



Environment

Box 2703, Whitehorse, Yukon Y1A 2C6

QZ08-083

March 23, 2009

**QZ08-083**

Hudson Bay Mining & Smelting

Yukon Water Board Secretariat  
Suite 106, 419 Range Road  
Whitehorse, Yukon  
Y1A 3V1

Attn: Kelly Boutilier  
Licencing Officer

**Re: Intervention for Type B Water Licence Application QZ08-083, Hudson Bay Mining and Smelting, Installation of Adit Plug at Tom Valley Property.**

---

The Yukon Department of Environment (Yukon Environment) has completed its review of this Type B water licence application. We are not intending to appear at a public hearing to make representations in connection with this matter, but would participate if a hearing is convened by the Board.

Yukon Environment accepts that as a consequence of the flooding of the adit, discharge water quality will not improve (in fact may deteriorate) for an unknown time period. The proponent estimates that water quality will stabilize within two years, and has proposed that water quality standards for the site come into effect September 30, 2011. For this purpose, the proponent has proposed site-specific water quality standards that reflect natural background levels (95<sup>th</sup> percentile for copper, nickel and zinc) at the site.

Effluent Quality Standards

Yukon Environment accepts the proposed Effluent Quality Standards as presented by the proponent in their letter dated November 18, 2008. Specifically, following September 30, 2011, surface water grab samples at the site shall not exceed:

Parameter	Concentration
Arsenic (dissolved)	1.0 mg/l
Copper (total)	1.4 mg/l
Lead (total)	0.4 mg/l
Nickel (total)	2.1 mg/l
Zinc (total)	12.6 mg/l

The proponent has not described what measures will be taken should these standards not be achieved by September 30, 2011. Given the long delays already allowed at this site, Yukon Environment recommends that, should interim monitoring results (ie. prior to September 30, 2011) indicate possible failure to achieve the standards above, the proponent should be prepared to initiate immediate onsite water treatment. In other words, the proponent should design, source and install a water treatment plant if any doubt exists regarding achievement of the standards.

### Water Sampling Schedule

The proponent has proposed dropping the requirement to sample site water quality in the month of May, citing site access, avalanche danger and worker safety concerns. The Department agrees that the May sampling date may be removed from the sampling plan.

### Slope Stability

In section 3.1.2.2 of the project proposal, the proponent has presented the geotechnical conditions at the site and describes a highly fractured hillside, with relatively shallow depths to the flooded portion of the adit. Environment Yukon has concerns about the potential for increased seepage at the site through the native highly fractured bedrock. Although a safety factor of 1.5 has been applied to shear factor values for the site, there remains some possibility that internal pressures may increase beyond the structural limitations of the hillside. There is potential for a massive slope failure.

The Recommended Geotechnical Monitoring Program (described in "BGC Engineering Inc. Interoffice Memorandum", dated November 7, 2008) relies on visual observations during monthly site inspections, and GPS and photo documentation of aboveground geotechnical conditions, including "recent landslide activity". Environment Yukon would prefer a more systematic and rigorous method of monitoring slope stability that would anticipate slope failure before landslides occur.

### Waste Rock Dump Cover

Environment Yukon does not accept that a partial cover for the waste rock dump will adequately prevent Acid Rock Drainage and Metal Leaching from this structure. Environment would prefer to see a greater effort to recontour the waste rock dump to allow for a full cover. The proponent has indicated that only ¼ of the flat area north of the portal is needed for the sludge containment pond (1,000 m<sup>2</sup> for the pond, of the estimated 4,000 m<sup>2</sup> flat area) – the remainder of this area may be suitable for placement of waste rock and cover material.

Environment recommends that the waste rock dump cover plan be amended to provide for a 100 percent cover of ARD and metal leaching materials.

### Long-term Site Disposition

The proponent has not indicated what their long-term plans are for this site. If a walk-away scenario is envisioned, this should be presented with timelines and justification.


### Project Timelines

In its Reasons for Decision for QZ99-046, the Yukon Water Board (the Board) expressed concerns for long delays and that there was a waste deposit that should not be ignored ("QZ99-046, Reasons for Decision, page 3 to 5: *The history of this application has involved long delays, not all of which are the responsibility of the HBMS, but which the Board does not wish to see continue. The first approach was unacceptable as there appears to be an existing waste deposit that should not be ignored.*") The licence came into effect January 01, 2003, zinc discharge from the adit was to be compliant by September 30, 2005, for which the Applicant now seeks to extend yet further.

Environment echoes these concerns. Further delays in the execution of this project would be unacceptable, in light of the continued deposit of wastes to the environment.

Thank you for the opportunity to review the application. A copy of this intervention has been mailed to the applicant at the address provided in Schedule IV of the application.

Regards,



---

Pat Paslawski  
Environmental Assessment Officer  
Environmental Affairs

cc Hudson Bay Mining & Smelting