



Giant Mine Environmental Assessment

IR Response

Round One: Information Request - Environment Canada IR # 10

May 31, 2011

INFORMATION REQUEST RESPONSE

EA No: 0809-001

Information Request No: Environment Canada #10

Date Received:

February 28, 2011

Linkage to Other IRs:

Date of this Response:

May 31, 2011

Request

Preamble:

Treated water from the site is currently discharged to Baker Creek during the open water season. It is proposed that the effluent discharge point be relocated to a diffuser outfall which will be constructed in Yellowknife Bay. It is noted in the DAR that this will change the hydrogeological regime of Baker Creek.

Question:

Please describe any significant negative effects expected from this activity in terms of the reduction in summer flows.

Reference to DAR (relevant DAR Sections):

S.6.1.2 (Summary of Post-Remediation Conditions)

Reference to the EA Terms of Reference

S. 3.5.2 (Fish and Aquatic Habitat)

Summary

The Giant Mine Remediation Project (Remediation Project) is anticipated to result in overall improvements to the environment of Baker Creek. In particular, shifting the treated minewater discharge point from Baker Creek to Great Slave Lake will reduce chemical loadings to the creek. Although this may result in Baker Creek drying up during the summer months, this is not viewed as an adverse effect because flows within the creek will be returned to a more natural condition (both in terms of chemical quality and hydrology). A comprehensive monitoring program will be put in place to verify the performance of the Remediation Project in this regard.



Giant Mine Environmental Assessment

IR Response

Round One: Information Request - Environment Canada IR # 10

May 31, 2011

Response

As indicated in Section 8.4.2.3 and Table 8.4.2 of the DAR, the remediation plan will result in a net improvement in hydrological conditions by returning Baker Creek to a more natural condition (i.e., by stopping the current practice of discharging treated minewater to the creek). In addition, while the design of Baker Creek has yet to be finalized, elements of the naturalized creek are anticipated to include channel modifications to create new aquatic habitat, to carry peak flood events and to reduce the potential for water discharges to underground mine workings. These proposed changes are similar to those that were successfully implemented during the rehabilitation of Baker Creek's Reach 4 that occurred in 2006 and 2007.

Potential effects on aquatic habitat and biota of changing hydrology are described in Section 8.7.2.3 of the DAR. The elimination of the volumetric flows associated with the current treated minewater discharge to Baker Creek warrant consideration. This is particularly important during late summer months when, based on current conditions, the discharge of treated minewater often represents the majority of flow within the creek. As indicated in Table 8.7.2 of the DAR, it was concluded that flows associated with the current discharge to the creek are not relevant to Arctic grayling use of the creek as spawning habitat. A similar relationship is expected to apply to other spring spawners such as longnose and white suckers, and northern pike. However, there is a potential that benthic invertebrates, resident fish species (e.g., nine-spine stickleback) and any species spawning late in the summer would be affected during years in which natural flows reduce to low levels following movement of the discharge point. This is not considered to be an adverse Project effect because the creek will be returned to a more natural condition.

