

2018-2019 ANNUAL REPORT

SUMMARY

INDEPENDENT ENVIRONMENTAL
MONITORING AGENCY 

A public watchdog for environmental management at EKATI DIAMOND MINE

MESSAGE FROM THE CHAIR



I am pleased to present the 2018-19 annual report of the Independent Environmental Monitoring Agency (Agency). The report summarizes the Agency's activities and offers recommendations for Dominion Diamond Mines ULC (Dominion) and for regulators.

2018 marked 20 years of production at the Ekati mine and the company commemorated with a celebration in August at the mine site and in Yellowknife. The Agency congratulates Dominion on this significant achievement.

The major focus for the Agency over the past year has been participating in the review of Interim Closure and Reclamation Plan (ICRP) v3.0. This document has not been revised since 2011, and recognizing the importance of closure of the mine to our Aboriginal Society Members, the Agency travelled to five communities to host Information Sessions where we presented a summary of the ICRP. These sessions not only informed the community members about what is in the document and the Agency's concerns, but also provided an opportunity for open discussion and for the Agency to hear community concerns. As part of the review process the Agency also participated in the WLWB-sponsored technical workshop and provided comments and recommendations to the WLWB including a recommendation that the ICRP v3.0 should not be approved in its current form as the plan lacks detail in many important areas.

This past year the Agency also participated in the review and evaluation of a number of important documents providing comments on the 2017 Air Quality Monitoring Program Report, Dust Suppressant Pilot Study Report (2016/17), Sable Waste Rock Storage Area Design Plan, Waste Water Processed Kimberlite Management Plan and Waste Rock and Ore Management Plan Version 9.0 and 10.0. Our main concerns and recommendations focused on seepage, risk mitigation for potentially acid generating waste rock, the use of the term "non-acid generating", and the use of diabase as a construction material on site.

Over the next year the Agency will continue to review and provide recommendations on Dominion's environmental management and monitoring plans and activities to ensure that there is good environmental performance at the mine site. Please feel free to contact the Agency at any time with your comments and concerns, or if you wish for us to visit your community.



Jaida Ohokannoak
www.monitoringagency.net

2017-18 SCORECARD FOR THE ENVIRONMENTAL PERFORMANCE OF THE EKATI MINE

Closure and Reclamation: Satisfactory – Dominion submitted an updated, integrated Interim Closure and Reclamation Plan (ICRP v3.0) on August 15, 2018. ICRP v3.0 lacks the level of detail the Agency would like to see for a mine that is over 20 years old, however it does represent a considerable improvement in that it includes many of the newer mine components. The workshop and first round of comments were useful and the Agency is confident an improved closure plan will be developed before the review process is completed.

Financial Security: Satisfactory – In 2018 the GNWT decided it will only accept security that is split between land and water. This is in contrast to the WLWB which continues to authorize the entire combined security under the water licence. This is out of Dominion's control, however it has resulted in there currently being no security held for the Misery underground development because GNWT is refusing to accept Dominion's security. The GNWT holds an appropriate amount of security for all other mine-related liabilities at Ekati.

Water and Aquatic Life: Satisfactory – A new water licence criteria for Potassium was approved by the WLWB. There are no new water quality issues this year. However, selenium and mercury levels in harvestable fish have reached levels of concern in lakes downstream of the mine. The Agency is concerned that mercury levels in harvestable species are above the safe consumption guideline in Kodiak Lake and that selenium levels in slimy sculpin (a small bottom feeder) and whitefish are exceeding the USEPA guideline for fish health and the BC Ministry of Environment human health guidelines.

Air Quality: Satisfactory – The 2018 Air Quality Monitoring Report shows that monitoring results were similar to historical data. Dominion has not yet submitted the site wide Air Quality Emissions Monitoring and Mitigation Plan that they have been assuring stakeholders since 2016 that it will be completed.

Wildlife: Satisfactory – The 2018 WEMP is well-produced with detailed reporting on waste management and wildlife incidents. The caribou mitigation measures in place to reduce impacts to caribou resulted in road closures and blasting deferred or cancelled on 20 occasions. However, the camera report has been delayed 2 years, road traffic data are incompletely reported, and road survey data are not presented. The Agency believes that Dominion should intensify efforts to integrate and analyze the monitoring used to link specific thresholds to trigger a management activity (intensified mitigation) and subsequent monitoring to determine effectiveness.

Traditional knowledge: Not Satisfactory – The Traditional Knowledge Elders Group met once on September 2018 at the Ekati mine. Future meetings have not been scheduled pending the decision of the Jay Project. Agency noted that the community engagement on the closure plan was lacking. During our community information sessions on closure, it appeared as though the communities were not well informed about the changes to the new closure plan.

AGENCY RECOMMENDATIONS 2018-19

TO WEK'EEZHII LAND AND WATER BOARD
RE: WASTE ROCK – EFFECTIVE NEUTRALIZING POTENTIAL

1 RECOMMENDATIONS

The Wek'eezhii Land and Water Board undertake a review to determine the most effective and efficient approach to testing and determining the neutralization, acid rock drainage and metal leaching potential of waste rock at the Ekati mine and other northern mine sites.

Wek'ëezhii Land and Water Board Response

The Wek'ëezhii Land and Water Board (WLWB or the Board) met on June 13, 2019 and considered the Independent Environmental Monitoring Agency (IEMA)'s May 27, 2019 e-mail. IEMA identified that its upcoming Environmental Agreement Annual Report will include a recommendation for the WLWB regarding effective neutralizing potential (NP) at the Ekati mine site, and requested the Board provide a response to be incorporated into its Annual Report.

The Board is aware that IEMA has raised similar concerns previously, including in its comments on the WROMP Version 9.0¹ and 10.0². The Board has communicated that it agrees “additional discussion of effective NP for all waste rock at the Ekati mine site is warranted” and previously directed Dominion to discuss the use of effective NP in the interim Closure and Reclamation Plan (ICRP) Version 3.0³. In addition, the Board has stated that “given the ongoing review of the Effective NP [Memorandum] and the ICRP Version 3.0, it is most appropriate to consider any necessary actions (e.g., expert review, technical workshop, resulting WROMP revisions) in consideration of the ICRP Version 3.0.”⁴

IEMA has referenced the technical memorandum submitted by Dominion as part of the ongoing ICRP Version 3.0 proceeding, however, the Board understands that IEMA's recommendation to the WLWB was not provided as part of a specific proceeding. As a matter of procedural fairness, the Board cannot respond to a recommendation on a proponent's submission outside of the proceeding for that submission.

¹ See WLWB Online Registry for W2012L2-0001 - Ekati - WROMP - Version 10.0 - Review Summary and Attachments - Mar 22_19.pdf; IEMA comment 3 and 4

² See WLWB Online Registry for W2012L2-0001 - Ekati - WROMP V9 and Sable WRSA Design Report V2 - Review Summary and

Attachments - Jun 4_18.pdf; IEMA comment 3

³ See WLWB Online Registry for W2012L2-0001 - Ekati - WROMP - Version 9.0 - Board Directive and RFD - June 27_18.pdf

⁴ See WLWB Online Registry for W2012L2-0001 - Ekati - WROMP - Version 10.0 - Reasons for Decision - Apr 24_19.pdf

2 RECOMMENDATIONS

Dominion should develop and implement an adaptive management strategy for seepage from waste rock storage areas that defines appropriate monitoring indicators, benchmarks and response plans.

Dominion Response

Dominion believes that adaptive management is an appropriate approach to managing WRSA seepage and have implemented adaptive management on a continuous basis. The current Waste Rock and Ore Management Plan (WROMP) V.10.0 contains the most recent iteration of the Waste Rock Storage Area (WRSA) Seepage adaptive management process, which was developed by Dominion in 2018. This process provides an appropriate and effective system that ensures continued protection of the Receiving Environment in a transparent manner and addresses the recommendations raised by IEMA.

Updated seepage quality screening criteria, as described in the Ekati mine's WROMP, are designed to prevent negative impacts on the Receiving Environment. The screening criteria are conservative, based on current information, and increase the transparency of seepage management at the Ekati mine. The screening criteria are conservative because they are applied where the sample is collected, which in most cases is at the toe of the WRSA (i.e., as compared to the point of entry to the Receiving Environment). This means that many factors that could mitigate the potential effects of seepage, such as attenuation, are not taken into account when considering the adaptive management of any particular seep. These criteria are used in conjunction with Seepage Monitoring Reports to verify or identify Seeps of Potential Concern, summarize response actions that are already underway, and identify appropriate additional response actions. Dominion anticipates that where appropriate, screening criteria may continue to be refined going forward, on the basis of new scientific research, continued data collection and professional judgement.

It should be noted that the implementation of screening and response programs for WRSA seepage is not new at the Ekati mine. Dominion has undertaken numerous actions in direct response to observed seepage quality and a number of response actions are actively being implemented by Dominion, which include:

- Silt curtains in seepage flow paths;
- Increased frequency of monitoring;
- Focused intensive flow monitoring programs;
- Monitoring of the local Receiving Environment;
- Refined identification of Receiving Environments;
- Mapping of seepage flowpaths; and
- Refinement of seepage data analysis, interpretation and screening.

TO DOMINION DIAMOND MINES ULC
RE: WASTE ROCK – ADAPTIVE MANAGEMENT STRATEGY FOR SEEPAGE

3 RECOMMENDATIONS

Given the exceedance of Health Canada guidelines of mercury in lake trout in Kodiak Lake, the Agency recommends that Dominion should:

- I. Investigate and report on the source of mercury contamination of trout in Kodiak Lake within the next year, and*
- II. Increase the frequency of non-lethal contaminants monitoring of trout in Kodiak Lake.*

Dominion Response

As specified in the current Ekati mine Water Licence W2012L2-0001, Schedule 8, Condition 4C, the Response Plan (i.e., for fish) will include “a description of likely causes of the Action Level exceedance”. The timeline for submission of the Fish Response Plan Version 1.3 is 31 October 2019, as approved by the Wek'ëezhii Land and Water Board (the Board). The Aquatic Response Framework and associated Aquatic Response Plans do allow for the implementation of special studies where and when applicable however, Dominion understands the appropriate place to address frequency of constituent monitoring in the Receiving Environment is the AEMP Re-evaluation, which is due to be finalized and submitted to the Board in December 2019.

4 RECOMMENDATIONS

Dominion should intensify efforts to document specific measurable thresholds that trigger wildlife management activities (i.e., intensified mitigation), and to conduct and document follow-up monitoring to determine effectiveness.

Dominion Response

Wildlife management activities undertaken at the Ekati Diamond Mine have evolved throughout the life of the mine, based on engagement, monitoring program results and the subsequent adaptive management decisions made over a number of years (See Adaptative Management Decision Tree for the Ekati Diamond Mine, Figure 2.2-1 in the approved Wildlife Effects Monitoring Plan, 2017).

In most cases, the trigger for wildlife management activities is the observation and/or reporting of wildlife to the Environment Department by site personnel (i.e., site wildlife notifications). The procedures (i.e., Wildlife Protection Fatal Risk Control Procedures), program work instructions, site-wide policies, and WEMP Plan that Dominion has in place dictate other management actions (i.e., short and long-term road closures required as per the Caribou Road Mitigation Plan, work stoppage procedures in work instructions, and training/presentations for onboarding or to meet annual training requirements i.e., grizzly bear safety training). These controls are in place to ensure the safety of wildlife and site personnel alike.

The most appropriate way to measure the success of the management actions is to evaluate the number of management actions undertaken (i.e., 515 actions in 2018) relative to the number of mortalities (14) and incidents (25) that occurred for the same period. Arguably, for each occasion where wildlife were observed that did not result in a human-wildlife interaction or incident, the management action was successful. Understanding the cause and effect and extent to which controls and mitigation measures directly influence the outcome of each management action is not possible.

5 RECOMMENDATIONS

Dominion should integrate analysis of caribou monitoring techniques (such as incidental sightings with collar movements and road surveys) for management and to determine relative efficiency and spatial coverage of monitoring.

Dominion Response

Dominion agrees that it could be useful to combine the caribou collar locations (especially geo-fence collar data), road traffic data, road survey data and camera data into an integrated analysis. However, the actual practice of combining all of these different data in a way that produces ecologically relevant results is an extremely complicated process to undertake. Dominion is open to any suggestions from IEMA regarding processes by which all of this information could be integrated to provide results that would inform the assessments of the effectiveness of mitigations or provide ecologically meaningful results to inform onsite and range wide management of caribou.

Recommendation Themes + Recipients Overview

The Agency provides recommendations every year to relevant parties (Dominion Diamond Mines ULC, the Wek'ëezhii Land and Water Board, and applicable federal and territorial government departments) based on the review of information and comments from the past 12 months.

BOARD OF DIRECTORS AND STAFF



From left to right: Marc Casas, Tim Byers, Bill Slater, Jaida Ohokannoak, Jesse Jasper, Ron Allen, Emery Paquin, Shannon Moore. Absent: Kim Poole.

INDEPENDENT ENVIRONMENTAL
MONITORING AGENCY



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For further information on the Agency's recommendations, please refer to the technical or plain language version of our annual report available on our website or from our office.

ABOUT THE AGENCY

The Independent Environmental Monitoring Agency was formed in 1997 to act as a public watchdog over the Ekati Diamond Mine. We are governed by a Board of Directors appointed by:

- Akaitcho Treaty 8 First Nations (specifically, Łutsel K'e Dene First Nation and Yellowknives Dene First Nation)
- Tłı̨chǫ Government
- North Slave Métis Alliance
- Kitikmeot Inuit Association
- Government of Canada
- Government of the Northwest Territories
- Dominion Diamond Ekati ULC (Dominion Diamond)

AGENCY MANDATE

- Review, report or make recommendations on the environmental programs, reports and activities of Dominion Diamond and government and the integration of the experience and Traditional Knowledge of Aboriginal peoples;
- Participate as an intervenor in regulatory and other legal processes concerning the environment;
- Maintain a resource library of environmental information relevant to Ekati;
- Distribute information about Ekati to Aboriginal peoples and the general public; and
- Provide an effective means to bring to Dominion Diamond and governments the concerns of Aboriginal peoples and the general public.