INFORMATION REQUEST RESPONSE

EA No: 0809-001 **Information Request No: YKDFN #12**

Date Received

February 28, 2011

Linkage to Other IRs

Review Board IR #24
Alternatives North IR #14
Environnent Canada IR #17
YKDFN IR #11

Date of this Draft

June 17, 2011

Request

Preamble:
Preliminary dispersion analysis modeling of the diffuser indicates that the CCME arsenic water quality guideline for protection of freshwater aquatic life of 5 g/L can be maintained in Yellowknife Bay within a short distance of (2 to 10 m) of the diffuser discharge point. It should be noted that the modelling was based on assumed average arsenic effluent concentrations of 0.2 mg/L and a short term effluent concentration of 0.4 mg/L; both of which that are smaller than MMER regulatory limit of 0.5 mg/L. It should be further noted that the dispersion analysis only considered arsenic as the constituent. It was stated that the water quality will be monitored in the vicinity of the outfall diffuser, outside the initial mixing zone. It is noted that no regulatory limits are stated for this sampling location and also the lateral distance of the sampling point from the diffuser is not stated.

Question:
It is requested that anticipated lateral distance of the sampling away from the diffuser is indicated. It is requested that a regulatory limit for the sampling point in the vicinity of the outfall diffuser be designated. CCME regulatory limits for the protection of aquatic life and Health Canada drinking water quality guideline could be adopted. In addition to the designation of a regulatory limit it is requested that a contingency plan should be outlined for the outfall and diffuser if the regulatory limits for the sampling point outside of the mixing zone cannot be achieved.

Reference to DAR (relevant DAR Sections)

S.14 Environmental Monitoring and Evaluation Framework and Long-Term Environmental Monitoring

Summary

More precise sampling locations beyond what is giving in the Developer's Assessment Report (DAR) can not be provided at this time since design of the diffuser and mixing zone are still in progress. These design elements and the Aquatic Effects Monitoring Program (AEMP) need to be advanced further before such details can be presented.

The design of the Water Treatment Plant (WTP) includes recycling of non-compliant effluent prior to discharge and the Aquatic Effects Monitoring Program includes mechanisms to change site processes if the objectives in the receiving environment are not being met. The Giant Mine Remediation Project Team (Project Team) believes that the requested contingency plan is already included in the Giant Mine Remediation Project (Remediation Project).

Response

The design of the diffuser and the associated mixing zone are still in progress, therefore more precise monitoring sample locations can not yet be defined beyond what is given in the DAR (page 14-27 and Figure 14.2.5). Compliance monitoring locations upstream of discharge and surveillance monitoring locations downstream of discharge will be identified by the Mackenzie Valley Land and Water Board (MVLWB) within a future water license granted for the site. In addition, the Project Team will develop an AEMP for operations at Giant Mine, utilizing INAC's 2007 "Guidelines for Designing and Implementing Aquatic Effects Monitoring Programs for Development Projects in the Northwest Territories."

The MVLWB will establish effluent quality criteria within its water license granted to the Project Team for discharge from the WTP. These "regulatory limits" must be achieved prior to effluent discharge, and are defined by samples taken at the last point of control (i.e. immediately prior to release of effluent). Monitoring points within the receiving environment form the basis of the AEMP that will be developed. The AEMP will contain an adaptive management approach with mechanisms to change the site processes if monitoring indicates that the objectives (termed "water quality standards" by MVLWB) are not being met outside the mixing zone.

The design of the WTP includes enough storage volume to hold 1.7 million litres of treated effluent prior to discharge. This provides ample opportunity to capture, retain, and re-treat non compliant effluent. Any effluent that exceeds the effluent quality criteria set out in a future water license will be recycled to the start of the treatment system and effluent will not be discharged into the environment until the criteria are met. The WTP design and the adaptive management approach incorporated into the AEMP demonstrate that the requested contingency plan for the diffuser is already incorporated into the Giant Mine Remediation Plan.

The Parties are respectfully referred to the more detailed response to Review Board Information Request #24,Question 1, for information on the diffuser design. With regard to the expected performance of the new WTP, the Parties are respectfully referred to the more detailed response to Alternatives North Information Request #14, Question 1.