

REASONS FOR DECISION  
WATER USE APPLICATION QZ04-063  
KETZA RIVER HOLDINGS LTD.

The Yukon Water Board (“the board”) has concluded deliberations pertaining to water use application QZ04-063, which is an application for a type A licence for quartz mining undertaking.

The Ketza River Mine is located 80 km south of Ross River, Yukon. The mine has been inactive for several years.

In the application, and clarified in subsequent submissions, Ketza River Holdings Ltd. (“Ketza”) requested a water use licence to store water within an existing tailings impoundment and to deposit a waste through a controlled discharge of water from an existing tailings impoundment. Ketza did not apply for a licence to conduct active mining activities. Initially, Ketza requested an expiry date of September 2007, but this was later changed to December 31, 2009.

The last water use licence for this project, which authorized the use of water and deposit of waste related to an operating mine, expired in 1998. The board determined that previous licences, issued under other legislation, for a different purpose, and to different proponents, were not pertinent to this application. Therefore previous board decisions related to this site were not included in the water use register.

Ketza submitted an application on October 22, 2004. The application was inadequate until the spring of 2007, when Ketza provided sufficient information and clarification of their proposal.

Notice of Application and Public Hearing was provided, in accordance with the requirements of the *Waters Act*, by publication in local newspapers and in the Yukon Gazette. Notice was also provided, through correspondence, to Ross River Dena Council, Government of Yukon, Fisheries and Oceans Canada, Environment Canada, and the Yukon Conservation Society.

In response, the Board received interventions from Yukon Conservation Society (“YCS”), Ross River Dena Council (“RRDC”), Environment Canada (“EC”) and Government of Yukon (“GY”).

A public hearing was held in Whitehorse on April 11, 12 and 13, 2007. All of the parties except YCS attended and participated in the hearing.

### **Environmental Assessment**

A screening report dated October 2005 and prepared by Government of Yukon under the *Environmental Assessment Act* was included in the water use register, as well as an addendum dated February 28/07.

### **Security (Part B)**

In determining the factors that would affect security calculations, the board considered the *Waters Act Regulation*, sec 11(1), which states that the amount of security cannot exceed the total of the cost of abandonment of the undertaking, restoration of the site of the undertaking, and ongoing measures that may remain after closure. In this case, the site of the undertaking is the Ketzá mine, not just the tailings impoundment. The board determined that it was therefore appropriate to consider the cost of abandonment for the entire site.

In determining the amount of security, the board concurred with Ketzá's position that ongoing care and maintenance during the life of the licence should not be considered in the calculation of security. Ketzá disagreed with GY's estimate for some specific components, but the board agreed that GY's estimates represent a cautious approach and, except for some minor mathematical corrections, GY's estimates were accepted. Ketzá will be required to provide security in the amount of \$3,087,600 within 60 days of the issuance of the licence. The board notes that this amount will likely need to be revisited from time to time in the future, as the decommissioning plan is developed and reviewed, and as the Licensee proceeds with their plan to reopen the mine.

In their written intervention, YCS recommended that security should be adequate to address a reclamation plan for the site. YCS did not provide specific recommendations as to the amount of security.

### **Operating Conditions (Part C)**

#### Tailings Pond Water Level

EC recommended that there should be a lower limit on the pond level, in order to prevent exposure of tailings that could lead to oxidation and increased arsenic. Ross River Dena Council opposed this recommendation, arguing that a lower pond level would reduce the risk of dam instability. Ketzá's position was that there should be no lower limit, so that they could have operational flexibility.

The board determined that EC did not provide sufficient scientific rationale to support a reasonable expectation that arsenic levels would be increased through lower pond levels. However, even if that were the case, discharges from the impoundment must be treated to meet the arsenic standard stipulated in the licence. Therefore, the licence will not include a lower limit for the tailings impoundment.

### **Effluent Standards (Part D)**

The parties reached agreement on most effluent standards, with some minor divisions on lead, nickel and zinc and a larger variance on arsenic.

Ketzá proposed to meet standards as per the Metal Mine Effluent Regulations ("MMER"). GY and EC agreed, but recommended two standards for arsenic: 0.5 mg/L at the dam seepage, which

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reflects MMER, and 0.3 mg/L at the discharge to Cache Creek, and argued that this standard was included in previous licences.

The board decided that the standard for arsenic will be 0.5 mg/L, and the compliance point will be the discharge to Cache Creek. The board accepted that, although MMER does not apply to this project, it is an appropriate minimum standard for this situation, and that decisions made in the past for a different project were not sufficient to support a more strict standard for this licence.

The board noted, however, that MMER standards reflect mean monthly, whereas the parties at the hearing spoke of these standards applying to grab samples. The licence standards apply to grab samples. While the difference results in some more strict standards, the monitoring requirements are such that this is not unreasonable or onerous.

### Water Quality Objectives/Downstream Water Quality as a Trigger

Some parties argued that the licence should include a downstream water quality objective. Water licences typically do not include objectives, except as a trigger for some other specific action. In this case, the board was not presented with proposed actions that would be triggered through a downstream objective. Water quality standards are an enforceable condition, whereas an objective is not enforceable. The board has therefore not included objectives in the licence.

### **Decommissioning (Part F)**

All parties agreed that a detailed decommissioning plan should be a requirement of the licence. Ketz and GY proposed that the plan should be provided within 18 months of the effective date of the licence. The licence requirement for a plan by January 2009 is a reasonable reflection of these recommendations.

The board determined it would be insufficient to require the closure plan to only be submitted, without some accompanying requirement to actually implement the plan. At the same time, the board accepts that there will be a need for review and assessment of any proposed closure plan. For that reason, the requirement to implement the closure plan will be subject to the appropriate authorizations and approvals, such as any requirement for assessment under the *Yukon Environmental and Socio-economic Assessment Act*, or any other requirements that may exist when the plan is submitted.

### **Modification and Construction (Part E)**

#### Toe Berm (Section 31)

The geotechnical report submitted by the applicant included a recommendation for construction of a toe berm, but the report did not indicate a time frame or discuss the urgency. RRDC recommended that construction of a toe berm should be a requirement of the licence. Ketz indicated that they would install a toe berm, but did not talk about timing.

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The board determined that construction of the toe berm will improve the factor of safety for the dam, that it should be constructed sooner rather than later, but that it may not be reasonable to expect construction to be completed during this summer. The licence requires the toe berm to be constructed by the end of September, 2008.

## **Monitoring and Surveillance (Part G)**

### Monitoring Program (Section 35)

The board decided that monitoring requirements for this licence will encompass the entire site, not just the immediate area of the tailings impoundment. Ketzá expressed their intention to proceed to active mining operations in the near future, and Ketzá agreed to develop a closure plan for the entire site. The information obtained through the monitoring program will be useful in the development of that plan, and will therefore not be unreasonably onerous.

### Sediment, Periphyton and Invertebrate Sampling Program (Section 38)

Ketzá advised that they would be conducting various sampling programs, but did not want them to be a condition of licence. Other parties did not take a position.

Sediment and invertebrate sampling programs are typical components of licences for operating mines, but this licence is not for an operating mine. However, the information that would come forward from this sampling will be useful in measuring downstream impacts.

The licence includes a requirement for sediment, periphyton and benthic invertebrate sampling program. The program will be conducted only once during the licence, during the summer low flow period.

### Physical Inspections and Monitoring (Sections 39, 40)

GY proposed that the licence should include a plan to maintain the stability of the dam and the diversion structures. Ketzá opposed this recommendation, arguing that there is no evidence of dam instability.

The board agreed that the monitoring requirements of the Dam Safety Guidelines are generally accepted as minimal requirements for structures of this nature. The primary purpose of this licence is the maintenance of the tailings impoundment, and some physical monitoring should be included in order to ensure its stability.

The licence includes requirements that are typical of other licences for projects with water impoundments, including annual monitoring and reporting, and the need to maintain structures in good order.

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Monitoring Station KR-50 (Schedule A and Section 37)

The board accepted RRDC's recommendation that the monitoring program should be expanded to include an additional downstream site in Cache Creek. The board has arbitrarily designated this site as KR-50, as that designation is not likely to exist at another site. Ketz River Holdings Ltd. will be required to provide coordinates once the site is established.

**Conclusion**

The board extends its thanks to the Applicant and Interveners for their participation in the water licensing process and for their cooperation and helpful recommendations. Subject to the approval of the Minister, water use licence QZ04-063 will be issued to Ketz River Holdings Ltd.

Bruce Willis, Chairperson  
YUKON WATER BOARD

July 20, 2007