JULY, AUGUST 2022 Environmental Update for SLEMA Board

October, 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. Water Licence Inspections
6. MVLWB Update
7. Environmental Agreement Update
8. SLEMA's Activities

1. Mine Update

- Commencement of Closure activities at site:

  - On March 1, 2022, De Beers began activities associated with the Closure phase as described in the Final Closure and Reclamation Plan (v.1.1) and as authorized by the corresponding Land Use Permit and Water Licence

  - Mine closure activities were initiated by MetNuna JV, who has assumed care and control of the Mine during Closure

2. SNP Reports

- The following Mine closure and reclamation activities were undertaken by MetNuna JV in June 2022:
  - Camp and facilities upgrades
  - Equipment maintenance
  - Utilities decommissioning
  - Demolition of the lake shed, old water pump house, transfer tower and conveyors, large vehicle parking, warehouse, welding shop 1 and BSP
  - Annual active discharge to Snap Lake from the Water Treatment Plant to Snap Lake began on May 31, 2022.

2. SNP Reports

- The following Mine closure and reclamation activities were undertaken by MetNuna JV in July 2022:
  - Camp operations
  - Equipment maintenance
  - Utilities decommissioning
  - Ongoing demolition of the process building (interior and exterior) and powerhouse (interior demolition)
  - Construction of the South and North ditch
  - Annual active discharge from the Water Treatment Plant to Snap Lake was ongoing in July 2022.

2. SNP Reports

- Water Management at site:
  - Fresh water is routinely extracted from Snap Lake
  - The Sewage is collected and treated at the Sewage Treatment Plant
  - Following written authorization from the Inspector, annual active discharge from the Water Treatment Plant to Snap Lake began on May 31 and was ongoing

2. SNP Reports

- 2022 WATER MANAGEMENT AT THE SITE

Water/ Wastewater	Jan m3	Feb m3	Mar m3	Apr m3	May m3	Jun m3	Jul m3
Fresh water from SL	577	485	785	672	828	876	784
Treated Sewage	165	315	333	190	384.6	417	411
Effluent discharged to SL	-	-	-	-	42	61,321	76333

2. SNP Reports

- WASTE MANAGEMENT: Summary of Monthly Waste Quantities

Waste Type	Apr	May	Jun	Jul	Aug	Sept
Domestic (Incinerated)	1,669 Kg	2,014 Kg	2,220 Kg	1795 Kg		
Domestic & Industrial (to landfill)	5,145 Kg	2,510 Kg	2,129 Kg	1,411 (t)		

2. SNP Reports

- Hourly and daily meteorological data was collected at the Hill Meteorological Monitoring Station

  and the Lake Hydro-Meteorological Monitoring Station.

2. SNP Reports

- Summary of Spills at Site

Table: Summary of Reportable Spills

Date	Substance	Volume	Location	NWT Spill #
April 7	Diesel Exhaust Fluid	400 L	Laydown 1	2022121
April 16	Sewage	20 L	New STP	2022133
June 19	Hydraulic Fluid	250L	Quarry	2022291

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	N	N	N	N	✓	✓					
02-05 Run off Rock Pad	N	N	N	N	✓	N	N					
02-06 Runoff Quarry	N	N	N	N	✓	N	N					
02-11 WMP Dam	N	N	N	N	N	N	N					
02-14 WMP	N	N	N	N	N	✓	✓					

N= None
✓= Sampled

3. 2022 WATER MONITORING SCHEDULE

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

N = None

✓ = sampled

3. WATER MONITORING

Results:

- 2022 Reported TDS at Snap Lake mixing zones:

	TDS mg/L					
MONTH/ STATION	Apr	May	Jun	Jul	Aug	Sep
SNP 02-20d	**252**	**N**		**197**		
SNP 02-20e	**257**	**N**		**266**		
SNP 02-20 f	**252**	**N**		**215**		

There was not water Lake sampling in May 2022
Analysis Results at SNP 02-20 MS for June are not yet reported

4. Incidents at Site

- GNWT Spill #2022291, which occurred at the Snap Lake Mine on June 19, 2022

- Incident Summary

  On June 19th, 2022, a Komatsu 650 Excavator was loading material in the Quarry (adjacent to the Crusher). While in operation, a hydraulic line connected to the main boom cylinder failed, causing a spill of approximately 250L of Hydraulic Fluid on the rock floor below.

  The floor level the Excavator was working on where the spill took place, sat just above the water table; no hydraulic fluid escaped into the main water body nearby.

4. Incidents at Site

- GNWT Spill #2022291 on June 19, 2022

- Immediate Actions

  The spill was isolated to the surrounding area of the Excavator swing radius.

  Spill pads and containment devices were used to isolate the area and protect the nearby water body. The hose on the Excavator was fixed and replaced.

  Clean up was completed on June 20th 2022.

- Root Cause

  The failure in the hydraulic hose was most likely due to the condition of the hose, which appeared to be subject to wear and tear

4. Incidents at Site

- GNWT Spill #2022291 on June 19, 2022 (Cont.)

  - Follow-Up Actions

    An incident review with maintenance personnel was completed to determine a plan moving forward for equipment that is working near water

    The plan is to ensure that the any equipment that may incur potential leaks, either be swapped out of the location or the part is replaced prior to any further work taking place

    For verification purposes, three water samples of the nearby water body were taken and sent for testing; test results confirmed that no hydrocarbons/contaminants were released

4. Incidents at Site

- GNWT Spill #2022291 on June 19, 2022 (Cont.)

Location of spill nearby water

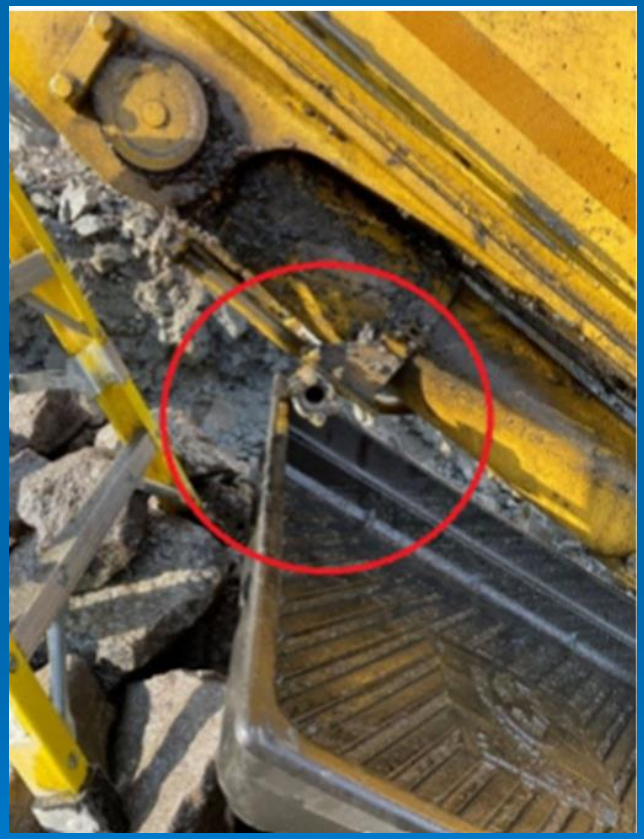
4. Incidents at Site

- GNWT Spill #2022291 on June 19, 2022 (Cont.)

Komatsu excavator

4. Incidents at Site

- GNWT Spill #2022291 on June 19, 2022 (Cont.)



Hydraulic line connected to the main boom cylinder failure

5. Inspection Reports

- On June 6, 2022 a water licence inspection was conducted at Site by Tom Bradbury, Resource Management Officer III
- The following areas were inspected

- Ammonium Nitrate Storage Area/Temporary Hazardous Waste Storage Area
- Old Emulsion Plant Area
- Landfarm
- Landfill/Cell 1
- Perimeter Sumps/North Pile
- Powerhouse
- Modular Water Treatment Plant

5. Inspection Reports

- June 6, 2022 Water Licence Inspection

  - All areas inspected were reported as satisfactory by the Inspector
  - A minor issue relative to the failure to install the inline monitoring meters for pH, temperature, conductivity, and Turbidity at the effluent line (SNP 02-16j) during startup of the sewage treatment plant (STP) was discussed with the Inspector and resolved

5. Inspection Reports

- June 6, 2022 Water Licence Inspection

1)Temporary Hazardous Waste Storage Secondary containment in place

2) Temporary Hazardous Waste Storage – 3000 litre totes

5. Inspection Reports

- June 6, 2022 Water Licence Inspection

3) Temporary Hazardous Waste Storage – 3000 Litre Totes – Proper labelling

4)Old Emulsion Plant Area – Trailer to be removed.

5. Inspection Reports

- June 6, 2022 Water Licence Inspection

5) Old Emulsion Plant Area – Sump yet to be removed

6) Landfarm – Hydrocarbon impacted soil

5. Inspection Reports

- June 6, 2022 Water Licence Inspection

7) Cell 1 – Former landfill.

8) Overlooking Perimeter Sump 4.

5. Inspection Reports

- On July 18, 2022, a Water Licence inspection was conducted at the Site by Tom Bradbury, Resource Management Officer III

  The following areas were inspected

  - Waste Management Area
  - Perimeter Sump Construction
  - Materials Demolition
  - Temporary Hazardous Waste Storage
  - Spills

5. Inspection Reports

- July 18, 2022, Water Licence inspection (cont.)

  The following areas were inspected

  - Waste Management Area
  - Perimeter Sump Construction
  - Materials Demolition
  - Temporary Hazardous Waste Storage
  - Spills

There were no concerns noted during the inspection

5. Inspection Reports

- July 18, 2022, Water Licence inspection

The Inspector informed that he approved DeBeers request for the disposal of shotcrete into the Fresh Air Raise cavities and/or inside the Conveyor Portal

Shotcrete was originally brought into Snap Lake and applied to walls and ceilings of the underground mine during construction

The concrete mix is considered inert

5. Inspection Reports

- July 18, 2022, Water Licence inspection

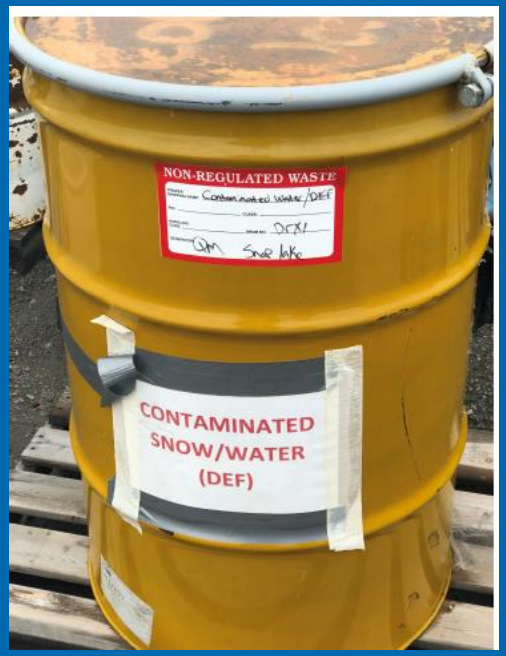
Approval of DeBeers request for the disposal of shotcrete into the Fresh Air Raise cavities and/or inside the Conveyor Portal (cont.)

Approval was provided for the following reasons:

- the areas outlined in the request are to be capped and covered
- the material is inert and poses no negative impact to the environment
- the material would normally be buried in the cells of the North Pile, which would require significant capacity (>5000 m3); and
- similar historical requests were granted.

5. Inspection Reports

- July 18, 2022 Water Licence Inspection



1) Waste Transfer Area – Proper labeling

2) Waste Transfer Area – Drums on pallets and strapped when full

5. Inspection Reports

- July 18, 2022 Water Licence Inspection

3) Waste Transfer Area – Containers in lined area of WTA

4) Perimeter Sump 5 – Excavation for increased capacity

5. Inspection Reports

- July 18, 2022 Water Licence Inspection

5) Area Between Perimeter Sumps 4 and 5 – Exposing bedrock for concrete placement

6) Perimeter Sump 4 – Construction for infilling

5. Inspection Reports

- July 18, 2022 Water Licence Inspection

7) Spill 2022121 – Post clean-up

8) Main Portal – Concrete team on site to cap entryways to underground

5. Inspection Reports

- July 18, 2022 Water Licence Inspection

9) Process Plant – Dismantling of the Process Plant underway

10) Powerhouse – Dismantling of the Powerhouse underway

5. Inspection Reports

- July 18, 2022 Water Licence Inspection

11) Tank Farm – Dismantling of the 500,000L tank farm

12) Fresh Air Raise – Removal of Fresh Air Raise for purpose of capping and covering

5. Inspection Reports

- July 18, 2022 Water Licence Inspection

13) View from the North Pile –Overlooking Perimeter Sump(s) construction

6. MVLWB Regulatory Update

- REVIEW OF THE 2021 AQUATIC EFFECT MONITORING ANNUAL REPORT

  - The 2021 AEMP AR went for public review with a deadline on August 16
  - The AR is awaiting Board's Decision

6. MVLWB Regulatory Update

- Aquatic Effects Monitoring Program (AEMP) Design Plan V 1.2 For Closure and Post-Closure Board Decision

  - The Aquatic Effects Monitoring Program (AEMP) Design Plan is required by Water Licence, Part G
  - The Board directed DeBeers to submit a revised Plan, the AEMP Design Plan Version 1.3 which should follow Board directives
  - The revised AEMP Design Plan V 1.3 will be considered approved when De Beers receives written confirmation of conformity from the Board.

7. Environmental Agreement Update

- Conditional Approval of the Wildlife Management and Monitoring Plan for the Snap Lake Mine

On July 15, 2022, the Deputy Minister Environment and Natural Resources issued a letter communicating the conditional approval of the WMMP for the Snap Lake Closure and Post Closure

De Beers was required to resubmit within 30 days a version that incorporates six Approval Conditions, between them tiered mitigation measures for caribou and aggressive wildlife procedures

8. SLEMA ACTIVITIES

- SLEMA EXECUTIVE BOARD MEMBERS MEETING

A Core Group Meeting was held via zoom on August 15, 2022

Topics:

- Final Closure and Reclamation Plan update
- Site Visit
- TK Panel Meeting and others

8. SLEMA ACTIVITIES

- SITE VISIT

SLEMA assisted De Beers with the site visit on August 29, 2022

The main objective of the site visit was the fish tasting event organized by DeBeers

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- Traditional Knowledge Panel meeting

On Tuesday, August 30, a Traditional Knowledge Panel Meeting organized by SLEMA was held

Members of the TK Panel discussed topics related to the Snap Lake Final Closure Plan and made recommendations included in SLEMA comments for the Snap Lake FCRP

8. SLEMA ACTIVITIES

- SLEMA reviews in July & August 2022:

Review of the Surveillance Network Program - SNP monthly reports

- Review of the AEMP AR