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September 5, 2012

Robert Holmes, Director, Mineral Resources
Government of Yukon
Department of Energy, Mines & Resources
P.O. Box 2703
Whitehorse, Yukon Y1A 2C6

Dear Mr. Holmes:

Regarding: Dry Stack Tailings Facility Construction and Operation Plan Revision 2, QML-0009

This submission (revision 2) of the Dry Stack Tailings Facility (DSTF) Construction and Operation Plan incorporates the deposition of tailings generated by milling Onek and Lucky Queen ore. Ore from the Onek, Lucky Queen and Bellekeno deposits will be processed through the District Mill generating composite tailings to be deposited in the existing DSTF.

Attachment A, *EBA Opinion on Properties of Lucky Queen and Onek Tails For Use in Existing Dry Stack Tailings Facility, Near Bellekeno Mill, YT*, provides confirmation that the physical and chemical properties of the tailings that will be produced from the two new ore zones are expected to be very similar to the geological and geotechnical properties of the Bellekeno ore zone tailings. Attachment B provides geochemical characterization of the Onek and Lucky Queen tailings, showing they are geochemically similar to the Bellekeno tailings.

The previously submitted and approved *Detailed Design Dry-Stacked Tailings Facility Report* and the approved *Operations, Maintenance, and Surveillance Manual for the DSTF,* prepared for Alexco by EBA Engineering Consultants Ltd, outline the detailed design and operations of the DSTF.

Sincerely,
ALEXCO KENO HILL MINING CORP.

Brad A. Thrall
EVP & Chief Operating Officer

Attachments:

A. EBA Opinion on Properties of Lucky Queen and Onek Tails For Use in Existing Dry Stack Tailings Facility, Near Bellekeno Mill, YT

B. Geochemical Characterization of Onek and Lucky Queen Tailings

Attachment A

EBA Opinion on Properties of Lucky Queen and Onek Tails For Use in Exisiting Dry Stack Tailings Facility, Near Bellekeno Mill, YT, EBA 2012

A TETRA TECH COMPANY

March 2, 2012

ISSUED FOR USE
EBA FILE: W14101178.011

Alexco Keno Hill Mining Corp.
#4 – 151 Industrial Road
Whitehorse, YT Y1A 2V3

Via Email: bthrall@alexcoresource.com

Attention: Brad Thrall

Subject: EBA Opinion on Properties of Lucky Queen and Onek Tails For Use in Existing Dry Stack Tailings Disposal Facility, near Bellekeno Mill, YT

The physical and chemical properties of the tailings that will be produced from the two new ore zones are expected to be very similar to the geological and geotechnical properties of the Bellekeno ore zone tailings. Experience gained from thorough geological review of deposits throughout the Keno Hill Silver District indicates there are minor variations in ore mineralogy and deposit configuration, but all deposits discovered to date fall within a relatively narrow and well understood geological range, all hosted within the same geological terrain, age range and subjected to similar structural controls and ore genesis environments.

Within that range, the geotechnical properties of the tailings produced from milling these variations are expected to be very similar. As part of ongoing DSTF operations, maintenance and surveillance protocol and procedures, these assumptions will be confirmed through testing through the ongoing implementation of the Tailings Characterization Plan. Results of analytical testing presented in the YESAB Project Proposal indicate the similar geological nature of the three ore zones. All ore from each of the three deposits will be processed in the same mill, with the same mill process flow sheet, therefore producing a nearly identical particle size distribution.

If there are any minor variations in the nature of Lucky Queen and Onek tails from the Bellekeno tails, they are not expected to affect the geotechnical performance of the DSTF.

We trust this report meets your present requirements. If you have any questions or comments, please contact the undersigned.

Sincerely,
EBA Engineering Consultants Ltd.

J. Richard Trimble, P.Eng., FEC
Principal Consultant, Arctic Engineering
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Attachment B

Geochemical Characterization of Onek and Lucky Queen Tailings, Access Consulting 2012

Memorandum

To: Brad Thrall, Alexco Resource Corp.

From: Kai Woloshyn

Date: September 5, 2012

Re: Geochemical Characterization of Onek and Lucky Queen Tailings

TAILINGS GENERATION

Ore from the Onek and Lucky Queen deposits will be processed at the existing Keno District Mill Site, currently processing Bellekeno ore. Composite tailings generated from Bellekeno, Lucky Queen and Onek ore processing will be deposited in the previously assessed and licenced Dry Stack Tailings Facility (DSTF) and cement paste backfilled as composite into the Bellekeno, Onek or Lucky Queen underground workings.

The Bellekeno tailings streams have not been segregated, as was contemplated during the Bellekeno licencing process, because high pyrite tailings have not been generated as was anticipated during the Bellekeno mine assessment and licencing process. The tailings management approach has been fully discussed with the First Nation of Nacho Nyak Dun and Yukon Government regulators since mill commissioning commenced. The mill process produces two tailings streams based on the zinc extraction circuit (i.e., the zinc rougher and zinc cleaner flotation circuits produce tailings of slightly different compositions). Table 1 summarizes the metallurgical test work completed on the Onek and Lucky Queen Ore samples.

Table Table 2 presents the pyrite and other mineralogical contents of the tailings streams produced from the Onek and Lucky Queen ores and the mill tailings from July to September 2011. The Lucky Queen and Onek tailings have very low sulphide concentrations (less than 0.2%); the Bellekeno tailings also have relatively low sulphide content (~2.6%).

Metallurgical Testing of Onek and Lucky Queen Ore

Process Research Associates Ltd. was commissioned by Alexco to undertake a precious and base metal recovery study on samples originating from the Onek and Lucky Queen deposits during surface drilling programs completed in 2010. The purpose of this testing was to determine the recovery of silver (Ag), lead (Pb) and zinc (Zn) in the flotation circuits in the existing mill, and to evaluate the environmental parameters of the residual tailings. Representative samples from drill core were used to produce a composite sample of Onek and Lucky Queen for metallurgical testing.

The results of the metallurgical testwork indicate that Onek and Lucky Queen ore samples respond well to the current metallurgical flowsheet operating at the mill. There is a direct relationship between metal recovery, head grade and adequate base metals galena and sphalerite (PbS and ZnS) in the feed to maximize silver recovery. Therefore balancing the mill feed grade through the concurrent mining of Lucky Queen, Onek and Bellekeno will assist and be important in optimizing metallurgical performance from the Lucky Queen and Onek deposits. The metallurgical results shown in Tables 1 are not from locked cycle tests but demonstrate the importance of adequate base metal concentrations in the feed grade, most notably sufficient galena to optimize overall lead and silver recovery. Additional optimization testwork will be required for final reagent addition optimization through locked cycle testwork.

The four samples in Tables 1, 2, 3 and 4 represent *composites* of individual samples taken from all portions of the mineralized zone of each deposit. The whole rock analytical analysis including iron (Fe) of each of the four composite samples was presented in Table 3Table . The initial metallurgical testing for the Lucky Queen and Onek projects was based on typical laboratory scale ore sample composites and yielded small volumes of tailings. The scale of the metallurgical testing did not allow for collection of supernatant samples. In addition there was insufficient volume of tailings generated by the testing to allow for the establishment of humidity cells. Additional metallurgical testing and associated ABA testing of Lucky Queen and Onek samples will be ongoing.

The level and detail of metallurgical testwork completed for Onek and Lucky Queen is sufficient to determine that the current mill operations will adequately process ore from these deposits as well as determine that the final mill tailings product is geochemically similar to Bellekeno so that it can be stored in the currently permitted DSTF. Additional metallurgical testing and reagent optimization is a secondary requirement for mill operations performance solely for operational requirements and not for determining the environmental performance and assessment of the tailings. Locked cycle tests were completed on Bellekeno samples to determine the design of the process flowsheet while open cycle tests on Lucky Queen and Onek can be used to determine the compatibility of these ores with the current mill flowsheet. Additional metallurgical testwork will be completed as part of normal mill operations and planning but is not necessary for assessment of environmental performance determination.

Onek and Lucky Queen Tailings Characterization

Following metallurgical testing of Onek and Lucky Queen samples, the modified ABA protocol was used to calculate NP values. Alexco has since instituted a siderite ABA correction package for all tailings and near vein sampling where significant siderite is likely. Subsequent ABA testing in mineralized and near vein material for Lucky Queen and Onek will also use the siderite correction method.

The results shown in Table 2 are for the bulk tailings produced from the metallurgical flowsheet tested. As the results indicate, the tailings from Onek and Lucky Queen are well above a standard neutralization potential (NP) ratio (3:1) and potential acid generation is not expected. One of the primary reasons for the high NP ratio is the significantly less acid potential due to lower total sulphur and base metals (i.e. PbS) in Onek and Lucky Queen as compared to Bellekeno.

Carbonate species present in Onek and Lucky Queen tailings in approximate order of abundance include siderite, calcite, ankerite and possibly dolomite/ferroan dolomite.

Table 1 Metallurgical Testwork Summary of Onek and Lucky Queen Ore

Test ID	Sample ID	Products	Mass (%)	Grade			Recovery		
				Ag (g/t)	Pb (%)	Zn (%)	Ag (%)	Pb (%)	Zn (%)
F7	Onek	Head Grade		92.3	0.21	25.17			
		Pb Cl concentrate	0.6	6899.4	32.23	11.35	48.4	74.0	0.3
		Zn Cl concentrate	37.3	45.9	0.04	53.29	21.7	6.2	85.3
		Final Tailings	44.4	2.2	0.01	0.23	1.2	0.4	0.4
F8	Onek	Head Grade		333.8	3.59	12.03			
		Pb Cl concentrate	2.8	5196.5	70.97	3.10	46.5	56.7	0.7
		Zn Cl concentrate	16.2	127.0	0.24	48.44	6.7	1.1	68.1
		Final Tailings	65.0	11.0	0.08	1.76	2.3	1.5	9.9
F9	Lucky Queen	Head Grade		2251.8	4.49	3.15			
		Pb Cl concentrate	6.6	33084.2	65.86	2.97	93.3	95.1	5.7
		Zn Cl concentrate	4.3	214.7	0.16	58.79	0.4	0.2	73.6
		Final Tailings	80.3	8.3	0.06	0.10	0.3	1.1	2.4
F10	Lucky Queen	Head Grade		4527.7	10.40	4.58			
		Pb Cl concentrate	12.1	34837.3	70.47	1.88	84.6	87.3	4.8
		Zn Cl concentrate	5.9	301.2	0.74	58.94	0.4	0.4	72.5
		Final Tailings	67.7	20.9	0.09	0.06	0.3	0.6	0.9

Table 2 Onek and Lucky Queen Tailings ABA Summary

Item	SampleID	$S_{(T)}$	$S_{(SO4)}$	Paste	Acid	Neutralization Potential (NP)		
		%	%	pH	Potential	Actual	Ratio	Net
1	F7 Final tailing/Onek	0.17	0.03	7.8	4.4	36.8	8.4	32.4
2	F8 Final tailing/Onek	0.15	0.05	7.8	3.1	26.0	8.3	22.9
3	F9 Final tailing/Lucky Queen	0.18	0.04	8.2	4.4	20.4	4.7	16.0
4	F10 Final tailing/Lucky Queen	0.19	0.04	7.5	4.7	17.8	3.8	13.1
DUP	F7 Final tailing/Onek	0.17	0.03	7.8	4.4	37.1	8.5	32.8
Bellekeno Tailings, January to May 2011 Monthly Average		2.61	0.06	8.1	81.62	276.2	3.4	194.6

The final tailings deposited in the DSTF or underground as composite paste backfill at either Bellekeno, Lucky Queen or Onek will be a combination of Onek, Lucky Queen and Bellekeno ores. Given the current performance of the Bellekeno tailings and the ABA testwork completed for Onek and Lucky Queen, bulk tailings stored on the DSTF are not a concern from an acid generating potential perspective. The Onek and Lucky Queen tailings are shown to be geochemically similar or better to Bellekeno in Tables 2 to 4, and therefore the storage of the Onek and Lucky Queen tailings in the DSTF is appropriate.

Metals analysis of the tailings from the Lucky Queen and Onek metallurgical program was completed and the results are shown in Table 3Table . Shake Flask Extraction (SFE) test results for the Lucky Queen tailing samples F9 and F10 are presented in Table 4. The metal leaching concentrations from the Lucky Queen tailings SFE test are similar or less than those observed in the Bellekeno tailings porewater samples and the Bellekeno humidity cell.

Humidity cells have not been established for any of the geological materials at the Lucky Queen or Onek sites. The Onek and Lucky Queen tailings are low sulphide (<0.2%) (see Table 2); therefore, they are not anticipated to be acid-generating. The following factors are relevant to characterizing the potential effects of deposition of Lucky Queen and Onek tailings:

- tailings placed as backfill into the underground workings will be cemented backfill which includes a cement binder that will effectively reduce the leachability and permeability of the backfilled tailings;
- during the operations phase of the mine, the DSTF seepage is collected and routed to the Mill Pond for use in the processing circuit;
- any discharges from the Mill Pond already require treatment to achieve EQS under QZ09-092;
- at closure the DSTF will have a soil cover installed to reduce infiltration in addition to a bioreactor to provide ongoing long-term water treatment during the post-closure period; and
- humidity cells were not provided or deemed necessary for assessment or licensing of the Bellekeno mine but instead have been commissioned during operations. The information provided for the Lucky Queen and Onek assessment is considered consistent with that approach.

Additional metallurgical testing on the Lucky Queen and Onek ores is currently being advanced by Alexco and the tailings generated by this testing will be utilized for additional geochemical testing programs.

Elevated concentrations of sphalerite (ZnS) in the tailings will result in leachate containing higher concentrations of zinc. Sample F8 from Onek in Tables 1 and 2 had a low zinc recovery; consequently, there considerable amount of zinc in the metallurgical analysis of the tailings shown in Table 3. Through metallurgical optimization, zinc recovery will increase; consequently, zinc concentrations in the tailings and leachate will decrease. During operations, leachate from the DSTF will be collected and recycled in the mill processing, or diverted to the mill water treatment plant. At closure, the DSTF will be covered to minimize waster infiltration and leachate will be treated with a passive bioreactor system.

Bellekeno Tailings Characterization

Characterization of the actual tailings generated from Bellekeno ores has been ongoing and the results of the humidity cell tests currently in operation on representative tailings from the Bellekeno deposit for the first 47 weeks of humidity cell operation are shown presented in Table 5 and Figures 1 to 3. The ABA and metallurgical monthly averages from January to May 2011 for the Bellekeno tailings are shown in Table 2 and 3, respectively. The humidity cells for Bellekeno have been in operation over 47 weeks and results to date show a decreasing trend in metal concentrations for arsenic, copper, lead and nickel in the cell leachate over time. The exception to the observed trends is zinc and cadmium. Zinc has shown an increasing trend to a concentration of approximately 3 mg/L while cadmium has a current concentration of approximately 0.008 mg/L. The 47 week humidity cell data is presented in Table 5Table . Alexco intends to continue to operate this cell through 2012 and into 2013. At closure the DSTF will be covered. Table 7 presents the XRD mineralogical analysis of the composite Bellekeno tailings samples collected in July, August and September 2011.

Table 3 Onek and Lucky Queen Tailings Metallurgical Analysis

Elements	Units	Sample ID				Bellekeno Tailings
		F7 Cut Tailings/ Onek	F8 Cut Tailings/ Onek	F9 Cut Tailings/ Lucky Queen	F10 Cut Tailings/Lucky Queen	January to May 2011 Monthly Average
C-Inorg	%	0.34	0.06	0.21	0.23	3.91
S(SO4)	%	0.03	0.05	0.04	0.04	0.06
Ag	ppm	3.2	9.6	9.6	23.2	53.08
Al	%	0.36	0.36	0.99	0.49	1.12
As	ppm	344	406	13	22	3526
Ba	ppm	18	30	169	80	180
Bi	ppm	<2	<2	<2	<2	3
Ca	%	0.65	0.28	0.48	0.27	1.55
Cd	ppm	14.4	131.1	4.9	3.0	255
Co	ppm	<1	2	3	<1	14.6
Cr	ppm	168	180	454	77	19
Cu	ppm	384	370	281	226	270
Fe	%	18.38	18.82	5.8	6.99	13.73
K	%	0.07	0.09	0.37	0.18	0.33
La	ppm	15	<10	<10	<10	8.66
Mg	%	0.55	0.39	0.36	0.32	0.40
Mn	ppm	52200	51678	21651	27757	42420
Mo	ppm	<1	<1	2	<1	0.81
Na	%	0.02	0.02	0.03	0.02	0.074
Ni	ppm	52	36	69	33	20
P	ppm	115	165	141	122	178
Pb	ppm	81	744	423	686	3498
Sb	ppm	<5	<5	9.0	<5	60
Sc	ppm	3	2	2	1	4
Sr	ppm	10	12	20	10	42
Ti	%	<0.01	<0.01	0.02	<0.01	0.04
Tl	ppm	15	20	<10	11	0.424
V	ppm	5	6	17	8	22
W	ppm	<10	177	<10	<10	1.46
Zn	ppm	1937	15630	697	416	1749

Table 4 Shake Flask Extraction Results for Lucky Queen Tailings Samples

Mine/Dump Location	Units	Lucky Queen Tailings	
		Lucky Queen Bulk Tails F9	Lucky Queen Bulk Tails F10
Leachable Anions & Nutrients			
Alkalinity, Total (as $CaCO_3$)	mg/L	28.2	25.1
Bromide (Br)	mg/L	<0.050	<0.050
Chloride (Cl)	mg/L	1.51	0.89
Conductivity	us/cm	434	352
Fluoride (F)	mg/L	0.078	0.035
Nitrate (as N)	mg/L	0.0259	0.0254
Nitrite (as N)	mg/L	0.0072	0.0053
pH	pH	8.1	8.0
Sulfate (SO_4)	mg/L	183	140
Hardness (as $CaCO_3$)	mg/L	204	158
Leachable Metals			
Aluminum (Al)-Leachable	mg/L	<0.0050	<0.0050
Antimony (Sb)-Leachable	mg/L	0.016	0.0116
Arsenic (As)-Leachable	mg/L	<0.0010	<0.0010
Barium (Ba)-Leachable	mg/L	0.037	0.0459
Beryllium (Be)-Leachable	mg/L	<0.00050	<0.00050
Bismuth (Bi)-Leachable	mg/L	<0.00050	<0.00050
Boron (B)-Leachable	mg/L	0.025	0.014
Cadmium (Cd)-Leachable	mg/L	0.00164	0.00509
Calcium (Ca)-Leachable	mg/L	74.9	59.6
Chromium (Cr)-Leachable	mg/L	<0.00050	<0.00050
Cobalt (Co)-Leachable	mg/L	0.0002	0.00702
Copper (Cu)-Leachable	mg/L	0.0303	0.0503
Iron (Fe)-Leachable	mg/L	<0.030	<0.030
Lead (Pb)-Leachable	mg/L	0.0181	0.112
Lithium (Li)-Leachable	mg/L	<0.0050	<0.0050
Magnesium (Mg)-Leachable	mg/L	3.96	2.27
Manganese (Mn)-Leachable	mg/L	0.765	1.14
Mercury (Hg)-Leachable	mg/L	<0.000050	<0.000050
Molybdenum (Mo)-Leachable	mg/L	0.00318	0.00078
Nickel (Ni)-Leachable	mg/L	0.00067	0.00253
Phosphorus (P)-Leachable	mg/L	<0.30	<0.30
Potassium (K)-Leachable	mg/L	3.93	1.87
Selenium (Se)-Leachable	mg/L	0.00871	0.00463
Silicon (Si)-Leachable	mg/L	1.91	1.11
Silver (Ag)-Leachable	mg/L	0.000144	0.000627
Sodium (Na)-Leachable	mg/L	6.19	4.57
Strontium (Sr)-Leachable	mg/L	0.193	0.141
Thallium (Tl)-Leachable	mg/L	0.00011	<0.00010
Tin (Sn)-Leachable	mg/L	<0.00050	<0.00050
Titanium (Ti)-Leachable	mg/L	<0.010	<0.010
Uranium (U)-Leachable	mg/L	0.000011	<0.000010
Vanadium (V)-Leachable	mg/L	<0.0010	<0.0010
Zinc (Zn)-Leachable	mg/L	0.0189	0.0955

Table 5 Bellekeno Humidity Cell Results up to Week 47

Sample ID	MILL TAILS COMPOSITE-JAN-JUN2011-0	MILL TAILS COMPOSITE-JAN-JUN2011-1	MILL TAILS COMPOSITE-JAN-JUN2011-2	MILL TAILS COMPOSITE-JAN-JUN2011-3	MILL TAILS COMPOSITE-JAN-JUN2011-4	MILL TAILS COMPOSITE-JAN-JUN2011-5	MILL TAILS COMPOSITE-JAN-JUN2011-6	MILL TAILS COMPOSITE-JAN-JUN2011-7	MILL TAILS COMPOSITE-JAN-JUN2011-8	MILL TAILS COMPOSITE-JAN-JUN2011-9	MILL TAILS COMPOSITE-JAN-JUN2011-10	MILL TAILS COMPOSITE-JAN-JUN2011-11
Date Sampled	17-AUG-11	24-AUG-11	31-AUG-11	07-SEP-11	14-SEP-11	21-SEP-11	28-SEP-11	05-OCT-11	12-OCT-11	19-OCT-11	26-OCT-11	02-NOV-11
ALS Sample ID	L1045358-1	L1049390-1	L1051834-1	L1054437-1	L1057740-1	L1060984-1	L1064228-1	L1067341-1	L1070094-1	L1073037-1	L1076479-1	L1079310-1
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Sample Preparation												
Total Volume In	750	500	500	500	500	500	500	500	500	500	500	500
Total Volume Out	550	460	460	450	450	475	435	485	475	450	500	460
Physical Tests												
Conductivity	1950	1050	1050	822	648	553	523	415	463	435	438	428
pH	7.89	7.7	7.86	7.81	7.91	7.81	7.91	7.86	7.84	7.79	7.91	7.83
Anions and Nutrients												
Acidity (as $CaCO_3$)	5	4.8	5.8	10.9	5	3.4	5.6	7.1	7.2	6.3	10.4	5.1
Alkalinity, Total (as $CaCO_3$)	43	45	68.3	64.5	49.6	62.7	68.4	78.3	73.7	73.9	72.1	75.6
Bromide (Br)	<0.050	<0.50	<0.5	<0.50	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	15.6	7.4	<5.0	<5.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	0.354	0.37	0.34	0.34	0.288	0.27	0.254	0.208	0.183	0.164	0.161	0.179
Nitrate (as N)	10.1	3.36	<0.050	<0.050	0.0148	0.0065	0.0096	0.0052	<0.0050	<0.0050	0.007	0.0066
Nitrite (as N)	0.0845	0.089	0.011	<0.010	0.0064	<0.0010	0.0036	0.0046	<0.0010	0.0016	0.0012	0.0043
Sulfate (SO_4)	1150	513	595	455	320	248	230	158	189	172	181	184
Dissolved Metals												
Aluminum (Al)-Dissolved	<0.010	<0.010	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0219	<0.0050	<0.0050	<0.0050
Antimony (Sb)-Dissolved	0.023	0.0241	0.0222	0.0178	0.0159	0.0166	0.0159	0.016	0.0164	0.0154	0.0155	0.0152
Arsenic (As)-Dissolved	0.00081	0.00195	0.00248	0.0015	0.00139	0.00104	0.00079	0.00091	0.0008	0.0008	0.00083	0.00078
Barium (Ba)-Dissolved	0.0985	0.056	0.0372	0.0359	0.0387	0.0347	0.0371	0.0381	0.0395	0.0368	0.0389	0.0371
Beryllium (Be)-Dissolved	<0.00020	<0.00020	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Dissolved	<0.0010	<0.0010	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Dissolved	0.166	0.157	0.185	0.117	0.075	0.076	0.054	0.037	0.134	0.029	0.025	0.024
Cadmium (Cd)-Dissolved	0.0264	0.0216	0.0339	0.0292	0.0228	0.0263	0.0249	0.0205	0.0294	0.0292	0.0333	0.0328
Calcium (Ca)-Dissolved	439	217	240	192	150	119	121	90.3	101	94.3	100	94.2
Chromium (Cr)-Dissolved	<0.0010	<0.0010	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt (Co)-Dissolved	0.00155	0.00089	0.00289	0.00318	0.00179	0.00198	0.002	0.0015	0.00223	0.002	0.00223	0.00219
Copper (Cu)-Dissolved	0.0049	<0.0010	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Iron (Fe)-Dissolved	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Lead (Pb)-Dissolved	0.192	0.161	0.137	0.104	0.111	0.128	0.123	0.0971	0.0956	0.107	0.104	0.0985
Lithium (Li)-Dissolved	0.0608	0.0495	0.0488	0.0269	0.0196	0.0162	0.0113	0.00832	0.0074	0.00656	0.00592	0.00589
Magnesium (Mg)-Dissolved	17.3	10.6	10.3	6.94	4.64	3.7	2.89	1.89	2.05	1.71	1.67	1.46
Manganese (Mn)-Dissolved	3.69	1.81	4.07	3.71	2.11	2.13	2.08	1.53	1.81	1.59	1.72	1.6
Mercury (Hg)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum (Mo)-Dissolved	0.00463	0.00467	0.00422	0.00327	0.00376	0.00393	0.00387	0.00361	0.00333	0.00314	0.00299	0.00319
Nickel (Ni)-Dissolved	0.0037	0.0015	0.0042	0.00415	0.00193	0.00223	0.00209	0.00154	0.00264	0.00217	0.00238	0.00209
Phosphorus (P)-Dissolved	0.61	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Dissolved	27.1	13	8.75	4.78	3.74	2.88	2.23	1.57	1.58	1.3	1.29	1.17
Selenium (Se)-Dissolved	0.00176	0.00109	0.00076	0.00075	0.00054	0.00044	0.00042	0.00028	0.00031	0.00029	0.00028	0.00026
Silicon (Si)-Dissolved	2.48	2.82	4.61	3.76	4.07	4.28	4.42	4.11	3.97	3.98	4.07	4.17
Silver (Ag)-Dissolved	0.00801	0.000588	<0.000020	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Dissolved	67.5	23.3	10.4	3.64	2.14	1.35	0.853	0.562	0.746	0.46	0.477	0.426
Strontium (Sr)-Dissolved	1.33	0.623	0.565	0.382	0.276	0.249	0.245	0.179	0.185	0.166	0.168	0.187
Sulfur (S)-Dissolved	459	249	198	147	111	86.1	78.8	53.1	63.5	58.5	60.9	57.7
Thallium (Tl)-Dissolved	0.000564	0.000455	0.000381	0.000248	0.000147	0.000189	0.000218	0.000232	0.000105	0.000097	0.000099	0.000263
Tin (Sn)-Dissolved	<0.00020	<0.00020	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Dissolved	<0.010	<0.010	<0.010	<0.010	0.016	0.014	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Dissolved	0.000725	0.000413	0.000698	0.000526	0.000315	0.000276	0.000261	0.000179	0.000243	0.000193	0.000212	0.000188
Vanadium (V)-Dissolved	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Dissolved	0.478	0.587	1.97	2.16	1.16	1.77	1.82	1.56	2.34	2.23	2.71	2.87

Sample ID	MILL TAILS COMPOSITE-JAN-JUN2011-12	MILL TAILS COMPOSITE-JAN-JUN2011-13	MILL TAILS COMPOSITE-JAN-JUN2011-14	MILL TAILS COMPOSITE-JAN-JUN2011-15	MILL TAILS COMPOSITE-JAN-JUN2011-16	MILL TAILS COMPOSITE-JAN-JUN2011-17	MILL TAILS COMPOSITE-JAN-JUN2011-18	MILL TAILS COMPOSITE-JAN-JUN2011-19	MILL TAILS COMPOSITE-JAN-JUN2011-20	MILL TAILS COMPOSITE-JAN-JUN2011-21	MILL TAILS COMPOSITE-JAN-JUN2011-22	MILL TAILS COMPOSITE-JAN-JUN2011-23
Date Sampled	**09-NOV-11**	**16-NOV-11**	**23-NOV-11**	**30-NOV-11**	**07-DEC-11**	**14-DEC-11**	**21-DEC-11**	**28-DEC-11**	**04-JAN-12**	**11-JAN-12**	**18-JAN-12**	**25-JAN-12**
ALS Sample ID	**L1082246-1**	**L1084760-1**	**L1087901-1**	**L1090459-1**	**L1092271-1**	**L1095037-1**	**L1097547-1**	**L1099484-1**	**L1100871-1**	**L1102681-1**	**L1104828-1**	**L1106888-1**
Matrix	**Water**	**Water**	**Water**	**Water**	**Water**	Water	Water	**Water**	**Water**	**Water**	Water	Water
Sample Preparation												
Total Volume In	500	500	500	500	500	500	500	500	500	500	500	500
Total Volume Out	460	480	450	475	470	450	460	410	445	425	420	490
Physical Tests												
Conductivity	359	408	362	374	362	341	397	512	525	505	472	435
pH	7.85	7.91	7.87	7.95	7.90	7.8	7.9	7.95	7.88	7.84	7.8	7.9
Anions and Nutrients												
Acidity (as $CaCO_3$)	6.2	7.5	5.8	7.7	4.8	5.7	7.8	6.2	7.1	6.2	6.2	8.8
Alkalinity, Total (as $CaCO_3$)	71.3	71.7	72.3	72.4	72.7	71.2	64.9	58.2	48.7	62.8	66.3	66.1
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	0.138	0.125	0.124	0.113	0.111	0.174	0.097	0.106	0.111	0.108	0.098	0.101
Nitrate (as N)	0.0064	0.0062	0.0141	0.0061	<0.0050	0.0101	0.0137	<0.0050	0.0061	0.01	0.0096	0.0076
Nitrite (as N)	0.0046	0.0052	0.0056	0.0046	0.004	0.0069	0.0054	0.0049	0.0026	0.0056	0.0045	0.0025
Sulfate (SO_4)	128	159	129	138	130	119	129	194	206	193	175	148
Dissolved Metals												
Aluminum (Al)-Dissolved	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Antimony (Sb)-Dissolved	0.0141	0.0146	0.0145	0.0142	0.013	0.0129	0.013	0.0124	0.0107	0.0099	0.00986	0.0103
Arsenic (As)-Dissolved	0.00075	0.00087	0.00076	0.00084	0.00083	0.00082	0.00089	0.00092	0.00076	0.00084	0.00098	0.00145
Barium (Ba)-Dissolved	0.0397	0.0441	0.0397	0.0417	0.0415	0.04	0.04	0.0465	0.045	0.0431	0.04	0.05
Beryllium (Be)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Dissolved	0.019	0.018	0.015	0.017	0.015	0.01	0.01	0.013	0.011	0.01	0.01	<0.010
Cadmium (Cd)-Dissolved	0.0272	0.0329	0.0318	0.0342	0.0351	0.03	0.04	0.0391	0.0465	0.0485	0.05	0.05
Calcium (Ca)-Dissolved	79.2	94.6	79.7	80.6	80.6	79.50	76.70	102	103	104	97.40	85.30
Chromium (Cr)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt (Co)-Dissolved	0.00164	0.00213	0.00183	0.00194	0.00188	0.00	0.00	0.00184	0.00188	0.00201	0.00	0.00
Copper (Cu)-Dissolved	<0.00050	0.0005	0.00062	0.00074	0.00078	0.00	0.00	<0.00050	<0.00050	0.00059	0.00	0.00
Iron (Fe)-Dissolved	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Lead (Pb)-Dissolved	0.0893	0.0894	0.0927	0.0918	0.0886	0.09	0.08	0.0794	0.0943	0.0898	0.10	0.09
Lithium (Li)-Dissolved	0.00417	0.00426	0.00365	0.00339	0.00291	0.00	0.00	0.00297	0.00282	0.00284	0.00	0.00
Magnesium (Mg)-Dissolved	1.09	1.28	1.04	1.09	1	0.90	0.97	1.28	1.39	1.45	1.28	1.28
Manganese (Mn)-Dissolved	1.18	1.5	1.22	1.47	1.27	1.15	1.15	1.13	1.2	1.23	1.30	1.36
Mercury (Hg)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum (Mo)-Dissolved	0.00295	0.00277	0.00268	0.00265	0.00259	0.00	0.00	0.00268	0.00266	0.00231	0.00	0.00
Nickel (Ni)-Dissolved	0.00158	0.002	0.00161	0.00175	0.00163	0.00	0.00	0.00157	0.00125	0.00143	0.00	0.00
Phosphorus (P)-Dissolved	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Dissolved	0.846	0.923	0.807	0.794	0.727	0.64	0.65	0.715	0.702	0.618	0.58	0.63
Selenium (Se)-Dissolved	0.0002	0.00022	0.00017	0.0002	0.00019	0.00	0.00	0.00022	0.0002	0.00017	0.00	0.00
Silicon (Si)-Dissolved	3.67	3.71	3.73	3.51	3.62	3.36	3.21	3.01	2.95	2.98	2.94	3.25
Silver (Ag)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Dissolved	0.35	0.352	0.295	0.305	0.289	0.26	0.29	0.338	0.322	0.315	0.28	0.31
Strontium (Sr)-Dissolved	0.129	0.148	0.147	0.144	0.134	0.12	0.11	0.147	0.174	0.146	0.14	0.12
Sulfur (S)-Dissolved	43.4	54.1	44.3	46.7	43.5	40.50	44.40	65.8	70.6	65.8	59.30	50.50
Thallium (Tl)-Dissolved	0.000076	0.000079	0.000243	0.000267	0.000222	0.00	0.00	0.000078	0.000238	0.000091	0.00	0.00
Tin (Sn)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Dissolved	<0.010	0.01	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010	<0.010	<0.010
Uranium (U)-Dissolved	0.000127	0.000184	0.000124	0.000147	0.000129	0.00	0.00	0.0002	0.000178	0.000153	0.00	0.00
Vanadium (V)-Dissolved	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Dissolved	2.14	2.69	2.55	2.71	2.76	2.64	2.72	2.18	2.69	2.98	2.91	3.47

Sample ID	MILL TAILS COMPOSITE-JAN-JUN2011-24	MILL TAILS COMPOSITE-JAN-JUN2011-29	MILL TAILS COMPOSITE-JAN-JUN2011-30	MILL TAILS COMPOSITE-JAN-JUN2011-31	MILL TAILS COMPOSITE-JAN-JUN2011-32	MILL TAILS COMPOSITE-JAN-JUN2011-33	MILL TAILS COMPOSITE-JAN-JUN2011-34	MILL TAILS COMPOSITE-JAN-JUN2011-35	MILL TAILS COMPOSITE-JAN-JUN2011-36	MILL TAILS COMPOSITE-JAN-JUN2011-37	MILL TAILS COMPOSITE-JAN-JUN2011-38	MILL TAILS COMPOSITE-JAN-JUN2011-39
Date Sampled	**01-FEB-12**	**07-MAR-12**	**14-MAR-12**	**21-MAR-12**	**28-MAR-12**	**04-APR-12**	**11-APR-12**	**18-APR-12**	**25-APR-12**	**02-MAY-12**	**09-MAY-12**	**16-MAY-12**
ALS Sample ID	**L1109203-1**	**L1121471-1**	**L1123018-1**	**L1125306-1**	**L1127559-1**	**L1130834-1**	**L1133140-1**	**L1135454-1**	**L1138358-1**	**L1141290-1**	**L1143994-1**	**L1147310-1**
Matrix	**Water**	**Water**	**Water**	Water	Water	Water	Water	Water	Water	Water	Water	Water
Sample Preparation												
Total Volume In	500	500	500	500	500	500	500	500	500	500	500	500
Total Volume Out	425	460	475	500	470	425	480	455	475	475	500	455
Physical Tests												
Conductivity	409	382	344	351	369	383	322	341	332	309	294	330
pH	7.97	7.91	7.85	7.9	7.9	7.93	7.79	7.92	7.9	7.9	7.85	7.88
Anions and Nutrients												
Acidity (as $CaCO_3$)	4.1	5.4	7.4	8.3	9	11.5	6.9	10.3	15	12.8	8	6.2
Alkalinity, Total (as $CaCO_3$)	58.2	65.5	64.8	59.8	54.9	57.1	49	61.2	58.8	49.2	55.3	49.3
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	0.092	0.08	0.08	0.073	0.071	0.071	0.059	0.068	0.067	0.059	0.05	0.058
Nitrate (as N)	0.0104	0.0063	0.0074	0.0085	0.0095	0.0056	0.0057	<0.0050	0.0069	<0.0050	0.0194	0.0061
Nitrite (as N)	0.0052	0.0015	0.0019	0.0014	0.0017	0.0019	0.0018	0.001	0.0014	0.0012	<0.0010	<0.0010
Sulfate (SO_4)	141	124	109	112	122	131	102	112	106	94.3	88.7	108
Dissolved Metals												
Aluminum (Al)-Dissolved	<0.0050		<0.0050		<0.0050		<0.0050		<0.0050		<0.0050	
Antimony (Sb)-Dissolved	0.00943		0.00812		0.00817		0.00804		0.00749		0.00858	
Arsenic (As)-Dissolved	0.0011		0.00155		0.00129		0.00168		0.00145		0.00154	
Barium (Ba)-Dissolved	0.0407		0.0393		0.04		0.0388		0.04		0.0408	
Beryllium (Be)-Dissolved	<0.00010		<0.00010		<0.00010		<0.00010		<0.00010		<0.00010	
Bismuth (Bi)-Dissolved	<0.00050		<0.00050		<0.00050		<0.00050		<0.00050		<0.00050	
Boron (B)-Dissolved	<0.010		<0.010		<0.010		<0.010		<0.010		<0.010	
Cadmium (Cd)-Dissolved	0.0433		0.0491		0.05	0.0498	0.0538	0.0604	0.05	0.06	0.0525	0.0505
Calcium (Ca)-Dissolved	83.5		62.1		67.00		58.2		67.90		55.3	
Chromium (Cr)-Dissolved	<0.00050		<0.00050		<0.00050		<0.00050		<0.00050		<0.00050	
Cobalt (Co)-Dissolved	0.00195		0.00256		0.00		0.00277		0.00		0.00307	
Copper (Cu)-Dissolved	0.00082		0.00192		0.00		0.00225		0.00		0.00261	
Iron (Fe)-Dissolved	<0.030		<0.030		<0.030		<0.030		<0.030		<0.030	
Lead (Pb)-Dissolved	0.0809		0.0779		0.08		0.0834		0.09		0.0926	
Lithium (Li)-Dissolved	0.00238		0.00172		0.00		0.00099		0.00		0.00148	
Magnesium (Mg)-Dissolved	1.07		0.862		0.99		0.939		1.12		1.02	
Manganese (Mn)-Dissolved	1.04		1.09		0.96		1.03		0.98		1.01	
Mercury (Hg)-Dissolved	<0.000010		<0.000010		<0.000010		<0.000010		<0.000010		<0.000010	
Molybdenum (Mo)-Dissolved	0.00223		0.00178		0.00		0.00158		0.00		0.00162	
Nickel (Ni)-Dissolved	0.00145		0.00188		0.00		0.00204		0.00		0.00234	
Phosphorus (P)-Dissolved	<0.30		<0.30		<0.30		<0.30		<0.30		<0.30	
Potassium (K)-Dissolved	0.497		0.385		0.37		0.331		0.35		0.317	
Selenium (Se)-Dissolved	0.00017		0.00014		0.00		0.00012		0.00		0.00013	
Silicon (Si)-Dissolved	2.87		2.72		2.43		2.41		2.58		2.45	
Silver (Ag)-Dissolved	<0.000010		<0.000010		<0.000010		<0.000010		<0.000010		<0.000010	
Sodium (Na)-Dissolved	0.241		0.209		0.20		0.184		0.20		0.172	
Strontium (Sr)-Dissolved	0.119		0.104		0.11		0.101		0.10		0.103	
Sulfur (S)-Dissolved	50.7		36.7		39.40		34.7		36.70		29.6	
Thallium (Tl)-Dissolved	0.000058		0.000038		0.00		0.000039		0.00		0.000041	
Tin (Sn)-Dissolved	<0.00010		<0.00010		<0.00010		<0.00010		<0.00010		<0.00010	
Titanium (Ti)-Dissolved	<0.010		<0.010		<0.010		<0.010		<0.010		<0.010	
Uranium (U)-Dissolved	0.000099		0.000049		0.00		0.000042		0.00		0.000037	
Vanadium (V)-Dissolved	<0.0010		<0.0010		<0.0010		<0.0010		<0.0010		<0.0010	
Zinc (Zn)-Dissolved	2.76	4.25	3.72	3.14	3.11	3.35	3.48	4.28	3.01	3.87	3.29	2.6

Sample ID	MILL TAILS COMPOSITE-JAN-JUN2011-40	MILL TAILS COMPOSITE-JAN-JUN2011-41	MILL TAILS COMPOSITE-JAN-JUN2011-42	MILL TAILS COMPOSITE-JAN-JUN2011-43	MILL TAILS COMPOSITE-JAN-JUN2011-44	MILL TAILS COMPOSITE-JAN-JUN2011-45	MILL TAILS COMPOSITE-JAN-JUN2011-46	MILL TAILS COMPOSITE-JAN-JUN2011-47
Date Sampled	**23-MAY-12**	**30-MAY-12**	**06-JUN-12**	**13-JUN-12**	**20-JUN-12**	**27-JUN-12**	**04-JUL-12**	**11-JUL-12**
ALS Sample ID	**L1150106-1**	**L1153466-1**	**L1156963-1**	**L1160871-1**	**L1164482-1**	**L1167961-1**	**L1171477-1**	**L1174741-1**
Matrix	**Water**	**Water**	**Water**	**Water**	**Water**	**Water**	**Water**	**Water**
Sample Preparation								
Total Volume In	500	500	500	500	500	500	500	500
Total Volume Out	485	495	490	475	475	475	470	475
Physical Tests								
Conductivity	299	299	292	281	277	274	271	270
pH	7.80	7.9	7.8	7.91	7.9	7.93	7.9	7.9
Anions and Nutrients								
Acidity (as $CaCO_3$)	8.8	14.9	14.3	8.7	7.7	12.9	5.3	6.8
Alkalinity, Total (as $CaCO_3$)	57.9	55.5	62.8	58.8	48.5	47.4	49.1	56.2
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	0.052	0.05	0.048	0.044	0.041	0.037	0.038	0.04
Nitrate (as N)	0.0054	0.0067	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.015
Nitrite (as N)	<0.0010	<0.0010	0.0019	0.0018	<0.0010	0.0013	0.0019	0.0012
Sulfate (SO_4)	92.9	90.9	87.4	81.8	82.7	82.3	79.9	78
Dissolved Metals								
Aluminum (Al)-Dissolved	<0.0050		<0.0050		<0.0050		<0.0050	FIELD
Antimony (Sb)-Dissolved	0.0077		0.008		0.00729		0.00719	
Arsenic (As)-Dissolved	0.0016		0.00168		0.00137		0.00141	
Barium (Ba)-Dissolved	0.0446		0.05		0.0468		0.05	
Beryllium (Be)-Dissolved	<0.00010		<0.00010		<0.00010		<0.00010	
Bismuth (Bi)-Dissolved	<0.00050		<0.00050		<0.00050		<0.00050	
Boron (B)-Dissolved	<0.010		<0.010		<0.010		<0.010	
Cadmium (Cd)-Dissolved	0.0596	0.06	0.06	0.0614	0.0481	0.0493	0.05	0.06
Calcium (Ca)-Dissolved	53.9		56.60		52.8		51.20	
Chromium (Cr)-Dissolved	<0.00050		<0.00050		<0.00050		<0.00050	
Cobalt (Co)-Dissolved	0.0035		0.00		0.0036		0.00	
Copper (Cu)-Dissolved	0.00241		0.00		0.00261		0.00	
Iron (Fe)-Dissolved	<0.030		<0.030		<0.030		<0.030	
Lead (Pb)-Dissolved	0.0831		0.09		0.0875		0.09	
Lithium (Li)-Dissolved	0.00207		0.00		0.00165		0.00	
Magnesium (Mg)-Dissolved	1.32		1.43		1.46		1.54	
Manganese (Mn)-Dissolved	1.14		1.20		1.06		1.20	
Mercury (Hg)-Dissolved	<0.000010		<0.000010		<0.000010		<0.000010	
Molybdenum (Mo)-Dissolved	0.00139		0.00		0.00138		0.00	
Nickel (Ni)-Dissolved	0.00278		0.00		0.00282		0.00	
Phosphorus (P)-Dissolved	<0.30		<0.30		<0.30		<0.30	
Potassium (K)-Dissolved	0.329		0.32		0.311		0.31	
Selenium (Se)-Dissolved	0.00015		0.00		0.00015		0.00	
Silicon (Si)-Dissolved	2.57		2.62		2.48		2.49	
Silver (Ag)-Dissolved	<0.000010		<0.000010		<0.000010		<0.000010	
Sodium (Na)-Dissolved	0.183		0.18		0.159		0.16	
Strontium (Sr)-Dissolved	0.0966		0.09		0.0919		0.09	
Sulfur (S)-Dissolved	31.1		29.30		27.4		27.00	
Thallium (Tl)-Dissolved	0.000039		0.00		0.000037		0.00	
Tin (Sn)-Dissolved	<0.00010		<0.00010		<0.00010		<0.00010	
Titanium (Ti)-Dissolved	<0.010		<0.010		<0.010		<0.010	
Uranium (U)-Dissolved	0.000035		0.00		0.00003		0.00	
Vanadium (V)-Dissolved	<0.0010		<0.0010		<0.0010		<0.0010	
Zinc (Zn)-Dissolved	3.86	3.65	3.61	4.07	2.63	2.89	2.96	3.96

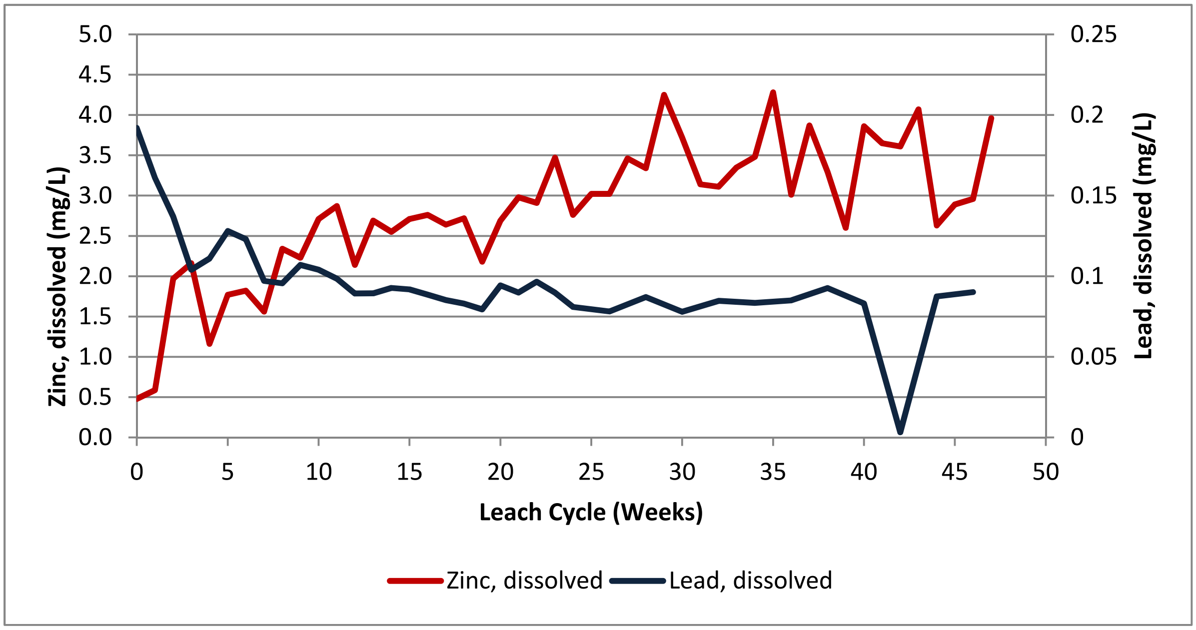

Figure 1 Bellekeno Tailings Humidity Cell Dissolved Zinc and Lead

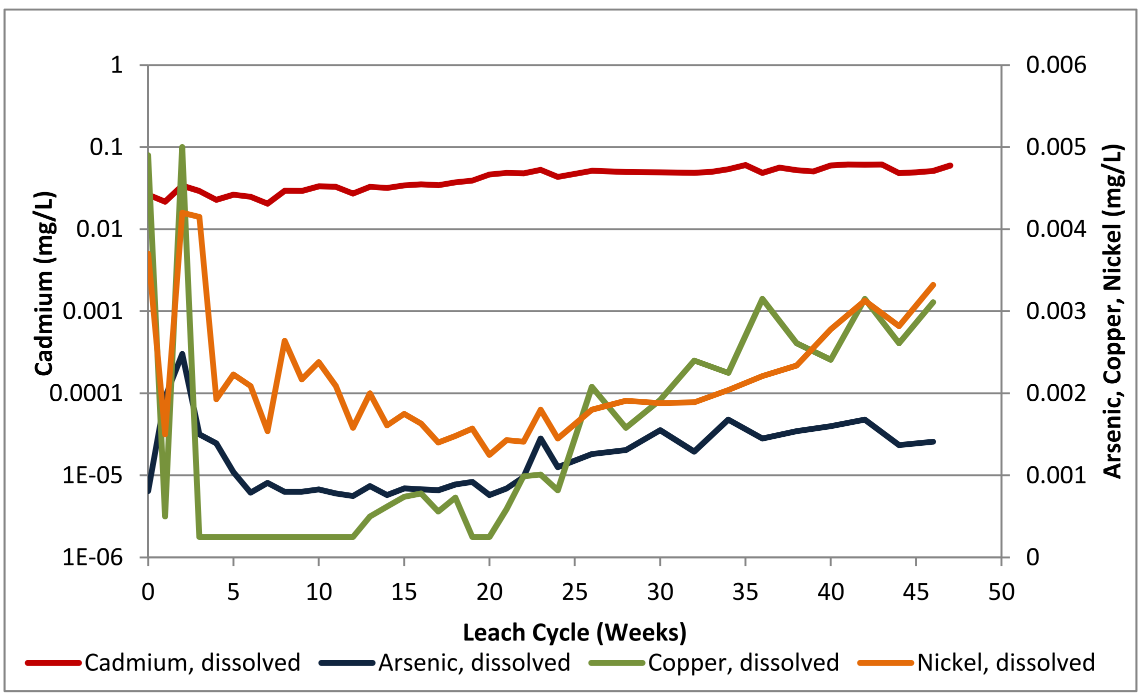

Figure 2 Bellekeno Tailings Humidity Cell Dissolved As, Cd, Cu and Ni

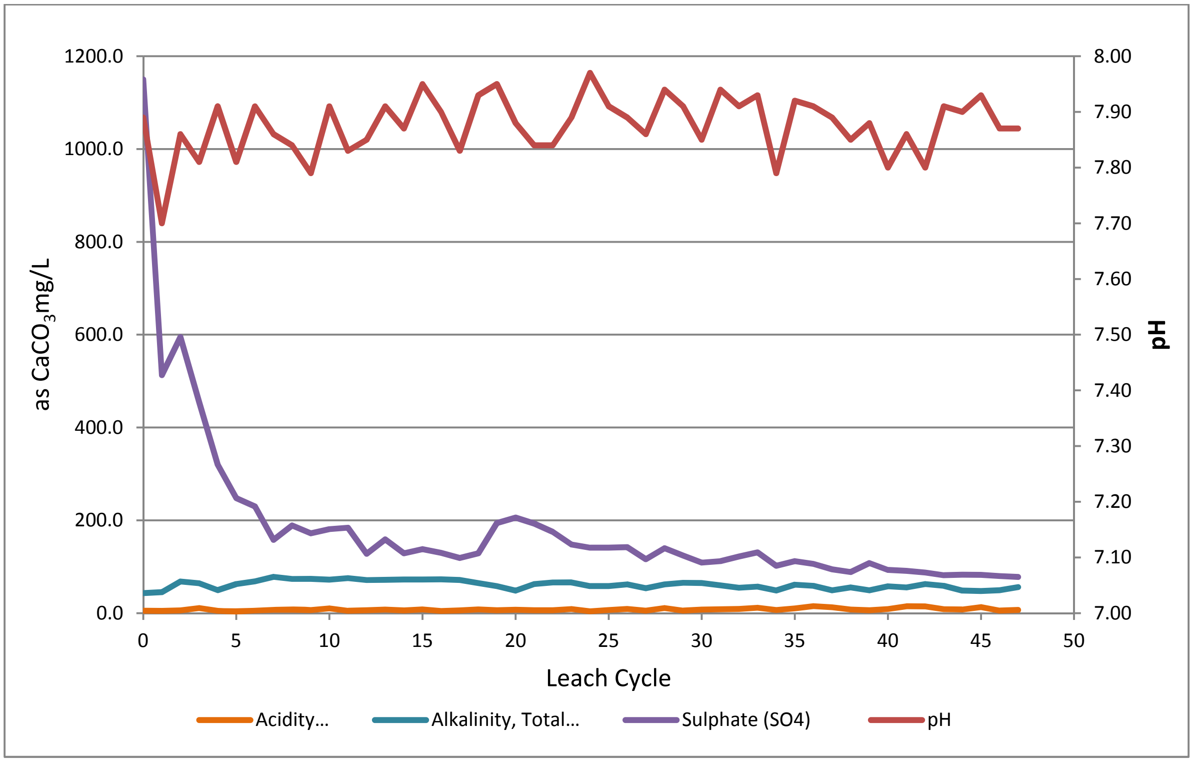

Figure 3 Bellekeno Tailings Humidity Cell Alkalinity, Acidity, pH and Sulphate

Laboratory test results were used previously to assess and predict the pore water quality of the filtered tailings from Bellekeno. This filter press filtrate quality was used to predict environmental effects from storage of tailings in the Dry Stack Tailings Facility. Table 6 compares the actual filter press filtrate of tailings from Bellekeno against the prediction of filter press filtrate quality obtained from laboratory testing on Bellekeno. The comparison demonstrates that the actual filter press filtrate is significantly better than predicted from the testwork.

Table 6 Bellekeno Tailings Filter Press Filtrate Data

Elements	Units	Bellekeno Filter press filtrate From Testwork	Actual Tailings Filter press filtrate Chemistry (Average 2011)	Actual Tailings Filter press filtrate Chemistry (Average 2012)
Sb	mg/L	<0.1	0.0516	0.0498
As	mg/L	<0.2	0.00647	0.00375
Cd	mg/L	0.12	0.00425	0.00465
Ca	mg/L	145	772	768
Cr	mg/L	<0.01	0.00025	0.0019
Cu	mg/L	0.64	0.403	0.281
Fe	mg/L	4.77	0.212	0.133
Pb	mg/L	0.45	0.0990	0.133
Ag	mg/L	<0.02	0.0236	0.0446
Zn	mg/L	20.31	0.0280	0.0627

Of most significance is the significantly lower zinc concentration in the filter press filtrate as compared to the testwork. The estimate of 20 mg/L zinc was used as the basis for potential environmental effects on groundwater from the DSTF and the comparison demonstrates that the initial estimate was highly conservative and actual water quality is significantly improved. In addition, a geosynthetic clay liner (GCL) layer was added to the DSTF design and has been installed below the DSTF footprint as a requirement under MMER to capture and measure any seepage from the tailings. The liner feature below the DSTF was not considered during the original assessment of the Bellekeno mine or a condition of the QML, but rather an outcome during the water licensing phase. The combination of the substantially high ABA ratio (3.8 to 8.4 : 1) due to the lower sulphur content of the Onek and Lucky Queen ores, preliminary results of the Bellekeno humidity cell tests, similarity of the Onek and Lucky Queen geochemical characteristics, consideration of the actual performance of the Bellekeno tailings and porewater chemistry compared to previously assessed testwork, and the addition of a GCL layer to the DSTF design give considerable confidence and justification for depositing filtered tailings from Onek and Lucky Queen into the currently authorized DSTF.

Alexco notes that during operations, any DSTF seepage is collected and routed to the Mill Pond for use in the processing circuit. Any discharges from the Mill Pond require treatment to achieve Effluent Quality Standards under QZ09-092. There has been no mill discharge to date since the mill was commissioned in late 2010. At closure the DSTF will have a soil cover installed to reduce infiltration, in addition to a bioreactor to provide ongoing long-term water treatment during the post-closure period.

Table 7 Results of XRD-Rietveld Mineralogical Analysis (weight %) of Bellekeno Composite Tailings

Minerals	Zn Rougher Tailings	Zn Cleaner Tailings	Final Mill Tailings	Minerals	Zn Rougher Tailings	Zn Cleaner Tailings	Final Mill Tailings	Minerals	Zn Rougher Tailings	Zn Cleaner Tailings	Final Mill Tailings	Final Mill Tailings
	July 2011 Composite	July 2011 Composite	July 2011 Composite		August 2011 Composite	August 2011 Composite	August 2011 Composite		September 2011 Composite	September 2011 Composite	September 2011 Composite	February 2012 Composite
Quartz	53.44	47.07	51.27	Quartz	53.36	45.38	54.29	Quartz	51.14	46.86	48.75	47.2
Siderite	32.16	26.08	34.31	Siderite	30.37	22.27	31.33	Siderite	31.66	25.05	32.79	35.1
Muscovite	5.53	10.76	4.62	Muscovite	6.33	12.92	5.68	Muscovite	6.39	10.69	6.19	7.3
Calcite	2.23	5.17	2.92	Calcite	2.77	4.88	2.70	Calcite	3.27	4.42	2.68	2.8
Sphalerite	1.75	5.17	3.27	Sphalerite	0.94	3.40	1.83	Sphalerite	1.52	2.81	2.76	2.8
Pyrite	1.96	1.91	2.35	Pyrite	2.10	2.24	2.21	Pyrite	2.56	1.65	2.77	3.1
Galena	0.18	1.31	0.38	Galena	0.11	1.04	0.27	Galena	0.15	0.71	0.51	0.6
Plagioclase	2.36	0	0.00	Plagioclase	2.29	2.05	0	Plagioclase	2.54	2.72	0.00	0
Ankerite	0	1.02	0.66	Ankerite	1.73	0	0.58	Ankerite	0	0.52	0.99	1.1
Gahnite	0	0	0.23	Gypsum	0	1.20	0	Gypsum	0	1.22	0	0
Chalcopyrite	0.27	0	0	Rutile	0	0.67	0	Arsenopyrite	0	0	0.33	0
Clinochlore	0	0.86	0	Clinochlore	0	1.79	0	Clinochlore	0.78	1.26	0.97	0
Rutile	0	0.65	0	Clinozoisite	0	2.17	0	Clinozoisite	0	2.11	0.00	0
Wurtzite	0.12	0	0	K-feldspar	0	0	1.13	K-feldspar	0	0	1.26	0
Total	100.0	100.0	100.0	Total	100.0	100.0	100.0	Total	100.0	100.0	100.0	100.0