



April 11, 2007

Yukon Water Board
106-419 Range Road
Whitehorse, YT, Y1A 3V1

Attention: Bruce Willis, Chair

Dear Mr. Willis:

Subject: Ketz River Mine – Water Licence Application (QZ04-063) – Response to Interventions

Ketz River Holdings Ltd. (KRH) has prepared the following response to the interventions filed by the Yukon Conservation Society, Ross River Dena Council, Environment Canada, and Government of Yukon for water licence application QZ04-063.

ROSS RIVER DENA COUNCIL (RRDC) - Exhibit 5.2

RRDC's intervention states:

- 1. The community of Ross River is located downstream of this mine and that we very concerned of the tailing dam and the seepage water under the dam.*
- 2. There should be an overall look at the site for any discharge into the water from the waste rock piles*
- 3. Monitoring of the site on the water.*

KRH Response: KRH has a long-standing relationship with RRDC and the Kaska Nation. A Memorandum of Understanding was signed in 2005 with RRDC (signed on behalf of the Kaska Nation). KRH has been operating a camp for care and maintenance, and mineral exploration, over the last couple of years. This camp normally has 30-40 staff, of which approximately half are RRDC members. A majority are employed with the care and maintenance activities and environmental monitoring programs. As identified in KRH's application and the supplemental information, KRH has conducted an extensive environmental clean-up and monitoring program on the site over the last few years. This program includes monitoring of water on the site and seepage from the tailings pond. KRH will continue these activities and programs in accordance with a water licence, once issued. A geotechnical inspection and assessment by qualified engineers is planned for this spring/summer. KRH has also welcomed RRDC representatives to visit the site and attend the environmental monitoring and geotechnical inspection.

ENVIRONMENT CANADA - Exhibit 5.3

Recommendation 1 – Prohibition from mining/milling during term of two-year licence.

KRH Response: KRH agrees with this recommendation. KRH does not intend on quartz mining or milling as part of this licence application.

Recommendation 2: *Prohibition from lowering tailings pond below elevation 1310.2 m (2.0 m below spillway invert). Notification to the Board 14 days in advance of any surface discharge from the tailings pond, including discharge of treated tailings pond water.*

KRH Response: KRH does not agree with Environment Canada’s recommendation, for two reasons:

1. Environment Canada’s rationale for opposing any further lowering of the water level in the tailings pond appears to be an alleged risk that exposing the tailings material would result in higher concentrations of arsenic in the tailings pond water.

Environment Canada’s rationale is not supported by water monitoring results from the past year when the water level has been lowered in the tailings pond. The arsenic concentrations have remained constant even when the water level has been lowered to 1310 m a.s.l. and some of the tailings have been exposed. Arsenic in tailings pond supernatant has remained constant while more importantly arsenic in seepage water has dropped and is now continually below 0.3 mg/l. The additional benefit with lower water level in the tailings pond is the reduced hydraulic head in the tailings pond, which reduces the amount of seepage at KR04 and KR05.

Further information on this issue can be found in Exhibit 1.5, Section 11.0, pages 5-6, paragraphs 2-4.

2. Keeping the tailings pond water level high would have a negative impact on the company’s options in conducting its care and maintenance activities by increasing costs from pumping back seepage flows.

Recommendation 3 – Previous licence to be referred to (eg. as a “template”) for deliberations concerning the current licence, recognizing however the need for updating to reflect current realities including:

- *Limitation to term of licence;*
- *Allowable uses of water (eg. prohibition from mining and milling activities);*
- *Changes to relevant legislation and licence references to applicable legislation/regulations;*
- *Advances to scientific understanding of toxicity of arsenic and other contaminants and thus protection of the aquatic environment and humans;*
- *Updated understanding of current level of environmental risk and liability, and of future liabilities and risk.*

KRH Response: The Yukon Water Board Secretariat has advised that previous licences for this site are not admissible as references in this hearing. This hearing deals with the storage of water and discharge of water from the tailings pond. It does not deal with other matters that may have been included in previous licences for this site.

Recommendation 4 – *Water Quality Objectives met in the receiving environment:*

- 0.02 mg/L Total Arsenic at KR-8 Cache Creek below Oxo (interim objective)
- 0.005 mg/L Total Arsenic at KR-12 Ketz̄a River CCME (long-term objective) for the protection of aquatic life.

KRH's Response: KRH can agree to the following:

- 0.02 mg/L for KR-8 as a **monthly average**, or as a water quality **objective**.
- 0.005 for total As at KR 12 as a water quality **objective**
- KR16, a water quality station upstream of mining disturbance, should be used for identifying background levels in the system

Further information on KRH's proposed water quality discharge standards and receiving water objectives are included in the Summary on page 8 of this document.

Recommendation 5 – *At a minimum: discharge standards at least consistent with previous licence. Highlighted maximum arsenic discharge limit, and changes to Total Suspended Solids and pH. Highlight the non-toxicity requirement.*

KRH's Response: KRH agrees to using MMER levels as discharge standards. KRH requests that KR-4(N3) and KR-5(S2) be recognized as compliance points (i.e. last point of control) with a standard of 0.5 mg/l together with the discharge point for the tailings pond: KR-9a. The MMER limit of 0.5 mg/L has been used since 2004, and the regulatory agencies have not expressed any concerns. During 2006, KRH discharged water from the tailings pond using 0.5 mg/l as an arsenic "standard" with no observable adverse impacts downstream.

KRH agrees with the non-toxicity requirement defined by a 96-hour LC50 bioassay test. Discharge by KRH of tailings pond water met the LC50 bioassay test of 100%, using rainbow trout with no mortalities. Further information on KRH's proposed water quality discharge standards and receiving water objectives are included in the Summary on page 8 of this document.

Recommendation 6 – *Incorporate monitoring according to suggested surveillance plan presented in Table 1 of Exhibit 1.7 (EBA; 29 August 2006) with... (includes 11 "bullets" with suggested changes/additions and/or clarifications).*

KRH Response: KRH has operated an extensive monitoring program over the last couple of years, and many of the monitoring stations and parameters identified in Recommendation 6 are part of KRH's monitoring program. However, KRH's licence application only deals with i) to store/ alter the flow of water; and ii) discharge of deposit of waste (i.e. tailings

pond water), so the water licence requirements should only address what is included in the licence application.

Recommendation 7- *Sediment analysis, periphyton composition, and invertebrate monitoring program to be conducted once per the two-year term of the licence.*

KRH Response: KRH does not agree with this recommendation for the care and maintenance program. This application only deals with i) to store/ alter the flow of water; and ii) discharge of deposit of waste; so the water licence requirements should only address what is included in the licence application.

Recommendation 8- *The Licencee conduct a seep survey program to monitor seeps from, and ponded water associated with, mine components (underground workings, open pits, waste rock dumps). A seep survey program should be conducted twice during the first year (spring and late summer) and once more during the second year of the licence term. Relevant parameters for such a seep survey program would include, at a minimum: geo-referenced location; flow/volume; field temperature; field pH; field conductivity, field specific cond.; total suspended solids; total and dissolved (field-filtered) metals; total alkalinity; total acidity; total sulphate.*

KRH Response: KRH agrees to seepage sampling at the tailings pond, but not for other locations that are not part of this licence application. Further information on KRH's proposed water quality discharge standards and receiving water objectives are included in the Summary on page 8 of this document.

Recommendation 9: *Requirement to submit a Final Reclamation Plan within the terms of this licence, and to reapply for a water licence at the time of submission to the incorporate in the plan. The final detailed Decommissioning and Reclamation Plan should result with a project area which is geochemically and geotechnically stable; respecting the long-term requirement for CCME receiving environment objectives in Cache Creek and Ketz'a River, and ensuring that any remaining structures are designed and built for long-term physical stability (eg. PMF and MCE standard).*

KRH Response: KRH is not opposed to preparing such a Plan within one and a half years of the issuance of water licence QZ04-063; however, it should only deal with the areas for which KRH has applied for in this water licence. KRH does not agree with the requirement to “re-apply” for a water licence at the time of submission of the plan.

Recommendation 10- *Proponent to perform site monitoring using documented and validated methods in accordance with generally-accepted standards of good scientific practice. Reference to ASTM/Standard Methods/others as appropriate.*

KRH Response: KRH is already performing site monitoring using documented and validated methods. Samples are being sent to laboratories that are certified by the Canadian Association of Environmental Analytical laboratories. KRH and its consultant have also

performed coordinated sampling with the Yukon Government's Water Resources Section to ensure that the site monitoring is conducted in a consistent manner.

GOVERNMENT OF YUKON – Exhibit 5.5

Page iv:

- *Yukon recommends it should be clearly stated in any water licence issued in relation to the application that mining or milling activity is not authorized.*
- *Yukon recommends that KRH be required to have a larger or two spill kits on site.*
- *The Yukon recommends that KRH be required to install a liner to contain fuel in the event of spills or leaks.*
- *The Yukon recommends that KRH be required to contain and line the refuelling area to avoid further cumulative spill impacts.*

KRH Response: These recommendations are acceptable to KRH. Spill kits have been on site for two years and liners for fuel containment already exist.

3.3.2 Effluent and Receiving Quality Standards

Page x: Yukon recommends that the Board reinstate the standards for lead, nickel and zinc from the old licence to minimize the potential for increased metals loadings.

KRH Response: Compliance with the standards for lead, nickel and zinc from the old licence has not been an issue in the past, and these standards are acceptable to KRH. However, it should be noted that the old licence is not admissible as reference for this hearing.

Page xi: The Yukon recommends that:

- *The Board reinstate the original effluent quality standard of 0.3 mg/l total arsenic concentration at end of pipe;*
- *Discharge of treated wastewater shall only occur between May 1st and October 31st of each year (also a reinstatement)*

KRH Response: KRH does not agree with the effluent quality standard of 0.3 mg/l arsenic. This standard was previously used for the polishing pond at KR7, not for effluent from the tailings pond. Further, it refers to a previous licence. KRH can agree with a 0.5 mg/l effluent discharge standard from the tailings pond in keeping with the MMER standards.

It should be noted that the Water Resources Section agreed with the 0.5 mg/l standard that was used for the “discharge without a licence” that was conducted by KRH from January 2006 to December 2006. Yukon's position is inconsistent from what was agreed to for the 2006 discharge period. KRH did not treat the discharge and monitored water quality every two weeks as per agreement, with no concerns registered by the Yukon government.

KRH's proposed water quality discharge standards and receiving water objectives are included in the Summary on page 8 of this document.

***Page xv:** The Yukon recommends that: the Board reinstate the original standard of 0.05 mg/l arsenic (now total) for seepage.*

KRH Response: KRH does not agree with this recommendation. Sampling points KR-4 N3 and KR-5 S2 should be deemed discharge points, with a discharge standard of 0.5 mg/l, which is identical and consistent with discharge standard for tailings pond water at KR9a.

Further information on KRH's proposed water quality discharge standards and receiving water objectives are included in the Summary on page 8 of this document.

***Page xviii:** The Yukon recommends that the Board set a receiving water standard in Cache Creek of 0.02 mg/L total arsenic at KR-8.*

KRH Response: KRH does not agree with this recommendation, as sampling stations upstream of the tailings pond on occasion exceed 0.02 mg/L. KRH has no ability to control water quality above the tailings pond. Further information on KRH's proposed water quality discharge standards and receiving water objectives are included in the Summary on page 8 of this document.

***Page xix:** The Board set a water quality standard of 0.005 mg/l total arsenic for the Ketz'a River at KR-12 (downstream of Cache Ck confluence).*

KRH Response: KRH can agree to the 0.005 mg/l total arsenic measured as a monthly average and as an **objective**; but not as a standard. KRH has no control over other drainages in the system. Further information on KRH's proposed water quality discharge standards and receiving water objectives are included in the Summary on page 8 of this document.

***Page xxii:** The Yukon recommends that the Board require KRH to provide, within one month of licence issuance, a detailed water structure management and maintenance plan for review and approval. The Board draft the licence to allow for review of a submitted plan, and for the plan to be revised and re-submitted, without the need for a licence amendment process.*

KRH Response: KRH does not agree with the statements in the Yukon's intervention in relation to dam stability and failure of water diversion structures. The dam has not exhibited instability in the 20 years it has been in place and has not been in danger of failure. KRH agreed to a lowering of the impoundment water as an added safety measure as requested by the Water Resources Section, Yukon government. This was done to reduce the potential risk of dam failure, to reduce the hydraulic head behind the dam, and hence reduce the

amount of seepage from the dam. Please note that KRH monitors and maintains all structures on a daily basis.

3.4 Decommissioning

3.4.1 Decommissioning Plans

Page xxiii: Yukon is requesting that KRH submit a detailed preliminary decommissioning and reclamation plan for closure, along with costing estimates, within one and a half years of entering into the Water licence that they have requested. This period will allow time for the proponent to develop their detailed decommissioning plan.

KRH Response: KRH does not agree with this recommendation, as KRH's application only includes i) to store/ alter the flow of water; and ii) emergency discharge of deposit of waste. The water licence requirements for this licence should only address what is included in the licence application. No modifications to any water use structures are proposed.

It is a strong likelihood that KRH will make a positive decision during this year to develop a producing mine at the site. As part of the regulatory applications for the production phase, KRH will prepare a detailed decommissioning and closure plan for the site.

3.4.2 Security

Page xxv: The Yukon recommends that the Board fix the amount of security for the site at is \$ 4.856 million.

KRH Response: KRH does not agree with the Yukon's recommendation for security for "care and maintenance", as such activities are currently being conducted by KRH. Further, Section 11(1) of the Waters Regulation does not include the provision of security for "care and maintenance" activities, only for abandonment and related activities.

KRH accepts Yukon's recommendation for a security for "permanent closure". However, KRH finds the estimated costs for permanent closure of the tailings impoundment dam to be too high. For instance, KRH understands that Yukon's consultant based his cost estimate on previous work conducted by other consultants. It appears that Yukon's consultant did not have access to the bathymetric map of the tailings pond that was prepared in 2005 (Exhibit 1.5.4). This map shows contours of the tailings pond following the distribution of the tailings material in the pond. Based on this distribution, the final location of the tailings during permanent closure should be located in a different location than what Yukon's calculation appears to be based on. This would result in significant reduction of the tailings reclamation costs. Based on the foregoing, KRH suggests that any security for the permanent closure at this stage of operation be estimated fixed at no more than \$1.776 million rather than the Yukon Government's \$3.063 million.

KRH has prepared a review of the security cost estimates, and this document is attached (Attachment 1).

With respect to timing of the security, KRH commits to furnishing the amount of security fixed by the Board by December 31, 2007, unless KRH has submitted an application for a Type A water licence for quartz mining production for the Ketzá River mine site before that date.

If KRH has submitted such an application before that date, no security should be fixed as part of this application; as KRH will be subject to an entirely new process, amounts of security, and content of a decommissioning plan.

SUMMARY

In summary, KRH requests a water use licence to include:

- **Storage of water** in the tailings pond;
- **Pumping water from two seepage zones** back to the tailings pond as required when the seepage water exceeds discharge standards established in this licence;
- **Discharging treated water** containing a waste from the tailings pond to Cache Creek in accordance with discharge standards established by the Yukon Water Board.

KRH proposes the following discharge points:

- **KR-4 N3** - North dam seepage discharge
- **KR-5 S2** - South dam seepage discharge
- **KR-9a** - End of Pipe Discharge into Cache Creek

KRH proposes the following compliance criteria for these discharge points:

Total Arsenic	0.5 mg/L
Total Cyanide	1.0 mg/L
Total Copper	0.3 mg/L
Total Lead	0.2 mg/L
Total Nickel	0.5 mg/L
Total Zinc	0.5 mg/L
Total Ammonia	1.0 mg/L

KRH proposes the following Water Quality Compliance Criteria for Arsenic:

Sample Station	Criteria
KR-4 N3 North dam seepage discharge	0.5 mg/L
KR-5 S2 South dam seepage discharge	0.5 mg/L

End of Pipe Discharge into Cache Creek	0.5 mg/L
KR-8 (Objective) Cache Creek Downstream	0.05 mg/L
KR-12 (Objective) Ketzra River	0.005 mg/L

Thank you for the opportunity to provide these responses to the interventions.

Yours Sincerely,

Original Signed by:

Tony Polyck
 Environmental Manager
 Ketzra River Holdings Ltd.

Attachment1: Ketzra - Review of Security Cost Estimates

Ketza - Review of Security Cost Estimates

	A	B	C	D
1	Area & Item	YTG Security Estimate - Permanent Closure	Ketza Security Estimate - Permanent Closure	Ketza Rationale
2	Table 3.1			
3	1430 Portal	110,000	60,000	1. Lowered by 10K, as the cost for removal of cables, etc is not related to this water licence. 2. Lowered by 40K due to a contractor estimate (30Kx2 to allow potentially higher costs for government)
4	Table 3.3			
5	Maintain tailings pond at 1310 m	0	0	
6	Install additional monitoring instrumentation	24,000	24,000	
7	Tailings Facility Upgrade	0	0	
8	Relocate Tailings	320,000	200,000	Previous reviewers did not have bathymetric map prepared in 2005. Tailings should be located in a different location than in the previous reports, and this requires less relocating of tailing material.
9	Tailings Beach Cover	800,000	350,000	The area to be covered is estimated at 70,000 square metres. With 0.5 metre of cover at \$5/cubic metre, the cost to KRH would be ~ \$175,000. It is estimated that the cost to government would be twice that amount.
10	Northwest Runoff Interceptor Ditch	0	0	
11	Lower Subsidiary Creek Diversion - Upgrade	0	0	
12	Cache Creek Diversion - narrowing of channel	200,000	30,000	Estimate is too high, remaining work estimated at 30K
13	Construct Water Treatment Plant	0	0	
14	Tailings Water Treatment	300,000	150,000	YTG's estimate is calculated for 20-year period; this should be a 10 year period as other closure estimates
15	Table 3.5			
16	GS&A and contractors	108,000	108,000	
17	Table 3.6			
18	Development of an Emergency Response Plan	5,000	2,000	Estimate too high; only nominal amount required to update existing plan
19	Tailings Pond Treatability Study	0	0	
20	Assessment of Arsenic loading	0	0	
21	Ecological and Human Health Risk Assessment	0	0	
22	Updated Water Balance	0	0	
23	Tailings Facility - stability and liquefaction assessment	0	0	
24	Tailings Facility - geotech investigations	0	0	
25	Seismic Hazard Assessment	0	0	
26	Tailings Dam Safety Review	10,000	10,000	
27	Tailing Facility Decommissioning Plan	10,000	10,000	
28	Table 3.7.2			
29	Monitoring - Supplies & services	76,000	76,000	
30	Monitoring - labor costs	160,000	160,000	
31	Annual geotechnical inspection	100,000	0	Already covered in Table 3.6
32	Reporting	100,000	50,000	Estimate is too high
33	Maintenance - Supplies & Services	70,000	70,000	
34	Maintenance - Labour	180,000	180,000	
35	Contingency (20%)	510,600	296,000	
36	Total	3,083,600	1,776,000	
37				

QZ04-063
Exhibit 6.1