METALLURGICAL TESTING
OF THE LAS MINAS DEPOSIT

SOURCE EXPLORATION CORPORATION
VERACRUZ, MEXICO

KM4508

June 24, 2015

ISO 9001:2008
Certificate No. FS 63170

ALS METALLURGY KAMLOOPS

ADDRESS 2957 Bowers Place, Kamloops, BC V1S 1W5 | **PHONE** +1 250 828 6157 | **FAX** +1 250 828 6159
ALS CANADA LTD Part of the ALS Group

INDEX

Calvin Chan, EIT
Project Metallurgist

Robert Sloan, P. Eng.
VP – ALS Metallurgy
North America

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
R. P. SLOAN
40376
June 24, 2015

June 24, 2015
KM4508

Electronic Distribution:
Matthew Liard, Source Exploration Corporation, Vancouver, BC
Brian Robertson, Source Exploration Corporation, Vancouver, BC

1.0 Introduction

Source Exploration Corporation is carrying out a preliminary test program on the skarn and epithermal copper-gold-silver Las Minas project, located in the state of Veracruz, 270 kilometers east of Mexico City.

Fifty-nine kilograms of half core sample was received from the Las Minas project for use in this study. From this material, a composite designated as the ED Composite was constructed.

The principle objectives of this laboratory test work, as defined by Mr. Matthew Liard, Senior Geologist of Source Exploration Corporation, in March 2015 were to:

- Assess the chemical and mineralogical characteristics of the ED Composite.

- Complete a Bond abrasion and a Bond ball mill work index test on the ED Composite.

- Complete Davis tube magnetic separation tests on the sample.

- Evaluate metallurgical performance of the composite by completing preliminary flowsheet development testing.

The program began mid-April 2015 and was completed by mid-June 2015. Following the test work, preparation of this technical report commenced.

The following technical brief summarizes only the key points of the program. All of the test data generated by this program can be reviewed in a series of appendices attached to this brief. The appendices are arranged as follows:

Appendix I - Sample Origin
Appendix II - Flotation Test Data
Appendix III - Particle Sizing Data
Appendix IV - Comminution Data
Appendix V - Special Assay Data
Appendix VI - Mineralogical Data

2.0 Physical Characterization

There are several inherent characteristics of an ore that will predispose the process design required to extract and concentrate minerals of value. The chemical content and hardness test data will dictate the crushing and grinding requirements and the configuration of the flotation process required. These characteristics are discussed in the following subsections.

2.1 Chemical Content

The chemical composition of the ED Composite was determined using standard analytical techniques. The resulting data is summarized in Table 1.

TABLE 1
CHEMICAL COMPOSITION OF THE ED COMPOSITE

Sample	Assay – percent or g/tonne							
	Cu	CuOx	CuCN	CuRes	Fe	S	Ag	Au
ED Composite	2.16	0.099	0.16	1.90	31.5	2.81	7	1.32

Notes: a) Duplicate head assay data is located in Appendix V.
b) The copper oxide (CuOx) assay represents copper soluble in weak acid; the copper cyanide (CuCN) assay represents copper soluble in cyanide; residual copper (CuRes) was the calculated copper remaining in the sample after CuOx and CuCN assays.
c) Ag and Au are in g/tonne; all other assays are in percent.

The ED Composite measured a copper content of about 2.2 percent. The copper oxide assay indicated little oxide copper mineralization in the feed; however, the copper cyanide assay indicate the presence secondary or native copper in this sample. Gold grade measured about 1.3 g/tonne, while silver content measured 7 g/tonne. Sulphur content was relatively low in the feed indicating low pyrite levels. Given the high iron content measured at about 31.5 percent, and low Sulphur content, high iron oxide mineral content is likely.

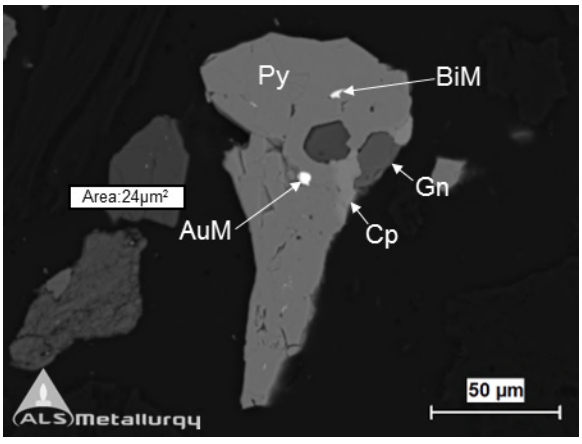
2.2 Comminution Testing

A Bond abrasion test was performed on the ED Composite, which measured about 0.14, indicating that the sample was mildly abrasive. A single Bond ball mill work index test was conducted on the ED Composite using a standard closing screen size of 106µm. The resulting index measured 13.3 kWh/tonne and, in our experience, this indicates that the composite would be considered moderately soft from a ball milling perspective*.

TABLE 2
SUMMARY OF COMMINUTION TEST WORK

Sample	Bond Ball Work Index	Abrasion Index
	kWh/tonne	A_i
ED Composite	13.3	0.14

QEMSCAN BACKSCATTER IMAGE
ED COMPOSITE, <106>38µm Fraction



Notes: a) AuM-Gold Bearing Mineral, Cp-Chalopyrite, BiM-Bismuth Tellurium Bearing Mineral, Py-Pyrite, FeOx-Iron Oxides, Gn-Gangue.
b) Full TMS Data is located in Appendix VI.

* Detailed comminution test results are located in Appendix IV.

3.0 Trace Mineral Searches

QEMSCAN Trace Mineral Searches (TMS) for gold was performed on three size fractions of the ED Composite, which had been ground to a nominal 146µm K_{80}. A summary of the results for gold analysis conducted are shown in Figure 1.

The average grain size of the gold bearing particle occurrences in the rougher feed was very fine, measuring an average diameter of 8, 6 and 4µm in the +106, -106 to +38, and -38µm fractions, respectively. These fine particles may be difficult to recover through means of gravity concentration. Gold particles that were as large as 31µm were observed; these larger particles may be recoverable through gravity concentration.

Gold particle occurrences in the coarse +106µm fraction were located predominantly in multiphase particles. The multiphase particles were primarily composed of non-sulphide gangue, iron oxides, pyrite and chalcopyrite in which gold particles comprised a low percentage of the particle surface area. Particles with high gangue and pyrite content would not be expected to be well recovered to a sulphide flotation concentrate*.

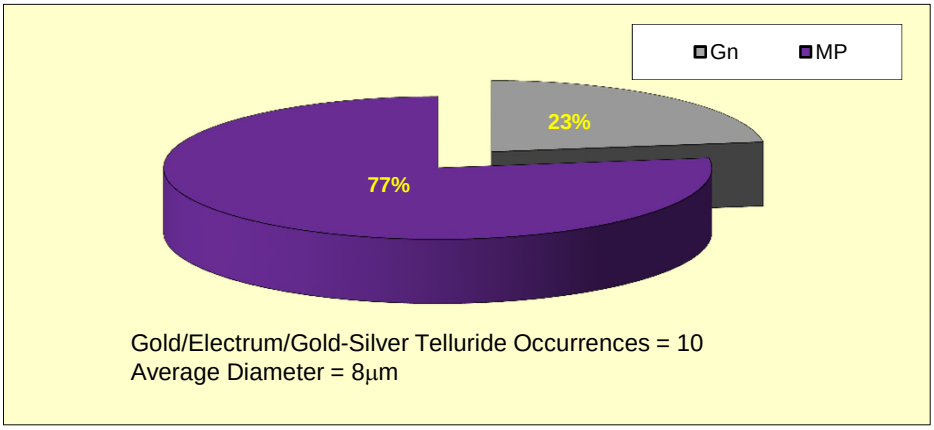
The gold occurrences in the intermediate -106 to +38µm fraction contained gold particles that were mostly in binary with chalcopyrite or in multiphase forms. Most of the gold occurrences were identified to be in association with chalcopyrite, and would likely be recovered into the rougher concentrate.

The gold occurrences in the -38µm fraction were identified as liberated gold or electrum particles or in binary with chalcopyrite, pyrite, non-sulphide gangue and multiphase particles. The liberated gold and gold in binary form with chalcopyrite particles should be recoverable to a flotation concentrate, while the gold particles in binary form with pyrite and non-sulphide gangue particles would not likely be recoverable in flotation due to the small area of gold in those particles.

* The recovery of particles with high pyrite would depend on the selectivity of the flotation circuit towards pyrite.

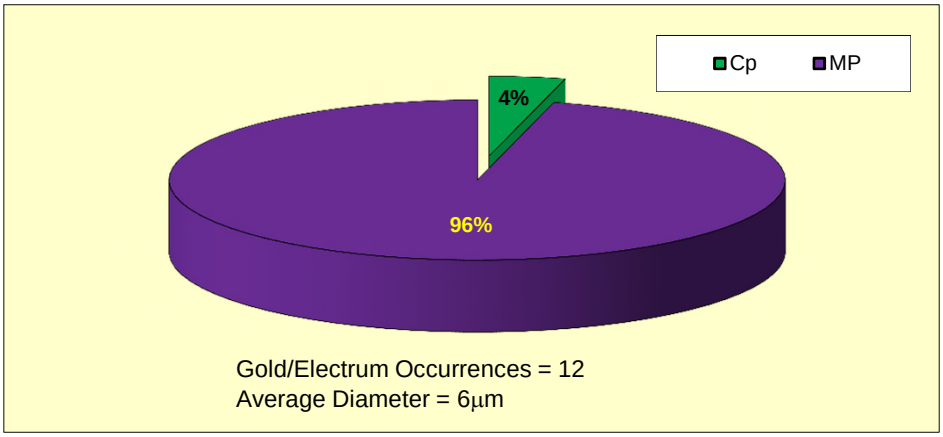
FIGURE 1
THE OVERALL STATUS OF GOLD IN THE ED COMPOSITE

>106µm Fraction



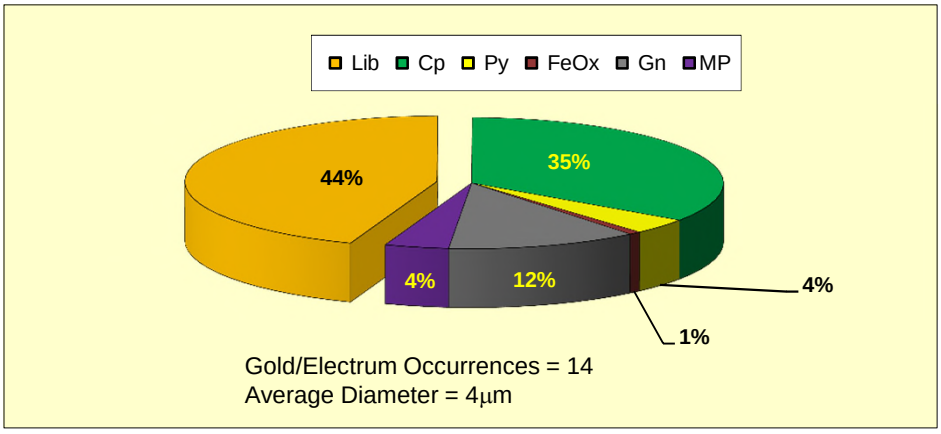
Gold/Electrum/Gold-Silver Telluride Occurrences = 10
Average Diameter = 8µm

<106>38µm Fraction



Gold/Electrum Occurrences = 12
Average Diameter = 6µm

<38µm Fraction



Gold/Electrum Occurrences = 14
Average Diameter = 4µm

Note: Lib - Liberated Gold particle; Cp - Gold particle with Chalcopyrite;
Py - Gold particle with Pyrite; Gn - Gold particle with Non-sulphide Gangue;
FeOx - Gold particle with Iron Oxides; MP - Gold particle in Multiphase.

4.0 Metallurgical Testing

A series of laboratory flotation tests were performed in this preliminary test program. Rougher tests were conducted to evaluate primary grind sizing, reagent requirements and pH. Batch cleaner tests were performed to assess regrind sizings and concentrate production potential. A single locked cycle test was performed to determine metallurgical performance under closed circuit conditions.

4.1 Rougher Test Results

A total of six rougher flotation tests were performed in this program. Primary grind sizings of 146 and 189µm K_{80} were investigated. A pH of 9, adjusted by lime, was tested and compared to a single test at natural pH. Potassium Amyl Xanthate (PAX) was used as the copper collector. Methyl Isobutyl Carbonyl (MIBC) was used as the frother. Figure 2 displays the flowsheet schematic used, along with a summary of test conditions and graphical representation of test results.

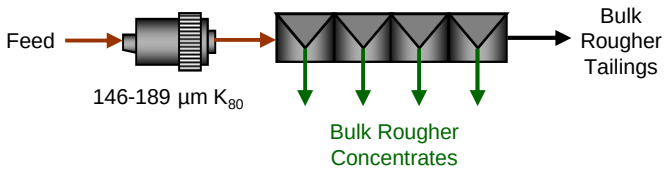
Addition of lime into the primary grinding mill appeared to improve copper flotation kinetics at equivalent PAX dosage. Lower copper recoveries were observed at PAX dosages of 40 g/tonne or lower. Mineralogical assessment by optical microscope of the rougher tail indicated liberated chalcopyrite was lost to rougher tails at lower PAX dosages. As a result, PAX dosages of 120 g/tonne were used throughout rougher testing*. Increasing primary grind sizing from 146 to 189µm K_{80} had a negative impact on copper recovery. Based on this result, primary grind sizing coarser than 146µm K_{80} would not be recommended.

A rougher test using a primary grind sizing of 146µm K_{80}, pH of 9, and 80 g/tonne PAX produced copper, gold and silver recoveries into the rougher concentrate of 97, 91 and 89 percent, respectively.

* Late into the test program, testing with 80 g/tonne PAX was performed due to cleaner performance; this is discussed in section 4.2.

FIGURE 2
ROUGHER FLOTATION

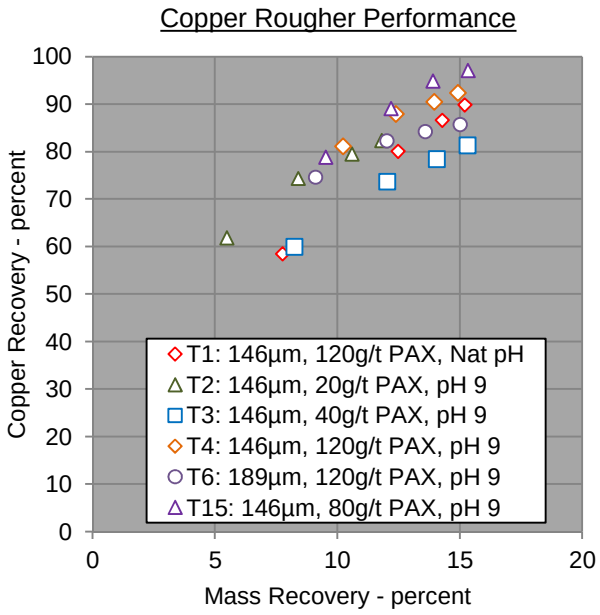
Flowsheet Schematic

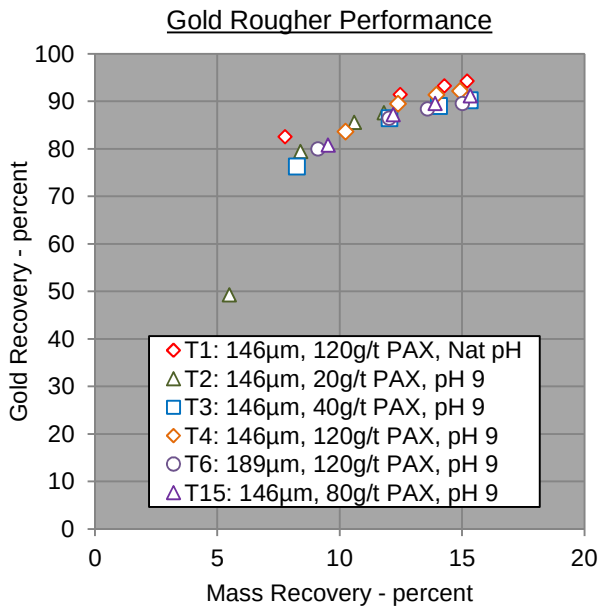


Test Conditions

Stage	pH	Redox mV	Reagent Addition - g/tonne	
			Lime	PAX
Primary Grind	8.0-9.3	-74 to +164	0-150	-
Bulk Rougher	8.2-9.3	-94 to +136	-	20-120

Note: Redox was measured with a Pt Ag/AgCl electrode and values are unadjusted against SHE.





Note: Detailed conditions and results are provided in Appendix II.

4.2 Cleaner Test Results

Six laboratory batch cleaner tests were performed with the ED Composite. These tests allowed preliminary estimations of metallurgical performance using basic flowsheet conditions. The tests investigated regrind sizings in the cleaner stages and their effect on metallurgical performance. All cleaner tests were conducted at a primary grind sizing of 146µm K_{80} and regrind sizes of 9 to 70µm K_{80}.

A schematic of the test flowsheet, a summary of test conditions and a graphical representation of the test data are presented in Figure 3.

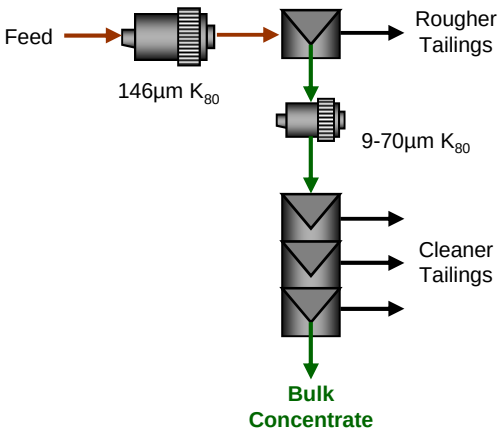
Cleaner tests were conducted on a range of regrind sizings. A trend was established between finer regrind sizing leading to higher copper concentrate grades but lower gold recoveries.

High PAX dosage in the rougher circuit affected frother conditions in the cleaner circuit. It was difficult to maintain a stable froth using MIBC; therefore, a stronger polyglycol frother, Polyfroth W34, was utilized in conjunction with MIBC to assist with froth stability.

The lower PAX dosage of 80 g/tonne was chosen to be the reference test for locked cycle testing due to better froth stability and only having to use MIBC to keep a stable froth. The reference test, at a primary grind sizing of about 146µm K_{80}, and a regrind sizing of about 70µm K_{80}, a bulk cleaner concentrate was produced with copper, gold and silver recoveries measuring about 94, 84, and 78 percent, respectively. These metals graded 23 percent, 13 g/tonne, and 58 g/tonne for copper, gold and silver, respectively.

FIGURE 3
CLEANER FLOTATION

Flowsheet Schematic

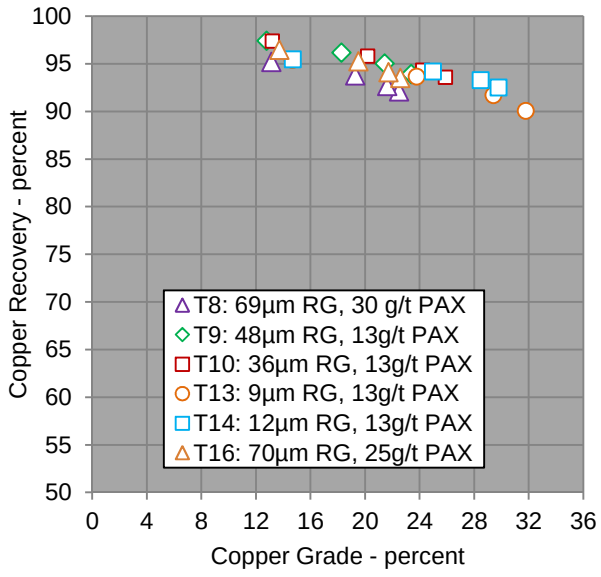


Test Conditions

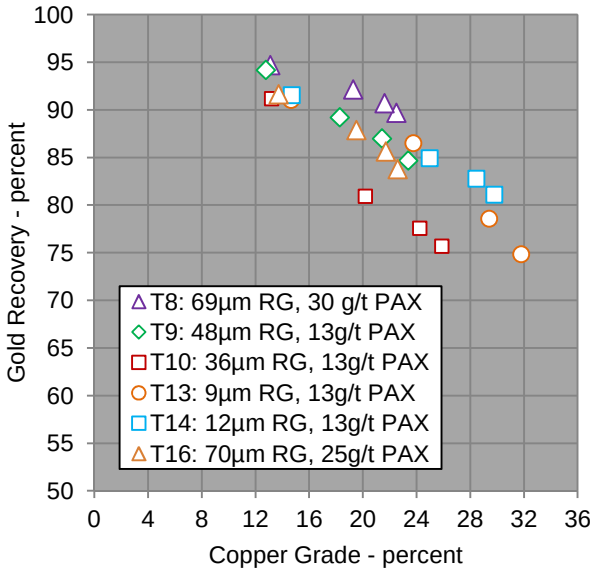
Stage	pH	Redox mV	Reagent Addition - g/tonne	
			Lime	PAX
Primary Grind	9.0-9.2	-68 to +190	150	-
Bulk Rougher	8.7-9.2	-104 to +120	-	80-120
Regrind	8.6-9.3	-52 to +155	50	-
Bulk Cleaner	8.3-9.3	-66 to +176	-	13-30

Note: Redox was measured with a Pt Ag/AgCl electrode and values are unadjusted against SHE.

Copper Performance



Gold Recovery With Respect to Copper Grade



Notes: a) Tests 8, 9, 10, 13, and 14 used a rougher PAX dosage of 120 g/tonne. Test 16 used a rougher PAX dosage of 80 g/tonne.
b) Detailed test conditions and results are located in Appendix II.

4.3 Locked Cycle Test Results

A single locked cycle test was performed on the ED Composite. This test provides an estimation of performance under closed circuit conditions. The test was conducted at a primary grind sizing of 146µm K_{80}, a regrind sizing of about 60µm K_{80} and at pH 9, adjusted by lime. Potassium Amyl Xanthate (PAX) was used as the copper collector at 80 g/tonne to mitigate froth stability issues in the cleaning stage with higher PAX dosages. Methyl Isobutyl Carbonyl (MIBC) and Polyfroth W34 were used as the frothers. These conditions were selected to promote higher gold recoveries and to lower the amount of PAX in the rougher circuit for froth stability. A schematic of the test flowsheet and a summary of test conditions are presented in Figure 4.

Higher recoveries at slightly lower copper concentrate grade were recorded in closed circuit testing than measured in open circuit cleaner batch testing. Overall, about 95 percent of the copper, 89 percent of the gold and 84 percent of the silver was recovered to a bulk concentrate grading about 22 percent copper, 13.4 g/tonne gold and 57 g/tonne silver.

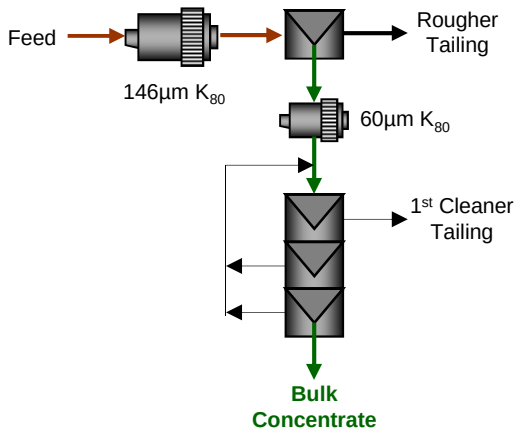
The froth appeared to be over-collected* after the third cycle and a stable froth was difficult to maintain until the addition of the strong frother W34 mitigated the issue. Further testing would be needed to optimize this flowsheet.

Although higher concentrate grades might be possible with high pH in the cleaning stage, higher gold losses might occur.

* Over-collection: Addition of an excess amount of collector in flotation, where a stable froth cannot be maintained to facilitate efficient mineral recovery.

FIGURE 4
LOCKED CYCLE TEST RESULTS

Flowsheet Schematic



Test Conditions

Stage	pH	Redox mV	Reagent Addition - g/tonne	
			Lime	PAX
Primary Grind	9.1	+107	150	-
Bulk Rougher	8.7-9.1	+38 to +101	-	80
Regrind	9.1	+125	50	-
Bulk Cleaner	8.6-9.1	+96 to 126	-	14

Note: Redox was measured with a Pt Ag/AgCl electrode and values are unadjusted against SHE.

Locked Cycle Test Results Summary

Product	Weight %	Assay - percent or g/tonne					Distribution - percent				
		Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
CYCLES IV and V											
Flotation Feed	100	2.43	31.6	3.16	7	1.59	100	100	100	100	100
Bulk Con	10.4	**22.3**	30.4	28.7	**57**	**13.4**	**95.4**	10.0	94.9	**84.2**	**88.8**
Bulk 1st Clnr Tail	6.7	0.86	25.4	1.23	10	1.16	2.4	5.4	2.6	9.9	4.9
Bulk Ro Tail	82.9	0.06	32.2	0.09	1	0.14	2.2	84.6	2.5	5.9	7.1

Notes: a) Au and Ag assay values are reported in g/tonne, all others in percent.
b) Detailed conditions and results are located in Appendix II.

4.4 Magnetic Separation

The ED Composite head, rougher tail, and cleaner concentrate samples produced during flotation testing were submitted for magnetic separations via Davis Tube to test the viability of producing a magnetite concentrate and/or to remove magnetic diluents from the concentrate. Detailed results can be found in Appendix II.

A Davis tube test at a magnetic field strength of 4,000 gauss was conducted on a pulverized head sample of the ED Composite. The test produced a magnetic concentrate grading about 68 percent iron with an iron recovery of about 60 percent. About 3 percent of the copper and 16 percent of the gold from the feed was measured in the magnetic concentrate, which would be considered as copper and gold losses.

The Davis tube test at a magnetic field strength of 4,000 gauss conducted on a bulk rougher tail from a standard pH 9, 120 g/tonne PAX, 146µm K_{80} primary grind rougher test produced a magnetic concentrate grading 67 percent iron, with 65 percent of the iron in the tail recovered. This would be considered a high grade magnetic concentrate, which may require little further treatment to meet saleable grade requirements.

Cleaner concentrates at regrind sizings of 48 and 36µm K_{80} had measured high iron values. Davis tube magnetic separation at a magnetic field strength of 1,000 gauss was employed in an attempt to reduce the iron content and to increase copper concentrate grade. Copper concentrate grade increased by 1 or 2 percentage points, with a commensurate loss of between 2 and 3 percent copper recovery loss in these tests. Gold losses to the magnetite concentrate were not measured due to insufficient sample mass in the magnetic concentrate to assay for gold.

5.0 Conclusions and Recommendations

A limited program of metallurgical testing was completed on a single copper-gold-silver sample from the Las Minas project identified as the "ED Composite". The metallurgical response of the ED Composite to basic flotation processing was tested and promising results were obtained. However, further testing to optimize Potassium Amyl Xanthate (PAX) dosage to avoid over-collection is recommended*.

The ED Composite was analyzed using both chemical and mineralogical techniques. The sample contained approximately 2.2 percent copper, 1.3 g/tonne gold and 7 g/tonne silver, as well as high iron content measuring 31.5 percent.

Trace Mineral Search (TMS) protocols using QEMSCAN was used to measure and identify the gold particles found in the ED Composite at a primary grind sizing of 146µm K_{80} in three size fractions. The gold occurrences averaged about 6µm in diameter; it would be unlikely to recover these fine gold bearing particles through the use of gravity concentration. Larger gold particles up to 31µm in diameter were located, and recovery of these coarser particles may be possible through gravity concentration. The gold occurrences in this sample were typically measured in multiphase form with non-sulphide gangue, iron oxides, pyrite and chalcopyrite and in binary form with pyrite, non-sulphide gangue, or chalcopyrite; or liberated. Gold occurrences associated with chalcopyrite and liberated gold would most likely be recovered via flotation whereas gold associated with non-sulphide gangue, iron oxide minerals, and to a lesser degree gold associated with pyrite would more likely be lost to tails.

* Over-collection: Addition of an excess amount of collector in flotation, where a stable froth cannot be maintained to facilitate efficient mineral recovery.

Flotation test data determined that primary grind sizing had a measureable effect on rougher copper recovery. Using similar conditions, copper rougher recovery averaged about 95 percent at 146µm K_{80}, while at a coarser grind of 189µm K_{80}, copper recovery decreased to 86 percent. Assessment by optical microscope of a rougher tail from a rougher test with lower PAX dosage indicated that most of the copper lost was seen as liberated chalcopyrite. High PAX dosages of at least 80 g/tonne were needed for high copper recoveries. High sulphur recoveries indicating high pyrite recoveries were also recorded for the rougher stage.

A number of cleaner tests at PAX dosages between 80 and 120 g/tonne with regrind sizings ranging from 9 to 70µm K_{80} were conducted to optimize overall performance. The trend of increasing copper performance with decreasing regrind size was observed, and vice versa with gold. With the current flowsheet, coarser regrind sizings would lead to higher gold recoveries. This is suspected to be related to gold measured with non-sulphide gangue, iron oxides, and pyrite in the QEMSCAN TMS analysis. Gold was located in all minerals, thus rejecting of pyrite and non-sulphide gangue and low grade copper sulphide binaries lowers gold recovery as well.

Excellent recoveries were measured in the locked cycle test. At a regrind sizing of 60µm K_{80}, PAX, and a pH of 9: about 95 percent of the copper, 88 percent of the gold and 84 percent of the silver were recovered into a bulk concentrate grading about 22 percent copper, 13 g/tonne gold and 57 g/tonne silver.

By the third cycle in the locked cycle test, the froth stability was difficult to maintain due to over-collection. The addition of the strong frother W34 mitigated this situation. Collector dosages must be refined in the flowsheet for successful plant performance. Froth instability was witnessed in cleaner flotation both in the batch cleaner testing and locked cycle test. The low grade of copper in the cycle test concentrates indicated insufficient control of pyrite and non-sulphide gangue flotation, which diluted the concentrate as a result. Further testing would be required to optimize performance of the circuit.

Davis tube magnetic separation was conducted on a pulverized ED Composite head to assess magnetic iron removal. A high iron grade was measured in the magnetic concentrate at 68 percent, although copper and gold recoveries to the magnetic concentrate were significant at 3 and 16 percent, respectively and would represent losses. Another Davis tube magnetic separation was conducted on the rougher tail of a standard rougher test. A high iron grade of 67 percent with an iron recovery of 65 percent was recorded in the magnetic concentrate. Davis tube magnetic separation was also attempted on cleaner concentrates to increase copper grade. In these tests, copper grades increased by 1 or 2 percentage points with a commensurate copper recovery loss of 2 or 3 percent. Gold recovery and grade was unknown due to insufficient sample mass*.

In the next phase of testing, further optimization of the rougher circuit is recommended in attempt to maintain both copper and gold performance. An optimized amount of collector should be tested in the rougher circuit. Detailed magnetic separation testing on the rougher tailings should be tested to test viability of producing iron concentrate. A determination of the minor elements in the copper concentrate to scan for deleterious elements should be conducted. A full mineralogical analysis using the QEMSCAN (Particle Mineral Analysis) should be conducted on a representative feed sample to provide mineral composition, mineral liberation and grade limiting curves. Following this, samples of varying geological origin and feed grades should be tested to determine the variation in metallurgical performance across the deposit. Samples representing expected plant feed grades and significant geological lithology types should be investigated as a priority.

* Insufficient magnetic concentrate mass for gold assays.

APPENDIX I – KM4508

SAMPLE ORIGIN

1.0 Sample Origin

A single shipment was received at ALS Metallurgy Kamloops on April 16, 2015. This shipment consisted of 6 samples in half core form weighing a total of 59 kilograms. These samples were reportedly from the Las Minas project located in the Mexican state of Veracruz, about 270 kilometers east of Mexico City.

A single composite named the ED Composite was constructed from the samples as instructed by the client. The mass and identification of each sample that was received is presented in Table I-1.

TABLE I-1
MASS AND IDENTIFICATION OF METALLURGICAL SAMPLES RECEIVED
April 16, 2015

Sample ID	Weight - kilograms	Sample Form
ED-9 4553	8.8	1/2 core
ED-9 4557	10.2	1/2 core
ED-8 4499	10.4	1/2 core
ED-15 4749	11.6	1/2 core
ED-9 4552	7.9	1/2 core
ED-9 4556	10.1	1/2 core

Duplicate and representative head cuts were removed for assay from the composite. The remainder was homogenized and rotary split into 2 kilogram charges for subsequent tests. All test charges were sealed in plastic bags under nitrogen and stored at -10^{o}C. The average head assays for the ED Composite are provided in Table I-2.

TABLE I-2
CHEMICAL COMPOSITION OF THE ED COMPOSITE

Sample	Assay – percent or g/tonne							
	Cu	CuOx	CuCN	CuRes	Fe	S	Ag	Au
ED Composite	2.16	0.099	0.16	1.77	31.5	2.81	7	1.32

Notes: a) Duplicate head assay data is located in Appendix V.
b) The copper oxide assay represents copper soluble in weak acid; the copper cyanide assay represents copper soluble in cyanide.
c) Ag and Au are in g/tonne; all other assays are in percent.

A cut of the sample was sent to ALS Minerals for a 48 element ICP scan. The certificate detailing the results is located in Appendix V.

Samples would be stored for a duration of 12 months and would be disposed of at the end of that period unless alternate arrangements are made.

APPENDIX II – KM4508

METALLURGICAL TEST DATA

INDEX

DATE: April 29, 2015

PROJECT NO: KM4508-01

PURPOSE: Preliminary Rougher Test.

PROCEDURE: Perform a one product rougher test.

FEED: 2 kg of ED Composite ore ground to a nominal 146μm K_{80}.

Stage	Reagents Added g/tonne			Time (minutes)			pH	Redox
	PAX		MIBC	Grind	Cond.	Float		
Primary Grind				15			8.0	9
Bulk CIRCUIT:								
Rougher 1	30		8		1	2	8.2	-58
Rougher 2	40		8		1	2	8.3	11
Rougher 3	30		8		1	2	8.4	2
Rougher 4	20		8		1	2	8.3	-9

Flotation Data	Rougher	
Flotation Machine	D2A	
Cell Size in liters	4.4	
Aspiration	Air	
Water Type	Fresh	
Impeller Speed in rpm	1100	

Grinding Data	Primary Grind
Mill:	M4-Mild
Charge/Material:	20kg-Mild
Water:	1000 ml

KM4508-01 ED Composite
Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t					Distribution - percent				
	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Bulk Ro Con 1	7.8	155.8	16.8	29.7	21.9	57	17.2	58.4	7.3	62.1	63.3	82.5
Bulk Ro Con 2	4.7	94.3	10.3	27.3	11.2	26	3.05	21.7	4.1	19.2	17.5	8.9
Bulk Ro Con 3	1.8	36.3	8.00	25.7	8.64	18	1.65	6.5	1.5	5.7	4.7	1.8
Bulk Ro Con 4	0.9	18.6	7.80	25.7	8.30	18	1.72	3.2	0.8	2.8	2.4	1.0
Bulk Ro Tail	84.8	1698.7	0.27	32.0	0.33	1	0.11	10.2	86.3	10.2	12.1	5.8
Feed	100.0	2003.7	2.24	31.4	2.74	7	1.62	100	100	100	100	100

KM4508-01 ED Composite
Cumulative Metallurgical Balance

Cumulative	Cum. Weight		Assay - percent or g/t					Distribution - percent				
Product	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Product 1	7.8	155.8	16.8	29.7	21.9	57	17.2	58.4	7.3	62.1	63.3	82.5
Product 1 to 2	12.5	250.1	14.3	28.8	17.9	45	11.9	80.1	11.4	81.3	80.8	91.4
Product 1 to 3	14.3	286.4	13.5	28.4	16.7	42	10.6	86.5	12.9	87.0	85.5	93.3
Product 1 to 4	15.2	305.0	13.2	28.2	16.2	40	10.0	89.8	13.7	89.8	87.9	94.2
Product 5	84.8	1698.7	0.27	32.0	0.33	1	0.11	10.2	86.3	10.2	12.1	5.8
Feed	100.0	2003.7	2.24	31.4	2.74	7	1.62	100	100	100	100	100

DATE: May 1, 2015

PROJECT NO: KM4508-02

PURPOSE: To Repeat Test 01 at a Higher pH.

PROCEDURE: Perform a one product rougher test.

FEED: 2 kg of ED Composite ore ground to a nominal 146μm K_{80}.

Stage	Reagents Added g/tonne			Time (minutes)			pH	Redox
	Lime	PAX	MIBC	Grind	Cond.	Float		
Primary Grind	150			15			9.1	-16
Bulk CIRCUIT:								
Rougher 1		5	8		1	2	8.9	28
Rougher 2		5	-		1	2	8.9	20
Rougher 3		5	8		1	2	8.8	75
Rougher 4		5	-		1	2	8.6	70

Flotation Data	Rougher	
Flotation Machine	D2A	
Cell Size in liters	4.4	
Aspiration	Air	
Water Type	Fresh	
Impeller Speed in rpm	1100	

Grinding Data	Primary Grind
Mill:	M4-Mild
Charge/Material:	20kg-Mild
Water:	1000 ml

KM4508-02 ED Composite
Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t					Distribution - percent				
	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Bulk Ro Con 1	5.5	110.4	24.1	29.8	27.7	60	13.3	61.8	5.1	56.4	51.0	49.9
Bulk Ro Con 2	2.9	58.4	9.20	29.7	16.9	47	14.7	12.5	2.7	18.2	21.1	29.2
Bulk Ro Con 3	2.2	44.1	5.09	26.4	7.05	30	4.14	5.2	1.8	5.7	10.2	6.2
Bulk Ro Con 4	1.2	24.4	5.00	28.0	6.02	22	2.46	2.8	1.0	2.7	4.1	2.0
Bulk Ro Tail	88.2	1770.2	0.43	32.9	0.52	1	0.21	17.7	89.4	17.0	13.6	12.6
Feed	100.0	2007.5	2.14	32.4	2.70	6	1.47	100	100	100	100	100

KM4508-02 ED Composite
Cumulative Metallurgical Balance

Cumulative	Cum. Weight		Assay - percent or g/t					Distribution - percent				
Product	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Product 1	5.5	110.4	24.1	29.8	27.7	60	13.3	61.8	5.1	56.4	51.0	49.9
Product 1 to 2	8.4	168.8	18.9	29.8	24.0	56	13.8	74.3	7.7	74.6	72.1	79.1
Product 1 to 3	10.6	212.9	16.1	29.1	20.5	50	11.8	79.5	9.5	80.3	82.3	85.3
Product 1 to 4	11.8	237.3	14.9	29.0	19.0	47	10.8	82.3	10.6	83.0	86.4	87.4
Product 5	88.2	1770.2	0.43	32.9	0.52	1	0.21	17.7	89.4	17.0	13.6	12.6
Feed	100.0	2007.5	2.14	32.4	2.70	6	1.47	100	100	100	100	100

DATE: May 5, 2015

PROJECT NO: KM4508-03

PURPOSE: To Repeat Test 02 With More Collector.

PROCEDURE: Perform a one product rougher test.

FEED: 2 kg of ED Composite ore ground to a nominal 146μm K_{80}.

Stage	Reagents Added g/tonne			Time (minutes)			pH	Redox
	Lime	PAX	MIBC	Grind	Cond.	Float		
Primary Grind	150			15			9.0	-74
Bulk CIRCUIT:								
Rougher 1		10	15		1	2	9.0	-94
Rougher 2		10	8		1	2	8.9	-39
Rougher 3		10	15		1	3	8.9	-25
Rougher 4		10	15		1	3	8.8	-30

Flotation Data	Rougher	
Flotation Machine	D2E	
Cell Size in liters	4.4	
Aspiration	Air	
Water Type	Fresh	
Impeller Speed in rpm	1100	

Grinding Data	Primary Grind
Mill:	M4-Mild
Charge/Material:	20kg-Mild
Water:	1000 ml

KM4508-03 ED Composite
Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t					Distribution - percent				
	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Bulk Ro Con 1	8.2	165.0	16.1	28.3	20.1	53	13.7	59.9	7.3	61.8	63.3	76.2
Bulk Ro Con 2	3.8	75.9	8.00	26.6	9.80	31	4.00	13.7	3.2	13.9	17.0	10.2
Bulk Ro Con 3	2.0	40.6	5.23	25.4	5.84	17	1.84	4.8	1.6	4.4	5.0	2.5
Bulk Ro Con 4	1.2	25.0	5.09	25.3	5.51	13	1.50	2.9	1.0	2.6	2.4	1.3
Bulk Ro Tail	84.7	1693.9	0.49	32.9	0.55	1	0.17	18.7	87.0	17.4	12.3	9.8
Feed	100.0	2000.4	2.22	32.0	2.68	7	1.49	100	100	100	100	100

KM4508-03 ED Composite
Cumulative Metallurgical Balance

Cumulative	Cum. Weight		Assay - percent or g/t					Distribution - percent				
Product	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Product 1	8.2	165.0	16.1	28.3	20.1	53	13.7	59.9	7.3	61.8	63.3	76.2
Product 1 to 2	12.0	240.9	13.5	27.8	16.9	46	10.7	73.6	10.4	75.7	80.4	86.4
Product 1 to 3	14.1	281.5	12.3	27.4	15.3	42	9.39	78.4	12.0	80.1	85.4	88.9
Product 1 to 4	15.3	306.5	11.8	27.3	14.5	40	8.75	81.3	13.0	82.6	87.7	90.2
Product 5	84.7	1693.9	0.49	32.9	0.55	1	0.17	18.7	87.0	17.4	12.3	9.8
Feed	100.0	2000.4	2.22	32.0	2.68	7	1.49	100	100	100	100	100

DATE: May 8, 2015

PROJECT NO: KM4508-04

PURPOSE: To Repeat Test 3 With More Collector.

PROCEDURE: Perform a one product rougher test.

FEED: 2 kg of ED Composite ore ground to a nominal 146μm K_{80}.

Stage	Reagents Added g/tonne			Time (minutes)			pH	Redox
	Lime	PAX	MIBC	Grind	Cond.	Float		
Primary Grind	150			15			9.1	137
Bulk CIRCUIT:								
Rougher 1		30	15		1	2	9.1	122
Rougher 2		30	-		1	2	9.1	75
Rougher 3		30	8		1	3	9.0	48
Rougher 4		30	8		1	3	8.9	23

Flotation Data	Rougher	
Flotation Machine	D2E	
Cell Size in liters	4.4	
Aspiration	Air	
Water Type	Fresh	
Impeller Speed in rpm	1100	

Grinding Data	Primary Grind
Mill:	M4-Mild
Charge/Material:	20kg-Mild
Water:	1000 ml

KM4508-04 ED Composite
Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t					Distribution - percent				
	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Bulk Ro Con 1	10.2	205.4	18.5	32.1	21.6	47	13.3	81.1	10.4	80.5	76.9	83.6
Bulk Ro Con 2	2.2	43.1	7.40	28.1	8.95	30	4.41	6.8	1.9	7.0	10.3	5.8
Bulk Ro Con 3	1.6	31.5	3.88	26.1	4.87	16	1.95	2.6	1.3	2.8	4.0	1.9
Bulk Ro Con 4	1.0	19.2	4.55	26.8	5.36	13	1.47	1.9	0.8	1.9	2.0	0.9
Bulk Ro Tail*	85.1	1705.4	0.21	31.8	0.25	1	0.15	7.6	85.6	7.8	6.8	7.8
Feed	100.0	2004.6	2.34	31.6	2.75	6	1.63	100	100	100	100	100

*Since Ag value was <1, value was estimated.

KM4508-04 ED Composite
Cumulative Metallurgical Balance

Cumulative	Cum. Weight		Assay - percent or g/t					Distribution - percent				
Product	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Product 1	10.2	205.4	18.5	32.1	21.6	47	13.3	81.1	10.4	80.5	76.9	83.6
Product 1 to 2	12.4	248.5	16.6	31.4	19.4	44	11.8	87.9	12.3	87.5	87.2	89.4
Product 1 to 3	14.0	280.0	15.1	30.8	17.8	41	10.7	90.5	13.6	90.3	91.2	91.3
Product 1 to 4	14.9	299.2	14.5	30.6	17.0	39	10.1	92.4	14.4	92.2	93.2	92.2
Product 5	85.1	1705.4	0.21	31.8	0.25	1	0.15	7.6	85.6	7.8	6.8	7.8
Feed	100.0	2004.6	2.34	31.6	2.75	6	1.63	100	100	100	100	100

DATE: May 12, 2015

PROJECT NO: KM4508-05

PURPOSE: To Determine the Amount of Magnetic Material in Sample.

PROCEDURE: Perform a Standard Davis Tube Magnetic Separation Test.

FEED: 30g of ED Composite Pulverized Head Sample.

Conditions	Cycle I		
Mass (g)	30		
DCV	83		
DCA	1.3		
Gauss	4000		
Flow Rate (1 min)	0.4		
Agitation Speed (rpm)	82		
Time (min)	8 Minutes		
Comments:	Clear at 7 Minutes		

KM4508-05 ED Composite
Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t					Distribution - percent				
	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Magnetic Con	27.9	8.2	0.20	**68.4**	0.25	1	0.86	2.7	59.5	2.6	2.1	15.7
Magnetic Tail	72.1	21.2	2.76	18.0	3.65	9	1.78	97.3	40.5	97.4	97.9	84.3
Feed	100.0	29.4	2.05	32.1	2.70	7	1.52	100	100	100	100	100

KM4508-05 ED Composite
Cumulative Metallurgical Balance

Cumulative	Cum. Weight		Assay - percent or g/t					Distribution - percent				
Product	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Product 1	27.9	8.2	0.20	68.4	0.25	1	0.86	2.7	59.5	2.6	2.1	15.7
Product 2	72.1	21.2	2.76	18.0	3.65	9	1.78	97.3	40.5	97.4	97.9	84.3
Feed	100.0	29.4	2.05	32.1	2.70	7	1.52	100	100	100	100	100

DATE: May 12, 2015

PROJECT NO: KM4508-06

PURPOSE: Investigate a Coarse Primary Grind.

PROCEDURE: Perform a one product rougher test.

FEED: 2 kg of ED Composite ore ground to a nominal 189μm K_{80}.

Stage	Reagents Added g/tonne			Time (minutes)			pH	Redox
	Lime	PAX	MIBC	Grind	Cond.	Float		
Primary Grind	150			12			9.3	164
Bulk CIRCUIT:								
Rougher 1		30	15		1	2	9.3	136
Rougher 2		30	8		1	2	9.2	126
Rougher 3		30	-		1	3	9.1	97
Rougher 4		30	8		1	3	8.9	61

Flotation Data	Rougher
Flotation Machine	D2E
Cell Size in liters	4.4
Aspiration	Air
Water Type	Fresh
Impeller Speed in rpm	1100

Grinding Data	Primary Grind
Mill:	M4-Mild
Charge/Material:	20kg-Mild
Water:	1000 ml

KM4508-06 ED Composite
Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t					Distribution - percent				
	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Bulk Ro Con 1	9.1	182.5	17.5	29.6	22.7	53	13.5	74.6	8.2	76.4	70.3	80.0
Bulk Ro Con 2	2.9	58.3	5.62	25.6	7.39	27	3.41	7.7	2.3	7.9	11.4	6.5
Bulk Ro Con 3	1.6	31.5	2.66	24.8	3.42	16	1.89	2.0	1.2	2.0	3.7	1.9
Bulk Ro Con 4	1.4	28.6	2.25	23.5	2.64	11	1.24	1.5	1.0	1.4	2.3	1.2
Bulk Ro Tail	85.0	1701.7	0.36	33.6	0.39	1	0.19	14.3	87.3	12.2	12.4	10.5
Feed	100.0	2002.6	2.14	32.7	2.71	7	1.54	100	100	100	100	100

KM4508-06 ED Composite
Cumulative Metallurgical Balance

Cumulative	Cum. Weight		Assay - percent or g/t					Distribution - percent				
Product	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Product 1	9.1	182.5	17.5	29.6	22.7	53	13.5	74.6	8.2	76.4	70.3	80.0
Product 1 to 2	12.0	240.8	14.6	28.6	19.0	47	11.1	82.2	10.5	84.4	81.7	86.4
Product 1 to 3	13.6	272.3	13.2	28.2	17.2	43	10.0	84.2	11.7	86.4	85.4	88.4
Product 1 to 4	15.0	300.9	12.2	27.7	15.8	40	9.16	85.7	12.7	87.8	87.6	89.5
Product 5	85.0	1701.7	0.36	33.6	0.39	1	0.19	14.3	87.3	12.2	12.4	10.5
Feed	100.0	2002.6	2.14	32.7	2.71	7	1.54	100	100	100	100	100

DATE: May 15, 2015

PROJECT NO: KM4508-07

PURPOSE: Preliminary Magnetic Separation Test.

PROCEDURE: Perform a Standard Davis Tube Magnetic Separation Test.

FEED: 30g of Test 04 Bulk Rougher Tail.

Conditions	Cycle I		
Mass (g)	30		
DCV	81		
DCA	1.3		
Gauss	4000		
Flow Rate (1 min)	0.4		
Agitation Speed (rpm)	82		
Time (min)	5 Minutes		
Comments:	Clear at 4.5 Minutes		

KM4508-07 Test 04 Bulk Rougher Tail
Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t					Distribution - percent				
	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Magnetic Con	33.4	9.9	0.10	**67.0**	0.11	2	0.14	18.6	64.8	15.6	66.8	17.6
Magnetic Tail	66.6	19.7	0.22	18.3	0.30	1	0.33	81.4	35.2	84.4	33.2	82.4
Feed	100.0	29.6	0.18	34.6	0.24	1	0.27	100	100	100	100	100

KM4508-07 Test 04 Bulk Rougher Tail
Cumulative Metallurgical Balance

Cumulative	Cum. Weight		Assay - percent or g/t					Distribution - percent				
Product	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Product 1	33.4	9.9	0.10	67.0	0.11	2	0.14	18.6	64.8	15.6	66.8	17.6
Product 2	66.6	19.7	0.22	18.3	0.30	1	0.33	81.4	35.2	84.4	33.2	82.4
Feed	100.0	29.6	0.18	34.6	0.24	1	0.27	100	100	100	100	100

DATE: May 15, 2015

PROJECT NO: KM4508-08

PURPOSE: Preliminary Cleaner Test.

PROCEDURE: Perform a standard one product cleaner test.

FEED: 2 kg of ED Composite ore ground to a nominal 146µm K_{80}.
Bulk Regrind Discharge - 69µm K_{80}.

Stage	Reagents Added g/tonne			Time (minutes)			pH	Redox
	Lime	PAX	MIBC	Grind	Cond.	Float		
Primary Grind	150			15			9.1	190
Bulk CIRCUIT:								
Rougher 1	-	30	8		1	2	9.1	106
Rougher 2	-	30	-		1	2	9.0	82
Rougher 3	-	30	-		1	3	9.0	21
Rougher 4	-	30	-		1	3	9.0	19
Regrind	50			5			9.3	155
Cleaner 1	-	20	30		1	8	9.3	100
Cleaner 2	-	5	30		1	7	8.8	176
Cleaner 3	-	5	30		1	6	8.6	120

Flotation Data	Rougher	Cleaner
Flotation Machine	D2E	D1C
Cell Size in liters	4.4	2.2
Aspiration	Air	
Water Type	Fresh	
Impeller Speed in rpm	1100	1200

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M4-Mild	RM4-Mild
Charge/Material:	20kg-Mild	6kg-Stainless Steel
Water:	1000ml	estimated

KM4508-08 ED Composite
Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t					Distribution - percent				
	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Bulk Concentrate	9.2	184.2	**22.5**	30.7	27.1	59	14.0	92.1	8.7	91.7	78.3	87.9
Bulk 3rd Clnr Tail	0.4	8.6	3.04	26.6	4.03	27	4.00	0.6	0.4	0.6	1.7	1.2
Bulk 2nd Clnr Tail	1.3	25.9	1.90	24.2	2.54	18	1.91	1.1	1.0	1.2	3.4	1.7
Bulk 1st Clnr Tail	5.4	107.5	0.59	26.4	0.78	6	0.82	1.4	4.4	1.5	4.6	3.0
Bulk Rougher Tail	83.7	1672.0	0.13	33.2	0.16	1	0.11	4.8	85.6	4.9	12.0	6.3
Feed	100.0	1998.2	2.25	32.5	2.72	7	1.47	100	100	100	100	100

KM4508-08 ED Composite
Cumulative Metallurgical Balance

Cumulative Product	Cum. Weight		Assay - percent or g/t					Distribution - percent				
	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Product 1	9.2	184.2	22.5	30.7	27.1	59	14.0	92.1	8.7	91.7	78.3	87.9
Product 1 to 2	9.6	192.8	21.6	30.5	26.1	58	13.6	92.7	9.1	92.3	80.0	89.0
Product 1 to 3	10.9	218.7	19.3	29.8	23.3	53	12.2	93.8	10.0	93.5	83.3	90.7
Product 1 to 4	16.3	326.2	13.1	28.7	15.9	37	8.43	95.2	14.4	95.1	88.0	93.7
Product 5	83.7	1672.0	0.13	33.2	0.16	1	0.11	4.8	85.6	4.9	12.0	6.3
Feed	100.0	1998.2	2.25	32.5	2.72	7	1.47	100	100	100	100	100

DATE: May 20, 2015

PROJECT NO: KM4508-09

PURPOSE: To Repeat Test 08 With a Fine Regrind.

PROCEDURE: Perform a standard one product cleaner test.

FEED: 2 kg of ED Composite ore ground to a nominal 146µm K_{80}.
Bulk Regrind Discharge - 48µm K_{80}.

Stage	Reagents Added g/tonne			Time (minutes)			pH	Redox
	Lime	PAX	MIBC	Grind	Cond.	Float		
Primary Grind	150			15			9.2	155
Bulk CIRCUIT:								
Rougher 1		30	30		1	2	9.2	105
Rougher 2		30	-		1	2	9.1	105
Rougher 3		30	8		1	3	9.1	86
Rougher 4		30	8		1	3	8.9	80
Regrind	50			12			9.1	127
Cleaner 1	-	10	75		1	8	9.1	111
Cleaner 2	-	2	75		1	7	8.7	169
Cleaner 3	-	1	90		1	6	8.5	170

Flotation Data	Rougher	Cleaner
Flotation Machine	D2C	D1C
Cell Size in liters	4.4	2.2
Aspiration	Air	
Water Type	Fresh	
Impeller Speed in rpm	1100	1200

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M4-Mild	RM4-Mild
Charge/Material:	20kg-Mild	6kg-Stainless Steel
Water:	1000ml	estimated

KM4508-09 ED Composite
Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t					Distribution - percent				
	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Bulk Concentrate	9.0	180.5	**23.4**	31.3	27.6	59	14.7	93.9	8.7	93.5	76.7	84.7
Bulk 3rd Clnr Tail	0.9	18.8	2.64	24.2	3.69	24	3.86	1.1	0.7	1.3	3.3	2.3
Bulk 2nd Clnr Tail	1.9	37.3	1.40	26.0	1.84	13	1.88	1.2	1.5	1.3	3.5	2.2
Bulk 1st Clnr Tail	5.3	105.8	0.52	27.5	0.74	6	1.47	1.2	4.5	1.5	4.6	5.0
Bulk Rougher Tail	82.9	1659.2	0.07	33.1	0.08	1	0.11	2.6	84.6	2.5	12.0	5.8
Feed	100.0	2001.6	2.25	32.4	2.66	7	1.57	100	100	100	100	100

KM4508-09 ED Composite
Cumulative Metallurgical Balance

Cumulative	Cum. Weight		Assay - percent or g/t					Distribution - percent				
Product	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Product 1	9.0	180.5	23.4	31.3	27.6	59	14.7	93.9	8.7	93.5	76.7	84.7
Product 1 to 2	10.0	199.3	21.4	30.6	25.3	56	13.7	95.0	9.4	94.8	80.0	87.0
Product 1 to 3	11.8	236.6	18.3	29.9	21.6	49	11.8	96.2	10.9	96.0	83.5	89.2
Product 1 to 4	17.1	342.4	12.8	29.2	15.2	36	8.62	97.4	15.4	97.5	88.0	94.2
Product 5	82.9	1659.2	0.07	33.1	0.08	1	0.11	2.6	84.6	2.5	12.0	5.8
Feed	100.0	2001.6	2.25	32.4	2.66	7	1.57	100	100	100	100	100

DATE: May 20, 2015

PROJECT NO: KM4508-10

PURPOSE: To Repeat Test 09 at a Fine Regrind.

PROCEDURE: Perform a standard one product cleaner test.

FEED: 2 kg of ED Composite ore ground to a nominal 146µm K_{80}.
Bulk Regrind Discharge - 36µm K_{80}.

Stage	Reagents Added g/tonne				Time (minutes)			pH	Redox
	Lime	PAX	W34	MIBC	Grind	Cond.	Float		
Primary Grind	150				15			9.2	163
Bulk CIRCUIT:									
Rougher 1		30		30		1	2	9.2	120
Rougher 2		30		-		1	2	9.2	75
Rougher 3		30		8		1	3	9.1	66
Rougher 4		30		8		1	3	9.0	56
Regrind	50				20			9.1	125
Cleaner 1		10	56	30		1	8	9.1	116
Cleaner 2		2	112	30		1	7	8.7	67
Cleaner 3		1	112	30		1	6	8.5	158

Flotation Data	Rougher	Cleaner
Flotation Machine	D2C	D1C
Cell Size in liters	4.4	2.2
Aspiration	Air	
Water Type	Fresh	
Impeller Speed in rpm	1100	1200

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M4-Mild	RM4-Mild
Charge/Material:	20kg-Mild	6kg-Stainless Steel
Water:	1000ml	estimated

KM4508-10 ED Composite
Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t					Distribution - percent				
	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Bulk Concentrate	8.2	165.2	**25.9**	31.7	30.6	67	13.8	93.6	8.1	92.5	75.6	75.7
Bulk 3rd Clnr Tail	0.6	12.7	2.72	24.9	4.06	26	4.44	0.8	0.5	0.9	2.3	1.9
Bulk 2nd Clnr Tail	1.9	38.8	1.71	25.5	2.54	19	2.62	1.5	1.5	1.8	5.0	3.4
Bulk 1st Clnr Tail	6.0	120.5	0.61	27.0	0.93	7	2.56	1.6	5.0	2.0	5.8	10.2
Bulk Rougher Tail	83.2	1665.5	0.07	33.1	0.09	1	0.16	2.6	84.9	2.7	11.4	8.8
Feed	100.0	2002.7	2.28	32.4	2.73	7	1.50	100	100	100	100	100

KM4508-10 ED Composite
Cumulative Metallurgical Balance

Cumulative	Cum. Weight		Assay - percent or g/t					Distribution - percent				
Product	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Product 1	8.2	165.2	25.9	31.7	30.6	67	13.8	93.6	8.1	92.5	75.6	75.7
Product 1 to 2	8.9	177.9	24.2	31.2	28.7	64	13.1	94.3	8.6	93.4	77.8	77.5
Product 1 to 3	10.8	216.7	20.2	30.2	24.0	56	11.2	95.8	10.1	95.2	82.9	80.9
Product 1 to 4	16.8	337.2	13.2	29.1	15.8	38	8.14	97.4	15.1	97.3	88.6	91.2
Product 5	83.2	1665.5	0.07	33.1	0.09	1	0.16	2.6	84.9	2.7	11.4	8.8
Feed	100.0	2002.7	2.28	32.4	2.73	7	1.50	100	100	100	100	100

DATE: May 27, 2015

PROJECT NO: KM4508-11

PURPOSE: Preliminary Magnetic Separation Test.

PROCEDURE: Perform a Standard Davis Tube Magnetic Separation Test.

FEED: KM4508 Test 09 Bulk Concentrate.

Conditions	Cycle I		
Mass (g)	30		
DCV	18		
DCA	0.3		
Gauss	1000		
Flow Rate (1 min)	0.4		
Agitation Speed (rpm)	82		
Time (min)	5 Minutes		
Comments:			

KM4508-11 Test 09 Bulk Concentrate
Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t					Distribution - percent				
	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Magnetic Con	8.8	2.6	7.00	**53.3**	8.55	50	nes	2.7	14.6	2.7	7.5	-
Magnetic Tail	91.2	27.1	23.8	29.8	29.5	59	15.9	97.3	85.4	97.3	92.5	-
Feed	100.0	29.7	22.3	31.9	27.7	58	-	100	100	100	100	0

KM4508-11 Test 09 Bulk Concentrate
Cumulative Metallurgical Balance

Cumulative Product	Cum. Weight		Assay - percent or g/t					Distribution - percent				
	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Product 1	8.8	2.6	7.00	53.3	8.55	50	-	2.7	14.6	2.7	7.5	-
Product 2	91.2	27.1	23.8	29.8	29.5	59	-	97.3	85.4	97.3	92.5	-
Feed	100.0	29.7	22.3	31.9	27.7	58	-	100	100	100	100	0

DATE: May 27, 2015

PROJECT NO: KM4508-12

PURPOSE: Preliminary Magnetic Separation Test.

PROCEDURE: Perform a Standard Davis Tube Magnetic Separation Test.

FEED: KM4508 Test 10 Bulk Concentrate.

Conditions	Cycle I		
Mass (g)	30		
DCV	18		
DCA	0.3		
Gauss	1000		
Flow Rate (1 min)	0.4		
Agitation Speed (rpm)	82		
Time (min)	5 Minutes		
Comments:			

KM4508-12 Test 10 Bulk Concentrate
Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t					Distribution - percent				
	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Magnetic Con	6.1	1.8	8.30	**53.9**	9.98	57	nes	2.2	10.2	2.0	5.5	-
Magnetic Tail	93.9	27.8	23.8	30.6	31.3	63	12.4	97.8	89.8	98.0	94.5	-
Feed	100.0	29.6	22.9	32.0	30.0	63	-	100	100	100	100	0

KM4508-12 Test 10 Bulk Concentrate
Cumulative Metallurgical Balance

Cumulative	Cum. Weight		Assay - percent or g/t					Distribution - percent				
Product	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Product 1	6.1	1.8	8.30	53.9	9.98	57	-	2.2	10.2	2.0	5.5	0.0
Product 2	93.9	27.8	23.8	30.6	31.3	63	-	97.8	89.8	98.0	94.5	-
Feed	100.0	29.6	22.9	32.0	30.0	63	-	100	100	100	100	0

DATE: June 1, 2015

PROJECT NO: KM4508-13

PURPOSE: To Repeat Test 10 at a Fine Regrind.

PROCEDURE: Perform a standard one product cleaner test.

FEED: 2 kg of ED Composite ore ground to a nominal 146µm K_{80}.
Bulk Regrind Discharge - 9µm K_{80}.

Stage	Reagents Added g/tonne				Time (minutes)			pH	Redox
	Lime	PAX	W34	MIBC	Grind	Cond.	Float		
Primary Grind	150				15			9.0	-42
Bulk CIRCUIT:									
Rougher 1	-	30		30		1	2	9.0	-62
Rougher 2	-	30		-		1	2	8.8	-34
Rougher 3	-	30		-		1	3	8.8	-2
Rougher 4	-	30		-		1	3	8.7	-16
Regrind	50				15			9.0	-52
Cleaner 1	-	10	14			1	8	9.0	-64
Cleaner 2	-	2	-			1	7	8.4	-66
Cleaner 3	-	1	-			1	6	8.3	-14

Flotation Data	Rougher	Cleaner
Flotation Machine	D2A	D1B
Cell Size in liters	4.4	2.2
Aspiration	Air	
Water Type	Fresh	
Impeller Speed in rpm	1100	1200

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M4-Mild	Stirred Mill
Charge/Material:	20kg-Mild	1.2kg-Beads
Water:	1000ml	estimated

KM4508-13 ED Composite
Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t					Distribution - percent				
	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Bulk Concentrate	6.3	125.1	**31.8**	27.8	34.0	79	17.0	90.0	5.6	80.2	71.3	74.8
Bulk 3rd Clnr Tail	0.6	12.6	5.86	26.7	15.90	48	8.39	1.7	0.5	3.8	4.4	3.7
Bulk 2nd Clnr Tail	1.8	36.3	2.36	24.5	8.16	21	6.21	1.9	1.4	5.6	5.5	7.9
Bulk 1st Clnr Tail	5.7	113.1	0.68	26.0	2.81	8	1.14	1.7	4.7	6.0	6.5	4.5
Bulk Rougher Tail	85.6	1703.5	0.12	32.0	0.14	1	0.15	4.6	87.7	4.5	12.3	9.0
Feed	100.0	1990.6	2.22	31.2	2.67	7	1.43	100	100	100	100	100

KM4508-13 ED Composite
Cumulative Metallurgical Balance

Cumulative	Cum. Weight		Assay - percent or g/t					Distribution - percent				
Product	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Product 1	6.3	125.1	31.8	27.8	34.0	79	17.0	90.0	5.6	80.2	71.3	74.8
Product 1 to 2	6.9	137.7	29.4	27.7	32.3	76	16.2	91.7	6.1	83.9	75.7	78.5
Product 1 to 3	8.7	174.0	23.8	27.0	27.3	65	14.1	93.6	7.6	89.5	81.2	86.5
Product 1 to 4	14.4	287.1	14.7	26.6	17.7	42	9.01	95.4	12.3	95.5	87.7	91.0
Product 5	85.6	1703.5	0.12	32.0	0.14	1	0.15	4.6	87.7	4.5	12.3	9.0
Feed	100.0	1990.6	2.22	31.2	2.67	7	1.43	100	100	100	100	100

DATE: June 4, 2015

PROJECT NO: KM4508-14

PURPOSE: To Repeat Test 13 at a Coarser Regrind.

PROCEDURE: Perform a standard one product cleaner test.

FEED: 2 kg of ED Composite ore ground to a nominal 146µm K_{80}.
Bulk Regrind Discharge - 12µm K_{80}.

Stage	Reagents Added g/tonne			Time (minutes)			pH	Redox
	Lime	PAX	MIBC	Grind	Cond.	Float		
Primary Grind	150			15			9.1	63
Bulk CIRCUIT:								
Rougher 1	-	30	15		1	2	9.0	-12
Rougher 2	-	30	15		1	2	9.0	-29
Rougher 3	-	30	15		1	3	8.9	-41
Rougher 4	-	30	-		1	3	8.8	-43
Regrind	50			8			8.6	-18
Cleaner 1	-	10	45		1	8	8.4	-3
Cleaner 2	-	2	15		1	7	8.4	-4
Cleaner 3	-	1	15		1	6	8.4	-23

Flotation Data	Rougher	Cleaner
Flotation Machine	D2A	D1B
Cell Size in liters	4.4	2.2
Aspiration	Air	
Water Type	Fresh	
Impeller Speed in rpm	1100	1200

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M4-Mild	Stirred Mill
Charge/Material:	20kg-Mild	1.2kg-Beads
Water:	1000ml	estimated

KM4508-14 ED Composite
Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t					Distribution - percent				
	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Bulk Concentrate	7.0	139.2	**29.8**	29.3	34.7	79	17.6	92.5	6.8	89.3	82.8	81.1
Bulk 3rd Clnr Tail	0.4	7.7	4.51	24.0	9.71	37	6.58	0.8	0.3	1.4	2.1	1.7
Bulk 2nd Clnr Tail	1.1	22.1	1.82	22.9	4.33	19	2.94	0.9	0.8	1.8	3.2	2.1
Bulk 1st Clnr Tail	6.1	121.7	0.47	26.1	1.09	6	1.65	1.3	5.3	2.5	5.5	6.6
Bulk Rougher Tail	85.4	1706.8	0.12	30.6	0.16	1	0.15	4.6	86.8	5.1	6.4	8.5
Feed	100.0	1997.5	2.25	30.1	2.71	7	1.51	100	100	100	100	100

KM4508-14 ED Composite
Cumulative Metallurgical Balance

Cumulative	Cum. Weight		Assay - percent or g/t					Distribution - percent				
Product	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Product 1	7.0	139.2	29.8	29.3	34.7	79	17.6	92.5	6.8	89.3	82.8	81.1
Product 1 to 2	7.4	146.9	28.5	29.0	33.4	77	17.0	93.3	7.1	90.7	84.9	82.7
Product 1 to 3	8.5	169.0	25.0	28.2	29.6	69	15.2	94.2	7.9	92.5	88.1	84.9
Product 1 to 4	14.6	290.7	14.7	27.3	17.7	43	9.52	95.4	13.2	94.9	93.6	91.5
Product 5	85.4	1706.8	0.12	30.6	0.16	1	0.15	4.6	86.8	5.1	6.4	8.5
Feed	100.0	1997.5	2.25	30.1	2.71	7	1.51	100	100	100	100	100

DATE: June 8, 2015

PROJECT NO: KM4508-15

PURPOSE: To Repeat Test 04 With Less Collector.

PROCEDURE: Perform a one product rougher test.

FEED: 2 kg of ED Composite ore ground to a nominal 146μm K_{80}.

Stage	Reagents Added g/tonne			Time (minutes)			pH	Redox
	Lime	PAX	MIBC	Grind	Cond.	Float		
Primary Grind	150			15			9.1	30
Bulk CIRCUIT:								
Rougher 1	-	20	15		1	2	9.0	15
Rougher 2	-	20	8		1	2	9.0	-32
Rougher 3	-	20	8		1	3	9.0	-5
Rougher 4	-	20	8		1	3	8.9	-21

Flotation Data	Rougher
Flotation Machine	D2A
Cell Size in liters	4.4
Aspiration	Air
Water Type	Fresh
Impeller Speed in rpm	1100

Grinding Data	Primary Grind
Mill:	M4-Mild
Charge/Material:	20kg-Mild
Water:	1000 ml

KM4508-15 ED Composite
Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t					Distribution - percent				
	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Bulk Ro Con 1	9.5	190.7	19.6	29.8	25.8	58	15.2	78.8	9.1	81.0	70.1	84.1
Bulk Ro Con 2	2.7	53.5	9.10	27.4	10.2	31	3.42	10.3	2.3	9.0	10.5	5.3
Bulk Ro Con 3	1.7	34.2	8.00	27.0	8.43	22	1.99	5.8	1.5	4.7	4.8	2.0
Bulk Ro Con 4	1.4	28.7	3.73	26.2	4.02	21	1.55	2.3	1.2	1.9	3.8	1.3
Bulk Ro Tail*	84.7	1694.2	0.08	31.7	0.12	1	0.15	2.9	85.9	3.3	10.7	7.4
Feed	100.0	2001.3	2.37	31.2	3.03	8	1.72	100	100	100	100	100

*Since Ag value was <1, value was estimated.

KM4508-15 ED Composite
Cumulative Metallurgical Balance

Cumulative	Cum. Weight		Assay - percent or g/t					Distribution - percent				
Product	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Product 1	9.5	190.7	19.6	29.8	25.8	58	15.2	78.8	9.1	81.0	70.1	84.1
Product 1 to 2	12.2	244.2	17.3	29.3	22.4	52	12.6	89.0	11.4	90.0	80.7	89.4
Product 1 to 3	13.9	278.4	16.2	29.0	20.7	48	11.3	94.8	12.9	94.8	85.4	91.3
Product 1 to 4	15.3	307.1	15.0	28.7	19.1	46	10.4	97.1	14.1	96.7	89.3	92.6
Product 5	84.7	1694.2	0.08	31.7	0.12	1	0.15	2.9	85.9	3.3	10.7	7.4
Feed	100.0	2001.3	2.37	31.2	3.03	8	1.72	100	100	100	100	100

DATE: June 10, 2015

PROJECT NO: KM4508-16

PURPOSE: Batch Cleaner Test With Test 15 Rougher Conditions.

PROCEDURE: Perform a standard one product cleaner test.

FEED: 2 kg of ED Composite ore ground to a nominal 146µm K_{80}.
Bulk Regrind Discharge - 70µm K_{80}.

Stage	Reagents Added g/tonne			Time (minutes)			pH	Redox
	Lime	PAX	MIBC	Grind	Cond.	Float		
Primary Grind	150			15			9.0	-68
Bulk CIRCUIT:								
Rougher 1	-	20	8		1	2	9.0	-104
Rougher 2	√	20	-		1	2	9.0	82
Rougher 3	√	20	-		1	3	9.0	84
Rougher 4	√	20	8		1	3	9.0	101
Regrind	50			5			9.2	105
Cleaner 1		15	15		1	7	9.2	100
Cleaner 2		5	23		1	6	8.7	146
Cleaner 3		5	23		1	5	8.7	151

Flotation Data	Rougher	Cleaner	Grinding Data	Primary Grind	Bulk Regrind
Flotation Machine	D2A	D1B	Mill:	M4-Mild	RM4-Mild
Cell Size in liters	4.4	2.2	Charge/Material:	20kg-Mild	6kg-Stainless Steel
Aspiration	Air		Water:	1000ml	estimated
Water Type	Fresh				
Impeller Speed in rpm	1100	1200			

KM4508-16 ED Composite
Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t					Distribution - percent				
	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Bulk Concentrate	9.6	191.2	**22.6**	31.6	29.1	58	13.1	93.5	9.6	92.7	78.2	83.8
Bulk 3rd Clnr Tail	0.5	9.0	3.11	26.7	4.53	28	6.06	0.6	0.4	0.7	1.8	1.8
Bulk 2nd Clnr Tail	1.3	25.3	2.09	25.9	3.12	19	2.70	1.1	1.0	1.3	3.4	2.3
Bulk 1st Clnr Tail	5.0	99.1	0.57	27.0	0.85	7	1.14	1.2	4.2	1.4	4.9	3.8
Bulk Rougher Tail	83.7	1672.6	0.10	32.0	0.14	1	0.15	3.5	84.8	3.9	11.8	8.4
Feed	100.0	1997.2	2.31	31.6	3.01	7	1.50	100	100	100	100	100

KM4508-16 ED Composite
Cumulative Metallurgical Balance

Cumulative	Cum. Weight		Assay - percent or g/t					Distribution - percent				
Product	%	grams	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Product 1	9.6	191.2	22.6	31.6	29.1	58	13.1	93.5	9.6	92.7	78.2	83.8
Product 1 to 2	10.0	200.2	21.7	31.4	28.0	57	12.8	94.1	10.0	93.4	79.9	85.6
Product 1 to 3	11.3	225.5	19.5	30.8	25.2	52	11.7	95.2	11.0	94.7	83.3	87.9
Product 1 to 4	16.3	324.6	13.7	29.6	17.8	39	8.47	96.5	15.2	96.1	88.2	91.6
Product 5	83.7	1672.6	0.10	32.0	0.14	1	0.15	3.5	84.8	3.9	11.8	8.4
Feed	100.0	1997.2	2.31	31.6	3.01	7	1.50	100	100	100	100	100

DATE: June 16, 2015

PROJECT NO: KM4508-17

PURPOSE: Preliminary Locked Cycle Test.

PROCEDURE: Perform a standard one product locked cycle test.

FEED: 5 x 2 kg of ED Composite ore ground to a nominal 146 µm K_{80}.
Bulk Regrind Discharge - 60µm K_{80}.

Stage	Reagents Added g/tonne			Time (minutes)			pH	Redox
	Lime	PAX	MIBC	Grind	Cond.	Float		
Primary Grind	150			15			9.1	107
Bulk CIRCUIT:								
Rougher 1	-	20	15		1	2	9.1	38
Rougher 2	-	20	-		1	2	8.9	36
Rougher 3	-	20	8		1	3	8.8	55
Rougher 4	-	20	4		1	3	8.7	101
Regrind	50			5			9.1	125
			W34					
Cleaner 1	-	8	84		1	8	9.1	96
Cleaner 2	-	3	84		1	7	8.8	125
Cleaner 3	-	3	84		1	6	8.6	126

Flotation Data	Rougher	Cleaner
Flotation Machine:	D2A	D1B
Cell Size in liters:	4.4	2.2
Aspiration:	Air	
Water Type:	Fresh	
Impeller Speed in rpm:	1100	1200

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M4-Mild	RM4-Mild
Charge/Material:	20kg-Mild	6kg-Stainless Steel
Water:	1000ml	estimated

KM4508-17

Estimated Dry Weight Table

Product	Cycles - Weight (gms)				
	I	II	III	IV	V
Bulk CIRCUIT:					
Rougher Concentrate	325	325	325	320	325
Cleaner Tail 1	100	140	130	125	140
Cleaner Tail 2	31	39	46	46	53
Cleaner Tail 3	15	15	17	17	17
Bulk Concentrate	175	180	180	185	190
Primary Discharge pH	9.2	9.1	9.1	9.1	9.1
Primary Discharge Redox	115	102	122	112	107

KM4508-17 ED Composite

OVERALL CYCLE TEST MASS AND METALLURGICAL BALANCE

Product	Weight	Weight	Assay - percent or g/t					Distribution - percent				
	%	g	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
Bulk Con I	2.0	196.3	**21.8**	30.7	28.4	57	12.9	17.8	1.9	18.0	15.6	16.3
Bulk Con II	2.0	202.3	**22.3**	30.3	28.7	56	12.8	18.9	1.9	18.7	15.8	16.7
Bulk Con III	2.1	206.7	**22.0**	31.7	27.9	58	13.4	19.0	2.1	18.6	16.7	17.9
Bulk Con IV	2.1	207.8	**22.4**	30.5	29.0	57	12.4	19.4	2.0	19.4	16.5	16.6
Bulk Con V	2.1	210.1	**22.1**	30.3	28.5	57	14.4	19.4	2.0	19.3	16.7	19.5
Bulk 3rd Clnr Tail	0.1	14.7	3.26	24.4	4.73	31	3.66	0.2	0.1	0.2	0.6	0.3
Bulk 2nd Clnr Tail	0.5	45.5	2.01	23.9	2.94	21	1.98	0.4	0.3	0.4	1.3	0.6
Bulk 1st Clnr Tail I	1.1	106.4	0.54	25.6	0.81	7	1.27	0.2	0.9	0.3	1.0	0.9
Bulk 1st Clnr Tail II	1.4	144.6	0.92	25.6	1.35	10	0.98	0.6	1.2	0.6	2.0	0.9
Bulk 1st Clnr Tail III	1.3	131.5	0.77	25.9	1.12	9	0.94	0.4	1.1	0.5	1.7	0.8
Bulk 1st Clnr Tail IV	1.3	125.6	0.89	25.4	1.27	11	1.02	0.5	1.0	0.5	1.9	0.8
Bulk 1st Clnr Tail V	1.4	142.0	0.84	25.4	1.20	10	0.90	0.5	1.1	0.5	2.0	0.8
Bulk Ro Tail I	16.5	1650.8	0.09	31.8	0.12	1	0.14	0.6	16.7	0.6	2.3	1.5
Bulk Ro Tail II	16.4	1644.4	0.10	32.1	0.13	1	0.15	0.7	16.8	0.7	2.3	1.6
Bulk Ro Tail III*	16.6	1660.1	0.08	32.1	0.11	1	0.17	0.5	16.9	0.6	1.2	1.8
Bulk Ro Tail IV*	16.7	1669.5	0.06	32.1	0.09	1	0.14	0.4	17.0	0.5	1.2	1.5
Bulk Ro Tail V*	16.5	1653.3	0.07	32.3	0.10	1	0.13	0.5	17.0	0.5	1.2	1.4
FEED	100	10012	2.39	31.5	3.10	7	1.55	100.0	100.0	100.0	100.0	100.0

*Ag value lower than 1, values are estimated.

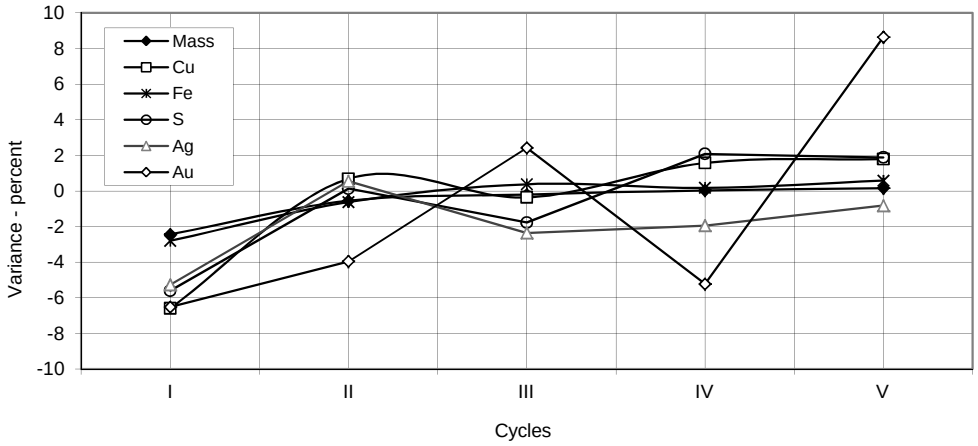
KM4508-17 ED Composite

METALLURGICAL BALANCES BY TEST CYCLES

Product	Weight	Weight	Assay - percent or g/t					Distribution - percent				
	%	g	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
CYCLE IV												
Flotation Feed	100.0	2003	2.43	31.5	3.16	7	1.47	100.0	100.0	100.0	100.0	100.0
Bulk Con	10.4	207.8	22.4	30.5	29.0	57	12.4	95.6	10.0	95.1	84.2	87.7
Bulk 1st Clnr Tail	6.3	125.6	0.89	25.4	1.27	11	1.02	2.3	5.1	2.5	9.8	4.4
Bulk Ro Tail	83.4	1669.5	0.06	32.1	0.09	1	0.14	2.1	84.9	2.4	5.9	8.0
CYCLE V												
Flotation Feed	100.0	2005	2.43	31.6	3.15	7	1.68	100.0	100.0	100.0	100.0	100.0
Bulk Con	10.5	210.1	22.1	30.3	28.5	57	14.4	95.3	10.0	94.7	84.2	89.8
Bulk 1st Clnr Tail	7.1	142.0	0.84	25.4	1.20	10	0.90	2.4	5.7	2.7	10.0	3.8
Bulk Ro Tail	82.4	1653.3	0.07	32.3	0.10	1	0.13	2.3	84.3	2.6	5.8	6.4
CYCLES IV and V												
Flotation Feed	100.0	4008	2.43	31.6	3.16	7	1.57	100.0	100.0	100.0	100.0	100.0
Bulk Con	10.4	417.9	22.3	30.4	28.7	57	13.4	95.4	10.0	94.9	84.2	88.8
Bulk 1st Clnr Tail	6.7	267.6	0.86	25.4	1.23	10	0.96	2.4	5.4	2.6	9.9	4.1
Bulk Ro Tail	82.9	3322.8	0.06	32.2	0.09	1	0.14	2.2	84.6	2.5	5.9	7.1

Cycle Test Stability Data

Cycles	Mass		Calculated Head					Metal Unit Variances (%)				
	%Var.	g/cycle	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
I	-2.4	1953.5	2.29	31.4	3.00	7	1.48	-7	-3	-6	-5	-7
II	-0.6	1991.3	2.42	31.4	3.12	7	1.50	1	-1	0	1	-4
III	-0.2	1998.3	2.39	31.7	3.05	7	1.59	0	0	-2	-2	2
IV	0.0	2002.9	2.43	31.5	3.16	7	1.47	2	0	2	-2	-5
V	0.2	2005.4	2.43	31.6	3.15	7	1.68	2	1	2	-1	9
Total	-	2002.3	2.39	31.5	3.10	7	1.55	-	-	-	-	-



KM4508-17 ED Composite

CYCLES (IV+V) MASS BALANCE FLOWSHEET AND METALLURGICAL BALANCE DATA

Flotation Stream		Weight	Assay (percent or g/t)					Distribution (percent)				
No.	Product	%	Cu	Fe	S	Ag	Au	Cu	Fe	S	Ag	Au
1	Bulk Ro Feed	100.0	2.43	31.6	3.16	7	1.57	100.0	100.0	100.0	100.0	100.0
2	Bulk Ro Tail	82.9	0.06	32.2	0.09	1	0.14	2.2	84.6	2.5	5.9	7.1
3	Bulk Ro Con	17.1	13.9	28.4	18.0	39	8.55	97.8	15.4	97.5	94.1	92.9
4	Bulk 1st Clnr Feed	20.1	12.2	27.8	15.8	37	7.63	100.7	17.7	100.7	104.1	97.4
5	Bulk 1st Clnr Tail	6.7	0.86	25.4	1.23	10	0.96	2.4	5.4	2.6	9.9	4.1
6	Bulk 1st Clnr Con	13.4	17.8	29.0	23.1	49	10.9	98.3	12.3	98.1	94.2	93.4
7	Bulk 2nd Clnr Tail	2.3	2.01	23.9	2.94	21	1.98	1.9	1.7	2.1	6.8	2.9
8	Bulk 2nd Clnr Con	11.2	21.0	30.0	27.2	55	12.8	96.4	10.6	96.0	87.4	90.5
9	Bulk 3rd Clnr Tail	0.7	3.26	24.4	4.73	31	3.66	1.0	0.6	1.1	3.2	1.7
10	Bulk 3rd Clnr Con	10.4	22.3	30.4	28.7	57	13.4	95.4	10.0	94.9	84.2	88.8
11	Final Tail	89.6	0.12	31.7	0.18	1	0.20	4.6	90.0	5.1	15.8	11.2

APPENDIX III – KM4508

PARTICLE SIZING DATA

INDEX

TABLE III-1
SCREEN ANALYSIS
KM4508 ED Composite - 10 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
35 Mesh	425	0.00	100.0
48 Mesh	300	8.80	91.2
65 Mesh	212	19.70	71.5
100 Mesh	150	17.70	53.8
150 Mesh	106	13.00	40.8
200 Mesh	75	10.00	30.8
270 Mesh	53	7.90	22.9
400 Mesh	38	5.00	17.9
TOTAL		100.00	**

K80= 249µm

Note: 10 min. grind calibration using 2 kg. Ore, 1000 ml water and
20 kg. of Mild Steel rods in Mill: M5

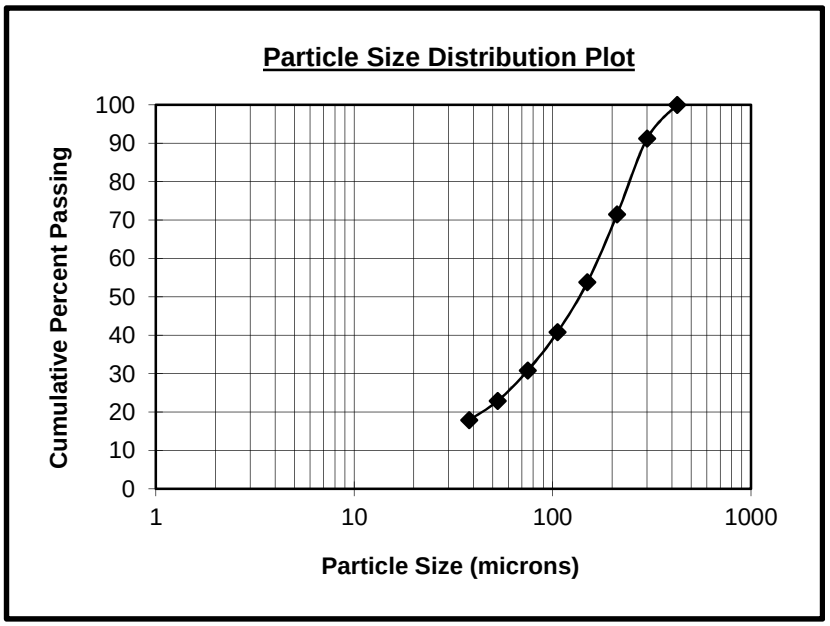


TABLE III-2
SCREEN ANALYSIS
KM4508 ED Composite - 12 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
35 Mesh	425	0.00	100.0
48 Mesh	300	0.50	99.5
65 Mesh	212	12.50	87.0
100 Mesh	150	19.50	67.5
150 Mesh	106	17.20	50.3
200 Mesh	75	12.30	38.0
270 Mesh	53	8.50	29.5
400 Mesh	38	7.20	22.3
TOTAL		100.00	**

K80= 189µm

Note: 12 min. grind calibration using 2 kg. Ore, 1000 ml water and 20 kg. of Mild Steel rods in Mill: M5

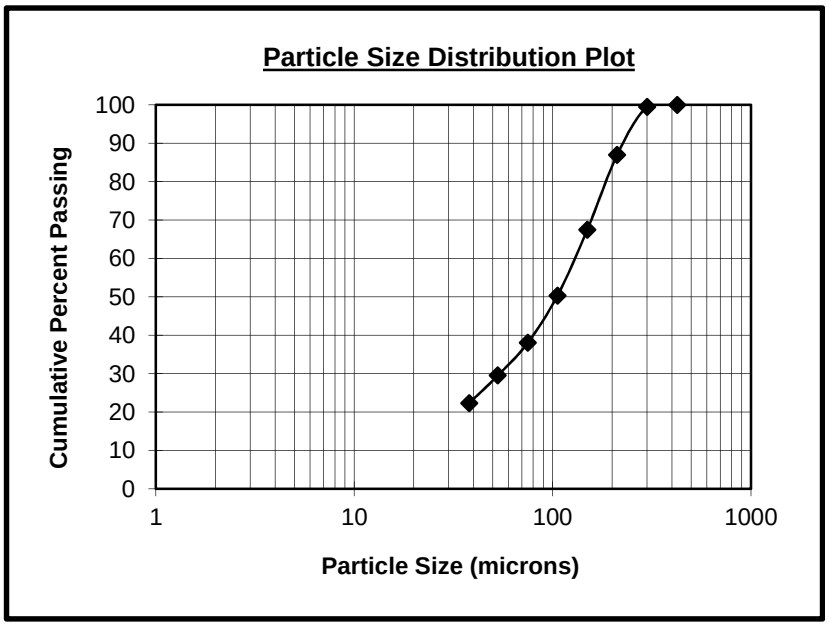
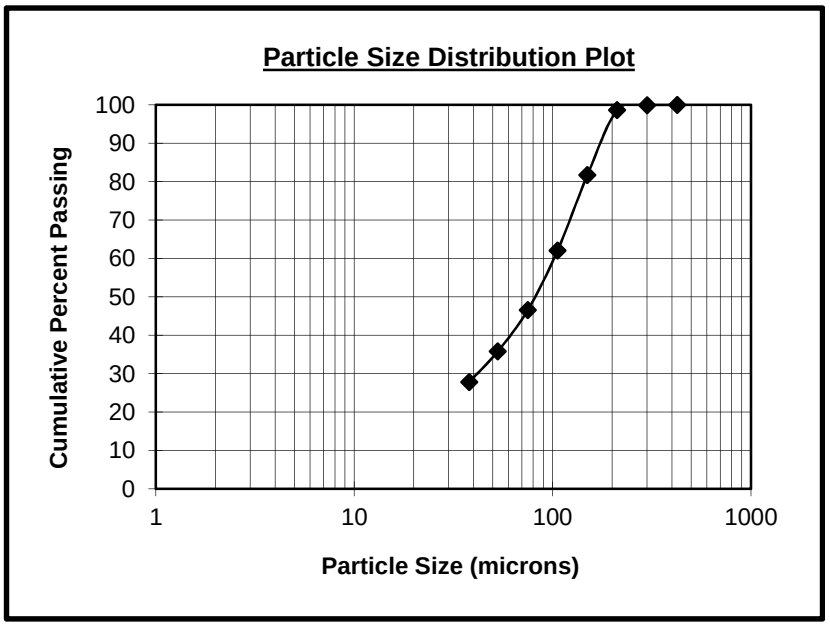


TABLE III-3
SCREEN ANALYSIS
KM4508 ED Composite - 15 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
35 Mesh	425	0.00	100.0
48 Mesh	300	0.10	99.9
65 Mesh	212	1.30	98.6
100 Mesh	150	16.90	81.7
150 Mesh	106	19.70	62.0
200 Mesh	75	15.50	46.5
270 Mesh	53	10.70	35.8
400 Mesh	38	8.00	27.8
TOTAL		100.00	**

K80= 146µm

Note: 15 min. grind calibration using 2 kg. Ore, 1000 ml water and
20 kg. of Mild Steel rods in Mill: M5



ALS Metallurgy

ISO9001:2008
Certificate No. FS63170

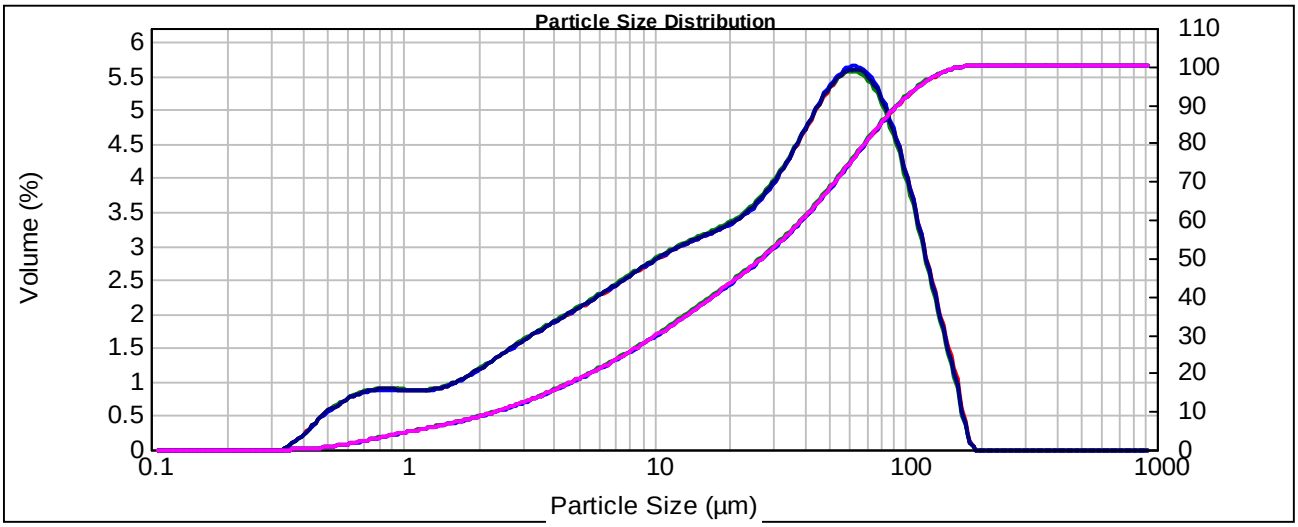
Result Analysis Report

Project and Test number: KM4508-08
Measured by: Kevin
Measured: Friday, May 15, 2015 1:00:52 PM
Sample Name: Copper Regrind Discharge - Average
Edited by: Kevin
Analysed: Friday, May 15, 2015 1:00:53 PM

Particle Name: Silica 0.1
Accessory Name: Hydro 2000MU (A)
Analysis model: General purpose
Sensitivity: Normal
Particle RI: 1.544
Absorption: 0.1
Size range: 0.100 to 1000.000 um
Obscuration: 15.96 %
Dispersant Name: Water
Dispersant RI: 1.330
Weighted Residual: 0.325 %
Result Emulation: Off

Concentration: 0.0161 %Vol
Span : 3.391
Uniformity: 1.08
Result units: Volume
Specific Surface Area: 0.989 m²/g
Surface Weighted Mean D[3,2]: 6.069 um
Vol. Weighted Mean D[4,3]: 38.713 um

d(0.1): 2.379 um d(0.5): 26.923 um **d(0.8): 69.428 um** d(0.9): 93.669 um d(0.98): 135.98 um



Size (µm)	Volume In %	Size (µm)	Volume In %	Size (µm)	Volume In %	Size (µm)	Volume In %	Size (µm)	Volume In %	Size (µm)	Volume In %
0.100	0.00	0.479	0.33	2.291	0.82	10.965	1.75	52.481	3.31	251.189	0.00
0.110	0.00	0.525	0.39	2.512	0.88	12.023	1.79	57.544	3.37	275.423	0.00
0.120	0.00	0.575	0.45	2.754	0.94	13.183	1.84	63.096	3.36	301.995	0.00
0.132	0.00	0.631	0.49	3.020	0.99	14.454	1.87	69.183	3.29	331.131	0.00
0.145	0.00	0.692	0.52	3.311	1.05	15.849	1.91	75.858	3.14	363.078	0.00
0.158	0.00	0.759	0.53	3.631	1.10	17.378	1.95	83.176	2.91	398.107	0.00
0.174	0.00	0.832	0.53	3.981	1.15	19.055	2.00	91.201	2.63	436.516	0.00
0.191	0.00	0.912	0.53	4.365	1.20	20.893	2.05	100.000	2.29	478.630	0.00
0.209	0.00	1.000	0.53	4.786	1.25	22.909	2.12	109.648	1.91	524.807	0.00
0.229	0.00	1.096	0.52	5.248	1.31	25.119	2.21	120.226	1.54	575.440	0.00
0.251	0.00	1.202	0.52	5.754	1.36	27.542	2.31	131.826	1.16	630.957	0.00
0.275	0.00	1.318	0.52	6.310	1.42	30.200	2.44	144.544	0.82	691.831	0.00
0.302	0.00	1.445	0.54	6.918	1.47	33.113	2.59	158.489	0.43	758.578	0.00
0.331	0.00	1.585	0.56	7.586	1.53	36.308	2.75	173.780	0.03	831.764	0.00
0.363	0.01	1.738	0.60	8.318	1.59	39.811	2.91	190.546	0.00	912.011	0.00
0.398	0.09	1.905	0.65	9.120	1.65	43.652	3.07	208.930	0.00	1000.000	0.00
0.437	0.14	2.089	0.70	10.000	1.70	47.863	3.21	229.087	0.00		
0.479	0.26	2.291	0.76	10.965		52.481		251.189	0.00		

Operator notes:

ALS Metallurgy

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM4508-09

Measured by:
Kevin

Measured:
Wednesday, May 20, 2015 12:07:39 PM

Sample Name:
Copper Regrind Discharge - Average

Edited by:
Kevin

Analysed:
Wednesday, May 20, 2015 12:07:41 PM

Particle Name:
Silica 0.1

Accessory Name:
Hydro 2000MU (A)

Analysis model:
General purpose

Sensitivity:
Normal

Particle RI:
1.544

Absorption:
0.1

Size range:
0.100 to 1000.000 um

Obscuration:
19.58 %

Dispersant Name:
Water

Dispersant RI:
1.330

Weighted Residual:
0.300 %

Result Emulation:
Off

Concentration:
0.0173 %Vol

Span :
3.198

Uniformity:
1.01

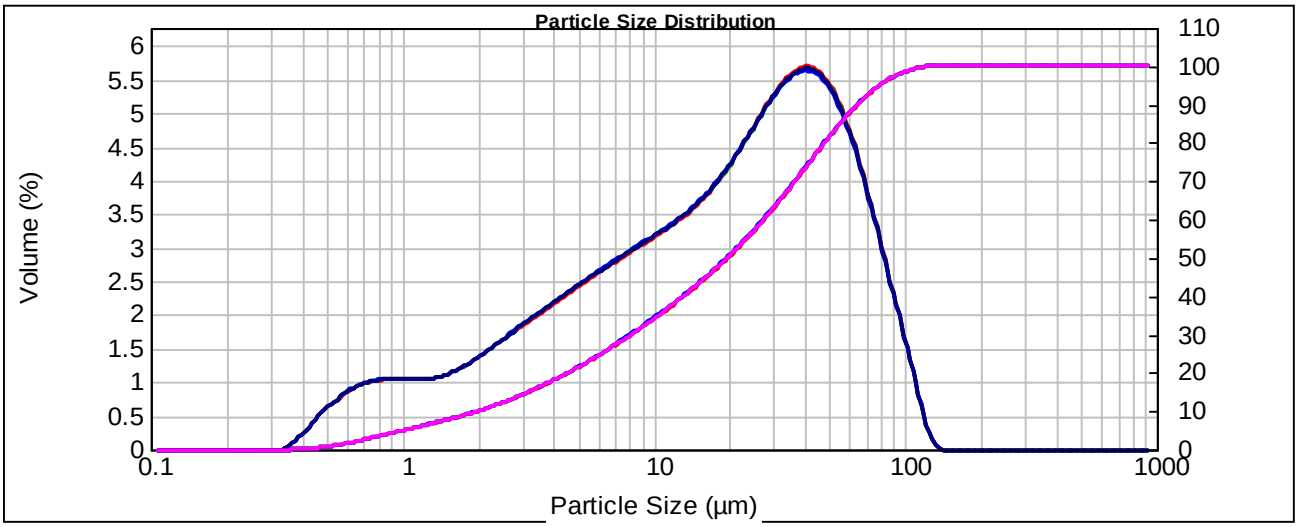
Result units:
Volume

Specific Surface Area:
1.14 m²/g

Surface Weighted Mean D[3,2]:
5.248 um

Vol. Weighted Mean D[4,3]:
27.176 um

d(0.1): 1.987 um d(0.5): 19.560 um **d(0.8): 47.625 um** d(0.9): 64.532 um d(0.98): 94.48 um



Size (µm)	Volume In %	Size (µm)	Volume In %	Size (µm)	Volume In %	Size (µm)	Volume In %	Size (µm)	Volume In %	Size (µm)	Volume In %
0.100	0.00	0.479	0.38	2.291	0.95	10.965	2.00	52.481	3.08	251.189	0.00
0.110	0.00	0.525	0.45	2.512	1.02	12.023	2.06	57.544	2.84	275.423	0.00
0.120	0.00	0.575	0.52	2.754	1.09	13.183	2.13	63.096	2.55	301.995	0.00
0.132	0.00	0.631	0.57	3.020	1.15	14.454	2.22	69.183	2.23	331.131	0.00
0.145	0.00	0.692	0.60	3.311	1.22	15.849	2.31	75.858	1.88	363.078	0.00
0.158	0.00	0.759	0.62	3.631	1.28	17.378	2.42	83.176	1.51	398.107	0.00
0.174	0.00	0.832	0.63	3.981	1.34	19.055	2.54	91.201	1.16	436.516	0.00
0.191	0.00	0.912	0.63	4.365	1.41	20.893	2.68	100.000	0.80	478.630	0.00
0.209	0.00	1.000	0.63	4.786	1.47	22.909	2.82	109.648	0.41	524.807	0.00
0.229	0.00	1.096	0.62	5.248	1.53	25.119	2.97	120.226	0.11	575.440	0.00
0.251	0.00	1.202	0.63	5.754	1.59	27.542	3.12	131.826	0.00	630.957	0.00
0.275	0.00	1.318	0.64	6.310	1.65	30.200	3.24	144.544	0.00	691.831	0.00
0.302	0.00	1.445	0.67	6.918	1.71	33.113	3.34	158.489	0.00	758.578	0.00
0.331	0.01	1.585	0.71	7.586	1.77	36.308	3.40	173.780	0.00	831.764	0.00
0.363	0.10	1.738	0.77	8.318	1.82	39.811	3.41	190.546	0.00	912.011	0.00
0.398	0.16	1.905	0.82	9.120	1.88	43.652	3.36	208.930	0.00	1000.000	
0.437	0.29	2.089	0.89	10.000	1.94	47.863	3.25	229.087	0.00		
0.479		2.291		10.965		52.481		251.189			

Operator notes:

ALS Metallurgy

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM4508-10

Measured by:
Kevin

Measured:
Wednesday, May 20, 2015 12:46:50 PM

Sample Name:
Copper Regrind Discharge - Average

Edited by:
Kevin

Analysed:
Wednesday, May 20, 2015 12:46:51 PM

Particle Name:
Silica 0.1

Accessory Name:
Hydro 2000MU (A)

Analysis model:
General purpose

Sensitivity:
Normal

Particle RI:
1.544

Absorption:
0.1

Size range:
0.100 to 1000.000 um

Obscuration:
17.42 %

Dispersant Name:
Water

Dispersant RI:
1.330

Weighted Residual:
0.298 %

Result Emulation:
Off

Concentration:
0.0144 %Vol

Span :
2.821

Uniformity:
0.89

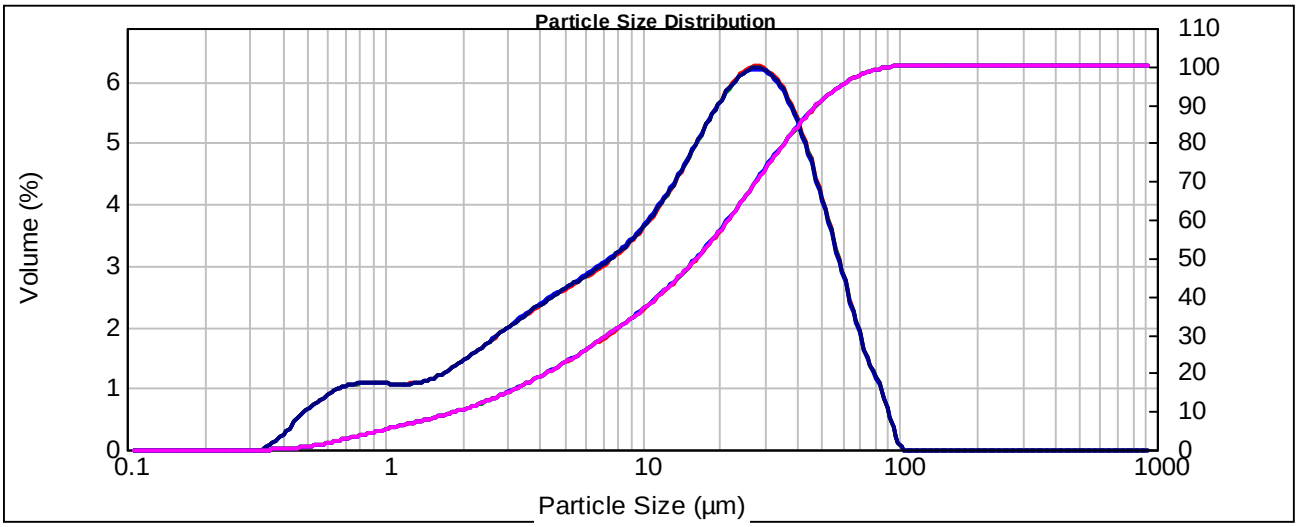
Result units:
Volume

Specific Surface Area:
1.21 m²/g

Surface Weighted Mean D[3,2]:
4.970 um

Vol. Weighted Mean D[4,3]:
21.201 um

d(0.1): 1.916 um d(0.5): 16.356 um **d(0.8): 35.752 um** d(0.9): 48.050 um d(0.98): 71.79 um



Size (µm)	Volume In %	Size (µm)	Volume In %	Size (µm)	Volume In %	Size (µm)	Volume In %	Size (µm)	Volume In %	Size (µm)	Volume In %
0.100	0.00	0.479	0.40	2.291	1.00	10.965	2.36	52.481	2.10	251.189	0.00
0.110	0.00	0.525	0.47	2.512	1.08	12.023	2.51	57.544	1.73	275.423	0.00
0.120	0.00	0.575	0.54	2.754	1.16	13.183	2.68	63.096	1.37	301.995	0.00
0.132	0.00	0.631	0.59	3.020	1.23	14.454	2.85	69.183	1.02	331.131	0.00
0.145	0.00	0.692	0.63	3.311	1.31	15.849	3.04	75.858	0.75	363.078	0.00
0.158	0.00	0.759	0.65	3.631	1.38	17.378	3.23	83.176	0.54	398.107	0.00
0.174	0.00	0.832	0.65	3.981	1.44	19.055	3.40	91.201	0.15	436.516	0.00
0.191	0.00	0.912	0.65	4.365	1.51	20.893	3.55	100.000	0.00	478.630	0.00
0.209	0.00	1.000	0.64	4.786	1.57	22.909	3.66	109.648	0.00	524.807	0.00
0.229	0.00	1.096	0.64	5.248	1.63	25.119	3.73	120.226	0.00	575.440	0.00
0.251	0.00	1.202	0.64	5.754	1.70	27.542	3.74	131.826	0.00	630.957	0.00
0.275	0.00	1.318	0.66	6.310	1.76	30.200	3.69	144.544	0.00	691.831	0.00
0.302	0.00	1.445	0.69	6.918	1.83	33.113	3.57	158.489	0.00	758.578	0.00
0.331	0.01	1.585	0.73	7.586	1.91	36.308	3.37	173.780	0.00	831.764	0.00
0.363	0.10	1.738	0.79	8.318	2.00	39.811	3.12	190.546	0.00	912.011	0.00
0.398	0.16	1.905	0.86	9.120	2.10	43.652	2.81	208.930	0.00	1000.000	
0.437	0.31	2.089	0.93	10.000	2.22	47.863	2.46	229.087	0.00		
0.479		2.291		10.965		52.481		251.189			

Operator notes:

ALS Metallurgy

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM4508-13

Measured by:
quentin

Measured:
Monday, June 01, 2015 3:11:26 PM

Sample Name:
Copper Regrind Discharge - Average

Edited by:
quentin

Analysed:
Monday, June 01, 2015 3:11:27 PM

Particle Name:
Silica 0.1

Accessory Name:
Hydro 2000MU (A)

Analysis model:
General purpose

Sensitivity:
Normal

Particle RI:
1.544

Absorption:
0.1

Size range:
0.100 to 1000.000 um

Obscuration:
30.33 %

Dispersant Name:
Water

Dispersant RI:
1.330

Weighted Residual:
0.099 %

Result Emulation:
Off

Concentration:
0.0126 %Vol

Span :
2.777

Uniformity:
0.868

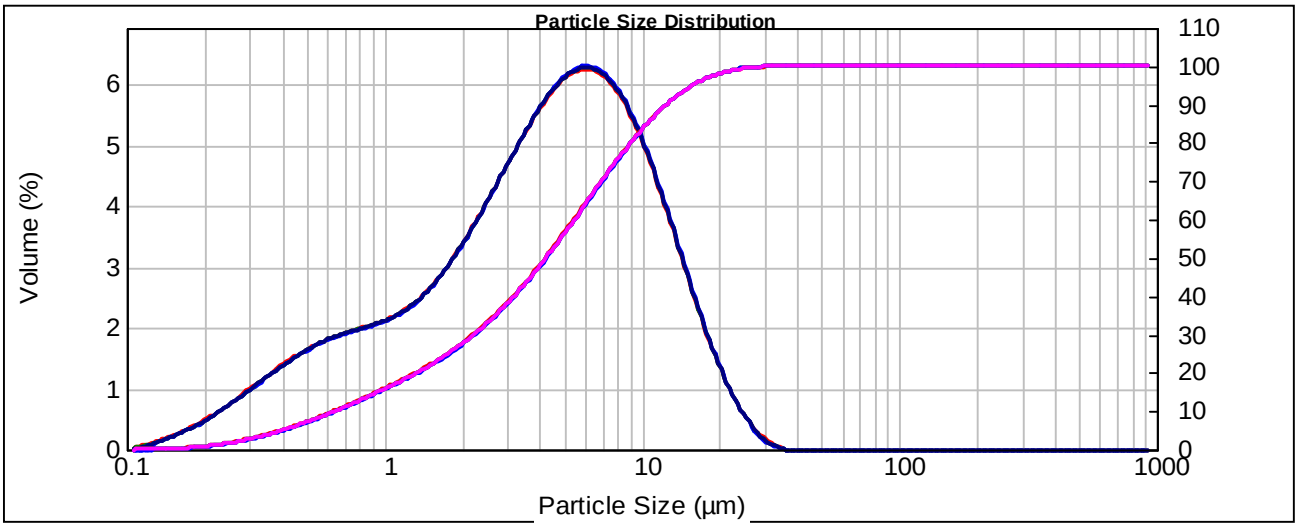
Result units:
Volume

Specific Surface Area:
3.53 m²/g

Surface Weighted Mean D[3,2]:
1.698 um

Vol. Weighted Mean D[4,3]:
5.586 um

d(0.1): 0.641 um d(0.5): 4.240 um **d(0.8): 9.033 um** d(0.9): 12.415 um d(0.98): 19.62 um



Size (µm)	Volume In %	Size (µm)	Volume In %	Size (µm)	Volume In %	Size (µm)	Volume In %	Size (µm)	Volume In %	Size (µm)	Volume In %
0.100	0.01	0.479	0.99	2.291	2.36	10.965	2.66	52.481	0.00	251.189	0.00
0.110	0.02	0.525	1.04	2.512	2.55	12.023	2.35	57.544	0.00	275.423	0.00
0.120	0.06	0.575	1.09	2.754	2.74	13.183	2.02	63.096	0.00	301.995	0.00
0.132	0.09	0.631	1.13	3.020	2.92	14.454	1.70	69.183	0.00	331.131	0.00
0.145	0.13	0.692	1.16	3.311	3.11	15.849	1.39	75.858	0.00	363.078	0.00
0.158	0.18	0.759	1.19	3.631	3.28	17.378	1.09	83.176	0.00	398.107	0.00
0.174	0.22	0.832	1.22	3.981	3.44	19.055	0.83	91.201	0.00	436.516	0.00
0.191	0.28	0.912	1.25	4.365	3.58	20.893	0.60	100.000	0.00	478.630	0.00
0.209	0.34	1.000	1.29	4.786	3.68	22.909	0.41	109.648	0.00	524.807	0.00
0.229	0.41	1.096	1.34	5.248	3.75	25.119	0.26	120.226	0.00	575.440	0.00
0.251	0.48	1.202	1.41	5.754	3.78	27.542	0.12	131.826	0.00	630.957	0.00
0.275	0.56	1.318	1.50	6.310	3.76	30.200	0.07	144.544	0.00	691.831	0.00
0.302	0.63	1.445	1.60	6.918	3.70	33.113	0.01	158.489	0.00	758.578	0.00
0.331	0.71	1.585	1.72	7.586	3.58	36.308	0.00	173.780	0.00	831.764	0.00
0.363	0.79	1.738	1.86	8.318	3.41	39.811	0.00	190.546	0.00	912.011	0.00
0.398	0.86	1.905	2.02	9.120	3.20	43.652	0.00	208.930	0.00	1000.000	0.00
0.437	0.93	2.089	2.19	10.000	2.94	47.863	0.00	229.087	0.00		
0.479		2.291		10.965		52.481		251.189			

Operator notes:

TABLE III-8

ALS Metallurgy

ISO9001:2008
Certificate No. FS63170

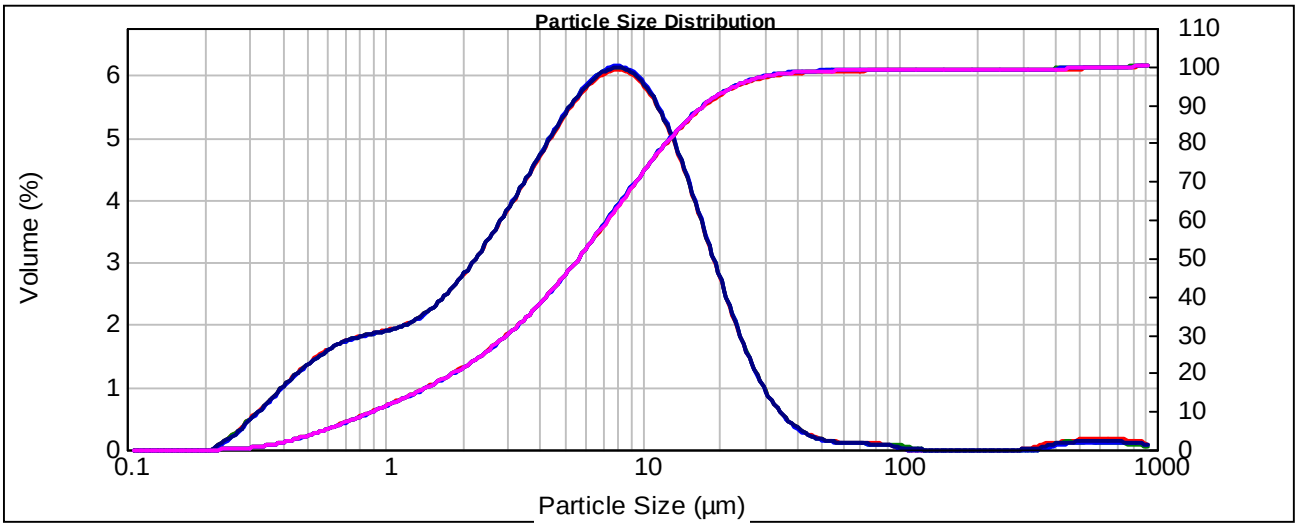
Result Analysis Report

Project and Test number: KM4508-14
Measured by: Kevin
Measured: Thursday, June 04, 2015 1:13:12 PM
Sample Name: Copper Regrind Discharge - Average
Edited by: Kevin
Analysed: Thursday, June 04, 2015 1:13:13 PM

Particle Name: Silica 0.1
Accessory Name: Hydro 2000MU (A)
Analysis model: General purpose
Sensitivity: Normal
Particle RI: 1.544
Absorption: 0.1
Size range: 0.100 to 1000.000 um
Obscuration: 26.55 %
Dispersant Name: Water
Dispersant RI: 1.330
Weighted Residual: 0.096 %
Result Emulation: Off

Concentration: 0.0129 %Vol
Span : 2.928
Uniformity: 1.7
Result units: Volume
Specific Surface Area: 2.43 m²/g
Surface Weighted Mean D[3,2]: 2.470 um
Vol. Weighted Mean D[4,3]: 12.286 um

d(0.1): 0.906 um d(0.5): 5.701 um **d(0.8): 12.433 um** d(0.9): 17.598 um d(0.98): 34.28 um



Size (µm)	Volume In %	Size (µm)	Volume In %	Size (µm)	Volume In %	Size (µm)	Volume In %	Size (µm)	Volume In %	Size (µm)	Volume In %
0.100	0.00	0.479	0.82	2.291	1.93	10.965	3.33	52.481	0.08	251.189	0.00
0.110	0.00	0.525	0.89	2.512	2.08	12.023	3.12	57.544	0.07	275.423	0.00
0.120	0.00	0.575	0.96	2.754	2.24	13.183	2.87	63.096	0.06	301.995	0.00
0.132	0.00	0.631	1.01	3.020	2.40	14.454	2.59	69.183	0.06	331.131	0.01
0.145	0.00	0.692	1.05	3.311	2.56	15.849	2.29	75.858	0.05	363.078	0.04
0.158	0.00	0.759	1.09	3.631	2.73	17.378	1.98	83.176	0.05	398.107	0.07
0.174	0.00	0.832	1.11	3.981	2.90	19.055	1.67	91.201	0.03	436.516	0.07
0.191	0.00	0.912	1.13	4.365	3.07	20.893	1.38	100.000	0.01	478.630	0.08
0.209	0.00	1.000	1.15	4.786	3.23	22.909	1.10	109.648	0.00	524.807	0.08
0.229	0.01	1.096	1.18	5.248	3.37	25.119	0.86	120.226	0.00	575.440	0.08
0.251	0.09	1.202	1.22	5.754	3.49	27.542	0.65	131.826	0.00	630.957	0.08
0.275	0.14	1.318	1.28	6.310	3.59	30.200	0.48	144.544	0.00	691.831	0.08
0.302	0.25	1.445	1.35	6.918	3.65	33.113	0.35	158.489	0.00	758.578	0.08
0.331	0.34	1.585	1.44	7.586	3.68	36.308	0.25	173.780	0.00	831.764	0.07
0.363	0.43	1.738	1.55	8.318	3.66	39.811	0.17	190.546	0.00	912.011	0.06
0.398	0.54	1.905	1.66	9.120	3.60	43.652	0.13	208.930	0.00	1000.000	0.02
0.437	0.64	2.089	1.80	10.000	3.49	47.863	0.09	229.087	0.00		
0.479	0.73	2.291		10.965		52.481		251.189			

Operator notes:

ALS Metallurgy

ISO9001:2008
Certificate No. FS63170

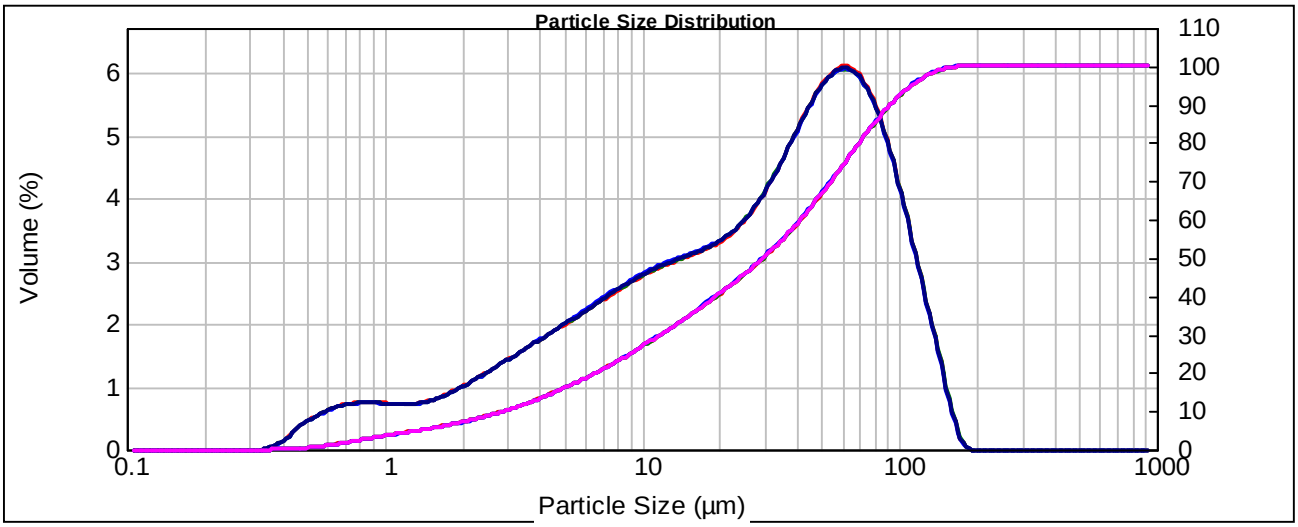
Result Analysis Report

Project and Test number: KM4508-16
Measured by: Kevin
Measured: Tuesday, June 16, 2015 7:59:52 AM
Sample Name: Copper Regrind Discharge - Average
Edited by: Kevin
Analysed: Tuesday, June 16, 2015 7:59:54 AM

Particle Name: Silica 0.1
Accessory Name: Hydro 2000MU (A)
Analysis model: General purpose
Sensitivity: Normal
Particle RI: 1.544
Absorption: 0.1
Size range: 0.100 to 1000.000 um
Obscuration: 14.74 %
Dispersant Name: Water
Dispersant RI: 1.330
Weighted Residual: 0.444 %
Result Emulation: Off

Concentration: 0.0165 %Vol
Span : 3.016
Uniformity: 0.964
Result units: Volume
Specific Surface Area: 0.868 m²/g
Surface Weighted Mean D[3,2]: 6.910 um
Vol. Weighted Mean D[4,3]: 39.542 um

d(0.1): 2.899 um d(0.5): 29.639 um **d(0.8): 69.760 um** d(0.9): 92.301 um d(0.98): 131.09 um



Size (µm)	Volume In %	Size (µm)	Volume In %	Size (µm)	Volume In %	Size (µm)	Volume In %	Size (µm)	Volume In %	Size (µm)	Volume In %
0.100	0.00	0.479	0.27	2.291	0.71	10.965	1.75	52.481	3.61	251.189	0.00
0.110	0.00	0.525	0.32	2.512	0.77	12.023	1.79	57.544	3.67	275.423	0.00
0.120	0.00	0.575	0.38	2.754	0.83	13.183	1.83	63.096	3.64	301.995	0.00
0.132	0.00	0.631	0.41	3.020	0.89	14.454	1.86	69.183	3.54	331.131	0.00
0.145	0.00	0.692	0.44	3.311	0.96	15.849	1.90	75.858	3.35	363.078	0.00
0.158	0.00	0.759	0.45	3.631	1.02	17.378	1.94	83.176	3.07	398.107	0.00
0.174	0.00	0.832	0.45	3.981	1.08	19.055	1.99	91.201	2.73	436.516	0.00
0.191	0.00	0.912	0.45	4.365	1.14	20.893	2.06	100.000	2.33	478.630	0.00
0.209	0.00	1.000	0.44	4.786	1.20	22.909	2.15	109.648	1.91	524.807	0.00
0.229	0.00	1.096	0.43	5.248	1.26	25.119	2.26	120.226	1.49	575.440	0.00
0.251	0.00	1.202	0.44	5.754	1.33	27.542	2.40	131.826	1.07	630.957	0.00
0.275	0.00	1.318	0.45	6.310	1.39	30.200	2.57	144.544	0.62	691.831	0.00
0.302	0.00	1.445	0.47	6.918	1.46	33.113	2.75	158.489	0.22	758.578	0.00
0.331	0.01	1.585	0.50	7.586	1.52	36.308	2.95	173.780	0.01	831.764	0.00
0.363	0.05	1.738	0.55	8.318	1.59	39.811	3.15	190.546	0.00	912.011	0.00
0.398	0.10	1.905	0.60	9.120	1.64	43.652	3.34	208.930	0.00	1000.000	
0.437	0.21	2.089	0.65	10.000	1.70	47.863	3.50	229.087	0.00		
0.479		2.291		10.965		52.481		251.189			

Operator notes:

ALS Metallurgy

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM4508-17

Measured by:
quentin

Measured:
Tuesday, June 16, 2015 1:12:07 PM

Sample Name:
Copper Regrind Discharge V - Average

Edited by:
quentin

Analysed:
Tuesday, June 16, 2015 1:12:08 PM

Particle Name:
Silica 0.1

Accessory Name:
Hydro 2000MU (A)

Analysis model:
General purpose

Sensitivity:
Normal

Particle RI:
1.544

Absorption:
0.1

Size range:
0.100 to 1000.000 um

Obscuration:
22.63 %

Dispersant Name:
Water

Dispersant RI:
1.330

Weighted Residual:
0.451 %

Result Emulation:
Off

Concentration:
0.0180 %Vol

Span :
4.732

Uniformity:
1.47

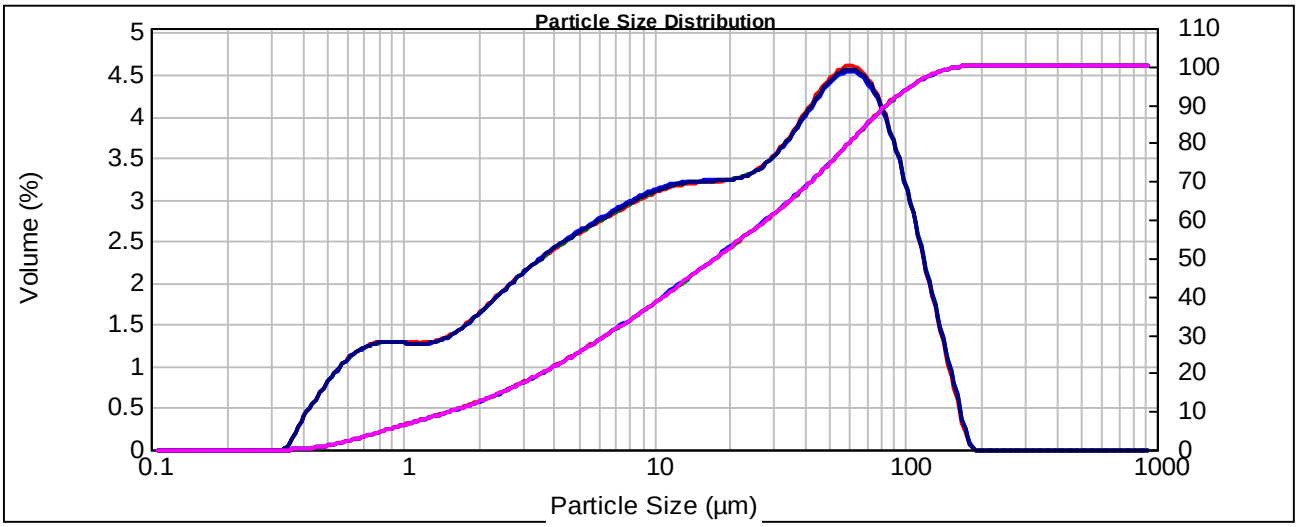
Result units:
Volume

Specific Surface Area:
1.33 m²/g

Surface Weighted Mean D[3,2]:
4.525 um

Vol. Weighted Mean D[4,3]:
32.171 um

d(0.1): 1.557 um d(0.5): 17.618 um **d(0.8): 59.822 um** d(0.9): 84.927 um d(0.98): 128.79 um



Size (µm)	Volume In %
0.100	0.00
0.110	0.00
0.120	0.00
0.132	0.00
0.145	0.00
0.158	0.00
0.174	0.00
0.191	0.00
0.209	0.00
0.229	0.00
0.251	0.00
0.275	0.00
0.302	0.00
0.331	0.01
0.363	0.14
0.398	0.28
0.437	0.37
0.479	0.48
0.525	0.57
0.575	0.65
0.631	0.71
0.692	0.75
0.759	0.77
0.832	0.78
0.912	0.77
1.000	0.77
1.096	0.76
1.202	0.77
1.318	0.78
1.445	0.81
1.585	0.85
1.738	0.91
1.905	0.97
2.089	1.04
2.291	1.11
2.512	1.18
2.754	1.24
3.020	1.31
3.311	1.37
3.631	1.42
3.981	1.47
4.365	1.52
4.786	1.56
5.248	1.61
5.754	1.65
6.310	1.69
6.918	1.73
7.586	1.77
8.318	1.81
9.120	1.84
10.000	1.87
10.965	1.90
12.023	1.92
13.183	1.93
14.454	1.93
15.849	1.94
17.378	1.94
19.055	1.95
20.893	1.96
22.909	1.99
25.119	2.03
27.542	2.08
30.200	2.16
33.113	2.25
36.308	2.36
39.811	2.47
43.652	2.57
47.863	2.66
52.481	2.72
57.544	2.75
63.096	2.72
69.183	2.64
75.858	2.50
83.176	2.31
91.201	2.06
100.000	1.78
109.648	1.48
120.226	1.17
131.826	0.87
144.544	0.58
158.489	0.27
173.780	0.02
190.546	0.00
208.930	0.00
229.087	0.00
251.189	0.00
275.423	0.00
301.995	0.00
331.131	0.00
363.078	0.00
398.107	0.00
436.516	0.00
478.630	0.00
524.807	0.00
575.440	0.00
630.957	0.00
691.831	0.00
758.578	0.00
831.764	0.00
912.011	0.00
1000.000	0.00

Operator notes:

APPENDIX IV – KM4508

COMMINUTION DATA

INDEX

TABLE IV-1A
BOND ABRASION TEST
KM4508 ED Composite

Original Paddle Weight: 95.1001 g
Final Paddle Weight: 94.9568 g

Abrasion Index, A_i: 0.1433

Wear Material	Wear Equation	Predicted Wear Rates	
		lb/kwh	kg/kwh
Wet rod mill, rods	0.35*(Ai-0.020)^0.20	0.230	0.104
Wet rod mill, liners	0.035*(Ai-0.015)^0.30	0.019	0.009
Wet ball mill, balls	0.35*(Ai-0.015)^0.33	0.178	0.081
Wet ball mill, liners	0.026*(Ai-0.015)^0.30	0.014	0.006
Dry ball mill, balls	0.05*(Ai)^0.5	0.019	0.009
Dry ball mill, liners	0.005*(Ai)^0.5	0.0019	0.0009
Crusher, liners	(Ai+0.22)/11	0.033	0.015
Roll Crusher, shells	(Ai/10)^0.67	0.058	0.026

Total Feed Weight 1598 g
P = 80% Passing size of test product 13767 μm

TABLE IV-1B
BOND ABRASION SCREEN ANALYSIS
KM4508 ED Composite

Product	Weight (g) Retained	Particle Size µm	Weight % Retained	Cumulative % Passing
3/4 Mesh	0.00	18845	0.00	100.0
5/8 Mesh	16.10	16000	1.01	99.0
1/2 Mesh	466.90	12500	29.23	69.8
7/16 Mesh	332.10	11200	20.79	49.0
3/8 Mesh	162.10	9500	10.15	38.8
3 Mesh	136.60	6300	8.55	30.3
4 Mesh	48.80	4750	3.05	27.2
6 Mesh	46.30	3360	2.90	24.3
TOTAL	1597.6		100.00	**

K80 = 13767µm

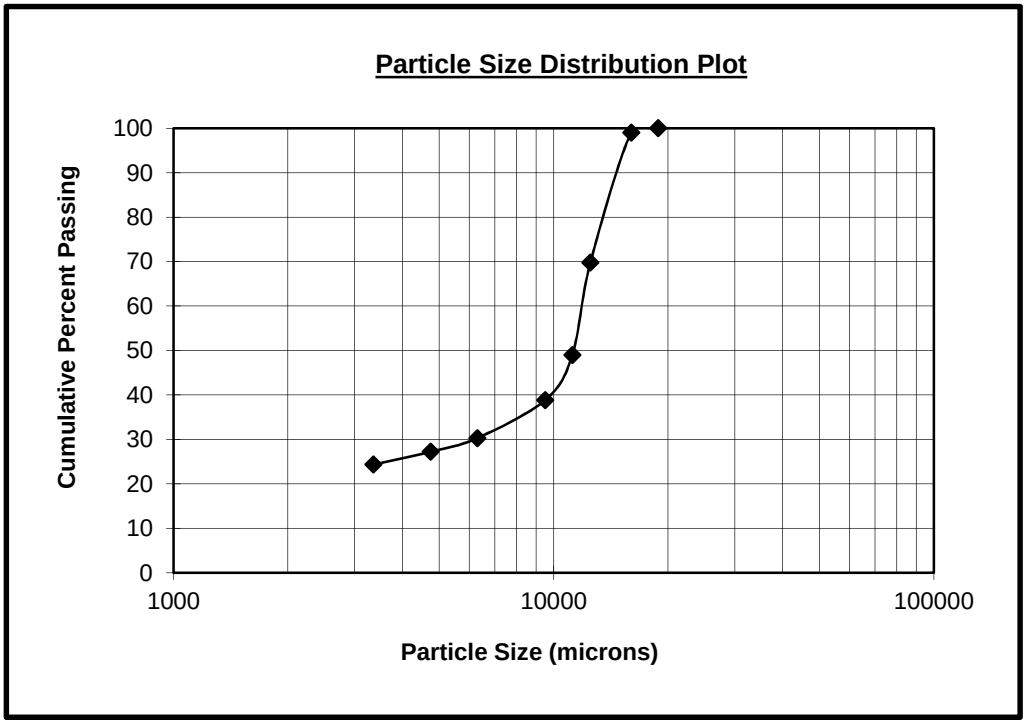


TABLE IV-2A
BOND BALL GRINDABILITY TEST
KM4508 ED Composite

Weight of 700 ml Sample :	1976.4 g	Aperture Test Sieve :	106µm
1/3.5 of Sample Weight :	564.7 g	Percent Undersize :	12.9%

Cycle	Weight of New Feed	Number of Revolutions	Weight of Undersize			
			Product	Feed	Net Product	Net/Rev
1	1976.4	100	415.5	254.8	160.7	1.61
2	415.5	318	527.3	53.6	473.7	1.49
3	527.3	334	579.6	68.0	511.6	1.53
4	579.6	319	577.2	74.7	502.5	1.57
5	577.2	312	572.4	74.4	498.0	1.60
6	572.4	307	558.0	73.8	484.2	1.58

BOND WORK INDEX FORMULA

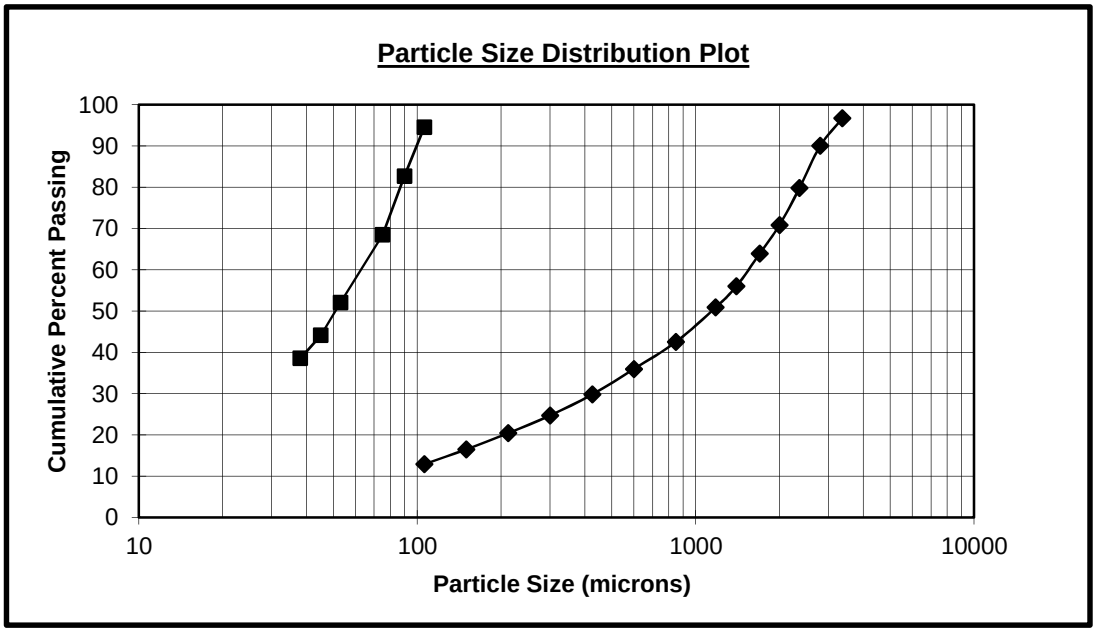
$$Wi = (44.5 \times 1.102) / (Pi^{.23} \times Gpb^{.82} \times (10/\sqrt{P} - 10/\sqrt{F}))$$

Pi = Sieve Size Tested.	106 µm
Gbp = Net undersize produced per revolution of mill.	1.58 g
P = 80% Passing size of test product.	87 µm
F = 80% Passing size of test feed.	2369 µm

BOND BALL WORK INDEX (Wi) 13.3 kw-hr/tonne

TABLE IV-2B
BOND BALL SCREEN ANALYSIS
KM4508 ED Composite

Particle Size		Feed to Cycle 1			Equilibrium Cycle Undersize		
mesh	µm	Weight (g) Retained	Weight % Retained	Cumulative % Passing	Weight (g) Retained	Weight % Retained	Cumulative % Passing
6 Mesh	3360	16.50	3.35	96.6	-	-	-
7 Mesh	2800	32.80	6.66	90.0	-	-	-
8 Mesh	2360	50.30	10.21	79.8	-	-	-
9 Mesh	2000	44.10	8.95	70.8	-	-	-
10 Mesh	1700	34.00	6.90	63.9	-	-	-
12 Mesh	1400	39.10	7.94	56.0	-	-	-
14 Mesh	1180	25.20	5.12	50.9	-	-	-
20 Mesh	850	41.10	8.35	42.5	-	-	-
28 Mesh	600	32.40	6.58	35.9	-	-	-
35 Mesh	425	30.40	6.17	29.8	-	-	-
48 Mesh	300	25.00	5.08	24.7	-	-	-
65 Mesh	212	21.20	4.30	20.4	-	-	-
100 Mesh	150	19.30	3.92	16.5	-	-	-
150 Mesh	106	17.60	3.57	12.9	5.70	5.50	94.5
170 Mesh	90	-	-	-	12.30	11.87	82.6
200 Mesh	75	-	-	-	14.70	14.19	68.4
270 Mesh	53	-	-	-	17.00	16.41	52.0
325 Mesh	45	-	-	-	8.20	7.92	44.1
400 Mesh	38	-	-	-	5.80	5.60	38.5
TOTAL		492.5	100.00	**	103.6	100.00	**
		K80 = 2369µm			**K80 = 87µm**		



APPENDIX V – KM4508

SPECIAL DATA

INDEX

TABLE V-1A
DUPLICATE HEAD ASSAY DATA

Sample	Elements for Assay - percent or g/tonne							
	Cu	CuOx	CuCN	CuRes	Fe	S	Ag	Au
ED Composite HD1	2.16	0.099	0.16	1.77	31.5	2.84	7	1.28
ED Composite HD2	2.15	-	-	-	31.5	2.77	6	1.36
Average	**2.16**	**0.099**	**0.16**	**1.77**	**31.5**	**2.81**	**7**	**1.32**

Note: Ag and Au is reported in g/tonne, all others in percent.

TABLE V-2
STATISTICAL ANALYSIS OF HEAD ASSAYS
ED Composite

Test	Elements for Assay - percent or g/tonne				
	Cu	Fe	S	Ag	Au
1	2.24	31.4	2.74	7	1.62
2	2.14	32.4	2.70	6	1.47
3	2.22	32.0	2.68	7	1.49
4	2.34	31.6	2.75	6	1.63
5	2.05	32.1	2.70	7	1.52
6	2.14	32.7	2.71	7	1.54
8	2.25	32.5	2.72	7	1.47
9	2.25	32.4	2.66	7	1.57
10	2.28	32.4	2.73	7	1.50
13	2.22	31.2	2.67	7	1.43
14	2.25	30.1	2.71	7	1.51
15	2.37	31.2	3.03	8	1.43
16	2.31	31.6	3.01	7	1.50
17	2.39	31.5	3.10	7	1.55
Average	**2.25**	**31.8**	**2.78**	**7**	**1.52**
Measured	**2.16**	**31.5**	**2.81**	**7**	**1.32**

Note: Au and Ag are reported in g/tonne, all others in percent.

TABLE V-3A
COMPARATIVE COPPER CONCENTRATE ASSAYS

Test		Copper - percent	
		AAS	Titre
8		22.2	22.5
9		22.5	23.4
10		25.2	25.9
13		30.2	31.8
14		28.4	29.8
16		21.3	22.6
17	Cu Con I	20.6	21.8
	Cu Con II	21.5	22.3
	Cu Con III	21.8	22.0
	Cu Con IV	21.4	22.4
	Cu Con V	21.4	22.1

TABLE V-3B
COMPARATIVE IRON CONCENTRATE ASSAYS

Test	Iron - percent	
	AAS	Titre
5	65.4	68.4
7	66.4	67.0
11	53.2	53.3
12	53.8	53.9

ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: 604 984 0221 Fax: 604 984 0218 www.alsglobal.com

To: ALS METALLURGY, DIV OF ALS CANADA LTD
2957 BOWERS PL
KAMLOOPS BC V1S 1W5

Finalized Date: 25- APR- 2015
Account: KRL

CERTIFICATE VA15058125

Project: KM4508

P.O. No.: A1512

This report is for 1 Pulp sample submitted to our lab in Vancouver, BC, Canada on 21- APR- 2015.

The following have access to data associated with this certificate:

ALS METALLURGY	SIMONE BAWTREE	BRENDA TREMBLAY

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI- 21	Received Sample Weight
LOG- 24	Pulp Login - Rcd w/o Barcode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	
ME- MS61	48 element four acid ICP- MS	
ME- OG62	Ore Grade Elements - Four Acid	ICP- AES
Cu- OG62	Ore Grade Cu - Four Acid	VARIABLE

To: ALS METALLURGY, DIV OF ALS CANADA LTD
ATTN: BRENDA TREMBLAY
2957 BOWERS PL
KAMLOOPS BC V1S 1W5

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:

Colin Ramshaw, Vancouver Laboratory Manager

ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: 604 984 0221 Fax: 604 984 0218 www.alsglobal.com

To: ALS METALLURGY, DIV OF ALS CANADA LTD
2957 BOWERS PL
KAMLOOPS BC V1S 1W5

Finalized Date: 25- APR- 2015
Account: KRL

Project: KM4508

CERTIFICATE OF ANALYSIS VA15058125

Sample Description	Method / Analyte / Units / LOR	WEI- 21 Recvd Wt. kg 0.02	ME- MS61 Ag ppm 0.01	ME- MS61 Al % 0.01	ME- MS61 As ppm 0.2	ME- MS61 Ba ppm 10	ME- MS61 Be ppm 0.05	ME- MS61 Bi ppm 0.01	ME- MS61 Ca % 0.01	ME- MS61 Cd ppm 0.02	ME- MS61 Ce ppm 0.01	ME- MS61 Co ppm 0.1	ME- MS61 Cr ppm 1	ME- MS61 Cs ppm 0.05	ME- MS61 Cu ppm 0.2	ME- MS61 Fe % 0.01
KM4508 ED Comp Hd 1		0.02	7.63	0.91	47.9	10	0.18	7.12	13.60	0.81	14.90	78.4	194	0.12	>10000	32.4

***** See Appendix Page for comments regarding this certificate *****

ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: 604 984 0221 Fax: 604 984 0218 www.alsglobal.com

To: ALS METALLURGY, DIV OF ALS CANADA LTD
2957 BOWERS PL
KAMLOOPS BC V1S 1W5

Finalized Date: 25- APR- 2015
Account: KRL

Project: KM4508

CERTIFICATE OF ANALYSIS VA15058125

Sample Description	Method	ME- MS61	ME- MS61	ME- MS61	ME- MS61	ME- MS61	ME- MS61	ME- MS61	ME- MS61	ME- MS61	ME- MS61	ME- MS61	ME- MS61	ME- MS61	ME- MS61	ME- MS61
	Analyte	Ga	Ge	Hf	In	K	La	Li	Mg	Mn	Mo	Na	Nb	Ni	P	Pb
	Units	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm
	LOR	0.05	0.05	0.1	0.005	0.01	0.5	0.2	0.01	5	0.05	0.01	0.1	0.2	10	0.5
KM4508 ED Comp Hd 1		16.10	0.35	0.3	2.83	0.01	6.9	1.3	0.45	2420	13.05	0.01	1.4	17.6	90	8.2

***** See Appendix Page for comments regarding this certificate *****

ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: 604 984 0221 Fax: 604 984 0218 www.alsglobal.com

To: ALS METALLURGY, DIV OF ALS CANADA LTD
2957 BOWERS PL
KAMLOOPS BC V1S 1W5

Finalized Date: 25- APR- 2015
Account: KRL

Project: KM4508

CERTIFICATE OF ANALYSIS VA15058125

Sample Description	Method	ME- MS61	ME- MS61	ME- MS61	ME- MS61	ME- MS61	ME- MS61	ME- MS61	ME- MS61	ME- MS61	ME- MS61	ME- MS61	ME- MS61	ME- MS61	ME- MS61	ME- MS61
	Analyte	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl	U	V
	Units	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	LOR	0.1	0.002	0.01	0.05	0.1	1	0.2	0.2	0.05	0.05	0.2	0.005	0.02	0.1	1
KM4508 ED Comp Hd 1		0.4	0.003	2.87	1.06	1.0	36	14.3	7.1	0.06	2.96	0.8	0.028	0.03	6.9	18

***** See Appendix Page for comments regarding this certificate *****

ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: 604 984 0221 Fax: 604 984 0218 www.alsglobal.com

To: ALS METALLURGY, DIV OF ALS CANADA LTD
2957 BOWERS PL
KAMLOOPS BC V1S 1W5

Finalized Date: 25- APR- 2015
Account: KRL

Project: KM4508

CERTIFICATE OF ANALYSIS VA15058125

Sample Description	Method	ME- MS61	ME- MS61	ME- MS61	ME- MS61	Cu- OG62
	Analyte	W	Y	Zn	Zr	Cu
	Units	ppm	ppm	ppm	ppm	%
	LOR	0.1	0.1	2	0.5	0.001
KM4508 ED Comp Hd 1		99.8	2.6	134	9.0	2.34

***** See Appendix Page for comments regarding this certificate *****

ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: 604 984 0221 Fax: 604 984 0218 www.alsglobal.com

To: ALS METALLURGY, DIV OF ALS CANADA LTD
2957 BOWERS PL
KAMLOOPS BC V1S 1W5

Finalized Date: 25- APR- 2015
Account: KRL

Project: KM4508

CERTIFICATE OF ANALYSIS VA15058125

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: REE's may not be totally soluble in this method.
ME- MS61

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.
Cu- OG62 LOG- 24 ME- MS61 ME- OG62
WEI- 21

APPENDIX VI – KM4508

MINERALOGICAL DATA

INDEX

TABLE 1A

DISTRIBUTION OF GOLD MINERALS BY AREA

KM4508 ED Composite, >106µm

Sample	% Gold Bearing Minerals		
	Au	Au/El	AuAgTe
ED Composite	4	73	23

Notes: a) Au-Gold, Au/El-Gold/Electrum, AuAgTe-Gold Silver Telluride.

TABLE 1B

AVERAGE SIZE OF THE GOLD OCCURRENCES BY CLASS OF ASSOCIATION

KM4508 ED Composite, >106µm

Particles Observed	Mode of Occurrence	Average Projected Area Diameter - microns							Area % Gold
		AuM	Cp	Sp	BiM	Py	FeOx	Gn	
1	Gold Adhesion Inclusion Multiphase	6	-	-	13	-	-	139	<1
1	Gold/Electrum Adhesion Multphase	7	20	19	-	127	-	22	<1
5	Gold/Electrum Inclusion Multiphase	7	24	-	-	-	78	77	<1
1	Gold/Electrum Adhesion Inclusion Multiphase	17	17	-	-	73	41	129	1
1	AuAgTe Gangue Inclusion Binary	5	-	-	-	-	89	45	<1
1	AuAgTe Gangue Adhesion Inclusion Binary	13	-	-	-	-	35	185	<1

Notes: a) AuM-Gold Bearing Mineral, Cp-Chalcopyrite, Sp-Sphalerite, BiM-Bismuth Tellurium Bearing Mineral, Py-Pyrite, FeOx-Iron Oxides, Gn-Gangue.
b) Projected area diameter is the diameter of a circle in mineralogical terms.
c) AuAgTe-Gold Silver Telluride.

TABLE 1C

DISTRIBUTION OF GOLD OCCURRENCES BY CLASS OF ASSOCIATION

KM4508 ED Composite, >106µm

Particles Observed	Mode of Occurrence	Lib	Locked in Binary With:		MP
			Cp	Gn	
1	Gold	-	-	-	100
7	Gold/Electrum	-	-	-	100
2	Gold Silver Telluride	-	-	100	-
10	Total Gold Bearing Minerals	-	-	20	80

Notes: a) Lib-Liberated, Cp-Chalcopyrite, Gn-Gangue, MP-Multiphase.

TABLE 1D

DISTRIBUTION OF GOLD AREA BY CLASS OF ASSOCIATION

KM4508 ED Composite, >106µm

Particles Observed	Mode of Occurrence	Lib	Locked in Binary With:		MP
			Cp	Gn	
1	Gold	-	-	-	4
7	Gold/Electrum	-	-	-	73
2	Gold Silver Telluride	-	-	23	-
10	Total Gold Bearing Minerals	-	-	23	77

Notes: a) Lib-Liberated, Cp-Chalcopyrite, Gn-Gangue, MP-Multiphase.

TABLE 1E

DISTRIBUTION OF GOLD AREA BY CLASS OF ASSOCIATION - ADJUSTED

KM4508 ED Composite, >106µm

Particles Observed	Mode of Occurrence	Lib*	Locked in Binary With:		MP
			Cp	Gn	
1	Gold	-	-	-	4
7	Gold/Electrum	-	-	-	73
2	Gold Silver Telluride	-	-	23	-
10	Total Gold Bearing Minerals	-	-	23	77

Notes: a) Lib*-Particles with greater than 50 percent area gold, Cp-Chalcopyrite, Gn-Gangue, MP-Multiphase.

TABLE 1F

SUMMARY OF QEMSCAN TRACE MINERAL SEARCH

KM4508 ED Composite, >106µm

Sample	ED Composite
Size Fraction	>106µm
Number of Pucks Scanned	22
Backscattered Electrons (BSE) Limit	100
Total Searched Particles	2.66×10^5
Number of Gold Occurrences Detected by Qemscan	10
Mean Projected Diameter of Gold	8.0 µm
Assay Measured Au	1.0 g/t

Note: a) This data is as found at 2 µm resolution.

TABLE 1G

STATUS OF GOLD OCCURRENCES BY CLASS OF ASSOCIATION

KM4508 ED Composite, >106µm

Particle	Mode of Occurrence	Projected Area Diameter - microns							Area % Gold	Volume of Gold
		AuM	Cp	Sp	BiM	Py	FeOx	Gn		
1	AuAgTe Gangue Adhesion Inclusion Binary	13	-	-	-	-	35	185	<1	1119
2	Gold/Electrum Inclusion Multiphase	6	19	-	-	-	13	60	1	107
3	AuAgTe Gangue Inclusion Binary	5	-	-	-	-	89	45	<1	50
4	Gold/Electrum Inclusion Multiphase	6	24	-	-	-	121	14	<1	135
5	Gold Adhesion Inclusion Multiphase	6	-	-	13	-	-	139	<1	100
6	Gold/Electrum Inclusion Multiphase	4	46	-	-	-	104	57	<1	39
7	Gold/Electrum Inclusion Multiphase	12	11	-	-	-	106	90	1	870
8	Gold/Electrum Inclusion Multiphase	5	19	-	-	-	44	167	<1	65
9	Gold/Electrum Adhesion Inclusion Multiphase	17	17	-	-	73	41	129	1	2684
10	Gold/Electrum Adhesion Multphase	7	20	19	-	127	-	22	<1	152

Notes: a) AuM-Gold Bearing Mineral, Cp-Chalcopyrite, Sp-Sphalerite, BiM-Bismuth Tellurium Bearing Mineral, Py-Pyrite, FeOx-Iron Oxides, Gn-Gangue.

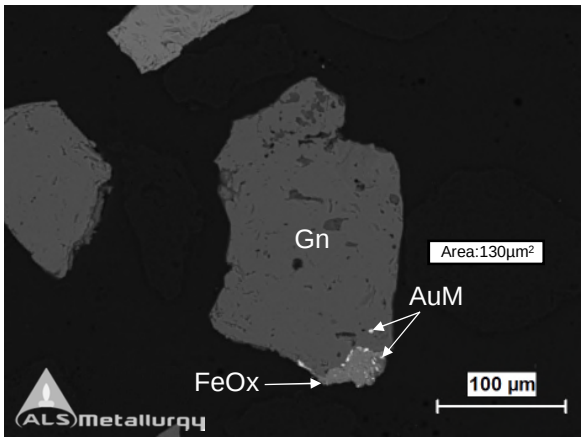
b) Projected area diameter is the diameter of a circle in mineralogical terms.

c) Volume of Gold is expressed as μm^3. Volume data assumes particles are spherical in shape.

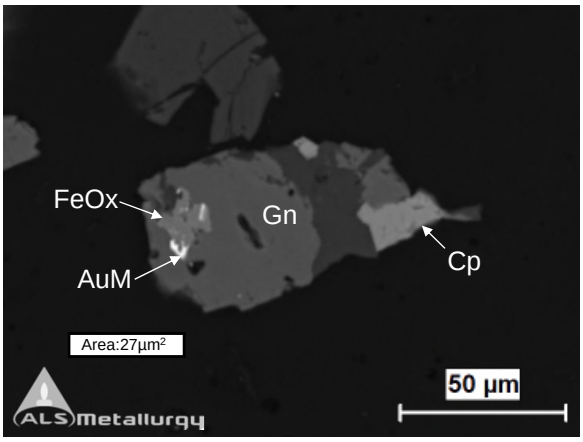
d) AuAgTe-Gold Silver Telluride.

QEMSCAN BACKSCATTER IMAGE 1
LAS MINAS – ED COMPOSITE, >106µm
KM4508

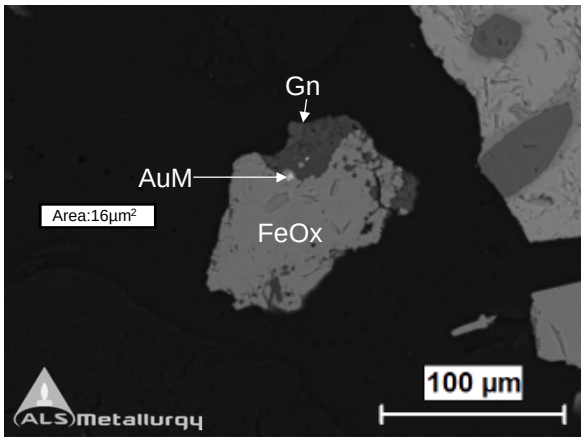
Particle 1



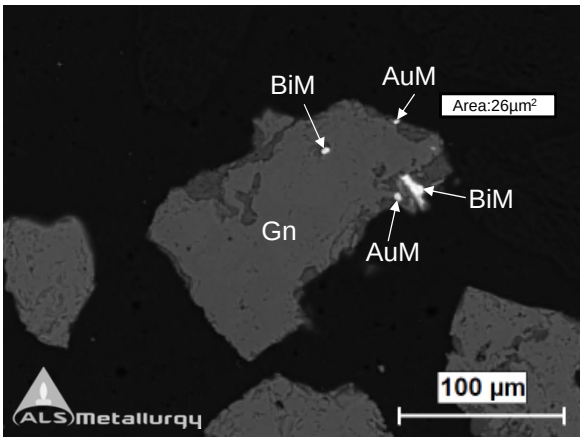
Particle 2



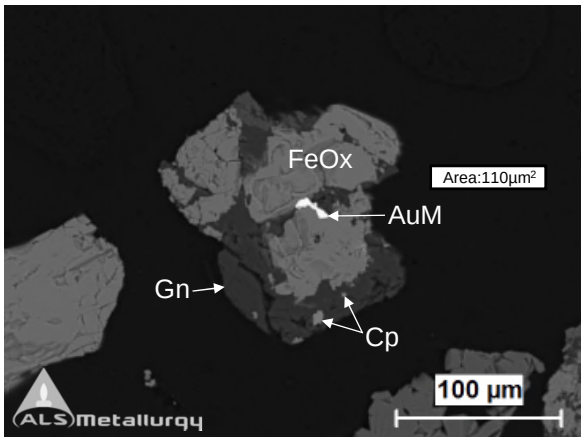
Particle 3



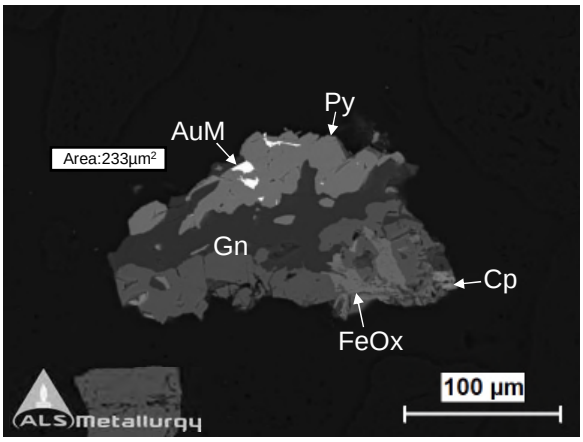
Particle 5



Particle 7



Particle 9



*AuM-Gold Bearing Mineral, Cp-Chalcopyrite, BiM-Bismuth Tellurium Bearing Mineral, Py-Pyrite, FeOx-Iron Oxides, Gn-Gangue.

TABLE 2A

DISTRIBUTION OF GOLD MINERALS BY AREA

KM4508 ED Composite, <106>38µm

Sample	% Gold Bearing Minerals		
	Au	Au/El	Oth
ED Composite	6	94	<1

Notes: a) Au-Gold, Au/El-Gold/Electrum, Oth-Unresolved Gold Mineral.

TABLE 2B

AVERAGE SIZE OF THE GOLD OCCURRENCES BY CLASS OF ASSOCIATION

KM4508 ED Composite, <106>38µm

Particles Observed	Mode of Occurrence	Average Projected Area Diameter - microns						Area % Gold
		AuM	Cp	BiM	Py	FeOx	Gn	
3	Gold Inclusion Multiphase	5	25	2	39	11	23	<1
1	Gold/Electrum Chalcopyrite Adhesion Binary	2	46	-	-	-	-	<1
3	Gold/Electrum Chalcopyrite Inclusion Binary	4	88	-	-	-	-	<1
1	Gold/Electrum Adhesion Multiphase	31	22	-	-	-	59	20
2	Gold/Electrum Inclusion Multiphase	3	19	-	-	56	48	<1
1	Gold/Electrum Adhesion Inclusion Multiphase	2	26	-	-	35	11	<1
1	Unresolved Gold Inclusion Multiphase	2	70	17	-	75	44	<1

Notes: a) AuM-Gold Bearing Mineral, Cp-Chalcopyrite, BiM-Bismuth Tellurium Bearing Mineral, Py-Pyrite, FeOx-Iron Oxides, Gn-Gangue.
b) Projected area diameter is the diameter of a circle in mineralogical terms.

TABLE 2C

DISTRIBUTION OF GOLD OCCURRENCES BY CLASS OF ASSOCIATION

KM4508 ED Composite, <106>38µm

Particles Observed	Mode of Occurrence	Lib	Locked in Binary With:		MP
			Cp	Gn	
3	Gold	-	-	-	100
8	Gold/Electrum	-	50	-	50
1	Unresolved Gold	-	-	-	100
12	Total Gold Bearing Minerals	-	33	-	67

Notes: a) Lib-Liberated, Cp-Chalcopyrite, Gn-Gangue, MP-Multiphase.

TABLE 2D

DISTRIBUTION OF GOLD AREA BY CLASS OF ASSOCIATION

KM4508 ED Composite, <106>38µm

Particles Observed	Mode of Occurrence	Lib	Locked in Binary With:		MP
			Cp	Gn	
3	Gold	-	-	-	6
8	Gold/Electrum	-	4	-	89
1	Unresolved Gold	-	-	-	1
12	Total Gold Bearing Minerals	-	4	-	96

Notes: a) Lib-Liberated, Cp-Chalcopyrite, Gn-Gangue, MP-Multiphase.

TABLE 2E

DISTRIBUTION OF GOLD AREA BY CLASS OF ASSOCIATION - ADJUSTED

KM4508 ED Composite, <106>38µm

Particles Observed	Mode of Occurence	Lib	Locked in Binary With:		MP
			Cp	Gn	
3	Gold	-	-	-	6
8	Gold/Electrum	-	4	-	89
1	Unresolved Gold	-	-	-	1
12	Total Gold Bearing Minerals	-	4	-	96

Notes: a) Lib*-Particles with greater than 50 percent area gold, Cp-Chalcopyrite, Gn-Gangue, MP-Multiphase.

TABLE 2F

SUMMARY OF QEMSCAN TRACE MINERAL SEARCH

KM4508 ED Composite, <106>38µm

Sample	ED Composite
Size Fraction	<106>38µm
Number of Pucks Scanned	15
Backscattered Electrons (BSE) Limit	100
Total Searched Particles	8.57×10^5
Number of Gold Occurrences Detected by Qemscan	12
Mean Projected Diameter of Gold	5.8 µm
Assay Measured Au	1.7 g/t

Note: a) This data is as found at 2 µm resolution.

TABLE 2G

STATUS OF GOLD OCCURRENCES BY CLASS OF ASSOCIATION

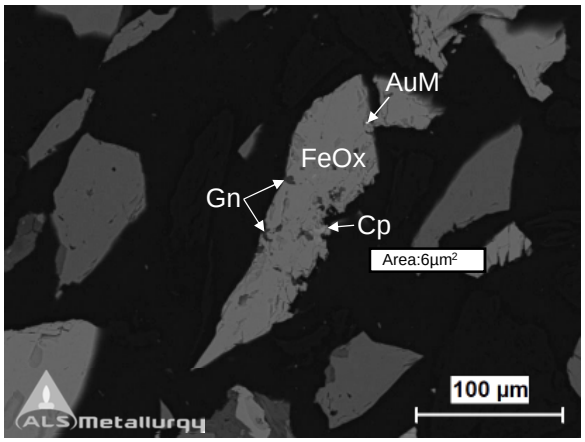
KM4508 ED Composite, <106>38µm

Particle	Mode of Occurrence	Projected Area Diameter - microns						Area % Gold	Volume of Gold
		AuM	Cp	BiM	Py	FeOx	Gn		
1	Gold/Electrum Chalcopyrite Inclusion Binary	4	146	-	-	-	-	<1	46
2	Gold/Electrum Chalcopyrite Inclusion Binary	4	54	-	-	-	-	1	29
3	Gold/Electrum Adhesion Inclusion Multiphase	2	26	-	-	35	11	<1	8
4	Gold/Electrum Adhesion Multiphase	31	22	-	-	-	59	20	15907
5	Gold/Electrum Inclusion Multiphase	3	26	-	-	6	81	<1	16
6	Gold/Electrum Inclusion Multiphase	3	13	-	-	105	16	<1	12
7	Unresolved Gold Inclusion Multiphase	2	70	17	-	75	44	<1	7
8	Gold/Electrum Chalcopyrite Inclusion Binary	3	64	-	-	-	-	<1	11
9	Gold Inclusion Multiphase	6	18	5	84	-	24	<1	88
10	Gold/Electrum Chalcopyrite Adhesion Binary	2	46	-	-	-	-	<1	8
11	Gold Inclusion Multiphase	4	49	-	-	32	45	<1	33
12	Gold Inclusion Multiphase	4	8	-	34	-	-	1	41

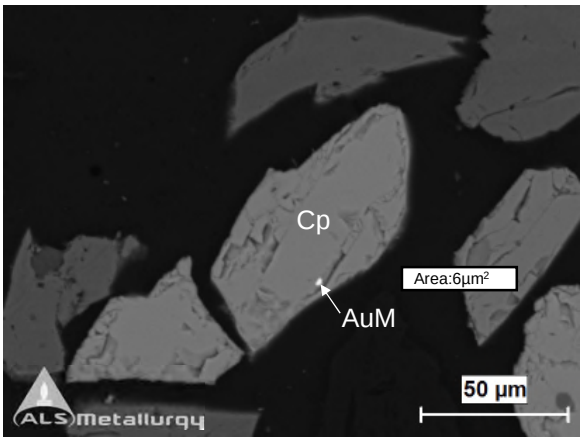
Notes: a) AuM-Gold Bearing Mineral, Cp-Chalcopyrite, BiM-Bismuth Tellurium Bearing Mineral, Py-Pyrite, FeOx-Iron Oxides, Gn-Gangue.
b) Projected area diameter is the diameter of a circle in mineralogical terms.
c) Volume of Gold is expressed as μm^3. Volume data assumes particles are spherical in shape.

QEMSCAN BACKSCATTER IMAGE 2
LAS MINAS – ED COMPOSITE, <106>38µm
KM4508

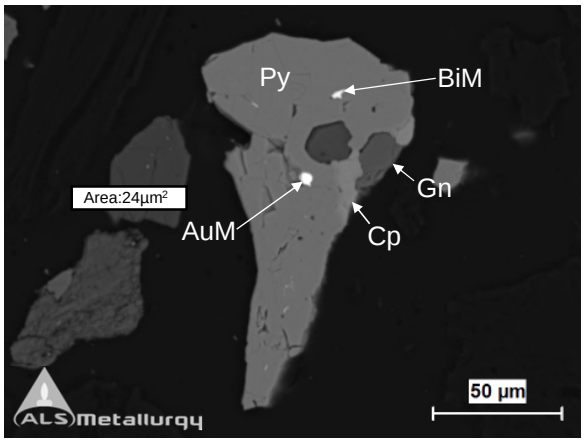
Particle 6



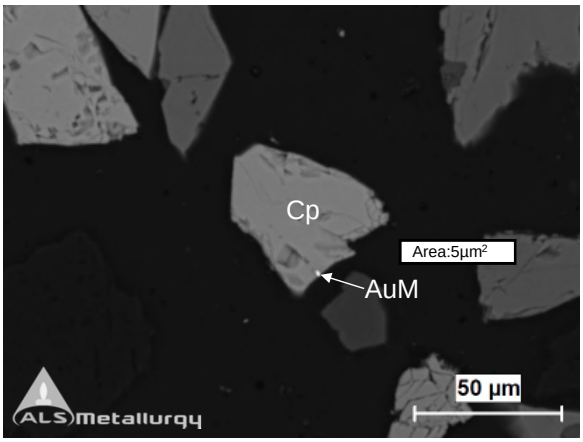
Particle 8



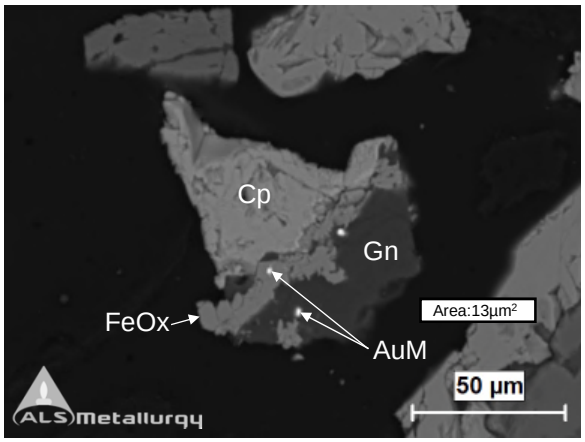
Particle 9



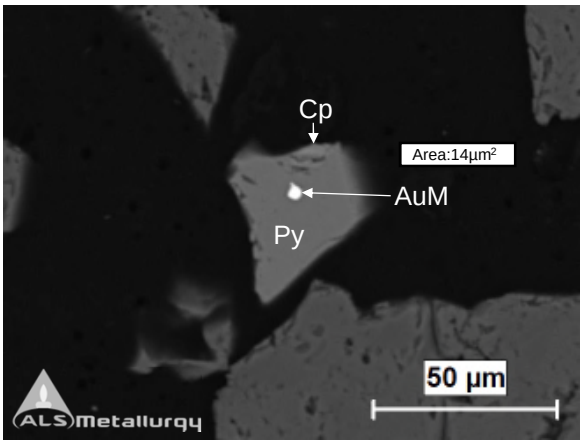
Particle 10



Particle 11



Particle 12



*AuM-Gold Bearing Mineral, Cp-Chalcopyrite, BiM-Bismuth Tellurium Bearing Mineral, Py-Pyrite, FeOx-Iron Oxides, Gn-Gangue.

TABLE 3A

DISTRIBUTION OF GOLD MINERALS BY AREA

KM4508 ED Composite, <38µm

Sample	% Gold Bearing Minerals	
	Au	Au/El
ED Composite	4	96

Notes: a) Au-Gold, Au/El-Gold/Electrum.

TABLE 3B

AVERAGE SIZE OF THE GOLD OCCURRENCES BY CLASS OF ASSOCIATION

KM4508 ED Composite, <38µm

Particles Observed	Mode of Occurrence	Average Projected Area Diameter - microns					Area % Gold
		AuM	Cp	Py	FeOx	Gn	
1	Gold Pyrite Inclusion Binary	3	-	12	-	-	6
6	Liberated Gold/Electrum	4	-	-	-	-	100
3	Gold/Electrum Chalcopyrite Adhesion Binary	5	12	-	-	-	15
1	Gold/Electrum Iron Oxide Inclusion Binary	1	-	-	11	-	2
1	Gold/Electrum Gangue Adhesion Binary	6	-	-	-	20	7
2	Gold/Electrum Inclusion Multiphase	2	25	22	-	-	<1

Notes: a) AuM-Gold Bearing Mineral, Cp-Chalcopyrite, Py-Pyrite, FeOx-Iron Oxide, Gn-Gangue.
b) Projected area diameter is the diameter of a circle in mineralogical terms.

TABLE 3C

DISTRIBUTION OF GOLD OCCURRENCES BY CLASS OF ASSOCIATION

KM4508 ED Composite, <38µm

Particles Observed	Mode of Occurrence	Lib	Locked in Binary With:				MP
			Cp	Py	FeOx	Gn	
1	Gold	-	-	100	-	-	-
13	Gold/Electrum	46	23	-	8	8	15
14	Total Gold Bearing Minerals	43	22	7	7	7	14

Notes: a) Lib-Liberated, Cp-Chalcopyrite, Py-Pyrite, FeOx-Iron Oxide, Gn-Gangue, MP-Multiphase.

TABLE 3D

DISTRIBUTION OF GOLD AREA BY CLASS OF ASSOCIATION

KM4508 ED Composite, <38µm

Particles Observed	Mode of Occurrence	Lib	Locked in Binary With:				MP
			Cp	Py	FeOx	Gn	
1	Gold	-	-	4	-	-	-
13	Gold/Electrum	44	35	-	1	12	4
14	Total Gold Bearing Minerals	44	35	4	1	12	4

Notes: a) Lib-Liberated, Cp-Chalcopyrite, Py-Pyrite, FeOx-Iron Oxide, Gn-Gangue, MP-Multiphase.

TABLE 3E

DISTRIBUTION OF GOLD AREA BY CLASS OF ASSOCIATION - ADJUSTED

KM4508 ED Composite, <38µm

Particles Observed	Mode of Occurrence	Lib*	Locked in Binary With:				MP
			Cp	Py	FeOx	Gn	
1	Gold	-	-	4	-	-	-
13	Gold/Electrum	62	17	-	1	12	4
14	Total Gold Bearing Minerals	62	17	4	1	12	4

Notes: a) Lib*-Particles with greater than 50 percent area gold, Cp-Chalcopyrite, Py-Pyrite, FeOx-Iron Oxide, Gn-Gangue, MP-Multiphase.

TABLE 3F

SUMMARY OF QEMSCAN TRACE MINERAL SEARCH

KM4508 ED Composite, <38µm

Sample	ED Composite
Size Fraction	<38µm
Number of Pucks Scanned	15
Backscattered Electrons (BSE) Limit	100
Total Searched Particles	3.33×10^7
Number of Gold Occurrences Detected by Qemscan	14
Mean Projected Diameter of Gold	4.1 µm
Assay Measured Au	2.0 g/t

Note: a) This data is as found at 2 µm resolution.

TABLE 3G

STATUS OF GOLD OCCURRENCES BY CLASS OF ASSOCIATION

KM4508 ED Composite, <38µm

Particle	Mode of Occurrence	Projected Area Diameter - microns					Area % Gold	Volume of Gold
		AuM	Cp	Py	FeOx	Gn		
1	Gold/Electrum Inclusion Multiphase	2	38	21	-	-	<1	6
2	Gold/Electrum Chalcopyrite Adhesion Binary	7	6	-	-	-	59	165
3	Liberated Gold/Electrum	3	-	-	-	-	100	21
4	Liberated Gold/Electrum	5	-	-	-	-	100	74
5	Liberated Gold/Electrum	5	-	-	-	-	100	53
6	Gold Pyrite Inclusion Binary	3	-	12	-	-	6	16
7	Gold/Electrum Inclusion Multiphase	2	12	23	-	-	1	7
8	Gold/Electrum Iron Oxide Inclusion Binary	1	-	-	11	-	2	1
9	Liberated Gold/Electrum	4	-	-	-	-	100	26
10	Gold/Electrum Chalcopyrite Adhesion Binary	4	10	-	-	-	16	36
11	Liberated Gold/Electrum	4	-	-	-	-	100	41
12	Liberated Gold/Electrum	4	-	-	-	-	100	59
13	Gold/Electrum Chalcopyrite Adhesion Binary	5	20	-	-	-	6	72
14	Gold/Electrum Gangue Adhesion Binary	6	-	-	-	20	7	94

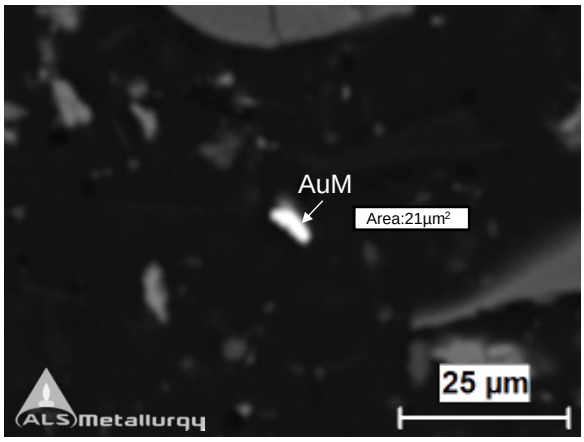
Notes: a) AuM-Gold Bearing Mineral, Cp-Chalcopyrite, Py-Pyrite, FeOx-Iron Oxide, Gn-Gangue.

b) Projected area diameter is the diameter of a circle in mineralogical terms.

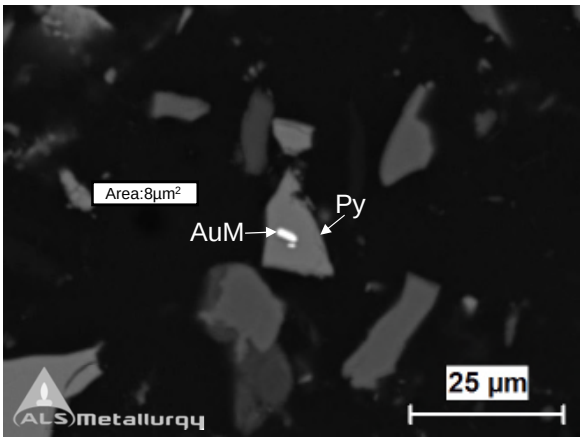
c) Volume of Gold is expressed as μm^3. Volume data assumes particles are spherical in shape.

QEMSCAN BACKSCATTER IMAGE 3
LAS MINAS – ED COMPOSITE, <38µm
KM4508

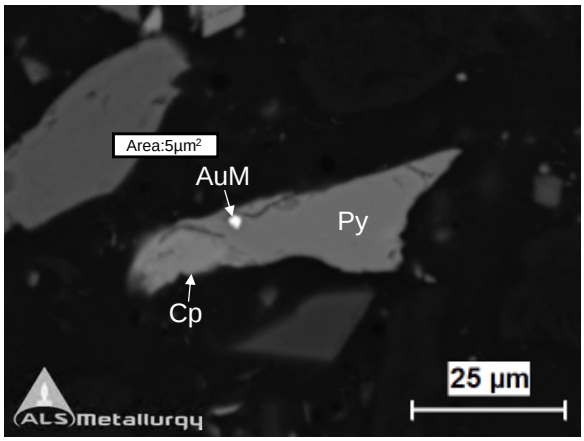
Particle 4



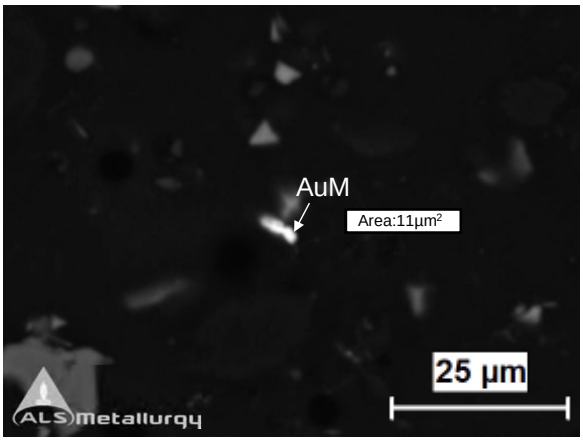
Particle 6



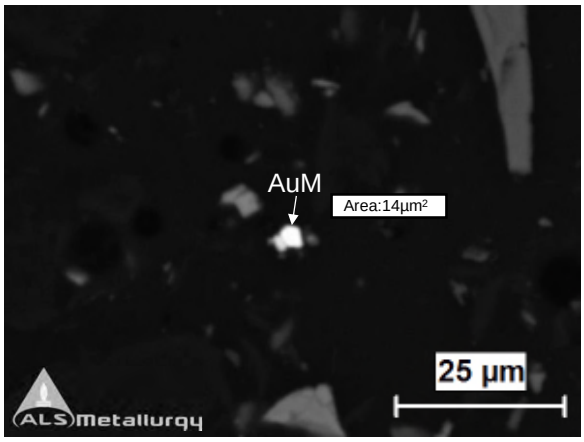
Particle 7



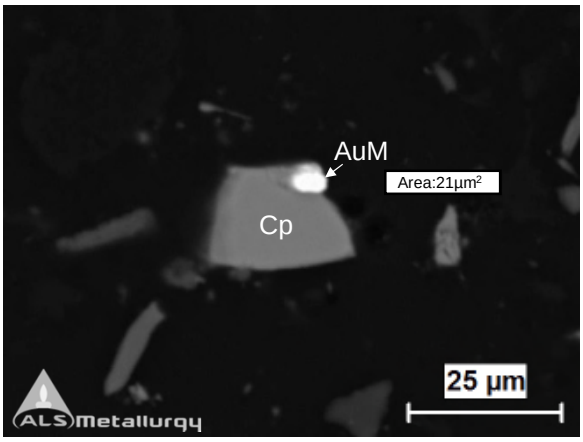
Particle 9



Particle 11



Particle 13



*AuM-Gold Bearing Mineral, Cp-Chalcopyrite, Py-Pyrite, Gn-Gangue.

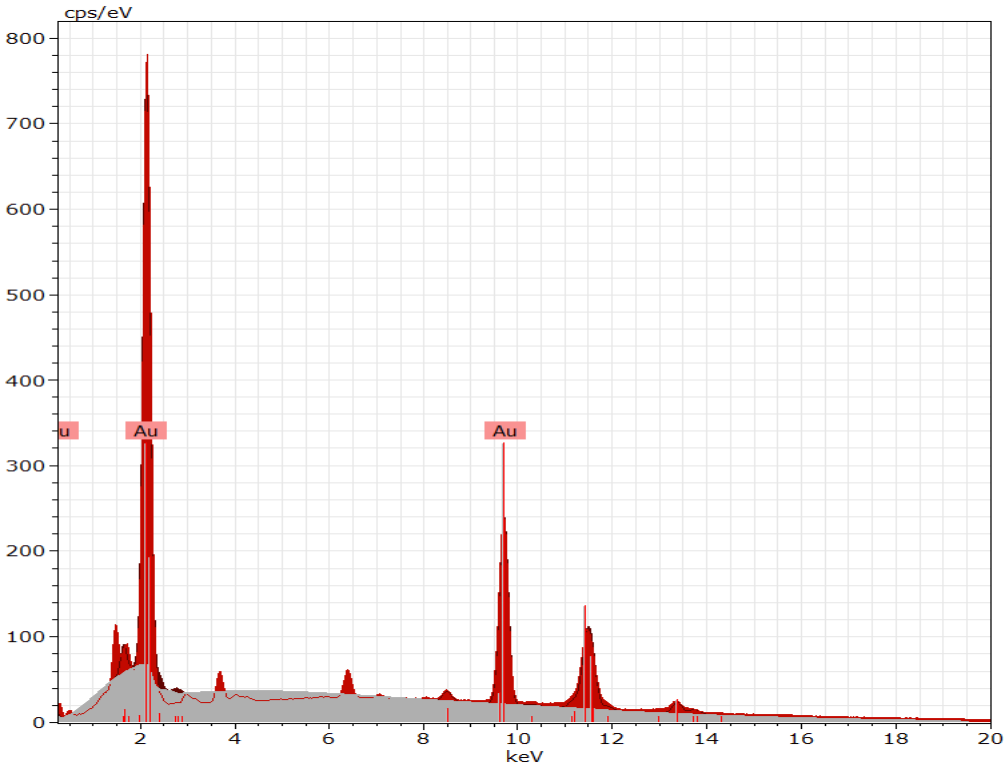
TABLE 4
QEMSCAN X-RAY ANALYSIS ON GOLD PARTICLES
KM4508 ED Composite, >106µm

Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
1	Gold	L-series	0.6	1.5	0.9	0.0
	Silver	L-series	23.0	56.9	61.3	0.7
	Tellurium	L-series	16.8	41.6	37.8	0.5
		Sum:	40.5	100	100	
Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
2	Gold	L-series	63.4	97.3	95.1	1.6
	Silver	L-series	1.8	2.7	4.9	0.1
		Sum:	65.2	100	100	
Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
4	Gold	L-series	47.6	85.6	76.4	1.2
	Silver	L-series	8.0	14.4	23.6	0.3
		Sum:	55.7	100	100	
Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
5	Gold	L-series	98.8	100.0	100.0	2.5
		Sum:	98.8	100	100	
Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
6	Gold	L-series	50.3	88.1	80.2	1.3
	Silver	L-series	6.8	11.9	19.8	0.2
		Sum:	57.2	100	100	
Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
7	Gold	L-series	49.6	88.2	80.4	1.3
	Silver	L-series	6.6	11.8	19.6	0.2
		Sum:	56.2	100	100	
Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
8	Gold	L-series	54.7	89.1	81.7	1.4
	Silver	L-series	6.7	10.9	18.3	0.2
		Sum:	61.4	100	100	

TABLE 4 CONTINUED
QEMSCAN X-RAY ANALYSIS ON GOLD PARTICLES

Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
9	Gold	L-series	67.5	94.1	89.7	1.7
	Silver	L-series	4.2	5.9	10.3	0.2
		Sum:	71.7	100	100	
Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
10	Gold	L-series	43.0	83.1	72.9	1.1
	Silver	L-series	8.8	16.9	27.1	0.3
		Sum:	51.7	100	100	

FIGURE 1
QEMSCAN X-RAY ANALYSIS ON GOLD PARTICLES
PARTICLE 5: GOLD



PARTICLE 6: GOLD/ELECTRUM

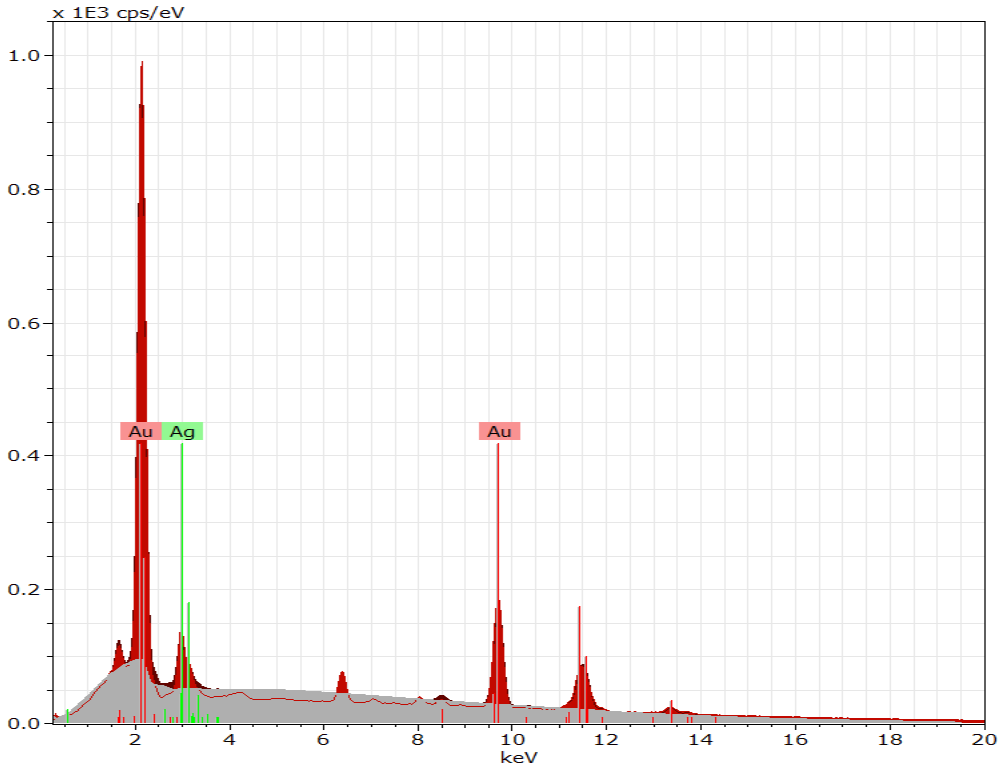


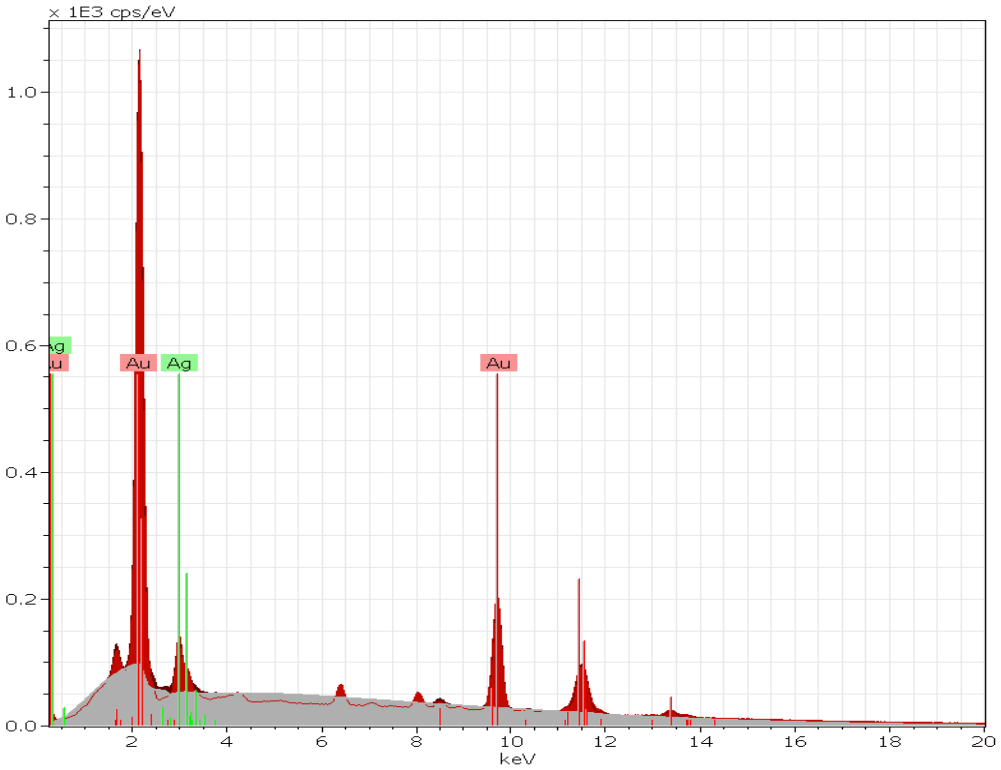
TABLE 5
QEMSCAN X-RAY ANALYSIS ON GOLD PARTICLES
KM4508 ED Composite, <106>38µm

Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
1	Gold	L-series	63.0	91.2	85.0	1.6
	Silver	L-series	6.1	8.8	15.0	0.2
		Sum:	69.1	100	100	
Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
2	Gold	L-series	52.7	88.4	80.6	1.4
	Silver	L-series	6.9	11.6	19.4	0.2
		Sum:	59.6	100	100	
Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
3	Gold	L-series	45.0	80.1	68.8	1.2
	Silver	L-series	11.2	19.9	31.2	0.4
		Sum:	56.2	100	100	
Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
4	Gold	L-series	64.5	92.6	87.3	1.7
	Silver	L-series	5.1	7.4	12.7	0.2
		Sum:	69.6	100	100	
Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
5	Gold	L-series	43.1	85.5	76.4	1.1
	Silver	L-series	7.3	14.5	23.6	0.3
		Sum:	50.4	100	100	
Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
6	Gold	L-series	52.1	85.9	76.9	1.4
	Silver	L-series	8.6	14.1	23.1	0.3
		Sum:	60.6	100	100	
Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
8	Gold	L-series	48.2	91.5	85.5	1.3
	Silver	L-series	4.5	8.5	14.5	0.2
		Sum:	52.7	100	100	

TABLE 5 CONTINUED
QEMSCAN X-RAY ANALYSIS ON GOLD PARTICLES

Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
9	Gold	L-series	70.7	100.0	100.0	1.8
		Sum:	70.7	100	100	
Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
10	Gold	L-series	46.2	85.8	76.8	1.2
	Silver	L-series	7.6	14.2	23.2	0.3
		Sum:	53.8	100	100	
Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
11	Gold	L-series	78.8	100.0	100.0	2.0
		Sum:	78.8	100	100	
Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
12	Gold	L-series	66.3	100.0	100.0	1.7
		Sum:	66.3	100	100	

FIGURE 2
QEMSCAN X-RAY ANALYSIS ON GOLD PARTICLES
PARTICLE 2: GOLD/ELECTRUM



PARTICLE 12: GOLD

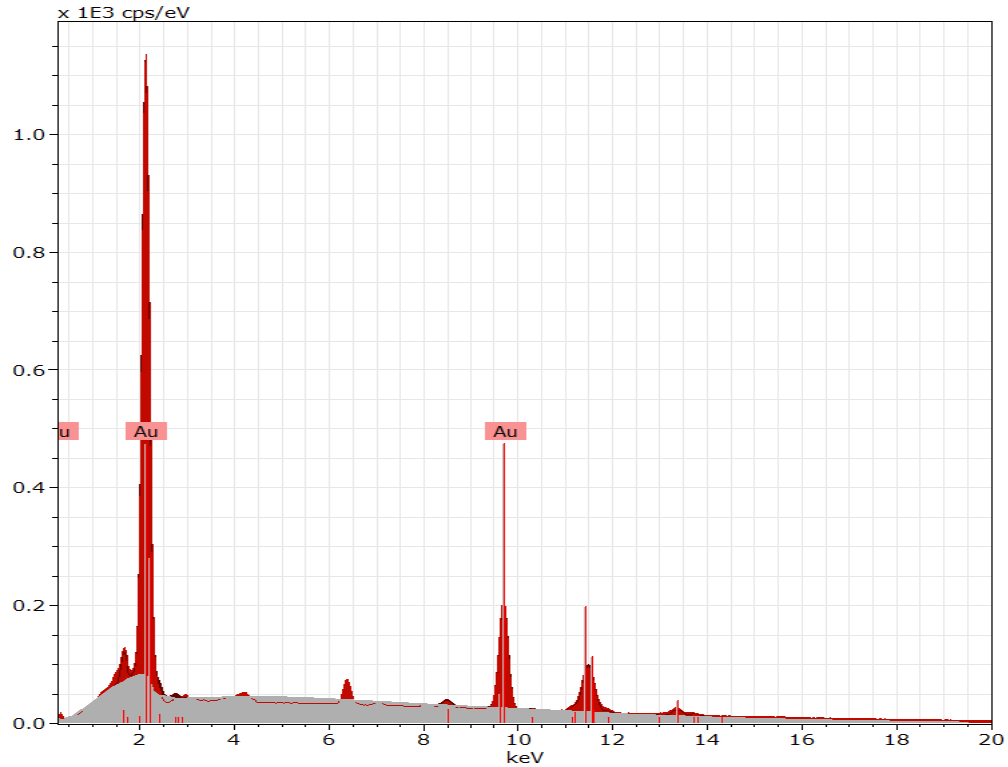


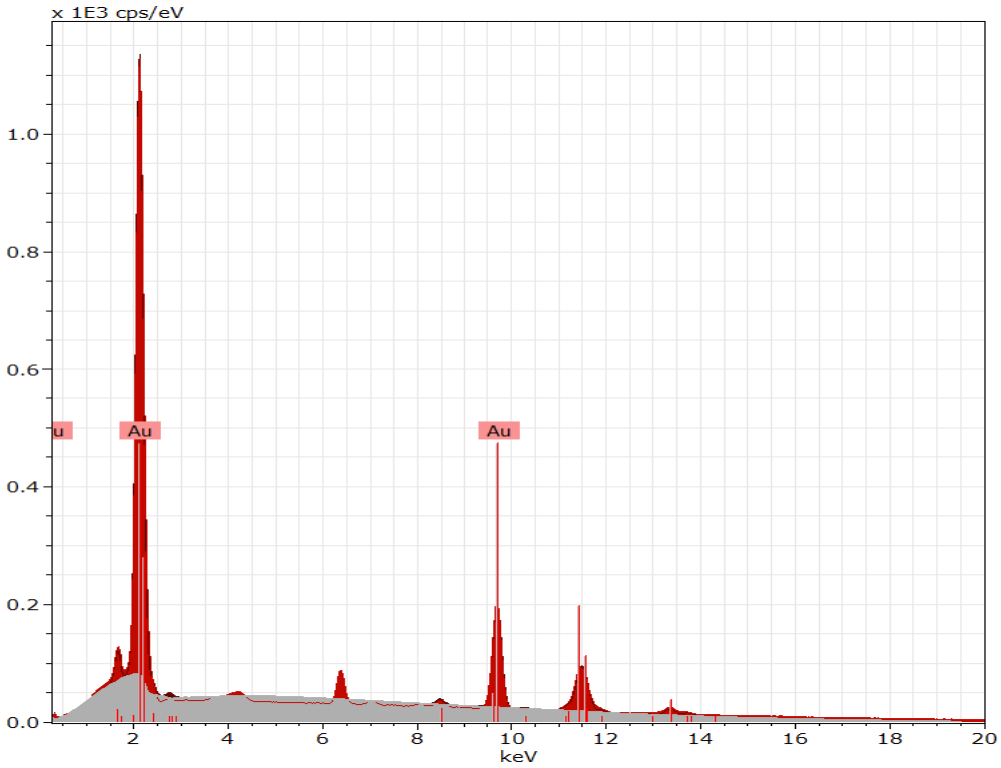
TABLE 6
QEMSCAN X-RAY ANALYSIS ON GOLD PARTICLES
KM4508 ED Composite, <38µm

Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
1	Gold	L-series	51.3	89.6	82.5	1.3
	Silver	L-series	5.9	10.4	17.5	0.2
		Sum:	57.3	100	100	
Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
2	Gold	L-series	51.9	81.4	70.5	1.4
	Silver	L-series	11.9	18.6	29.5	0.4
		Sum:	63.7	100	100	
Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
3	Gold	L-series	45.1	82.0	71.3	1.2
	Silver	L-series	9.9	18.0	28.7	0.3
		Sum:	55.0	100	100	
Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
4	Gold	L-series	61.0	93.2	88.3	1.6
	Silver	L-series	4.4	6.8	11.7	0.2
		Sum:	65.4	100	100	
Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
5	Gold	L-series	49.6	78.5	66.6	1.3
	Silver	L-series	13.6	21.5	33.4	0.5
		Sum:	63.2	100	100	
Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
6	Gold	L-series	64.9	100.0	100.0	1.7
		Sum:	64.9	100	100	
Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
7	Gold	L-series	49.7	88.3	80.5	1.3
	Silver	L-series	6.6	11.7	19.5	0.2
		Sum:	56.3	100	100	
Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
8	Gold	L-series	43.2	84.7	75.2	1.1
	Silver	L-series	7.8	15.3	24.8	0.3
		Sum:	51.0	100	100	

TABLE 6 CONTINUED
QEMSCAN X-RAY ANALYSIS ON GOLD PARTICLES

Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
9	Gold	L-series	58.1	93.9	89.5	1.5
	Silver	L-series	3.8	6.1	10.5	0.1
		Sum:	61.9	100	100	
Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
10	Gold	L-series	45.1	86.6	77.9	1.2
	Silver	L-series	7.0	13.4	22.1	0.2
		Sum:	52.2	100	100	
Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
11	Gold	L-series	54.2	87.8	79.7	1.4
	Silver	L-series	7.6	12.2	20.3	0.3
		Sum:	61.7	100	100	
Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
12	Gold	L-series	60.2	91.7	85.8	1.6
	Silver	L-series	5.5	8.3	14.2	0.2
		Sum:	65.7	100	100	
Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
13	Gold	L-series	49.3	86.6	77.9	1.3
	Silver	L-series	7.7	13.4	22.1	0.3
		Sum:	57.0	100	100	
Particle	Element	Series	Weight Percent	Normal Weight Percent	Normal Atomic Percent	Error in Percent
14	Gold	L-series	59.2	90.9	84.6	1.5
	Silver	L-series	5.9	9.1	15.4	0.2
		Sum:	65.0	100.0	100.0	

FIGURE 3
QEMSCAN X-RAY ANALYSIS ON GOLD PARTICLES
PARTICLE 6: GOLD



PARTICLE 11: GOLD/ELECTRUM