



SLEMA
September 2011
Environmental Update

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September 30, 2011

Outline

1. Mine Update
2. Inspection Update
3. Regulator Update
4. Stakeholders' Update
5. Reviews



Acronyms

- AANDC – Aboriginal Affairs and Northern Development Canada (previous INAC – India and Northern Affairs Canada)
- AEMP – Aquatic Effects Monitoring Program
- ARD – Acid Rock Drainage
- DFO – Fisheries and Oceans Canada
- EC – Environment Canada
- ENR – Department of Environment and Natural Resources, GNWT
- EQC – Effluent Quality Criteria
- GNWT – Government of the Northwest Territories
- MVLWB – Mackenzie Valley Land and Water Board
- PK – Processed Kimberlite
- SLEMA – Snap Lake Environmental Monitoring Agency
- SNP – Surveillance Network Program
- TDS – Total Dissolved Solids
- WEMP – Wildlife Effects Monitoring Program
- WTP – Water Treatment Plant
- WMP – Water Management Pond
- WQO – Water Quality Objective



1.1 Mine Update – August 2011

- Production rate: 77.7 % of its capacity (75,915 tonnes of kimberlite processed)
- 2,505 m³ of water withdrawn from Snap Lake
- 773,598 m³ of treated water discharged into Snap Lake
- 66,728 tonnes of coarse reject and 49,286 m³ of slimes deposited in the North Pile
- 8 spills (3 reportable)
- Water sampled in 12 monitoring stations
 - The monthly average for all parameters met compliance except
 - Copper and Zinc in SNP 02-05
 - Zinc in SNP 02-07.3, Zinc and Nitrate in SNP 02-07.5
 - Ammonia, Aluminum and Zinc in SNP 02-05, Zinc in SNP 02-05.2, Ammonia and Nitrate in both SNP 02-05.4 and SNP 02-05.5
- Construction and grubbing of the East Cell continued, and the diffuser outfall replacement project was initiated August 15. the core drilling program is ongoing



1.2 Response to Information Request #2

- Dated August 25, 2011
 - Response table provided
 - In response to each of MVLWB's questions
 - "CCME water guidelines and other benchmarks have been and will continue to be used, together with AEMP data, to determine where and when management may be required to reduce effluent discharge concentrations of specific substances"



1.3 Air Quality Monitoring Program

- Notice dated September 1, 2011
 - An on-going equipment malfunction and repair delay is affecting the Snap Lake Air Quality Monitoring Program; specifically the monitoring of particulate matter ($PM_{2.5}$, PM_{10} and TSP)
 - There will unfortunately be a consequent gap in monitoring data for particulate matter in the 2011 Air Quality and Emissions Management Annual Report



1.4 Response to Inspector Request (SNP 02-05)

- Dated September 30, 2011
- AANDC Inspector requested a mitigation plan for non-compliant water at SNP 02-05 be developed
 - No indication that water from SNP 02-05 is migrating to Snap Lake
 - Due to the closed nature of the location that evaporation in the summer months leads to parameters increasing in concentrations which leads to seasonal increases in the summer
 - Not necessary to further remediate the location at this time



2. Inspection Update

- INAC Inspector – Tracy Covey
- No reports received for
 - Water Licence Inspection
 - Land Use Permit Inspection



2.1 Inspectors Direction for Cleanup of AN Storage Pad

- Dated September 1, 2011
- The latest water quality samples collected from the AN Pad/Sump/surrounding environment confirm that source contamination at the site in question has not been removed as per direction on December 1, 2010
 - Complete cleanup by August 31, 2011
- De Beers is directed to continue removing material from the AN Pad/Sump area until no residual contamination remains by confirmatory samples
 - Completion of the cleanup must occur by October 14, 2011
 - Failure to comply with the direction may result in further action under the NWT Waters Act



3. Regulator Update

➤ MVLWB

- On September 2, 2011, sent out Rules of Procedures Including Public Hearings to reviewers, in preparation for the upcoming hearing
- On September 20, 2011, requested a proposed workplan and budget from EcoMetrix on recommendations for effluent quality criteria (EQC) for the Snap Lake Diamond Mine

Project due on October 17, 2011



3. Regulator Update

➤ MVLWB

- On September 21, 2011, distributed
 - Transcripts for all three days of the technical session for Snap Lake Diamond Mine
 - List of Information Requests (IRs)
 - De Beers to response by September 27
- List of Information Requests update on September 28
 - EC, AANDC and DFO added IRs into the list



3. Regulator Update

➤ MVLWB

- On September 30, 2011, scheduled a one day meeting
 - October 24
 - Topics
 - Harmonization of Fisheries Authorization and Water Licence on the AEMP requirements
 - Adaptive Management and action thresholds related to the AEMP



3.1 Technical Session for Water Licence Renewal

- September 14-16
- Participants
 - MVLWB and consultants
 - De Beers and consultants
 - SLEMA and consultant
 - AANDC, DFO, EC, ENR
 - YKDFN, Lutsel Ke, Deninu Kue (via phone), etc.
- Facilitated by Neil Hutchinson
- Topics discussed
 - WQO and EQC, SNP, TDS, North Pile management and site runoff, AEMP, Closure and Reclamation, Compliance Performance, etc.



4. Stakeholders' Update

➤ Information Requests by

- Environment Canada (EC) on September 26, 2011
- DFO on September 27
- AANDC (INAC) on September 27



4.1 Information Requests by EC

- Dated September 26, 2011
 - Current nitrate EQC is too high
 - Why are the annual loadings for ammonia, nitrate and phosphorus so high?
 - AEMP toxicity test results



4.2 Information Requests by DFO

➤ Dated September 27, 2011

- How will the project be assessed to determine if re-evaluation of the terms and conditions and monitoring thresholds are required?
- Why is a 15 year term appropriated for the Snap Lake Diamond Mine?
- Why should monitoring trace metals in invertebrates be removed from the water licence conditions?



4.3 Information Requests by AANDC

- Dated September 27, 2011
 - Opportunities for DBCI to control TDS inputs to Snap
 - Opportunities to improve model prediction
 - Will there be any effect on effluent quality and Snap Lake water quality as a result of switching to paste tailings disposal?
 - Rationale for using calculated TDS instead of measured TDS
 - Whether the 2011 "near field" predictions are comparable to the environmental assessment report "Max. in 1% of lake" predictions
 - Whether the predicted nitrate concentrations in Snap Lake assume 25% wastage or 10% wastage? If the predictions are based upon 25% wastage, what would the predicted concentrations be if 10% wastage were assumed?
 - 22 information requests on the North Pile



5. Documents to be Reviewed

- Air Quality, Meteorological Monitoring and Emission Reporting 2010 Annual Report
- Vegetation Monitoring Program 2010 Annual Report
- Wildlife Effects Monitoring Program 2010 Annual Report
 - Submitted on June 23, 2011

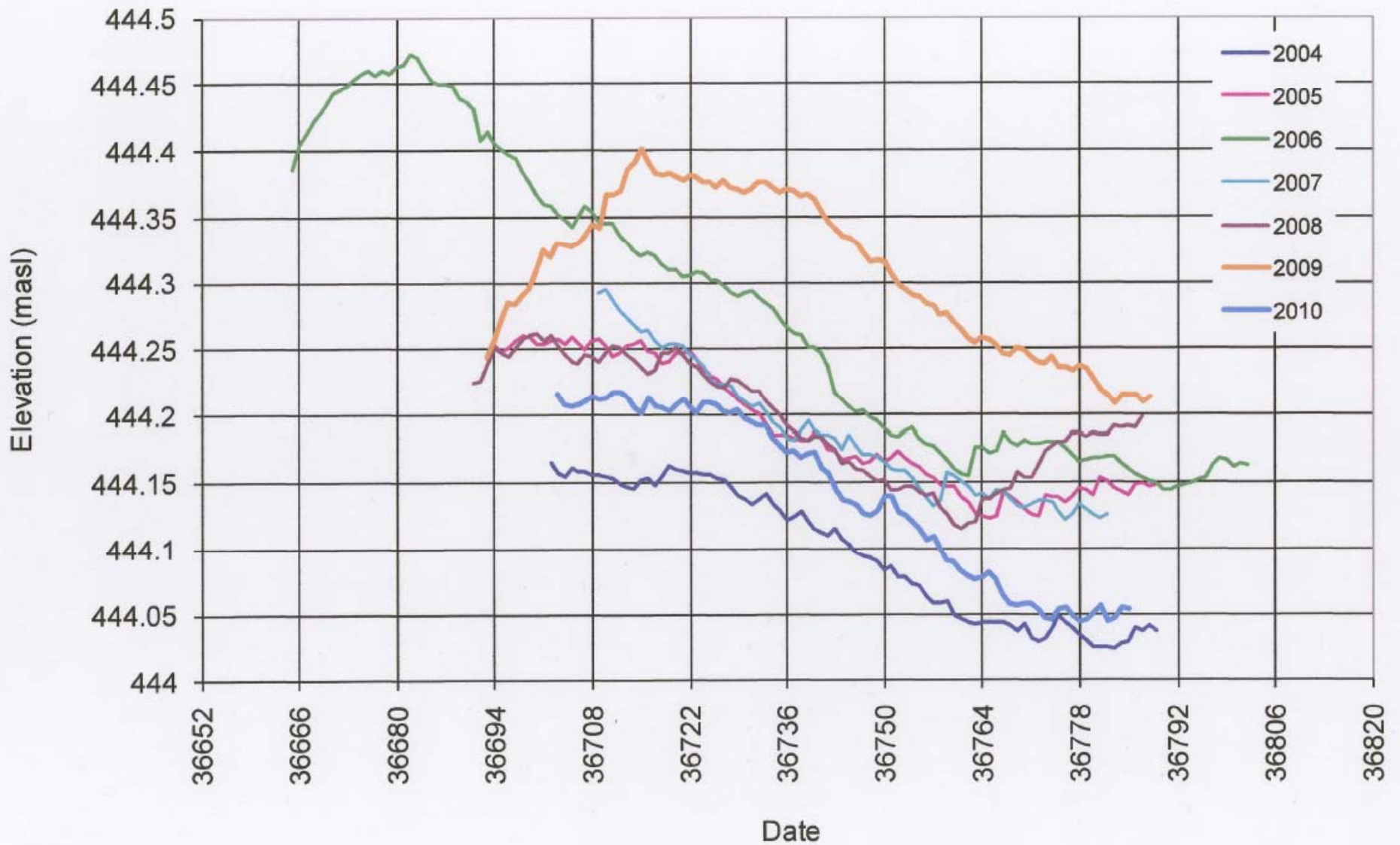


5.1 Hydrology Monitoring Program 2010 Annual Report

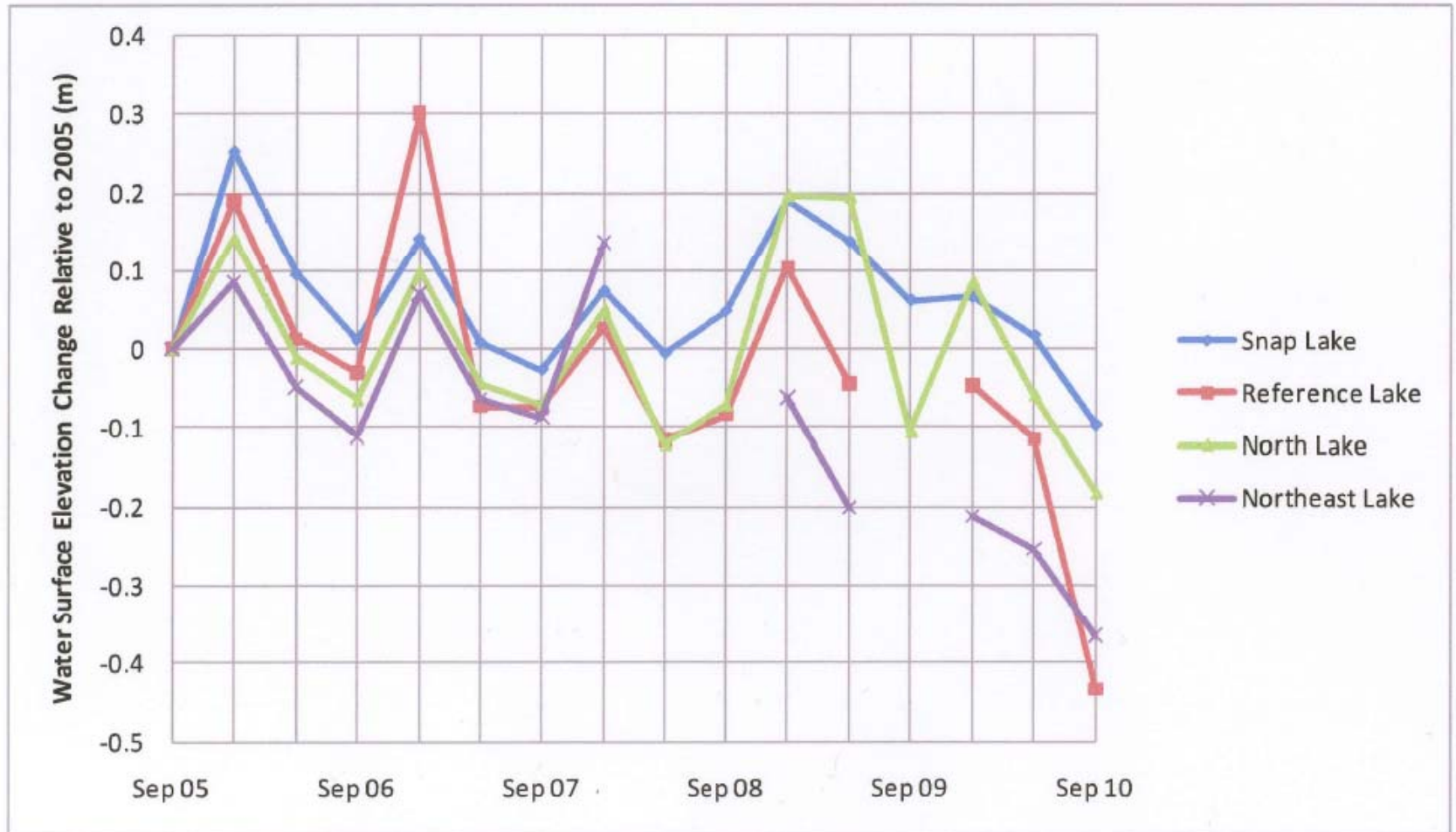
- Submitted on June 23, 2011
- Monitoring results indicate 2010 had low water levels and streamflows compared to previous years
- Snap Lake water levels continue to exhibit similar increases and decreases as other monitored lakes in the region
 - During 2010, the lake elevation dropped to the lowest level since 2004 due to very low precipitation and high evaporation
- The impact of the Mine activities on lake elevation remains small



Snap Lake Water Elevation



Surveyed Water Elevations for Selected Lakes near the Snap Lake Mine, Relative to September 2005



m = metres.

Comments from the Environmental Analyst

- No concerns are raised

