



**Energy, Mines and Resources
PO Box 2703 (K-9), Whitehorse, Yukon Y1A 2C6**

November 27, 2019

Brad Thrall
President, Alexco Keno Hill Mining Corp.
Vancouver, BC
V7X 1M9

Dear Mr. Thrall,

Re: Amendment to Keno Hill Silver District Mining Operations Project QML-0009, Bermingham Deposit

In support of the development of the Keno Hill Silver District Mining Operations Project, Alexco Keno Hill Mining Corporation ("AKHM") filed an application to amend Quartz Mining License QML-0009 for the inclusion of the Bermingham ore body. This request was received in my office electronically on August 29, 2018.

The application included a series of operational and environmental plans which were submitted between August 2018 and April 2019, in addition to a revised application letter on April 18, 2019. These documents were forwarded to the First Nations of Nacho Nyäk Dunn ("FNNND") and Yukon Government (YG) departments for review. The comments received from FNNND and YG were incorporated into a draft license which was sent to AKHM, FNNND and YG for review and comment on November 13, 2019.

After review and consideration of all comments received on the application and draft license, I have determined that an amendment to Quartz Mining License QML-0009 for the inclusion of the Bermingham deposit can be granted. I have attached one original license document for your records, and the second original will remain in our files.

In addition to the amendment application AKHM filed an update to the Reclamation and Closure Plan for both the current liabilities on site, and the liabilities two-years after commencement of Bermingham activities. This submission was a requirement of the QML-0009 for the review of financial security every two years from the effective date of the License. A third-party consultant was retained by Mineral Resources to review the cost-estimates. Mineral Resources met with

AKHM to discuss the results of our initial review of financial security requirements. Paragraph 11.1 of the License requires that \$7,871,492 be furnished within 60 days of the effective date; for greater clarity a table has been attached to this letter which shows the basis upon which security will be held. Financial security may be reassessed upon notification of the resumption of development and production activities, as required pursuant to Paragraph 10.9 of the amended license.

Should you have any questions or require clarification on terms and conditions contained in this license, do not hesitate to contact me at (867) 667-3126 3126.

Sincerely,



Todd Powell
Director, Mineral Resources

cc: Chief Simon Mervyn, First Nation of Na-Cho Nyäk Dun
John Fox, Assistant Deputy Minister, Oil, Gas and Mineral Resources
Kai Woloshyn, Environmental Manager, Alexco Keno Hill Mining Corp.
Paul Christman, Chief Mine Engineer, Mineral Resources
Matt Jenner, Natural Resources Officer

encl: Quartz Mining License QML-0009
Financial Security Determination

**QML-0009: Keno Hill Silver District Mining Operation
Financial Security Determination – Year 2 Liability**

Item No.	Description of Cost	YG Final Determination
Closure Implementation		
3	General & Administration	\$917,584
3.1	Onsite Management	\$777,584
3.2	Transport Costs	\$91,000
3.3	General Freight Allowance	\$49,000
4	Waste Rock Dumps/Storage Facilities	\$96,243
4.1	Bellekeno East Temporary P-AML WRSF	\$14,672
4.2	Bellekeno N-AML WRDA	\$0
4.3	Bellekeno Historic WRDAs	\$11,396
4.4	Onek P-AML WRSF	\$9,432
4.5	Onek N-AML WRDA	\$0
4.6	Lucky Queen P-AML WRSF	\$0
4.7	Lucky Queen N-AML WRDA	\$0
4.8	Flame and Moth Temporary P-AML WRSF	\$10,849
4.9	Flame and Moth N-AML WRDA	\$0
4.10	Birmingham N-AML WRDA	\$7,093
4.11	Birmingham P-AML WRSF	\$4,838
4.12	Borrow Areas	\$10,714
4.13	Coarse Ore Pad	\$27,249
5	Underground Mines	\$690,466
5.1	Bellekeno East Portal and Underground	\$174,291
5.2	Bellekeno 625 Adit Area	\$131,407
5.3	Bellekeno 200 Level Vent Raise	\$38,640
5.4	Onek 990 Portal and Underground	\$0
5.5	Onek 990 Portal Site and Infrastructure	\$50,729
5.6	Onek 990 Vent Raise	\$0
5.7	Lucky Queen Underground/Laydown Areas	\$69,688
5.8	Lucky Queen Vent Raise	\$0
5.9	Flame and Moth Underground	\$69,957
5.10	Flame and Moth Vent Raise	\$38,640
5.11	Birmingham Underground Portal and Surface Site	\$117,114
6	Water and Solutions Management	\$547,802
6.1	Mill Runoff Collection & Process Pond	\$38,040
6.2	Diversion Ditches	\$22,195
6.3	Bellekeno 625 WTP - Mine Pool Treatment Transition	\$404,249
6.5	Mill Pond - Bioreactor Transition	\$23,265
6.6	Flame and Moth Water Management	\$0
6.7	Birmingham Water Storage/Settling Pond	\$60,053

7	DSTF	\$118,416
7.2	DSTF - Year 2	\$118,416
8	Mill and Infrastructure/Facilities	\$613,106
8.1	Mill and Ancillary Facilities	\$500,952
8.2	Mill Pad	\$83,404
8.3	Camp Downsize	\$28,750
9	Haulage and Access Roads	\$191,215
9.1	Bellekeno East Portal to Upper Laydown	\$14,467
9.2	Bellekeno 625 Access	\$13,172
9.3	Bellekeno Haul Road	\$60,168
9.4	Keno City Bypass Road	\$33,805
9.5	Christal Lake Road	\$20,079
9.6	Lucky Queen Haul and Access Road	\$22,623
9.7	Birmingham Haul and Access Road	\$20,691
9.8	Other Roads and Trails	\$6,210
10	Supporting Studies	\$137,500
10.1	Kinetic Tailings and Waste Rock Materials Testing	\$27,500
10.2	Other Adaptive Management Plans Required	\$20,000
10.3	Contaminated Site Assessment Plan	\$10,000
10.4	Reclamation & Closure Research Plan	\$50,000
10.5	Passive Treatment Design	\$30,000
12	Interim Care and Maintenance	\$1,091,924
12.1	Personnel	\$582,384
12.2	Equipment	\$140,400
12.3	Tasks	\$282,140
12.4	Miscellaneous	\$87,000
	Sub-total	\$4,404,256
	Indirect Costs (%)	15%
	Indirect Costs	\$660,638.33
	Cost Inflation ¹	\$183,977
	Total Closure Implementation Costs	\$5,248,871
Post Closure Care, Maintenance, and Monitoring Costs		
13	Mobilization and Demobilization	\$151,200
13.1	Mobilize Equipment & Fuel	\$51,400
13.2	Mobilize Workers & Camp	\$25,200
13.3	Demobilize Equipment	\$49,400
13.4	Demobilize Workers & Camp	\$25,200
11	Post Closure Care, Maintenance and Monitoring	\$1,327,740
11.1	Onsite Management	\$280,500
11.2	Transport Costs	\$75,000
11.3	Water Treatment Costs	
	Active Treatment	

	Capital Costs	\$0
	Capital Replacement Costs	\$0
	Operating Costs	\$0
	Passive Treatment	
	Capital Costs	\$110,000
	Operation and Maintenance Costs	\$55,000
11.4	Reclamation & Closure Research Plan (Post Closure)	\$0
11.5	Monitoring & Reporting	\$807,240
	Sub-Total	\$1,478,940
	Sub-Total NPV (1.0162% DROR)	\$1,287,198
	Indirect Costs (%)	15%
	Indirect Costs	\$193,079.77
	Total (NPV)	\$1,480,278
	Total Financial Security (incl. Indirect Costs)	\$6,729,149
	Contingency Allowance on "Monitoring and Reporting"	10%
	Contingency Amount on "Monitoring and Reporting"	\$76,399
	Contingency Allowance on All Remaining Items	18.0%
	Contingency Amount	\$1,065,944
	Total Financial Security (Plus Contingency)	\$7,871,492