



Giant Mine Environmental Assessment

IR Response

Round One: Information Request - North Slave Métis Alliance #10

May 31, 2011

INFORMATION REQUEST RESPONSE

EA No: 0809-001

Information Request No: NSMA #10

Date Received:

February 28, 2011

Linkage to Other IRs

Review Board IR #12, 24
Environment Canada IR #16, 17
City of Yellowknife IR #4
Alternatives North IR #14
North Slave Métis Alliance IR #8

Date of this Response:

May 31, 2011

Request

How close is the diffuser to the Yellowknife water intake pipe (the whole pipe not just the intake)? What condition is the pipe in? What are the implications of diffuser malfunction occurring together with intake pipe malfunction? What impact does climate warming, increased spring and summer precipitation, thawing permafrost in Yellowknife Bay and Yellowknife River, and changing water levels have? Please provide a detailed risk analysis.

Reference to DAR (relevant DAR Sections):

DAR s. 6.8.6 Outfall and Diffuser

Reference to the EA Terms of Reference

ToR 3.2.4.9

Summary

A drawing showing the location of the City of Yellowknife water supply pipeline in relation to the preliminary location of the Giant Mine effluent diffuser is included. Only the City of Yellowknife can comment on the condition of the drinking water supply pipeline as replacement of the City's water supply pipeline and intake is not within the scope of the Giant Mine Remediation Project. The implications of a simultaneous malfunction of the two systems are discussed in some detail in the





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response to Review Board IR #12. Finally, the climatic events identified in the question would all result in increased water levels, which should only improve the diffuser performance.

Response

Note that for ease of reading the Information Request question was sub-divided and numbered into four questions and the responses are provided below.

Question 1

A drawing is attached to this response showing the location of the City of Yellowknife water supply pipeline in relation to the preliminary location of the Giant Mine effluent diffuser. This drawing shows a different diffuser location than Figure 6.8.4 in the Developer's Assessment Report (DAR); the current location is based on the design work that has been conducted since the DAR was finalized. That being said, it is still a preliminary drawing and final selection of the diffuser location is subject to further analyses and consultation. It should also be noted that the size of the mixing zone shown on the drawing is not necessarily to scale; design work is still proceeding to determine its size. The Project Team will engage the City and other concerned parties with respect to proposed diffuser locations to ensure that the selection of a diffuser location does not adversely affect the municipal water intake.

Question 2

The City of Yellowknife is evaluating the option of replacing its water supply pipeline. The Project Team is aware that the City held a public meeting in early May and stated that the anticipated replacement timeline was for the year 2020. Further details on the actual condition of the pipeline or the timeline should be directed to the City, as replacement of the City's water supply pipeline and intake is not within the scope of the Giant Mine Remediation Project.

Question 3

Simultaneous malfunction of the two different systems is an extremely low probability event and the chance that one system would negatively affect the other during such an event is even lower. The City's Pumphouse #2 (the primary water supply intake) is upstream of the diffuser and Pumphouse #1 (the backup intake) is over 4000m downstream of the diffuser. More importantly, the City's water supply pipeline is pressurized so that even if a crack were to develop, water would only escape the pipeline, not enter it. However, a scenario for the simultaneous malfunction of the two systems has been included in the Failure Modes Effects Analysis carried out in response to Review Board IR #12. The Parties are respectfully referred to that response for additional information.

Question 4

The final question presents several scenarios that would all serve to increase water levels. As the diffuser will be positioned in reference to the lake bed (so as to minimize sediment disturbance) and in a location where the current water depth is sufficient for the designed mixing zone, any increase in water level should only have positive effects on the diffuser performance.

