Water Resources Division
Qimugjuk Building
P.O. Box 2200
Iqaluit, Nunavut
X0A 0H0

Your file - Votre référence

NWB1CUL9902

April 25, 2002

Our file - Notre référence

Rita Becker
Licence Administrator
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NT X0E 1J0

Dear Ms. Becker:

RE: Water Licence Application, Cullaton Lake

The Water Resources Division has reviewed the water licence renewal application for the above-mentioned undertaking. The Annual Compliance Review has been included with this response. The Licensee satisfactorily compiled with the conditions of Licence NWB1CUL9902 in 2001; however, the letter of credit was renewed late and the public was not consulted and informed of closure activities. It is recommended that the security be maintained until a final inspection of the site has been competed by the Department of Indian Affairs and Northern Development (INAC). Homestake Canada Inc. should consult with nearby communities to ensure that they are aware of the reclamation activities that have been completed at the site.

During the 2001 inspection, minor slumping of some sections of the tailings impoundment structure was noted. At the time it was thought that the overall integrity of the tailings impoundment area (TCA) was unlikely to constitute a cause for concern and the geotechnical inspection completed in July 2001 concludes that tailings dams are stable. Despite this, the new licence should include provisions for ongoing monitoring of the TCA to ensure that long-term dam stability is maintained.

In 2001, a significant proportion of the solid waste was buried in the quarry, and the analytical results from the quarry pit (station 940-23) met the licence limits but exceeded the *Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life* for arsenic (arsenic (5.6 µg/L vs 5 µg/L), copper (6 µg/L vs 4 µg/L), iron (2.48 mg/L vs 0.3 mg/L), and zinc (70 µg/L vs 30 µg/L). In light of this and the quantity of bulky metal wastes buried at the quarry, the site should be monitored to ensure that the drainage leads from the pit towards Tailings Pond One as intended, and continues to meet Licence

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requirements. Also, regular monitoring should ensure that the establishment of the vegetative cover has been successful and that soil erosion is prevented.

Further monitoring of the former location of the higher grade waste rock dump is also recommended. During the 2001 inspection, dead vegetation was noted in this area and the analytical results from a sample of pooled water revealed that the field pH (3.2 vs 6.0-9.5) breached the effluent quality requirements set under the Water Licence. Furthermore, concentrations of cadmium (4.5 µg/L vs 0.017 µg/L), copper (210 µg/L), iron (3.14 mg/L), nickel (268 µg/L vs 150 µg/L), and zinc (420 µg/L) exceeded the *Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life*. Since the drainage from this area flows towards Shear Creek and/or Lake, reclamation of the area cannot be deemed complete until further monitoring assesses that runoff from the site no longer implies potential for the deposit of waste into waters.

The "Conclusions and Recommendations" in the *Notes on the Site Visit* (August 24, 2001) contain additional suggestions for future monitoring. For example, ongoing monitoring is recommended to assess water quality at the drainage creek from Shear Lake, the potential for leachate from the waste rock pile to the surrounding soil and Shear Lake, and to assess the effectiveness of grass seeding on the capped fill and potential for erosion. INAC concurs with these recommendations since the consolidating and capping the waste rock was not the preferred alternative. The February 2001 amendment application rejected this approach on the basis that the cover material available on site would not prevent acid generation (page 7). Ongoing monitoring will be required to ensure that the waste rock is frozen and that encapsulation and contouring prevents water infiltration and acid generation.

Should you have any questions or comments, please do not hesitate to contact me at (867) 975-4548 or by e-mail at johnsonmi@inac.gc.ca.

Sincerely,
Original signed by:

Michelle Johnson
Kitikmeot/Kivalliq Regional Coordinator

Attach.

c.c.: C. Bodykevich, Water Resource Officer
H. Kablalik, Resource Management Officer
Nunavut Impact Review Board