TETRA TECH WARDROP

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Appendix D2

Testwork Reports

ORE HARDNESS AND FLOTATION TESTING
KERR-SULPHURETS-MITCHELL
(KSM) PROJECT

SEABRIDGE GOLD INC.

KM3174

January 6, 2012

G&T METALLURGICAL SERVICES LTD.

2957 Bowers Place, Kamloops, B.C. Canada V1S 1W5

E-mail: info@gtmet.com , Website: www.gtmet.com

ISO 9001:2008
Certificate No. FS 63170

January 6, 2012

Mr. T.J. Smolik
Technical Services Manager
Seabridge Gold Inc.
Suite 400-106 Front Street
Toronto, ON
M5A 1E7

Dear Mr. Smolik;

Re: Ore Hardness and Flotation Testing – Kerr-Sulphurets-Mitchell (KSM) Project – KM3174

We are pleased to report that we have completed the scope of work approved by you under our project number KM3174. Eleven composite samples from the KSM project were tested for ore hardness and flotation properties.

The samples tested had copper feed grades ranging from 0.13 to 0.68 percent. Gold feed grades ranged from 0.26 to 1.1 g/tonne. SAG mill comminution (SMC) tests on each sample produced A*b parameter values ranging from 38 to 59 and averaging 49. The A*b value is a measure of resistance breakage in a SAG mill. Lower numbers indicate higher resistance. On the basis of the numbers recovered the samples ranged from moderately soft to moderately hard from a SAG milling perspective.

Bond ball mill work index tests were also completed on each sample. Bond ball mill work index values ranged from 14.1 to 18.7 kWh/tonne. The two Sulphuret samples had the highest Bond ball mill work indices at 16.7 and 18.7 kWh/tonne.

Open circuit cleaner flotation tests on seven Mitchell Zone composites, using the standard KSM flowsheet, produced typical metallurgical results for six of the seven samples. Copper recoveries ranged between 74 to 85 percent at copper grades between 21 to 30 percent for the seven samples. Composite 7 had a low copper feed grade and this likely explains the inferior metallurgical performance.

Locked cycle flotation tests on two Sulphurets and two Kerr composites produced copper recoveries ranging between 61 and 86 percent at copper grades ranging between 26 to 31 percent copper. The Sulphurets Hazetton composite had lower copper recovery at 61 percent and 26 percent copper grade for unknown reasons. Additional mineralogical and flotation testing would be required to troubleshoot this problem.

The copper scavenger cleaner tailing and pyrite concentrates produced in flotation testing on the 11 composites, were further processed in a standard 24 hour CIL cyanidation bottle roll test. On average, 52 percent of the feed gold was recovered to the copper concentrate, 8 percent to the 24 hour CIL solution from the scavenger tailing and 11 percent to the 24 hour CIL solution from the pyrite concentrate. The overall gold recovery was, on average, 71 percent and ranged from 65 to 77 percent.

Thank you for choosing G&T Metallurgical Services Ltd. for your testing needs. If you have any questions regarding this report or the test program, please contact us directly.

Sincerely,

John Folinsbee, P.Eng
VP - Operations

Helen Johnston
Project Metallurgist

January 6, 2012
KM3174

Report Distribution:
T.J. Smolik, Seabridge Gold Inc., Arizona, USA – 2 Copies
Gloria Trujillo, Seabridge Gold Inc., Toronto, ON – 2 Copies
Jay Layman, Seabridge Gold Inc., Colorado, USA – 1 Copy

ORE HARDNESS AND FLOTATION TESTING

KERR-SULPHURETS-MITCHELL (KSM) PROJECT

KM3174

January 6, 2012

Work Performed on Behalf of Seabridge Gold Inc.

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1.0 Introduction

The Kerr-Sulphurets-Mitchell (KSM) Project is wholly owned by Seabridge Gold Inc. G&T Metallurgical Services Ltd. has completed multiple metallurgical test programs on samples from the KSM project[*]. The KSM project is a large tonnage copper-gold-silver-molybdenum project located in Northwest British Columbia, about 68 kilometers, by air, north-northwest of Stewart, BC.

A Request For Proposal was received from Mr. Dean Lindsay, Metallurgical Consultant to Seabridge Gold, to conduct ore hardness and flotation testing on 11 samples from the KSM deposit. A proposal was constructed based on the received RFP and was sent to Mr. Lindsay via email on September 23, 2011.

The main objectives of the current test program can be summarized by the following points:

- Measure ore hardness properties for the suite of 11 samples using the SMC and Bond ball mill work index test procedures.

- Determine flotation metallurgical performance using batch open circuit flotation testing protocols on seven of the samples and locked cycle flotation testing protocols on the other four.

- Measure the concentrations of As, Cd, Pb, Sb and Zn in the flotation concentrates.

- Test the gold extraction from the cleaner scavenger tailing and reground pyrite rougher concentrates using a standard CIL cyanidation bottle roll procedure.

[*] For a complete listing of previous projects, please see Appendix V – Special Data.

The samples used in this test program were received at G&T Metallurgical Services Ltd. on October 3, 2011. The total weight of the sample shipment was estimated at 300 kg. The samples were received as half core and had individual sample weights between 25 to 30 kg[*].

The test program commenced in early October 2011 and was essentially complete during the first week of December 2011 with a final batch cleaner test on Composite 9.

The main findings from this test program are detailed in the main body of this report. Individual test results, along with supporting data, can be found in the following appendices.

Appendix I – Sample Origin
Appendix II – Metallurgical Test Data
Appendix III – Particle Sizing Data
Appendix IV – Comminution Data
Appendix V – Special Data

[*] For more details on the samples received and utilized in this test program please see Appendix I – Sample Origin.

2.0 Properties of the Test Samples

Chemical content and ore hardness are two important properties that influence the process flowsheet for a given ore. These properties, for the 11 KSM samples tested in this program, are discussed in more detail in the following subsections.

2.1 Chemical Content Data

The chemical contents of the 11 samples were measured using standard analytical protocols. The chemical content data is presented in Table 1.

TABLE 1
CHEMICAL CONTENT DATA

Sample Name	Element for Assay – percent or g/tonne										
	Cu	Mo	Pb	Zn	Fe	S	Ag	Au	As	Sb	Cd
Composite 1	0.20	0.005	0.01	0.01	3.89	3.17	4	0.77	0.004	<0.001	1
Composite 2	0.20	0.003	0.01	0.01	3.82	3.62	3	0.69	0.002	<0.001	1
Composite 3	0.20	0.004	0.01	0.01	4.32	4.52	3	0.71	0.001	<0.001	2
Composite 4	0.20	0.006	0.02	0.01	4.22	4.17	4	1.10	0.003	<0.001	2
Composite 5	0.23	0.005	0.02	0.01	4.08	4.89	3	0.56	0.001	<0.001	2
Composite 6	0.19	0.003	0.02	0.01	4.21	3.22	2	0.62	0.001	<0.001	1
Composite 7	0.13	0.009	0.05	0.02	4.19	3.75	3	0.65	0.001	<0.001	1
Composite 8	0.46	0.008	0.02	0.02	2.74	2.21	1	0.70	0.008	<0.001	2
Composite 9	0.17	0.004	0.05	0.04	5.50	3.51	2	0.65	0.006	<0.001	<1
Composite 10	0.59	0.001	0.02	0.02	5.65	5.74	1	0.26	0.009	<0.001	1
Composite 11	0.68	0.001	0.01	0.04	5.79	6.32	2	0.29	0.010	<0.001	1

Note: a) Au, Ag and Cd assays are reported in g/tonne. All others are reported in percent.
b) The sulphur assay is S_{TOTAL} reported by Leco.

The cross reference between the composite number and the source deposit is shown in Table 2.

TABLE 2
SAMPLE LEGEND

Composite Number	Deposit
1	Mitchell Year 0-5
2	Mitchell Year 0-10
3	Mitchell Year 10-LOM
4	Mitchell QSP
5	Mitchell HI QSZ
6	Mitchell CR PR
7	Mitchell IRAG
8	Sulphurets Raewyn CV
9	Sulphurets Lower Hazetton
10	Kerr CL Quartz
11	Kerr QSP Quartz

The 11 samples had feed copper grades ranging from about 0.13 to 0.68 percent. The seven Mitchell Zone samples tested had copper feed grades ranging from about 0.13 to 0.23 percent.

Gold feed grades ranged from about 0.26 to 1.10 g/tonne across the full sample suite. The two Kerr Zone composites had the lowest gold feed grades at an average of about 0.27 g/tonne.

The Kerr and Sulphurets samples had higher arsenic feed grades than the suite of Mitchell samples analyzed. In general, Pb, Zn, Sb and Cd values in the feed were low for all samples measured.

2.2 Ore Hardness Data

Ore hardness data was generated by completing an SMC (SAG Mill Comminution) and Bond ball mill work index test on each of the 11 composites. The SMC test data is used to provide information regarding ore grindability in a SAG (Semi-autogenous) mill. The Bond ball mill work index test provides information regarding ore grindability in a ball mill. The results of the ore hardness tests are displayed in Table 3*.

TABLE 3
ORE HARDNESS DATA

Composite	Type	A*b	Bond Ball Mill Work Index kWh/tonne
1	Mitchell Year 0-5	54.4	14.3
2	Mitchell Year 0-10	57.9	14.3
3	Mitchell Year 10-LOM	44.7	14.9
4	Mitchell QSP	47.4	14.1
5	Mitchell HI QSZ	59.6	14.5
6	Mitchell CR PR	47.6	14.4
7	Mitchell IRAG	53.2	15.3
8	Sulphurets Raewyn CV	41.7	18.7
9	Sulphurets Lower Hazetton	38.7	16.7
10	Kerr CL Quartz	46.1	14.8
11	Kerr QSP Quartz	47.0	14.1

The A*b parameter, a measure of resistance to impact breakage in two SAG mills, ranged between 38 and 59 for the samples tested. The average A*b value was 48.9.

On the basis of the recorded A*b values the samples tested ranged in hardness from moderately soft to moderately hard with respect to breakage in a SAG mill. On average, the sample suite tested can be considered to be of moderate hardness with respect to impact breakage in the SAG mill.

* The full JKTech report can be found in Appendix IV – Comminution.

The Bond ball mill work index ranged in value from 14.1 to 18.7 kWh/tonne. The Mitchell Zone and Kerr samples had relatively consistent Bond ball mill work indices, ranging from about 14 to 15 kWh/tonne. On this basis, these samples can be considered moderately hard.

The two Sulphurets samples had Bond ball mill work indices of 16.7 and 18.7 kWh/tonne. On this basis, these samples can be considered to be hard with respect to breakage in a ball mill.

3.0 Metallurgical Test Results

Composites 1 to 7 were tested using open circuit batch cleaner flotation testing protocols. Composites 8 to 11 were tested using locked cycle flotation testing protocols. The pyrite concentrates (reground) and cleaner scavenger tailing were further treated using cyanidation bottle roll testing protocols.

3.1 The Flowsheets

The flowsheets and test conditions used in the flotation tests are presented in Figure 1. The following comments provide a summary of the key features of this flowsheet:

- The flotation feed was ground to a target primary grind sizing of 120μm K_{80}. The rougher concentrate was ground to a target regrind sizing of 20μm K_{80}.

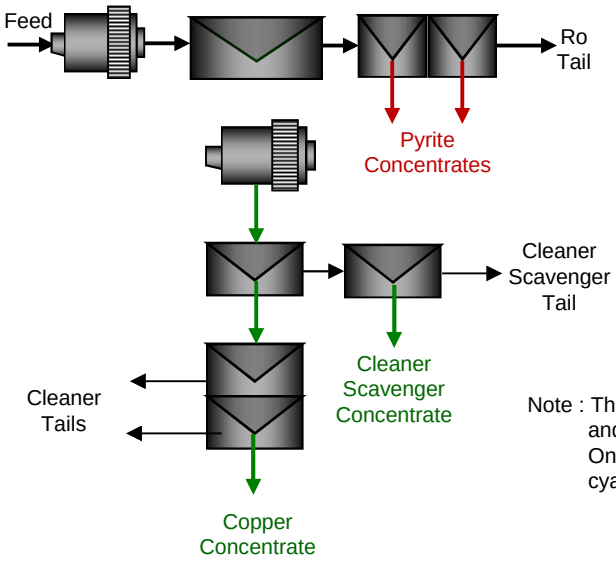
- The pH in both the rougher and cleaner circuits was modulated with the addition of about 400 g/tonne lime into the primary and regrind milling steps. The rougher pH was maintained at between pH 10.0 and 11.0 and the cleaner pH at about 11.5.

- A gangue depressant, PE26, was added to the regrind circuit at an addition rate of 20 g/tonne. PE26 is a mixture of CMC (Carboxy Methyl Cellulose) and guar gum.

- Cytec 3418A was added to the rougher and cleaning circuits as the primary copper sulphide mineral collector. Collector 208 was also added as an enhanced collector for precious metals. PAX (Potassium Amyl Xanthate) was added to the pyrite circuit to assist in collection of pyrite to the pyrite rougher concentrate.

FIGURE 1
FLOWSHEET AND TEST CONDITION PERFORMANCE DATA

Open Circuit Cleaner Flowsheet and Test Conditions

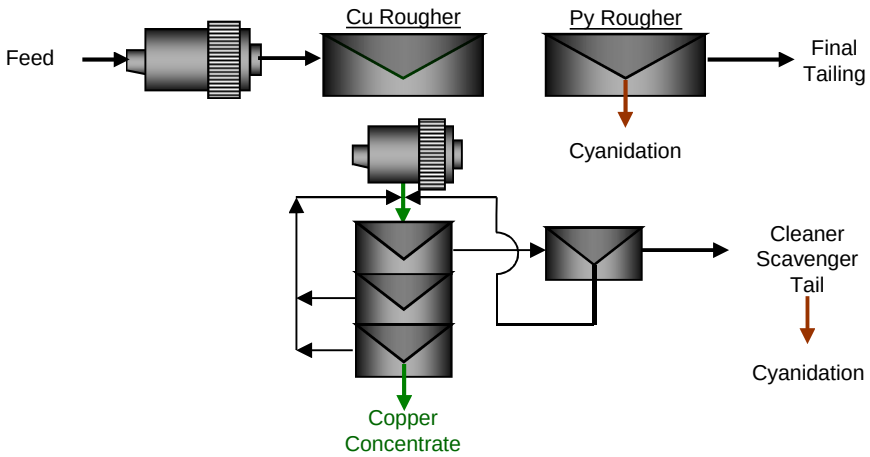


Stage	Grind µm K_{80}	pH	Reagents - g/t					
			Lime	PE26	Fuel Oil	208	3418A	PAX
Grind	116-131	10.50	400	-	10	-	-	-
Bulk Roughers	-	10-11	-	-	-	4-7	4-7	-
Regrind	14-23	11.5	400	-	50	-	-	-
Cleaner	-	11.5	-	20	40	9-19	9-19	-
Py Rougher	-	10.0	-	-	-	60	-	60

Note : The cleaner scavenger tailing and pyrite concentrates produced in both open and locked cycle tests were further treated in a CIL cyanidation bottle roll test. Only the pyrite rougher concentrate was subjected to regrinding prior to cyanidation.

Cycle Test Flowsheet and Test Conditions

Stage	Grind µm K_{80}	pH	Reagents - g/t					
			Lime	PE26	Fuel Oil	208	3418A	PAX
Grind	121-130	10.50	400-465	-	10	-	-	-
Bulk Roughers	-	10-11	0-65	-	-	2-5	2-5	-
Regrind	18-21	11.5	400	-	50	-	-	-
Cleaner	-	11.5	-	20	40	7-14	7-14	-
Py Rougher	-	10.0	-	-	-	60	-	60



Note: Additional test data can be located in Appendix II.

3.2 Flotation Test Results

The results of both the batch open circuit cleaner and locked cycle flotation tests are presented in Figure 2 and are further discussed as follows:

- Open circuit batch cleaner tests on the seven Mitchell Zone composites produced copper recoveries of between 74 and 85 percent at a copper grade of 25 to 30 percent for all but Composite 7. Composite 7 was a low copper feed grade Mitchell IARG sample[*].

- Results from this series of open circuit tests are typical for the KSM deposit based on previous testing, with the exception of Composite 7, which had a low copper feed grade..

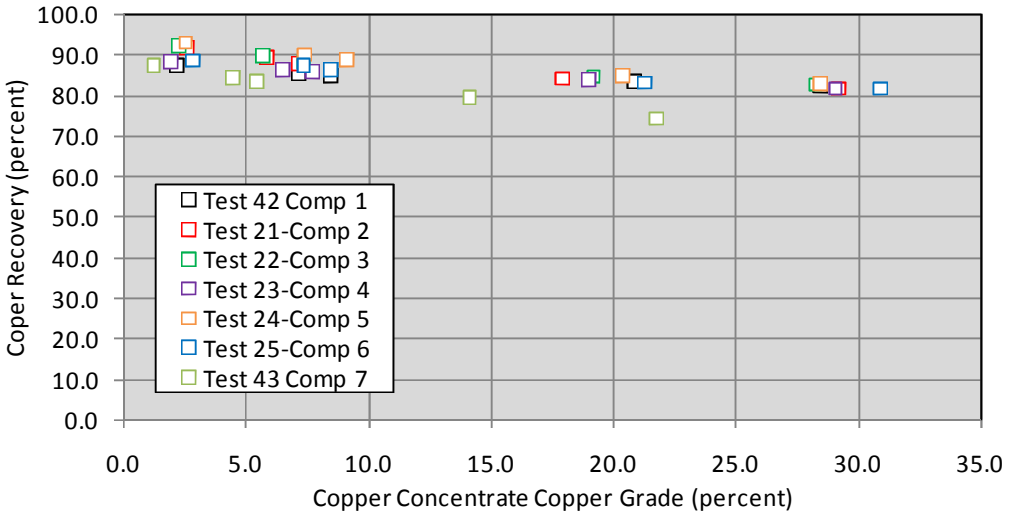
- Locked cycle flotation tests on two Sulphurets and two Kerr composites produced copper recoveries of between 61 and 86 percent at a concentrate copper grades ranging between 26 and 31 percent. The lower grade Sulphurets Hazetton composite, with a copper feed grade of 0.16 percent copper, produced the lower copper recovery of 61 percent at 26 percent copper grade in the copper concentrate. The lower copper feed grade may have contributed to inferior copper metallurgical performance for this sample.

- Gold recoveries, to the copper concentrate from the locked cycle tests, ranged between about 40 to 59 percent. Gold grades in the copper concentrate ranged between 5 to 64 percent.

[*] Only the best test results are shown in Figure 2. Data for all but the final initial set of tests can be found in Appendix II – Metallurgical Test Data. Reagent additions were modified from the standard KSM recipe to achieve the final result.

FIGURE 2
FLOTATION TEST RESULTS

Open Circuit Cleaner Test Results



Cycle Test Results

Product	Weight	Weight	Assay - percent or g/t						Distribution - percent					
	g	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Test 8 -Sulphurets-Raewyn CV														
Flotation Feed	3995.3	100.0	0.46	0.008	2.9	2.01	1	0.70	100.0	100.0	100.0	100.0	100.0	100.0
Bulk Concentrate	52.4	1.3	**29.3**	0.227	27.2	32.4	34	**31.4**	**83.6**	37.7	12.2	21.1	31.1	**58.6**
Bulk Cleaner Scav Tail	368.3	9.2	0.37	0.044	11.9	13.0	1	2.20	7.3	51.4	37.3	59.3	6.4	28.9
Pyrite Rougher Conc	268.5	6.7	0.26	0.005	5.9	5.34	1	0.67	3.8	4.4	13.5	17.8	4.7	6.4
Pyrite Rougher Tail	3306.1	82.7	0.03	0.001	1.3	0.04	1	0.05	5.2	6.6	37.0	1.8	57.8	6.0
Test 9 -Sulphurets-Hazelton														
Flotation Feed	4014.1	100.0	0.16	0.004	5.7	3.28	2	0.59	100.0	100.0	100.0	100.0	100.0	100.0
Bulk Concentrate	14.9	0.4	**26.0**	0.170	29.3	34.4	130	**63.7**	**60.6**	14.1	1.9	3.9	21.3	**40.1**
Bulk Cleaner Scav Tail	224.3	5.6	0.82	0.055	27.4	29.5	11	3.55	28.8	68.6	27.1	50.2	28.4	33.7
Pyrite Rougher Conc	267.2	6.7	0.12	0.004	20.4	20.64	4	1.26	4.8	5.4	24.1	41.8	11.8	14.3
Pyrite Rougher Tail	3507.7	87.4	0.01	0.001	3.0	0.15	1	0.08	5.8	11.9	46.9	4.1	38.6	11.9
Test 10 -Kerr-Cl Qtz														
Flotation Feed	3979.4	100.0	0.59	0.002	5.9	5.44	2	0.24	100.0	100.0	100.0	100.0	100.0	100.0
Bulk Concentrate	66.4	1.7	**30.7**	0.023	29.4	34.0	49	**7.2**	**86.3**	25.6	8.2	10.4	39.8	**49.7**
Bulk Cleaner Scav Tail	409.0	10.3	0.39	0.006	22.0	23.7	3	0.72	6.7	43.6	38.1	44.8	17.4	30.8
Pyrite Rougher Conc	413.9	10.4	0.16	0.001	17.3	18.36	1	0.38	2.8	3.8	30.3	35.1	5.1	16.3
Pyrite Rougher Tail	3090.1	77.7	0.03	0.001	1.8	0.68	1	0.01	4.2	27.1	23.3	9.7	37.8	3.2
Test 11 -Kerr QSP-Qtz														
Flotation Feed	3995.5	100.0	0.69	0.002	5.8	6.08	3	0.24	100.0	100.0	100.0	100.0	100.0	100.0
Bulk Concentrate	78.8	2.0	**29.0**	0.038	29.1	36.1	77	**5.1**	**83.4**	34.9	9.9	11.7	47.4	**41.1**
Bulk Cleaner Scav Tail	368.6	9.2	0.34	0.007	24.8	28.7	5	0.60	4.6	30.6	39.6	43.6	14.4	22.7
Pyrite Rougher Conc	539.7	13.5	0.33	0.001	16.2	19.03	3	0.54	6.5	7.9	37.9	42.3	14.7	30.0
Pyrite Rougher Tail	3008.4	75.3	0.05	0.001	1.0	0.19	1	0.02	5.4	26.6	12.6	2.4	23.5	6.2

Notes : a) Additional test data can be located in Appendix II. Multiple Tests were done on each composite - the best result reported.
b) Comp 1- Mitchell Year 0-5, Comp 2- Mitchell Year 0-10, Comp 3- Mitchell Year 10-LOM, Comp 4 –Mitchell QSP, Comp 5 –Mitchell Mitchell Hi Qtz, Comp 6 – Mitchell Cr Pr, Comp 7-Mitchell IARG

3.3 Cyanidation Test Results

The cleaner scavenger tail and pyrite concentrates produced in Tests 8 to 11 and 20 to 26 were further tested using a standard cyanidation bottle roll testing procedure. The results of these tests, along with overall gold recovery data, is presented in Figure 3 and further discussed in the following points:

- The average percent of feed gold recovered to the flotation copper concentrate was 52 percent. This percentage ranged from 37 to 64 percent.

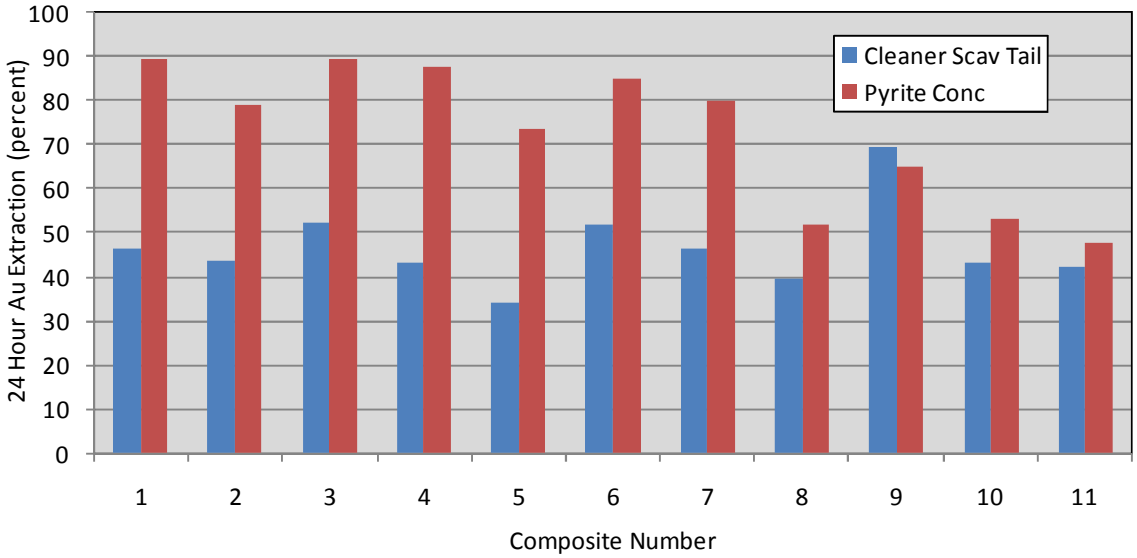
- On average, the 24 hour gold extraction from the cleaner scavenger tail was 47 percent. This percentage ranged from 39 to 70 percent. This translated into an average incremental gold recovery of 8 percent from the flotation feed.

- Gold in the pyrite concentrate was, on average, 73 percent extracted to the 24 hour cyanidation solution. This percentage ranged from 48 to 90 percent. The average incremental gold extraction to the 24 hour leach solution was 11 percent with respect to the flotation feed.

- The average overall gold extraction for this suite of 11 samples was 71 percent and ranged from 61 to 77 percent. On average, 52 percent was recovered to the copper concentrate and the balance to the 24 hour cyanidation solutions.

FIGURE 3
CYANIDATION TEST RESULTS

24 Hour Gold Extraction Data



Overall Gold Recovery

Composite	Copper Concentrate				Inc. Au Rec %		Overall Au
	Cu Dist %	Cu Grade %	Au Dist %	Au Grade g/t	Clean. Tail	Py Conc	Recovery %
1	71.9	27.0	64	89	4	8	76
2	81.8	29.0	56	80	2	11	69
3	82.9	28.2	58	78	4	12	74
4	81.8	29.0	62	146	4	11	77
5	82.5	28.5	53	54	5	10	69
6	81.8	30.9	56	67	3	14	73
7	57.9	20.7	37	56	8	15	61
8	83.6	29.3	59	31	11	3	73
9	60.6	26.0	40	64	23	9	73
10	86.3	30.7	50	7	13	9	72
11	83.4	29	41	5	10	14	65
Average	**78**	**28.0**	**52**	**61**	**8**	**11**	**71**

Notes : a) Additional test data can be located in Appendix II.
b) Comp 1- Mitchell Year 0-5, Comp 2- Mitchell Year 0-10, Comp 3- Mitchell Year 10-LOM, Comp 4 –Mitchell QSP, Comp 5 –Mitchell Mitchell Hi Qtz, Comp 6 – Mitchell Cr Pr, Comp 7-Mitchell IARG , Comp 8- Sulphurets Raewyn CV, Comp 9-Sulphurets Hazelton, Comp 10- Kerr Cl Qtz, Comp 11 – Kerr QSP Qtz

3.4 Quality of the Concentrates

The copper concentrates, produced in locked cycle flotation tests on Composites 8 to 11 (Sulphurets and Kerr Zone samples), were analyzed for a limited suite of minor elements. This minor element data is presented in Table 3.

TABLE 3
MINOR ELEMENT DATA

Element	Symbol	Unit	Test 8	Test 9	Test 10	Test 11
Antimony	Sb	g/t	**2100**	370	620	180
Arsenic	As	g/t	1768	205	621	**2793**
Cadmium	Cd	g/t	**68**	26	6	32
Lead	Pb	%	0.19	**0.72**	0.04	0.05
Zinc	Zin	%	0.29	0.18	0.08	0.75

The arsenic and antimony concentrations, in the copper concentrate, are bordering at the penalty limit for some samples.

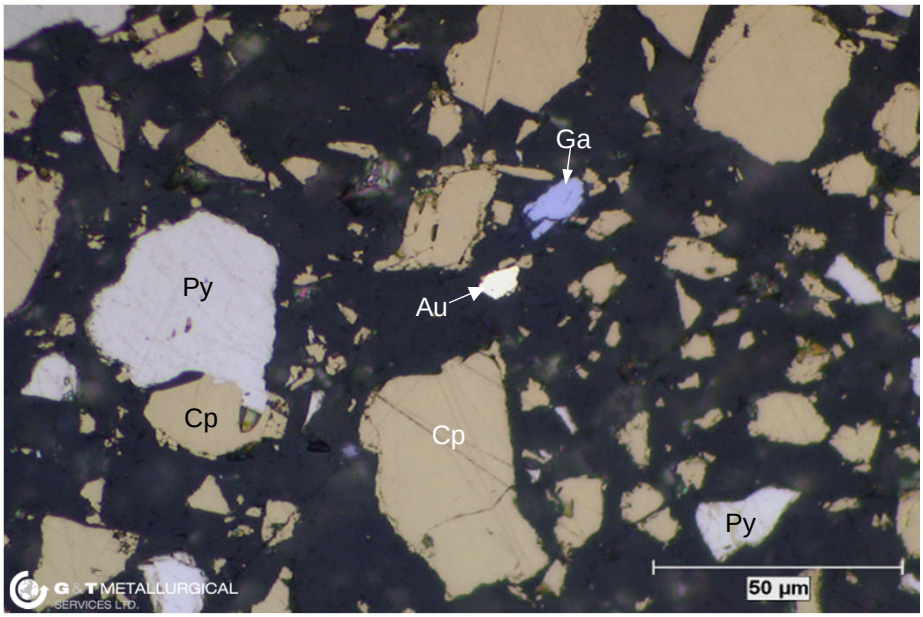
Cadmium is elevated in the copper concentrate produced from Test 8 – Sulphurets Raewyn CV composite. The level is not overly high, but could attract penalties at some smelters.

The lead content is elevated in the concentrate produced from Test 9 – Sulphurets Hazetton composite.

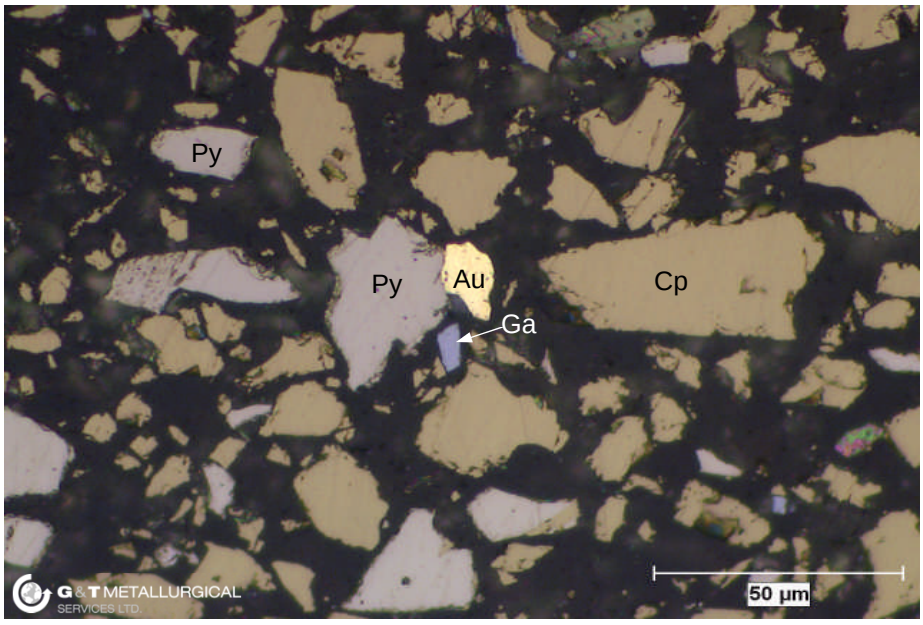
The minor element data should be reviewed by a concentrate marketing specialist to ensure that there are no marketing issues with these concentrates.

PHOTOMICROGRAPH 1
KERR SULPHURETS – BULK CONCENTRATE II
Test 9 KM3174

Unsized



Unsized



*Au-Gold, Cp-Chalcopyrite, Ga-Galena, Py-Pyrite

4.0 Conclusions and Recommendations

A metallurgical test program involving ore hardness and flotation testing has been completed on 11 composite samples from the KSM (Kerr-Sulphurets-Mitchell) project. The samples tested were reportedly representative of material from the Mitchell, Sulphurets and Kerr Zones at KSM.

The samples tested had copper feed grades ranging from about 0.13 up to 0.68 percent. Gold grades, in the feed, ranged from 0.26 to 1.10 g/tonne.

SMC (SAG mill comminution) tests on the 11 samples produced A*b values ranging from 38 to 59 and averaging 48.9. The A*b value is a measure of resistance to impact breakage in a SAG mill. On this basis, the samples tested ranged in classification from moderately soft to moderately hard and, on average, were of moderate hardness.

Bond ball mill work index tests produced Bond ball mill work indices ranging from 14.1 to 18.7 kWh/tonne. The Mitchell Zone samples had relatively consistent Bond ball mill work indices ranging from 14 to 15 kWh/tonne. The two Sulphurets samples had higher Bond ball mill work index values of 16.7 and 18.7 kWh/tonne. On the basis of these results, the samples tested ranged from moderately hard to hard with respect to breakage in a ball mill.

Open circuit cleaner tests on Composites 1 to 7 (Mitchell Zone composites), using a standard flowsheet and either standard or modified conditions, produced copper recoveries ranging from 74 to 85 percent at copper grades from 21 to 31 percent[*].

Composite 7, with a low copper feed grade of about 0.13 percent, also produced lower than typical copper recoveries and copper concentrate grades.

[*] Multiple tests were run on each composite with reagent additions being increased from standard conditions to achieve optimal performance.

Locked cycle flotation tests on two Sulphurets and two Kerr samples (Tests 8 to 11) produced final concentrate copper recoveries ranging from 61 to 86 percent. The copper grades in the concentrates ranged from 26 to 31 percent. Only the Sulphurets Hazetton composite produced a copper recovery of less than 80 percent at 26 percent copper grade.

The scavenger cleaner tailing and ground pyrite rougher concentrates from Test 8 to 11 and 20 to 26 were further processed using a standard 24 hour CIL cyanidation flowsheet. Average incremental gold recoveries were 8 and 11 percent from the cleaner scavenger tail and pyrite concentrate, respectively. The average overall gold recovery for all 11 samples was 71 percent.

A limited number of minor elements were assayed from the final copper concentrates from Tests 8 to 11 (Sulphurets and Kerr composites). Antimony, arsenic, cadmium and lead were somewhat elevated in some concentrates. The minor element data should be reviewed by a concentrate marketing specialist to determine any marketing issues with these concentrates.

APPENDIX I – KM3174

SAMPLE ORIGIN

1.0 Sample Origin

The samples tested in this program were received as half core on October 3, 2011. The shipment consisted of material representing 11 different ore zones within the KSM Project.

Each composite was assayed for the elements of interest and the results of these analyses are presented in Table I-1.

TABLE I-1
CHEMICAL CONTENT DATA

Sample Name	Element for Assay – percent or g/tonne										
	Cu	Mo	Pb	Zn	Fe	S	Ag	Au	As	Sb	Cd
Composite 1	0.20	0.005	0.01	0.01	3.89	3.17	4	0.77	0.004	<0.001	1
Composite 2	0.20	0.003	0.01	0.01	3.82	3.62	3	0.69	0.002	<0.001	1
Composite 3	0.20	0.004	0.01	0.01	4.32	4.52	3	0.71	0.001	<0.001	2
Composite 4	0.20	0.006	0.02	0.01	4.22	4.17	4	1.10	0.003	<0.001	2
Composite 5	0.23	0.005	0.02	0.01	4.08	4.89	3	0.56	0.001	<0.001	2
Composite 6	0.19	0.003	0.02	0.01	4.21	3.22	2	0.62	0.001	<0.001	1
Composite 7	0.13	0.009	0.05	0.02	4.19	3.75	3	0.65	0.001	<0.001	1
Composite 8	0.46	0.008	0.02	0.02	2.74	2.21	1	0.70	0.008	<0.001	2
Composite 9	0.17	0.004	0.05	0.04	5.50	3.51	2	0.65	0.006	<0.001	<1
Composite 10	0.59	0.001	0.02	0.02	5.65	5.74	1	0.26	0.009	<0.001	1
Composite 11	0.68	0.001	0.01	0.04	5.79	6.32	2	0.29	0.010	<0.001	1

Note: a) Au, Ag and Cd assays are reported in g/tonne. All others are reported in percent.
b) The sulphur assay is S_{TOTAL} reported by Leco.

A listing of sample names and weight of each received is shown in Table I-2.

TABLE I-2
SAMPLES RECEIVED - OCTOBER 3, 2011

Composite	Sample Id	Weight (kg)	Form
Composite 1	Mitchell Year 0-5	28.7	Half Core
Composite 2	Mitchell Year 5-10	30.0	Half Core
Composite 3	Mitchell Year 10-LOM	30.4	Half Core
Composite 4	Mitchell QSP	28.0	Half Core
Composite 5	Mitchell Hi QTZ	26.9	Half Core
Composite 6	Mitchell CR PR	27.0	Half Core
Composite 7	Mitchell IARG	29.6	Half Core
Composite 8	Sulphurets Raewyn CV	23.8	Half Core
Composite 9	Sulpherets Lower Hazetton	26.7	Half Core
Composite 10	Kerr Year CL Quartz	24.7	Half Core
Composite 11	Kerr QSP Quartz	23.7	Half Core
Total		299.5	

APPENDIX II – KM3174

METALLURGICAL TEST DATA

INDEX

DATE: November 11, 2011

PROJECT NO: KM3174-01

PURPOSE: Preliminary Cleaner Test.

PROCEDURE: Perform a standard two product cleaner test.

FEED: 4 kg of Composite 1 ore ground to a nominal 121μm K_{80}.
Bulk Regrind Discharge - 17μm K_{80}.
Pyrite Rougher Concentrate - 59μm K_{80}

FLOWSHEET: 2

Stage	Reagents Added g/tonne						Time (minutes)			pH
	Lime	PE26	Fuel Oil	208	3418A	MBC	Grind	Cond.	Float	
Primary Grind	400		10				17			9.6
BULK CIRCUIT:										
Rougher 1	75			3	3	8		1	3	10.0
Rougher 2	√			3	3	4		1	4	10.0
Regrind	400		50				12			11.5
Cleaner 1	-	20		5	5	8		1	5	11.5
Cleaner 2	√		10	4	4	8		1	4	11.5
Cleaner 3	√		10	3	3	8		1	3	11.5
Cleaner Scavenger	-		20	-	-	4		1	2	11.5
PYRITE CIRCUIT:					PAX					
Rougher 1	-			30	30	4		1	4	9.6
Rougher 2	-			30	30	4		1	4	9.2

Flotation Data	Rougher	Cleaner
Flotation Machine:	D2A	D1B
Cell Size in liters:	8.0	2.2
Aspiration:	Air	
Impeller Speed in rpm:	1100	1200

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M2-Mild	Stirred Mill
Charge/Material:	20kg-Mild	1.2kg-Beads
Water:	1500 ml	estimated

KM3174-01 Composite 1

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t				
	grams	%	Pb	Zn	As	Cd	Sb
Bulk Con	16.2	0.4	0.18	0.08	0.01	28	0.01

Note: Pb, Zn and Sb values are in percent, As and Cd values are in g/t

KM3174-01 Composite 1

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Bulk Con	16.2	0.4	29.9	0.313	29.8	34.1	424	80.9	64.6	19.5	3.1	4.7	34.0	42.7
Bulk 3rd Clnr Tail	5.8	0.1	4.51	0.539	24.4	27.1	120	17.3	3.5	12.0	0.9	1.3	3.4	3.3
Bulk 2nd Clnr Tail	27.3	0.7	2.08	0.130	24.3	26.4	56	3.37	7.6	13.7	4.2	6.1	7.6	3.0
Bulk Clnr Scav Con	21.4	0.5	2.11	0.161	24.9	27.8	57	10.6	6.0	13.2	3.4	5.1	6.0	7.4
Bulk Clnr Scav Tail	210.7	5.3	0.32	0.028	26.4	29.8	26	2.38	9.0	22.4	35.6	53.4	27.1	16.3
Pyrite Ro Con	171.8	4.3	0.16	0.007	14.9	17.1	5	1.81	3.7	4.3	16.4	25.0	4.3	10.1
Pyrite Ro Tail	3532.6	88.6	0.01	0.001	1.6	0.15	1	0.15	5.7	14.8	36.4	4.4	17.5	17.3
Feed	3985.8	100	0.19	0.007	3.9	2.95	5.1	0.77	100	100	100	100	100	100

KM3174-01 Composite 1

Cumulative Metallurgical Balance

Cumulative Product	Cum. Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Product 1	16.2	0.4	29.9	0.313	29.8	34.1	424	80.9	64.6	19.5	3.1	4.7	34.0	42.7
Product 1 to 2	22.0	0.6	23.2	0.372	28.4	32.3	344	64.1	68.1	31.5	4.0	6.0	37.5	45.9
Product 1 to 3	49.3	1.2	11.5	0.238	26.1	29.0	184	30.5	75.7	45.2	8.2	12.2	45.1	48.9
Product 1 to 4	70.7	1.8	8.66	0.215	25.8	28.6	146	24.5	81.7	58.5	11.6	17.2	51.1	56.3
Product 1 to 5	281.4	7.1	2.42	0.075	26.2	29.5	56	7.93	90.7	80.9	47.2	70.6	78.2	72.6
Product 6	171.8	4.3	0.16	0.007	14.9	17.1	5	1.81	3.7	4.3	16.4	25.0	4.3	10.1
Product 7	3532.6	88.6	0.01	0.001	1.6	0.15	1	0.15	5.7	14.8	36.4	4.4	17.5	17.3
Feed	3985.8	100	0.19	0.007	3.9	2.95	5.1	0.77	100	100	100	100	100	100

DATE: November 11, 2011

PROJECT NO: KM3174-02

PURPOSE: Preliminary Cleaner Test.

PROCEDURE: Perform a standard two product cleaner test.

FEED: 4 kg of Composite 2 ore ground to a nominal 116μm K_{80}.
Bulk Regrind Discharge - 18μm K_{80}.
Pyrite Rougher Concentrate - 96μm K_{80}

FLOWSHEET: 2

Stage	Reagents Added g/tonne						Time (minutes)			pH
	Lime	PE26	Fuel Oil	208	3418A	MBC	Grind	Cond.	Float	
Primary Grind	400		10				18			10.0
BULK CIRCUIT:										
Rougher 1	-			3	3	8		1	3	10.0
Rougher 2	√			2	2	4		1	4	10.0
Regrind	400		50				11			11.5
Cleaner 1	-	20		4	4	8		1	5	11.5
Cleaner 2	√		10	3	3	8		1	4	11.5
Cleaner 3	√		10	2	2	8		1	3	11.5
Cleaner Scavenger	√		20	-	-	-		1	2	11.5
PYRITE CIRCUIT:					PAX					
Rougher 1	-			30	30	4		1	4	9.4
Rougher 2	-			30	30	4		1	4	9.3

Flotation Data	Rougher	Cleaner
Flotation Machine:	D2A	D1B
Cell Size in liters:	8.0	2.2
Aspiration:	Air	
Impeller Speed in rpm:	1100	1200

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M2-Mild	Stirred Mill
Charge/Material:	20kg-Mild	1.2kg-Beads
Water:	1500 ml	estimated

KM3174-02 Composite 2

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t				
	grams	%	Pb	Zn	As	Cd	Sb
Bulk Con	17.7	0.4	0.08	0.03	0.01	18	0.01

Note: Pb, Zn and Sb values are in percent, As and Cd values are in g/t

KM3174-02 Composite 2

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Bulk Con	17.7	0.4	29.1	0.121	28.7	33.4	178	69.1	62.7	14.4	3.1	4.7	25.3	38.5
Bulk 3rd Clnr Tail	7.1	0.2	6.60	0.175	22.4	25.8	72	15.7	5.7	8.4	1.0	1.5	4.1	3.5
Bulk 2nd Clnr Tail	33.1	0.8	1.44	0.056	22.0	24.3	30	6.16	5.8	12.4	4.5	6.4	8.0	6.4
Bulk Clnr Scav Con	16.6	0.4	2.25	0.085	22.7	25.9	42	9.45	4.5	9.5	2.3	3.4	5.6	4.9
Bulk Clnr Scav Tail	230.5	5.8	0.30	0.020	24.5	27.8	11	2.79	8.4	30.8	34.8	50.9	20.4	20.2
Pyrite Ro Con	175.8	4.4	0.16	0.004	19.2	20.8	6	1.79	3.4	4.9	20.8	29.0	8.5	9.9
Pyrite Ro Tail	3514.2	88.0	0.02	0.001	1.6	0.15	1	0.15	9.4	19.7	33.5	4.1	28.2	16.6
Feed	3995.0	100	0.21	0.004	4.1	3.15	3	0.80	100	100	100	100	100	100

KM3174-02 Composite 2

Cumulative Metallurgical Balance

Cumulative	Cum. Weight		Assay - percent or g/t						Distribution - percent					
Product	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Product 1	17.7	0.4	29.1	0.121	28.7	33.4	178	69.1	62.7	14.4	3.1	4.7	25.3	38.5
Product 1 to 2	24.8	0.6	22.7	0.136	26.9	31.2	148	53.8	68.4	22.7	4.1	6.2	29.4	42.0
Product 1 to 3	57.9	1.4	10.5	0.090	24.1	27.3	80	26.6	74.2	35.1	8.6	12.5	37.4	48.4
Product 1 to 4	74.5	1.9	8.68	0.089	23.8	27.0	72	22.8	78.7	44.6	10.9	16.0	43.0	53.3
Product 1 to 5	305.0	7.6	2.35	0.037	24.3	27.6	26	7.67	87.2	75.4	45.7	66.9	63.3	73.5
Product 6	175.8	4.4	0.16	0.004	19.2	20.8	6	1.79	3.4	4.9	20.8	29.0	8.5	9.9
Product 7	3514.2	88.0	0.02	0.001	1.6	0.15	1	0.15	9.4	19.7	33.5	4.1	28.2	16.6
Feed	3995.0	100	0.21	0.004	4.1	3.15	3	0.80	100	100	100	100	100	100

DATE: November 11, 2011

PROJECT NO: KM3174-03

PURPOSE: Preliminary Cleaner Test.

PROCEDURE: Perform a standard two product cleaner test.

FEED: 4 kg of Composite 3 ore ground to a nominal 121μm K_{80}.
Bulk Regrind Discharge - 20μm K_{80}.
Pyrite Rougher Concentrate - 99μm K_{80}

FLOWSHEET: 2

Stage	Reagents Added g/tonne						Time (minutes)			pH
	Lime	PE26	Fuel Oil	208	3418A	MBC	Grind	Cond.	Float	
Primary Grind	400		10				17			10.0
BULK CIRCUIT:										
Rougher 1	-			3	3	8		1	3	10.0
Rougher 2	√			2	2	4		1	4	10.0
Regrind	400		50				11			11.5
Cleaner 1	-	20		4	4	8		1	4	11.5
Cleaner 2	√		10	3	3	8		1	3	11.5
Cleaner 3	√		10	2	2	8		1	2	11.5
Cleaner Scavenger			20	-	-	-		1	2	11.5
PYRITE CIRCUIT:					PAX					
Rougher 1	-			30	30	-		1	4	9.6
Rougher 2	-			30	30	4		1	4	9.2

Flotation Data	Rougher	Cleaner
Flotation Machine:	D2A	D1B
Cell Size in liters:	8.0	2.2
Aspiration:	Air	
Impeller Speed in rpm:	1100	1200

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M2-Mild	Stirred Mill
Charge/Material:	20kg-Mild	1.2kg-Beads
Water:	1500 ml	estimated

KM3174-03 Composite 3

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t				
	grams	%	Pb	Zn	As	Cd	Sb
Bulk Con	19.3	0.4	0.16	0.06	0.03	24	0.02

Note: Pb, Zn and Sb values are in percent, As and Cd values are in g/t

KM3174-03 Composite 3

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Bulk Con	19.3	0.5	28.4	0.293	28.1	34.4	232	67.1	65.2	26.4	3.0	3.9	28.9	40.5
Bulk 3rd Clnr Tail	6.7	0.2	4.11	0.246	25.1	28.3	76	9.85	3.3	7.7	0.9	1.1	3.3	2.1
Bulk 2nd Clnr Tail	44.9	1.1	1.05	0.063	24.3	28.0	32	5.27	5.6	13.1	6.0	7.4	9.3	7.4
Bulk Clnr Scav Con	13.6	0.3	2.68	0.123	25.3	28.9	56	27.09	4.3	7.8	1.9	2.3	4.9	11.5
Bulk Clnr Scav Tail	237.0	5.9	0.37	0.022	26.3	30.2	15	2.03	10.4	24.1	34.4	42.3	23.0	15.1
Pyrite Ro Con	210.6	5.3	0.13	0.005	23.4	26.4	6	2.23	3.3	4.6	27.2	32.9	8.2	14.7
Pyrite Ro Tail	3463.1	86.7	0.02	0.001	1.4	0.49	1	0.08	7.8	16.4	26.6	10.0	22.4	8.7
Feed	3995.2	100	0.21	0.005	4.5	4.23	4	0.80	100	100	100	100	100	100

KM3174-03 Composite 3

Cumulative Metallurgical Balance

Cumulative	Cum. Weight		Assay - percent or g/t						Distribution - percent					
Product	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Product 1	19.3	0.5	28.4	0.293	28.1	34.4	232	67.1	65.2	26.4	3.0	3.9	28.9	40.5
Product 1 to 2	26.0	0.7	22.1	0.280	27.3	32.8	192	52.3	68.5	34.0	3.9	5.0	32.2	42.6
Product 1 to 3	70.9	1.8	8.78	0.142	25.4	29.8	91	22.5	74.1	47.1	9.9	12.5	41.5	50.0
Product 1 to 4	84.5	2.1	7.80	0.139	25.4	29.6	85	23.3	78.5	54.9	11.8	14.8	46.5	61.6
Product 1 to 5	321.5	8.0	2.32	0.053	26.1	30.1	33	7.61	88.9	79.0	46.2	57.1	69.4	76.6
Product 6	210.6	5.3	0.13	0.005	23.4	26.4	6	2.23	3.3	4.6	27.2	32.9	8.2	14.7
Product 7	3463.1	86.7	0.02	0.001	1.4	0.49	1	0.08	7.8	16.4	26.6	10.0	22.4	8.7
Feed	3995.2	100	0.21	0.005	4.5	4.23	4	0.80	100	100	100	100	100	100

DATE: November 11, 2011

PROJECT NO: KM3174-04

PURPOSE: Preliminary Cleaner Test.

PROCEDURE: Perform a standard two product cleaner test.

FEED: 4 kg of Composite 4 ore ground to a nominal 131μm K_{80}.
Bulk Regrind Discharge - 19μm K_{80}.
Pyrite Rougher Concentrate - 130μm K_{80}

FLOWSHEET: 2

Stage	Reagents Added g/tonne						Time (minutes)			pH
	Lime	PE26	Fuel Oil	208	3418A	MBC	Grind	Cond.	Float	
Primary Grind	400		10				15			9.8
BULK CIRCUIT:										
Rougher 1	75			3	3	8		1	3	10.0
Rougher 2	√			1	1	-		1	4	10.0
Regrind	400		50				13			11.5
Cleaner 1	-	20		4	4	8		1	4	11.5
Cleaner 2	√		10	3	3	8		1	3	11.5
Cleaner 3	√		10	2	2	8		1	2	11.5
Cleaner Scavenger	√		20	-	-	-		1	2	11.5
PYRITE CIRCUIT:					PAX					
Rougher 1	-			30	30	4		1	4	9.4
Rougher 2	-			30	30	-		1	4	9.2

Flotation Data	Rougher	Cleaner
Flotation Machine:	D2A	D1B
Cell Size in liters:	8.0	2.2
Aspiration:	Air	
Impeller Speed in rpm:	1100	1200

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M2-Mild	Stirred Mill
Charge/Material:	20kg-Mild	1.2kg-Beads
Water:	1500 ml	estimated

KM3174-04 Composite 4

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t				
	grams	%	Pb	Zn	As	Cd	Sb
Bulk Con	19.2	0.4	0.16	0.13	0.16	46	0.25

Note: Pb, Zn and Sb values are in percent, As and Cd values are in g/t

KM3174-04 Composite 4

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Bulk Con	19.2	0.5	27.3	0.206	28.5	34.8	324	105.4	67.3	16.9	3.4	4.3	35.5	45.3
Bulk 3rd Clnr Tail	11.4	0.3	3.24	0.353	22.2	26.3	90	12.1	4.7	17.2	1.6	1.9	5.9	3.1
Bulk 2nd Clnr Tail	57.1	1.4	0.86	0.076	20.1	23.0	30	5.21	6.3	18.5	7.1	8.4	9.8	6.7
Bulk Clnr Scav Con	13.5	0.3	1.53	0.142	22.5	25.8	46	13.8	2.7	8.2	1.9	2.2	3.5	4.2
Bulk Clnr Scav Tail	279.4	7.0	0.18	0.017	22.7	27.2	12	2.58	6.5	20.7	39.1	48.7	19.2	16.1
Pyrite Ro Con	236.9	5.9	0.10	0.004	15.8	19.0	5	2.23	3.0	3.9	23.1	28.9	6.8	11.8
Pyrite Ro Tail	3382.2	84.6	0.02	0.001	1.2	0.26	1	0.17	9.6	14.7	24.0	5.6	19.3	12.9
Feed	3999.7	100	0.19	0.006	4.1	3.90	4	1.12	100	100	100	100	100	100

KM3174-04 Composite 4

Cumulative Metallurgical Balance

Cumulative Product	Cum. Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Product 1	19.2	0.5	27.3	0.206	28.5	34.8	324	105.4	67.3	16.9	3.4	4.3	35.5	45.3
Product 1 to 2	30.6	0.8	18.3	0.261	26.2	31.6	237	70.6	72.1	34.1	4.9	6.2	41.4	48.4
Product 1 to 3	87.7	2.2	6.96	0.140	22.2	26.0	102	28.0	78.4	52.6	12.0	14.6	51.2	55.0
Product 1 to 4	101.2	2.5	6.23	0.141	22.3	26.0	95	26.1	81.0	60.8	13.9	16.9	54.7	59.2
Product 1 to 5	380.6	9.5	1.79	0.050	22.6	26.9	34	8.84	87.5	81.4	53.0	65.6	73.9	75.3
Product 6	236.9	5.9	0.10	0.004	15.8	19.0	5	2.23	3.0	3.9	23.1	28.9	6.8	11.8
Product 7	3382.2	84.6	0.02	0.001	1.2	0.26	1	0.17	9.6	14.7	24.0	5.6	19.3	12.9
Feed	3999.7	100	0.19	0.006	4.1	3.90	4	1.12	100	100	100	100	100	100

DATE: November 11, 2011

PROJECT NO: KM3174-05

PURPOSE: Preliminary Cleaner Test.

PROCEDURE: Perform a standard two product cleaner test.

FEED: 4 kg of Composite 5 ore ground to a nominal 127μm K_{80}.
Bulk Regrind Discharge - 24μm K_{80}.
Pyrite Rougher Concentrate - 100μm K_{80}

FLOWSHEET: 2

Stage	Reagents Added g/tonne						Time (minutes)			pH
	Lime	PE26	Fuel Oil	208	3418A	MBC	Grind	Cond.	Float	
Primary Grind	400		10				20			10.0
BULK CIRCUIT:										
Rougher 1	-			3	3	8		1	3	10.0
Rougher 2	√			1	1	4		1	4	10.0
Regrind	400		50				11			11.5
Cleaner 1	-	20		4	4	8		1	4	11.5
Cleaner 2	√		10	3	3	8		1	3	11.5
Cleaner 3	√		10	7	7	8		1	2	11.5
Cleaner Scavenger	√		20	-	-	-		1	2	11.5
PYRITE CIRCUIT:					PAX					
Rougher 1	-			30	30	-		1	4	10.0
Rougher 2	-			30	30	-		1	4	9.6

Flotation Data	Rougher	Cleaner
Flotation Machine:	D2A	D1B
Cell Size in liters:	8.0	2.2
Aspiration:	Air	
Impeller Speed in rpm:	1100	1200

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M2-Mild	Stirred Mill
Charge/Material:	20kg-Mild	1.2kg-Beads
Water:	1500 ml	estimated

KM3174-05 Composite 5

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t				
	grams	%	Pb	Zn	As	Cd	Sb
Bulk Con	10.2	0.4	0.10	0.10	0.03	26	0.05

Note: Pb, Zn and Sb values are in percent, As and Cd values are in g/t

KM3174-05 Composite 5

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Bulk Con	10.2	0.3	25.9	0.067	26.5	32.6	154	62.5	30.1	3.1	1.6	1.8	11.2	27.6
Bulk 3rd Clnr Tail	15.6	0.4	18.9	0.279	24.1	29.5	116	26.0	33.6	20.0	2.2	2.4	12.9	17.5
Bulk 2nd Clnr Tail	37.3	0.9	2.90	0.160	25.6	31.2	50	6.78	12.3	27.3	5.7	6.2	13.3	10.9
Bulk Clnr Scav Con	14.9	0.4	2.52	0.119	27.1	32.5	46	5.11	4.3	8.1	2.4	2.6	4.9	3.3
Bulk Clnr Scav Tail	276.5	6.9	0.34	0.018	30.0	36.1	14	1.74	10.7	22.8	49.4	53.1	27.5	20.8
Pyrite Ro Con	202.6	5.0	0.11	0.005	22.6	27.9	4	1.40	2.5	4.2	27.3	30.1	5.8	12.3
Pyrite Ro Tail	3458.0	86.1	0.02	0.001	0.6	0.21	1	0.05	6.3	14.4	11.3	3.9	24.6	7.5
Feed	4015.1	100	0.22	0.005	4.2	4.68	4	0.58	100	100	100	100	100	100

KM3174-05 Composite 5

Cumulative Metallurgical Balance

Cumulative Product	Cum. Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Product 1	10.2	0.3	25.9	0.067	26.5	32.6	154	62.5	30.1	3.1	1.6	1.8	11.2	27.6
Product 1 to 2	25.8	0.6	21.7	0.195	25.0	30.7	131	40.4	63.8	23.1	3.9	4.2	24.0	45.2
Product 1 to 3	63.1	1.6	10.6	0.174	25.4	31.0	83	20.5	76.1	50.4	9.5	10.4	37.3	56.1
Product 1 to 4	78.0	1.9	9.04	0.164	25.7	31.3	76	17.6	80.4	58.5	11.9	13.0	42.2	59.4
Product 1 to 5	354.5	8.8	2.25	0.050	29.1	35.0	28	5.23	91.1	81.4	61.4	66.1	69.7	80.2
Product 6	202.6	5.0	0.11	0.005	22.6	27.9	4	1.40	2.5	4.2	27.3	30.1	5.8	12.3
Product 7	3458.0	86.1	0.02	0.001	0.6	0.21	1	0.05	6.3	14.4	11.3	3.9	24.6	7.5
Feed	4015.1	100	0.22	0.005	4.2	4.68	4	0.58	100	100	100	100	100	100

DATE: November 11, 2011

PROJECT NO: KM3174-06

PURPOSE: Preliminary Cleaner Test.

PROCEDURE: Perform a standard two product cleaner test.

FEED: 4 kg of Composite 6 ore ground to a nominal 126μm K_{80}.
Bulk Regrind Discharge - 29μm K_{80}.
Pyrite Rougher Concentrate - 175μm K_{80}

FLOWSHEET: 2

Stage	Reagents Added g/tonne						Time (minutes)			pH
	Lime	PE26	Fuel Oil	208	3418A	MBC	Grind	Cond.	Float	
Primary Grind	400		10				17			10.0
BULK CIRCUIT:										
Rougher 1	-			3	3	8		1	3	10.0
Rougher 2	√			3	3	-		1	4	10.0
Regrind	400		50				8			11.5
Cleaner 1	-	20				8		1	4	11.5
Cleaner 2	√		10			8		1	3	11.5
Cleaner 3	√		10			8		1	2	11.5
Cleaner Scavenger	-		20			-		1	2	11.5
PYRITE CIRCUIT:					PAX					
Rougher 1	-			30	30	4		1	4	9.9
Rougher 2	-			30	30	4		1	4	9.2

Flotation Data	Rougher	Cleaner
Flotation Machine:	D2A	D1B
Cell Size in liters:	8.0	2.2
Aspiration:	Air	
Impeller Speed in rpm:	1100	1200

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M2-Mild	Stirred Mill
Charge/Material:	20kg-Mild	1.2kg-Beads
Water:	1500 ml	estimated

KM3174-06 Composite 6

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t				
	grams	%	Pb	Zn	As	Cd	Sb
Bulk Con	17.3	0.4	0.06	0.02	0.01	18	0.00

Note: Pb, Zn and Sb values are in percent, As and Cd values are in g/t

KM3174-06 Composite 6

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Bulk Con	17.3	0.4	24.9	0.25	28.0	34.6	176	60.6	57.4	27.9	3.1	5.2	25.7	40.3
Bulk 3rd Clnr Tail	5.8	0.1	5.25	0.16	24.6	29.6	66	11.8	4.1	5.9	0.9	1.5	3.2	2.6
Bulk 2nd Clnr Tail	21.4	0.5	2.75	0.07	18.9	22.5	42	6.01	7.8	9.3	2.5	4.2	7.6	4.9
Bulk Clnr Scav Con	6.5	0.2	3.86	0.09	19.1	22.7	56	8.10	3.3	3.8	0.8	1.3	3.1	2.0
Bulk Clnr Scav Tail	199.4	5.0	0.48	0.02	22.5	26.9	14	3.19	12.8	25.1	28.3	46.3	23.5	24.4
Pyrite Ro Con	160.0	4.0	0.17	0.00	16.9	20.8	5	1.69	3.6	5.1	17.0	28.7	6.7	10.4
Pyrite Ro Tail	3585.1	89.7	0.02	0.00	2.1	0.42	1	0.11	11.0	23.0	47.4	13.0	30.2	15.4
Feed	3995.5	100	0.19	0.004	4.0	2.90	3	0.65	100	100	100	100	100	100

KM3174-06 Composite 6

Cumulative Metallurgical Balance

Cumulative	Cum. Weight		Assay - percent or g/t						Distribution - percent					
Product	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Product 1	17.3	0.4	24.9	0.25	28.0	34.6	176	60.6	57.4	27.9	3.1	5.2	25.7	40.3
Product 1 to 2	23.1	0.6	20.0	0.23	27.1	33.3	148	48.3	61.5	33.8	4.0	6.6	28.9	42.9
Product 1 to 3	44.5	1.1	11.7	0.15	23.2	28.1	97	28.0	69.3	43.1	6.5	10.8	36.5	47.8
Product 1 to 4	51.0	1.3	10.7	0.14	22.7	27.4	92	25.5	72.6	46.9	7.3	12.1	39.5	49.8
Product 1 to 5	250.4	6.3	2.56	0.05	22.5	27.0	30	7.72	85.4	72.0	35.5	58.3	63.0	74.2
Product 6	160.0	4.0	0.17	0.00	16.9	20.8	5	1.69	3.6	5.1	17.0	28.7	6.7	10.4
Product 7	3585.1	89.7	0.02	0.00	2.1	0.42	1	0.11	11.0	23.0	47.4	13.0	30.2	15.4
Feed	3995.5	100	0.19	0.004	4.0	2.90	3	0.65	100	100	100	100	100	100

DATE: November 11, 2011

PROJECT NO: KM3174-07

PURPOSE: Preliminary Cleaner Test.

PROCEDURE: Perform a standard two product cleaner test.

FEED: 4 kg of Composite 7 ore ground to a nominal 122μm K_{80}.
Bulk Regrind Discharge - 17μm K_{80}.
Pyrite Rougher Concentrate - 122μm K_{80}

FLOWSHEET: 2

Stage	Reagents Added g/tonne						Time (minutes)			pH
	Lime	PE26	Fuel Oil	208	3418A	MBC	Grind	Cond.	Float	
Primary Grind	400		10				15			10.0
BULK CIRCUIT:										
Rougher 1	-			3	3	8		1	3	10.0
Rougher 2	√			2	2	4		1	4	10.0
Regrind	400		50				8			11.5
Cleaner 1	-	20		4	4	8		1	4	11.5
Cleaner 2	√		10	3	3	8		1	3	11.5
Cleaner 3	√		10	2	2	8		1	2	11.5
Cleaner Scavenger	-		20	-	-	-		1	2	11.5
PYRITE CIRCUIT:					PAX					
Rougher 1	-			30	30	-		1	4	10.1
Rougher 2	-			30	30	-		1	4	9.7

Flotation Data	Rougher	Cleaner
Flotation Machine:	D2A	D1B
Cell Size in liters:	8.0	2.2
Aspiration:	Air	
Impeller Speed in rpm:	1100	1200

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M2-Mild	Stirred Mill
Charge/Material:	20kg-Mild	1.2kg-Beads
Water:	1500 ml	estimated

KM3174-07 Composite 7

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t				
	grams	%	Pb	Zn	As	Cd	Sb
Bulk Con	7.4	0.4	2.45	0.07	0.01	30	0.02

Note: Pb, Zn and Sb values are in percent, As and Cd values are in g/t

KM3174-07 Composite 7

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Bulk Con	7.4	0.2	25.5	1.191	28.3	35.5	196	92.1	38.3	22.1	1.2	1.9	15.0	33.5
Bulk 3rd Clnr Tail	5.3	0.1	7.60	0.584	24.8	30.7	74	16.4	8.2	7.8	0.8	1.2	4.0	4.3
Bulk 2nd Clnr Tail	25.3	0.6	2.60	0.178	21.7	26.1	34	6.76	13.3	11.3	3.3	4.7	8.9	8.4
Bulk Clnr Scav Con	13.3	0.3	2.52	0.321	22.0	26.8	38	7.88	6.8	10.7	1.7	2.6	5.2	5.1
Bulk Clnr Scav Tail	210.6	5.3	0.34	0.055	23.9	27.9	10	2.10	14.5	29.1	29.9	42.1	21.7	21.8
Pyrite Ro Con	220.0	5.5	0.12	0.009	20.3	25.1	4	1.36	5.4	5.0	26.6	39.6	9.1	14.7
Pyrite Ro Tail	3507.2	87.9	0.02	0.002	1.8	0.32	1	0.07	13.5	14.2	36.5	8.0	36.2	12.2
Feed	3989.1	100	0.12	0.010	4.2	3.50	2	0.51	100	100	100	100	100	100

KM3174-07 Composite 7

Cumulative Metallurgical Balance

Cumulative Product	Cum. Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Product 1	7.4	0.2	25.5	1.191	28.3	35.5	196	92.1	38.3	22.1	1.2	1.9	15.0	33.5
Product 1 to 2	12.7	0.3	18.0	0.938	26.8	33.5	145	60.5	46.5	29.8	2.0	3.0	19.0	37.7
Product 1 to 3	38.0	1.0	7.76	0.432	23.4	28.6	71	24.7	59.8	41.1	5.3	7.8	27.9	46.1
Product 1 to 4	51.3	1.3	6.40	0.403	23.1	28.1	63	20.4	66.6	51.8	7.0	10.3	33.1	51.3
Product 1 to 5	261.9	6.6	1.53	0.123	23.7	27.9	20	5.68	81.1	80.9	37.0	52.4	54.8	73.1
Product 6	220.0	5.5	0.12	0.009	20.3	25.1	4	1.36	5.4	5.0	26.6	39.6	9.1	14.7
Product 7	3507.2	87.9	0.02	0.002	1.8	0.32	1	0.07	13.5	14.2	36.5	8.0	36.2	12.2
Feed	3989.1	100	0.12	0.010	4.2	3.50	2	0.51	100	100	100	100	100	100

DATE: November 14, 2011

PROJECT NO: KM3174-08

PURPOSE: Preliminary Cycle Test.

PROCEDURE: Perform a standard two product locked cycle test.

FEED: 5 x 2 kg of Composite 8 ore ground to a nominal 121μm K_{80}.
Bulk Regrind Discharge - 19μm K_{80}.

FLOWSHEET: 3

Stage	Reagents Added g/tonne						Time (minutes)			pH
	Lime	PE26	Fuel Oil	208	3418A	MBC	Grind	Cond.	Float	
Primary Grind	400		10				27			9.8
BULK CIRCUIT:										
Rougher 1	65			3	3	30		1	3	10.0
Rougher 2	√			2	2	-		1	4	10.0
Regrind	400		50				5			11.5
Cleaner 1	-	20		5	5	15		1	4	11.5
Cleaner 2	√		10	4	4	15		1	3	11.5
Cleaner 3	√		10	3	3	15		1	2	11.5
Cleaner Scavenger	-		20	-	-	-		1	2	11.5
PYRITE CIRCUIT:					PAX					
Rougher 1	-			30	30	8		1	4	9.8
Rougher 2	-			30	30	8		1	4	9.6

Flotation Data	Rougher	Cleaner
Flotation Machine:	D2A	D1B
Cell Size in liters:	4.0	2.2
Aspiration:	Air	
Impeller Speed in rpm:	1100	1200

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M2-Mild	Stirred Mill
Charge/Material:	20kg-Mild	1.2kg-Beads
Water:	1500 ml	estimated

KM3174-08
Estimated Dry Weight Table

Product	Cycles - Weight (gms)				
	I	II	III	IV	V
BULK CIRCUIT					
Rougher Concentrate	210	240	210	220	220
Cleaner Scavenger Con	15	17	15	15	15
Cleaner Scavenger Tail	170	220	220	210	220
Cleaner Tail 2	33	51	38	47	51
Cleaner Tail 3	9	10	7	9	8
Bulk Concentrate	26	29	27	29	29
PYRITE CIRCUIT					
Rougher Concentrate	180	140	150	157	140
Primary Discharge pH	9.8	10.1	10.1	10.0	10.1

KM3174-08 Composite 8

OVERALL CYCLE TEST MASS AND METALLURGICAL BALANCE

Product	Weight	Weight	Assay - percent or g/t						Distribution - percent					
	g	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Bulk Concentrate I	22.1	0.2	31.1	0.293	27.6	33.8	30	31.8	14.8	7.4	2.1	3.7	4.6	10.0
Bulk Concentrate II	26.6	0.3	30.5	0.326	27.5	33.4	34	33.1	17.5	9.9	2.5	4.3	6.3	12.5
Bulk Concentrate III	25.1	0.3	30.8	0.298	28.2	33.8	36	32.8	16.6	8.6	2.4	4.2	6.3	11.7
Bulk Concentrate IV	26.8	0.3	29.4	0.296	28.2	32.5	34	33.5	16.9	9.1	2.5	4.3	6.3	12.7
Bulk Concentrate V	25.6	0.3	29.2	0.155	26.2	32.3	34	29.1	16.1	4.5	2.3	4.0	6.0	10.6
Bulk 3rd Cleaner Tail	6.4	0.1	3.99	0.795	14.5	17.8	12	8.9	0.5	5.8	0.3	0.6	0.5	0.8
Bulk 2nd Cleaner Tail	37.1	0.4	1.33	0.111	8.2	12.6	5	3.53	1.1	4.7	1.0	2.3	1.3	1.9
Bulk Cleaner Scav Con	11.1	0.1	2.70	0.159	12.6	14.1	8	4.39	0.6	2.0	0.5	0.8	0.6	0.7
Bulk Cleaner Scav Tail I	147.4	1.5	0.39	0.026	11.6	12.2	1	1.85	1.2	4.3	5.8	8.8	1.0	3.9
Bulk Cleaner Scav Tail II	193.1	1.9	0.25	0.026	10.9	11.6	1	1.58	1.0	5.7	7.1	11.0	1.3	4.3
Bulk Cleaner Scav Tail III	195.7	2.0	0.38	0.042	11.8	12.5	1	2.15	1.6	9.3	7.8	12.0	1.4	6.0
Bulk Cleaner Scav Tail IV	179.1	1.8	0.35	0.042	11.4	12.6	1	2.28	1.3	8.5	6.9	11.0	1.2	5.8
Bulk Cleaner Scav Tail V	189.2	1.9	0.38	0.047	12.3	13.3	1	2.13	1.5	10.1	7.8	12.3	1.3	5.7
Pyrite Rougher Conc I	179.1	1.8	0.20	0.004	6.0	5.23	1	0.65	0.8	0.8	3.6	4.6	1.2	1.6
Pyrite Rougher Conc II	141.2	1.4	0.20	0.004	5.5	4.87	1	0.59	0.6	0.6	2.6	3.4	1.0	1.2
Pyrite Rougher Conc III	141.7	1.4	0.26	0.004	6.1	5.93	1	0.68	0.8	0.6	2.9	4.1	1.0	1.4
Pyrite Rougher Conc IV	144.5	1.4	0.24	0.005	5.9	5.66	1	0.68	0.7	0.8	2.9	4.0	1.0	1.4
Pyrite Rougher Conc V	124.0	1.2	0.29	0.005	5.8	4.96	1	0.67	0.8	0.8	2.4	3.0	0.9	1.2
Pyrite Rougher Tail I	1617.0	16.1	0.03	0.001	1.4	0.04	1	0.06	1.1	1.3	7.5	0.4	11.2	1.4
Pyrite Rougher Tail II	1624.8	16.2	0.03	0.001	1.4	0.05	1	0.07	1.2	1.3	7.4	0.4	11.3	1.6
Pyrite Rougher Tail III	1652.9	16.5	0.03	0.001	1.3	0.05	1	0.06	1.1	1.3	7.3	0.4	11.4	1.4
Pyrite Rougher Tail IV	1643.0	16.4	0.03	0.001	1.3	0.04	1	0.05	1.0	1.3	7.0	0.3	11.4	1.2
Pyrite Rougher Tail V	1663.1	16.6	0.03	0.001	1.4	0.05	1	0.05	1.1	1.1	7.6	0.4	11.5	1.2
FEED	10017	100.0	0.46	0.009	3.0	2.04	1	0.70	100.0	100.0	100.0	100.0	100.0	100.0

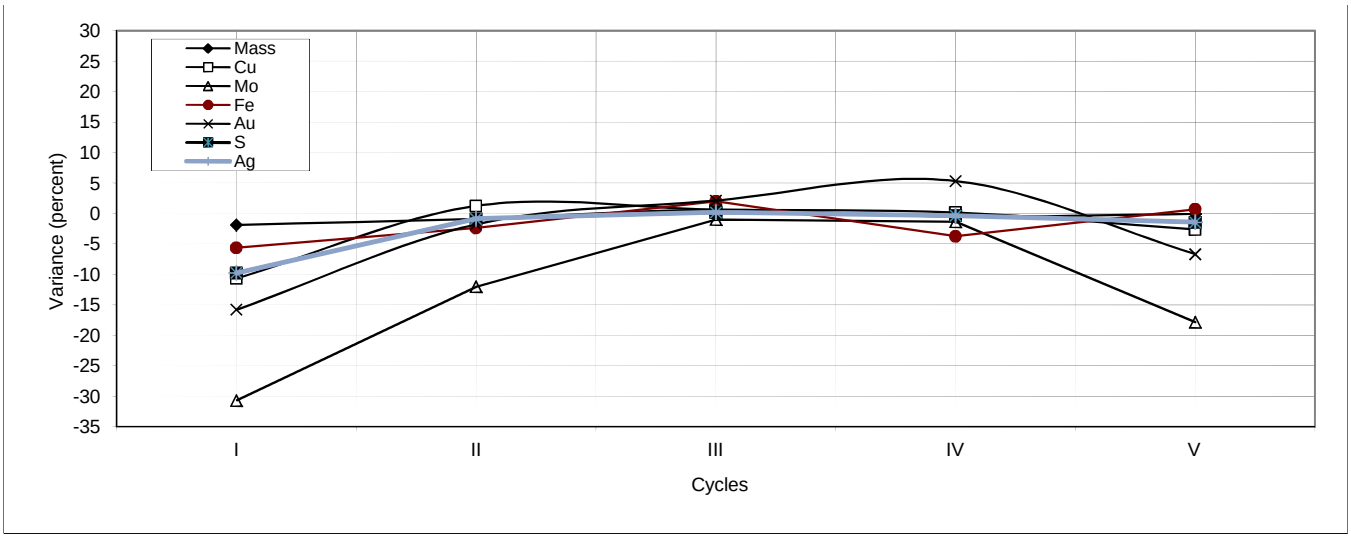
KM3174-08 Composite 8

METALLURGICAL BALANCES BY TEST CYCLES

Product	Weight	Weight	Assay - percent or g/t						Distribution - percent					
	g	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
CYCLE IV														
Flotation Feed	1993.4	100.0	0.47	0.009	2.9	2.01	1	0.75	100.0	100.0	100.0	100.0	100.0	100.0
Bulk Concentrate	26.8	1.3	29.4	0.296	28.2	32.5	34	33.5	84.6	46.0	13.2	21.7	31.7	60.4
Bulk Cleaner Scav Tail	179.1	9.0	0.35	0.042	11.4	12.6	1	2.28	6.7	43.2	35.7	56.2	6.2	27.5
Pyrite Rougher Conc	144.5	7.2	0.24	0.005	5.9	5.66	1	0.68	3.7	4.2	14.9	20.4	5.0	6.6
Pyrite Rougher Tail	1643.0	82.4	0.03	0.001	1.3	0.04	1	0.05	4.9	6.6	36.2	1.7	57.1	5.6
CYCLE V														
Flotation Feed	2001.9	100.0	0.45	0.007	3.0	2.02	1	0.66	100.0	100.0	100.0	100.0	100.0	100.0
Bulk Concentrate	25.6	1.3	29.2	0.155	26.2	32.3	34	29.1	82.6	27.6	11.2	20.5	30.6	56.7
Bulk Cleaner Scav Tail	189.2	9.5	0.38	0.047	12.3	13.3	1	2.13	7.9	61.3	38.9	62.4	6.6	30.6
Pyrite Rougher Conc	124.0	6.2	0.29	0.005	5.8	4.96	1	0.67	4.0	4.6	12.1	15.2	4.4	6.3
Pyrite Rougher Tail	1663.1	83.1	0.03	0.001	1.4	0.05	1	0.05	5.5	6.5	37.8	1.9	58.4	6.4
CYCLES IV and V														
Flotation Feed	3995.3	100.0	0.46	0.008	2.9	2.01	1	0.70	100.0	100.0	100.0	100.0	100.0	100.0
Bulk Concentrate	52.4	1.3	29.3	0.227	27.2	32.4	34	31.4	83.6	37.7	12.2	21.1	31.1	58.6
Bulk Cleaner Scav Tail	368.3	9.2	0.37	0.044	11.9	13.0	1	2.20	7.3	51.4	37.3	59.3	6.4	28.9
Pyrite Rougher Conc	268.5	6.7	0.26	0.005	5.9	5.34	1	0.67	3.8	4.4	13.5	17.8	4.7	6.4
Pyrite Rougher Tail	3306.1	82.7	0.03	0.001	1.3	0.04	1	0.05	5.2	6.6	37.0	1.8	57.8	6.0

Cycle Test Stability Data

Cycles	Mass		Calculated Head						Metal Unit Variances (%)					
	g/cycle	%Var.	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
I	1965.6	-1.88	0.42	0.006	2.9	1.81	1	0.60	-11	-31	-6	-13	-10	-16
II	1985.7	-0.88	0.47	0.008	2.9	1.96	1	0.70	1	-12	-2	-5	-1	-2
III	2015.4	0.60	0.46	0.009	3.0	2.09	1	0.71	1	-1	2	3	0	2
IV	1993.4	-0.50	0.47	0.009	2.9	2.01	1	0.75	0	-1	-4	-2	0	5
V	2001.9	-0.07	0.45	0.007	3.0	2.02	1	0.66	-3	-18	1	-1	-1	-7
Total	2003.32	-	0.46	0.009	3.0	2.04	1	0.70	-	-	-	-	-	-



KM3174-08 Composite 8

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

Flotation Stream		Weight	Assay (percent or g/t)						Distribution (percent)					
No.	Product	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
1	Bulk Rougher Feed	100.0	0.46	0.008	2.9	2.01	1	0.70	100.0	100.0	100.0	100.0	100.0	100.0
2	Bulk Rougher Tail	89.5	0.05	0.001	1.7	0.44	1	0.10	9.1	10.9	50.5	19.6	62.4	12.4
3	Bulk Rougher Concentrate	10.5	3.97	0.067	13.8	15.4	5	5.83	90.9	89.1	49.5	80.4	37.6	87.6
4	Bulk 1st Cleaner Feed	13.3	3.50	0.095	13.0	15.0	5	5.53	101.0	158.4	58.7	98.7	49.8	104.5
5	Bulk Cleaner Scav Con	0.6	2.70	0.159	12.6	14.1	8	4.39	2.0	11.2	2.4	3.9	3.1	3.5
6	Bulk Cleaner Scav Tail	9.2	0.37	0.044	11.9	13.0	1	2.20	7.3	51.4	37.3	59.3	6.4	28.9
7	Bulk 1st Clnr Concentrate	3.5	12.1	0.218	15.9	20.5	17	14.5	91.7	95.9	19.0	35.5	40.3	72.0
8	Bulk 2nd Cleaner Tail	1.9	1.33	0.111	8.2	12.6	5	3.53	5.4	26.1	5.2	11.6	6.5	9.3
9	Bulk 2nd Cleaner Concentrate	1.6	24.3	0.338	24.7	29.5	30	27.0	86.4	69.8	13.8	23.9	33.8	62.7
10	Bulk 3rd Cleaner Tail	0.3	3.99	0.795	14.5	17.8	12	8.93	2.8	32.1	1.6	2.8	2.7	4.1
11	Bulk 3rd Cleaner Concentrate	1.3	29.3	0.227	27.2	32.4	34	31.4	83.6	37.7	12.2	21.1	31.1	58.6
12	Pyrite Rougher Conc	6.7	0.26	0.005	5.9	5.34	1	0.67	3.8	4.4	13.5	17.8	4.7	6.4
13	Pyrite Rougher Tail	82.7	0.03	0.001	1.3	0.04	1	0.05	5.2	6.6	37.0	1.8	57.8	6.0
14	Total Tail	92.0	0.08	0.005	2.8	1.73	1	0.32	16.4	62.3	87.8	78.9	68.9	41.4

DATE: November 15, 2011

PROJECT NO: KM3174-09

PURPOSE: Preliminary Cycle Test.

PROCEDURE: Perform a standard two product locked cycle test.

FEED: 5 x 2 kg of Composite 9 ore ground to a nominal 127μm K_{80}.
Bulk Regrind Discharge - 21μm K_{80}.

FLOWSHEET: 3

Stage	Reagents Added g/tonne						Time (minutes)			pH
	Lime	PE26	Fuel Oil	208	3418A	MBC	Grind	Cond.	Float	
Primary Grind	400		10				22			10.1
BULK CIRCUIT:										
Rougher 1	-			2	2	15		1	3	10.0
Rougher 2	√			2	2	8		1	4	10.0
Regrind	400		50				3			11.5
Cleaner 1	-	20		4	4	15		1	3	11.5
Cleaner 2	√		10	3	3	15		1	3	11.5
Cleaner Scavenger	-		20	-	-	-		1	2	11.5
PYRITE CIRCUIT:					PAX					
Rougher 1	-			30	30	15		1	4	9.7
Rougher 2	-			30	30	-		1	4	9.6

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

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M2-Mild	Stirred Mill
Charge/Material:	20kg-Mild	1.2kg-Beads
Water:	1500 ml	estimated

KM3174-09
Estimated Dry Weight Table

Product	Cycles - Weight (gms)				
	I	II	III	IV	V
BULK CIRCUIT					
Rougher Concentrate	100	130	120	110	110
Cleaner Scavenger Con	5	7	10	5	8
Cleaner Scavenger Tail	100	140	120	125	120
Cleaner Tail 2	15	14	20	21	21
Bulk Concentrate	8	9	11	9	10
PYRITE CIRCUIT					
Rougher Concentrate	160	150	145	135	138
Primary Discharge pH	10.1	10.0	10.0	9.8	10.0

KM3174-09 Composite 9

OVERALL CYCLE TEST MASS AND METAL BALANCE

Product	Weight	Weight	Assay - percent or g/t						Distribution - percent					
	g	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Bulk Concentrate I*	5.3	0.1	28.40	0.190	28.7	33.6	138	78.1	9.0	2.2	0.3	0.5	3.2	6.8
Bulk Concentrate II	7.9	0.1	26.30	0.282	29.2	33.8	130	78.1	12.5	5.0	0.4	0.8	4.5	10.1
Bulk Concentrate III	8.7	0.1	24.0	0.279	28.7	33.8	124	64.9	12.5	5.4	0.4	0.9	4.7	9.2
Bulk Concentrate IV	6.8	0.1	26.00	0.206	29.0	34.0	132	74.9	10.6	3.1	0.4	0.7	3.9	8.3
Bulk Concentrate V	8.1	0.1	26.0	0.139	29.6	34.8	128	54.3	12.7	2.5	0.4	0.8	4.5	7.2
Bulk 2nd Cleaner Tail	15.7	0.2	4.35	0.094	23.3	27.4	34	9.9	4.1	3.3	0.7	1.3	2.3	2.5
Bulk Cleaner Scav Con	7.0	0.1	4.98	0.121	25.3	27.9	43	14.8	2.1	1.9	0.3	0.6	1.3	1.7
Bulk Cleaner Scav Tail I	83.3	0.8	0.89	0.054	23.7	25.4	11	3.42	4.5	10.1	3.5	6.4	4.0	4.7
Bulk Cleaner Scav Tail II	132.4	1.3	0.66	0.035	24.7	26.5	10	3.17	5.3	10.4	5.8	10.5	5.8	6.9
Bulk Cleaner Scav Tail III	110.8	1.1	0.67	0.038	25.9	29.0	10	2.75	4.5	9.5	5.1	9.6	4.8	5.0
Bulk Cleaner Scav Tail IV	115.0	1.1	0.83	0.051	27.3	29.3	11	3.47	5.7	13.2	5.6	10.1	5.5	6.5
Bulk Cleaner Scav Tail V	109.3	1.1	0.81	0.058	27.6	29.7	12	3.63	5.3	14.2	5.4	9.7	5.7	6.5
Pyrite Rougher Conc I	174.5	1.7	0.11	0.003	21.2	21.8	4	1.28	1.2	1.0	6.6	11.4	3.1	3.7
Pyrite Rougher Conc II	149.6	1.5	0.12	0.003	17.8	17.6	3	1.02	1.1	1.0	4.8	7.9	2.0	2.5
Pyrite Rougher Conc III	150.3	1.5	0.12	0.003	16.5	18.1	3	1.03	1.1	0.9	4.4	8.2	2.0	2.5
Pyrite Rougher Conc IV	136.7	1.4	0.12	0.005	19.5	20.1	4	1.25	1.0	1.4	4.8	8.3	2.4	2.8
Pyrite Rougher Conc V	130.5	1.3	0.11	0.002	21.4	21.2	4	1.28	0.9	0.7	5.0	8.3	2.3	2.7
Pyrite Rougher Tail I	1725.6	17.2	0.01	0.001	2.9	0.16	1	0.07	1.3	3.0	9.0	0.8	7.5	2.0
Pyrite Rougher Tail II	1716.2	17.1	0.01	0.001	2.9	0.14	1	0.07	1.2	2.7	9.0	0.7	7.5	2.0
Pyrite Rougher Tail III	1727.7	17.2	0.01	0.001	3.0	0.14	1	0.07	1.2	3.6	9.1	0.7	7.6	2.0
Pyrite Rougher Tail IV	1752.6	17.5	0.01	0.001	3.0	0.14	1	0.08	1.1	2.6	9.5	0.7	7.7	2.3
Pyrite Rougher Tail V	1755.1	17.5	0.01	0.001	3.0	0.17	1	0.08	1.2	2.2	9.5	0.9	7.7	2.3
FEED	10029	100.0	0.17	0.004	5.6	3.32	2	0.61	100.0	100.0	100.0	100.0	100.0	100.0

*Not enough samples, Au value estimated

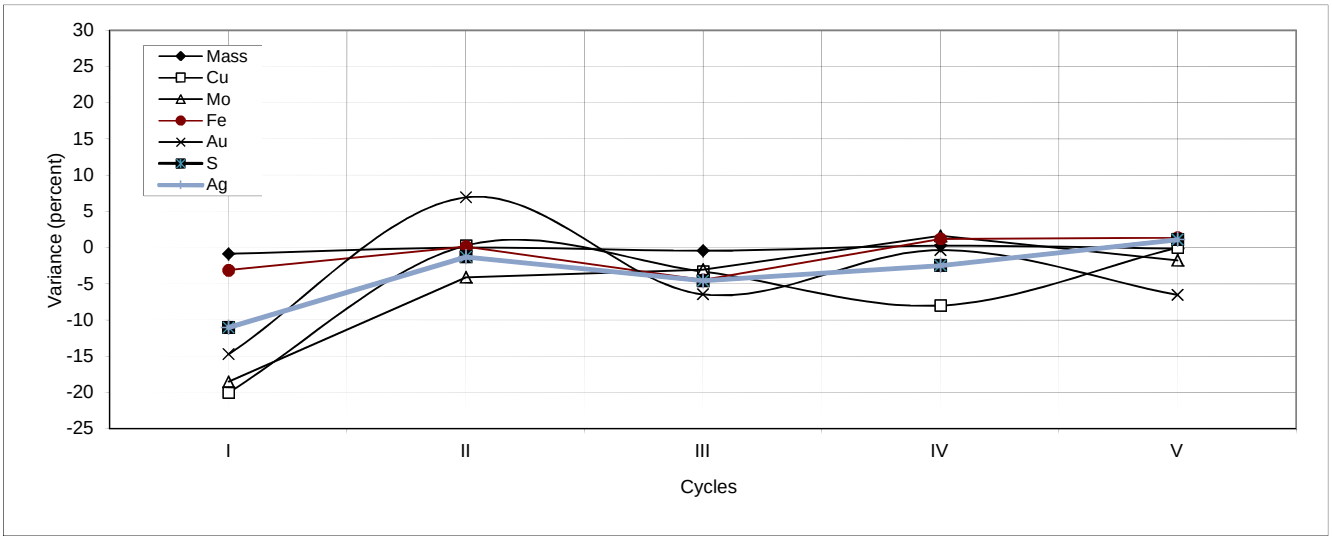
KM3174-09 Composite 9

METALLURGICAL BALANCES BY TEST CYCLES

Product	Weight	Weight	Assay - percent or g/t						Distribution - percent					
	g	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
CYCLE IV														
Flotation Feed	2011.1	100.0	0.15	0.005	5.6	3.27	2	0.61	100.0	100.0	100.0	100.0	100.0	100.0
Bulk Concentrate	6.8	0.3	26.00	0.206	29.0	34.0	132	74.9	57.7	15.4	1.7	3.5	20.1	41.8
Bulk Cleaner Scav Tail	115.0	5.7	0.83	0.051	27.3	29.3	11	3.47	31.2	65.0	27.7	51.2	28.4	32.7
Pyrite Rougher Conc	136.7	6.8	0.12	0.005	19.5	20.1	4	1.25	5.4	7.0	23.5	41.7	12.3	14.0
Pyrite Rougher Tail	1752.6	87.1	0.01	0.001	3.0	0.14	1	0.08	5.7	12.7	47.0	3.6	39.3	11.5
CYCLE V														
Flotation Feed	2003.0	100.0	0.17	0.004	5.7	3.29	2	0.57	100.0	100.0	100.0	100.0	100.0	100.0
Bulk Concentrate	8.1	0.4	26.0	0.139	29.6	34.8	128	54.3	63.3	12.8	2.1	4.3	22.4	38.4
Bulk Cleaner Scav Tail	109.3	5.5	0.81	0.058	27.6	29.7	12	3.63	26.6	72.4	26.6	49.2	28.4	34.7
Pyrite Rougher Conc	130.5	6.5	0.11	0.002	21.4	21.2	4	1.28	4.3	3.6	24.6	41.9	11.3	14.6
Pyrite Rougher Tail	1755.1	87.6	0.01	0.001	3.0	0.17	1	0.08	5.8	11.2	46.7	4.6	37.9	12.3
CYCLES IV and V														
Flotation Feed	4014.1	100.0	0.16	0.004	5.7	3.28	2	0.59	100.0	100.0	100.0	100.0	100.0	100.0
Bulk Concentrate	14.9	0.4	26.00	0.170	29.3	34.4	130	63.7	60.6	14.1	1.9	3.9	21.3	40.1
Bulk Cleaner Scav Tail	224.3	5.6	0.82	0.055	27.4	29.5	11	3.55	28.8	68.6	27.1	50.2	28.4	33.7
Pyrite Rougher Conc	267.2	6.7	0.12	0.004	20.4	20.6	4	1.26	4.8	5.4	24.1	41.8	11.8	14.3
Pyrite Rougher Tail	3507.7	87.4	0.01	0.001	3.0	0.15	1	0.08	5.8	11.9	46.9	4.1	38.6	11.9

Cycle Test Stability Data

Cycles	Mass		Calculated Head						Metal Unit Variances (%)					
	g/cycle	%Var.	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
I	1988.7	-0.85	0.13	0.004	5.5	3.21	2	0.53	-20	-19	-3	-4	-11	-15
II	2006.1	0.01	0.17	0.004	5.6	3.31	2	0.65	0	-4	0	0	-1	7
III	1997.5	-0.41	0.16	0.004	5.4	3.24	2	0.57	-3	-3	-4	-3	-5	-6
IV	2011.1	0.26	0.15	0.005	5.6	3.27	2	0.61	-8	2	1	-1	-2	0
V	2003.0	-0.14	0.17	0.004	5.7	3.29	2	0.57	0	-2	1	-1	1	-7
Total	2005.82	-	0.17	0.004	5.6	3.32	2	0.61	-	-	-	-	-	-



KM3174-09 Composite 9

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

Flotation Stream		Weight	Assay (percent or g/t)						Distribution (percent)					
No.	Product	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
1	Bulk Rougher Feed	100.0	0.16	0.004	5.7	3.28	2	0.59	100.0	100.0	100.0	100.0	100.0	100.0
2	Bulk Rougher Tail	94.0	0.02	0.001	4.3	1.60	1	0.16	10.6	17.3	70.9	45.9	50.4	26.2
3	Bulk Rougher Concentrate	6.0	2.39	0.062	27.6	29.8	19	7.30	89.4	82.7	29.1	54.1	49.6	73.8
4	Bulk 1st Cleaner Feed	7.1	2.53	0.068	27.0	29.4	22	7.95	112.7	108.6	33.9	63.6	68.1	95.7
5	Bulk Cleaner Scav Con	0.3	4.98	0.121	25.3	27.9	43	14.8	1.9	9.4	1.6	3.0	6.6	8.8
6	Bulk Cleaner Scav Tail	5.6	0.82	0.055	27.4	29.5	11	3.55	28.8	68.6	27.1	50.2	28.4	33.7
7	Bulk 1st Clnr Concentrate	1.2	11.3	0.118	25.2	29.7	65	27.2	82.0	30.5	5.2	10.4	33.1	53.3
8	Bulk 2nd Cleaner Tail	0.8	4.35	0.094	23.3	27.4	34	9.85	21.4	16.4	3.2	6.5	11.8	13.1
9	Bulk 2nd Cleaner Concentrate	0.4	26.0	0.17	29.3	34.4	130	63.7	60.6	14.1	1.9	3.9	21.3	40.1
10	Pyrite Rougher Conc	6.7	0.12	0.004	20.4	20.6	4	1.26	4.8	5.4	24.1	41.8	11.8	14.3
11	Pyrite Rougher Tail	87.4	0.01	0.001	3.0	0.15	1	0.08	5.8	11.9	46.9	4.1	38.6	11.9
12	Total Tail	93.0	0.07	0.004	6.0	3.39	2	0.38	39.4	85.9	98.1	96.1	78.7	59.9

DATE: November 16, 2011

PROJECT NO: KM3174-10

PURPOSE: Preliminary Cycle Test.

PROCEDURE: Perform a standard two product locked cycle test.

FEED: 5 x 2 kg of Composite 10 ore ground to a nominal 124μm K_{80}.
Bulk Regrind Discharge - 18μm K_{80}.

FLOWSHEET: 3

Stage	Reagents Added g/tonne						Time (minutes)			pH
	Lime	PE26	Fuel Oil	208	3418A	MBC	Grind	Cond.	Float	
Primary Grind	400		10				14			10.0
BULK CIRCUIT:										
Rougher 1	-			3	3	15		1	3	10.0
Rougher 2	√			3	3	8		1	4	10.0
Regrind	400		50				7			11.1
Cleaner 1	200	20		5	5	15		1	4	11.5
Cleaner 2	√		10	4	4	15		1	3	11.5
Cleaner 3	√		10	3	3	15		1	2	11.5
Cleaner Scavenger	√		20	-	-	-		1	2	11.5
PYRITE CIRCUIT:					PAX					
Rougher 1	-			30	30	8		1	4	9.6
Rougher 2	-			30	30	-		1	4	9.3

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

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M2-Mild	Stirred Mill
Charge/Material:	20kg-Mild	1.2 kg-Beads
Water:	1500 ml	estimated

KM3174-10
Estimated Dry Weight Table

Product	Cycles - Weight (gms)				
	I	II	III	IV	V
BULK CIRCUIT					
Rougher Concentrate	235	220	230	230	215
Cleaner Scavenger Con	14	20	12	18	18
Cleaner Scavenger Tail	190	210	230	240	230
Cleaner Tail 2	43	51	62	56	52
Cleaner Tail 3	10	10	13	11	12
Bulk Concentrate	33	35	35	36	37
PYRITE CIRCUIT					
Rougher Concentrate	195	190	200	190	200
Primary Discharge pH	10.0	10.0	10.0	10.0	9.9

KM3174-10 Composite 10

OVERALL CYCLE TEST MASS AND METALLURGICAL BALANCE

Product	Weight	Weight	Assay - percent or g/t						Distribution - percent					
	g	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Bulk Concentrate I	28.8	0.3	30.8	0.026	29.0	34.0	50	7.49	15.3	4.5	1.4	1.8	7.0	8.8
Bulk Concentrate II	31.0	0.3	31.1	0.021	29.4	35.1	52	7.33	16.6	4.0	1.6	2.0	7.9	9.3
Bulk Concentrate III	29.7	0.3	30.8	0.020	29.4	33.6	52	7.46	15.7	3.6	1.5	1.8	7.5	9.0
Bulk Concentrate IV	33.3	0.3	30.9	0.025	29.5	34.0	48	7.40	17.7	5.1	1.7	2.1	7.8	10.0
Bulk Concentrate V	33.1	0.3	30.5	0.022	29.2	34.0	50	6.90	17.4	4.3	1.6	2.1	8.1	9.3
Bulk 3rd Cleaner Tail	8.7	0.1	4.25	0.037	19.7	25.3	20	2.9	0.6	1.9	0.3	0.4	0.8	1.0
Bulk 2nd Cleaner Tail	38.3	0.4	1.80	0.018	20.4	22.9	12	1.40	1.2	4.1	1.3	1.6	2.2	2.2
Bulk Cleaner Scav Con	12.0	0.1	2.42	0.021	21.1	24.1	14	1.44	0.5	1.5	0.4	0.5	0.8	0.7
Bulk Cleaner Scav Tail I	172.9	1.7	0.47	0.004	21.5	22.4	3	0.69	1.4	4.5	6.3	7.1	2.5	4.9
Bulk Cleaner Scav Tail II	185.2	1.9	0.49	0.006	21.5	23.9	3	0.68	1.6	6.7	6.8	8.1	2.7	5.1
Bulk Cleaner Scav Tail III	194.9	2.0	0.57	0.006	21.3	22.8	3	0.66	1.9	7.6	7.1	8.2	2.9	5.2
Bulk Cleaner Scav Tail IV	212.1	2.1	0.42	0.007	21.6	23.4	3	0.73	1.5	8.4	7.8	9.1	3.1	6.3
Bulk Cleaner Scav Tail V	196.9	2.0	0.35	0.006	22.5	24.0	4	0.71	1.2	7.5	7.5	8.7	3.8	5.7
Pyrite Rougher Conc I	205.4	2.1	0.17	0.001	16.8	20.0	1	0.38	0.6	0.8	5.9	7.5	1.0	3.2
Pyrite Rougher Conc II	199.2	2.0	0.17	0.001	18.4	20.3	1	0.44	0.6	0.8	6.2	7.4	1.0	3.6
Pyrite Rougher Conc III	206.1	2.1	0.16	0.001	17.7	20.3	1	0.43	0.6	0.7	6.2	7.7	1.0	3.6
Pyrite Rougher Conc IV	197.8	2.0	0.16	0.001	17.1	18.2	1	0.36	0.5	0.6	5.8	6.6	1.0	2.9
Pyrite Rougher Conc V	216.1	2.2	0.16	0.001	17.5	18.5	1	0.39	0.6	0.7	6.4	7.3	1.1	3.4
Pyrite Rougher Tail I	1533.3	15.4	0.04	0.001	1.9	0.71	1	0.03	1.0	12.2	4.9	2.0	7.5	1.9
Pyrite Rougher Tail II	1562.4	15.7	0.03	0.001	1.9	0.72	1	0.01	0.9	5.5	5.0	2.1	7.6	0.6
Pyrite Rougher Tail III	1554.9	15.6	0.03	0.001	1.9	0.72	1	0.03	0.9	5.0	4.9	2.0	7.6	1.9
Pyrite Rougher Tail IV	1546.9	15.6	0.03	0.001	1.8	0.68	1	0.01	0.8	5.1	4.8	1.9	7.5	0.6
Pyrite Rougher Tail V	1543.2	15.5	0.03	0.001	1.8	0.68	1	0.01	0.9	4.8	4.6	1.9	7.5	0.6
FEED	9942	100.0	0.58	0.002	5.9	5.48	2	0.25	100.0	100.0	100.0	100.0	100.0	100.0

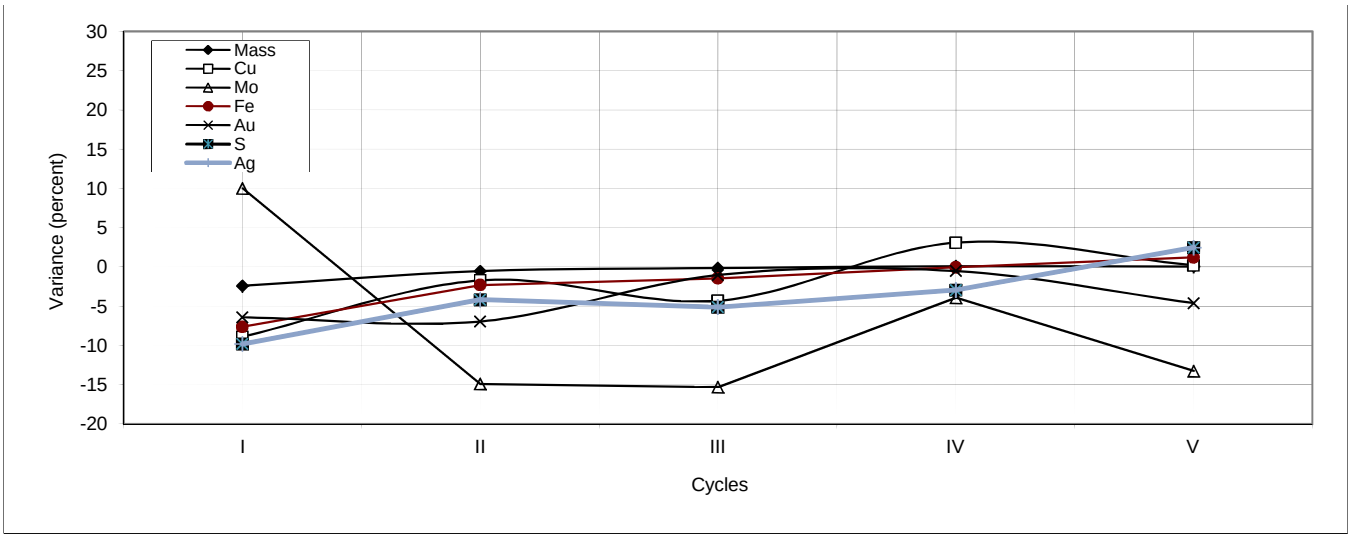
KM3174-10 Composite 10

METALLURGICAL BALANCES BY TEST CYCLES

Product	Weight	Weight	Assay - percent or g/t						Distribution - percent					
	g	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
CYCLE IV														
Flotation Feed	1990.1	100.0	0.60	0.002	5.9	5.40	2	0.25	100.0	100.0	100.0	100.0	100.0	100.0
Bulk Concentrate	33.3	1.7	30.9	0.025	29.5	34.0	48	7.40	85.9	26.3	8.4	10.5	40.2	50.5
Bulk Cleaner Scav Tail	212.1	10.7	0.42	0.007	21.6	23.4	3	0.73	7.4	43.7	39.0	46.2	16.0	31.7
Pyrite Rougher Conc	197.8	9.9	0.16	0.001	17.1	18.2	1	0.36	2.6	3.3	28.8	33.5	5.0	14.6
Pyrite Rougher Tail	1546.9	77.7	0.03	0.001	1.8	0.68	1	0.01	4.0	26.7	23.8	9.8	38.9	3.2
CYCLE V														
Flotation Feed	1989.3	100.0	0.59	0.001	6.0	5.48	2	0.24	100.0	100.0	100.0	100.0	100.0	100.0
Bulk Concentrate	33.1	1.7	30.5	0.022	29.2	34.0	50	6.90	86.7	24.8	8.1	10.3	39.4	48.8
Bulk Cleaner Scav Tail	196.9	9.9	0.35	0.006	22.5	24.0	4	0.71	5.9	43.4	37.2	43.4	18.7	29.9
Pyrite Rougher Conc	216.1	10.9	0.16	0.001	17.5	18.5	1	0.39	3.0	4.3	31.8	36.7	5.1	18.0
Pyrite Rougher Tail	1543.2	77.6	0.03	0.001	1.8	0.68	1	0.01	4.4	27.5	22.8	9.6	36.7	3.3
CYCLES IV and V														
Flotation Feed	3979.4	100.0	0.59	0.002	5.9	5.44	2	0.24	100.0	100.0	100.0	100.0	100.0	100.0
Bulk Concentrate	66.4	1.7	30.7	0.023	29.4	34.0	49	7.15	86.3	25.6	8.2	10.4	39.8	49.7
Bulk Cleaner Scav Tail	409.0	10.3	0.39	0.006	22.0	23.7	3	0.72	6.7	43.6	38.1	44.8	17.4	30.8
Pyrite Rougher Conc	413.9	10.4	0.16	0.001	17.3	18.4	1	0.38	2.8	3.8	30.3	35.1	5.1	16.3
Pyrite Rougher Tail	3090.1	77.7	0.03	0.001	1.8	0.68	1	0.01	4.2	27.1	23.3	9.7	37.8	3.2

Cycle Test Stability Data

Cycles	Mass		Calculated Head						Metal Unit Variances (%)					
	g/cycle	%Var.	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
I	1940.4	-2.42	0.55	0.002	5.6	5.18	2	0.24	-9	10	-8	-8	-10	-6
II	1977.8	-0.54	0.58	0.001	5.8	5.40	2	0.23	-2	-15	-2	-2	-4	-7
III	1985.6	-0.14	0.56	0.001	5.8	5.41	2	0.24	-4	-15	-1	-1	-5	-1
IV	1990.1	0.08	0.60	0.002	5.9	5.40	2	0.25	3	-4	0	-1	-3	-1
V	1989.3	0.04	0.59	0.001	6.0	5.48	2	0.24	0	-13	1	0	2	-5
Total	1988.44	-	0.58	0.002	5.9	5.48	2	0.25	-	-	-	-	-	-



KM3174-10 Composite 10

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

Flotation Stream		Weight	Assay (percent or g/t)						Distribution (percent)					
No.	Product	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
1	Bulk Rougher Feed	100.0	0.59	0.002	5.9	5.44	2	0.24	100.0	100.0	100.0	100.0	100.0	100.0
2	Bulk Rougher Tail	88.1	0.05	0.001	3.6	2.77	1	0.05	7.0	30.9	53.6	44.8	42.8	19.5
3	Bulk Rougher Concentrate	11.9	4.62	0.009	23.1	25.1	10	1.62	93.0	69.1	46.4	55.2	57.2	80.5
4	Bulk 1st Cleaner Feed	14.9	4.14	0.011	22.5	24.8	11	1.62	104.0	110.0	56.6	68.0	76.8	100.5
5	Bulk Cleaner Scav Con	0.6	2.42	0.021	21.1	24.1	14	1.44	2.1	8.2	2.1	2.7	4.1	3.6
6	Bulk Cleaner Scav Tail	10.3	0.39	0.006	22.0	23.7	3	0.72	6.7	43.6	38.1	44.8	17.4	30.8
7	Bulk 1st Clnr Concentrate	4.0	14.0	0.022	24.0	27.8	28	3.94	95.3	58.3	16.3	20.6	55.3	66.1
8	Bulk 2nd Cleaner Tail	1.9	1.80	0.018	20.4	22.9	12	1.40	5.8	22.2	6.6	8.1	11.2	11.2
9	Bulk 2nd Cleaner Concentrate	2.1	25.2	0.026	27.3	32.2	43	6.26	89.5	36.1	9.7	12.5	44.0	54.9
10	Bulk 3rd Cleaner Tail	0.4	4.25	0.037	19.7	25.3	20	2.86	3.1	10.5	1.5	2.0	4.3	5.2
11	Bulk 3rd Cleaner Concentrate	1.7	30.7	0.023	29.4	34.0	49	7.15	86.3	25.6	8.2	10.4	39.8	49.7
12	Pyrite Rougher Conc	10.4	0.16	0.001	17.3	18.4	1	0.38	2.8	3.8	30.3	35.1	5.1	16.3
13	Pyrite Rougher Tail	77.7	0.03	0.001	1.8	0.68	1	0.01	4.2	27.1	23.3	9.7	37.8	3.2
14	Total Tail	87.9	0.09	0.001	6.2	5.54	1	0.14	13.7	74.4	91.8	89.6	60.2	50.3

DATE: November 17, 2011

PROJECT NO: KM3174-11

PURPOSE: Preliminary Cycle Test.

PROCEDURE: Perform a standard two product locked cycle test.

FEED: 5 x 2 kg of Composite 11 ore ground to a nominal 130μm K_{80}.
Bulk Regrind Discharge - 19μm K_{80}.

FLOWSHEET: 3

Stage	Reagents Added g/tonne						Time (minutes)			pH
	Lime	PE26	Fuel Oil	208	3418A	MBC	Grind	Cond.	Float	
Primary Grind	650		10				13			10.0
BULK CIRCUIT:										
Rougher 1	-			2	2	15		1	3	10.0
Regrind	400		50				6			11.7
Cleaner 1	-	20		7	7	15		1	4	11.7
Cleaner 2	-		10	4	4	15		1	3	11.6
Cleaner 3	-		10	3	3	15		1	2	11.5
Cleaner Scavenger	-		20	-	-	-		1	2	11.5
PYRITE CIRCUIT:					PAX					
Rougher 1	-			30	30	15		1	4	9.8
Rougher 2	-			30	30	8		1	4	9.6

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

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M2-Mild	Stirred Mill
Charge/Material:	20kg-Mild	1.2 kg-Beads
Water:	1500 ml	estimated

KM3174-11
Estimated Dry Weight Table

Product	Cycles - Weight (gms)				
	I	II	III	IV	V
BULK CIRCUIT					
Rougher Concentrate	205	180	200	200	225
Cleaner Scavenger Con	14	12	27	13	18
Cleaner Scavenger Tail	145	145	180	200	200
Cleaner Tail 2	37	45	54	51	60
Cleaner Tail 3	13	13	10	9	15
Bulk Concentrate	33	42	40	40	44
PYRITE CIRCUIT					
Rougher Concentrate	280	320	270	270	250
Primary Discharge pH	9.0	10.0	10.2	10.1	10.0

KM3174-11 Composite 11

OVERALL CYCLE TEST MASS AND METALLURGICAL BALANCE

Product	Weight	Weight	Assay - percent or g/t						Distribution - percent					
	g	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Bulk Concentrate I	30.2	0.3	31.2	0.047	28.0	35.5	70	5.57	13.9	6.2	1.5	1.8	6.8	6.7
Bulk Concentrate II	40.6	0.4	28.4	0.040	28.9	36.1	70	4.96	17.0	7.3	2.0	2.5	9.1	8.0
Bulk Concentrate III	37.1	0.4	29.5	0.043	29.0	36.6	76	5.53	16.2	7.1	1.9	2.3	9.1	8.2
Bulk Concentrate IV	37.5	0.4	29.7	0.031	28.6	36.3	78	5.20	16.4	5.1	1.8	2.3	9.4	7.8
Bulk Concentrate V	41.3	0.4	28.4	0.045	29.5	36.0	76	4.96	17.3	8.2	2.1	2.5	10.1	8.2
Bulk 3rd Cleaner Tail	11.3	0.1	2.22	0.011	26.5	31.1	20	1.40	0.4	0.6	0.5	0.6	0.7	0.6
Bulk 2nd Cleaner Tail	48.9	0.5	0.83	0.013	22.6	27.0	10	0.85	0.6	2.8	1.9	2.2	1.6	1.7
Bulk Cleaner Scav Con	13.9	0.1	1.65	0.020	24.1	28.8	14	1.37	0.3	1.3	0.6	0.7	0.6	0.8
Bulk Cleaner Scav Tail I	139.9	1.4	0.81	0.005	24.5	15.2	6	0.70	1.7	3.0	5.9	3.6	2.7	3.9
Bulk Cleaner Scav Tail II	138.5	1.4	0.52	0.008	23.2	26.4	5	0.97	1.1	4.7	5.5	6.1	2.2	5.3
Bulk Cleaner Scav Tail III	168.6	1.7	0.51	0.008	24.6	26.9	5	0.64	1.3	5.6	7.1	7.6	2.7	4.3
Bulk Cleaner Scav Tail IV	183.2	1.8	0.37	0.008	24.9	29.9	5	0.60	1.0	6.7	7.9	9.2	2.9	4.4
Bulk Cleaner Scav Tail V	185.4	1.9	0.32	0.006	24.7	27.6	5	0.60	0.9	5.1	7.9	8.6	3.0	4.4
Pyrite Rougher Conc I	286.5	2.9	0.25	0.001	16.5	19.4	3	0.55	1.1	1.4	8.1	9.3	2.8	6.3
Pyrite Rougher Conc II	350.4	3.5	0.32	0.001	17.0	20.8	3	0.54	1.7	1.4	10.3	12.2	3.4	7.5
Pyrite Rougher Conc III	285.1	2.8	0.29	0.001	15.1	18.5	3	0.55	1.2	1.8	7.4	8.9	2.8	6.2
Pyrite Rougher Conc IV	284.2	2.8	0.35	0.001	16.6	19.7	3	0.57	1.5	1.6	8.1	9.4	2.7	6.4
Pyrite Rougher Conc V	255.5	2.6	0.31	0.001	15.8	18.3	4	0.51	1.2	1.4	6.9	7.9	3.3	5.2
Pyrite Rougher Tail I	1495.3	14.9	0.05	0.001	1.0	0.20	1	0.01	1.0	5.8	2.6	0.5	4.8	0.6
Pyrite Rougher Tail II	1466.0	14.7	0.05	0.001	1.0	0.17	1	0.01	1.0	6.1	2.5	0.4	4.7	0.6
Pyrite Rougher Tail III	1497.9	15.0	0.05	0.001	1.0	0.18	1	0.01	1.1	6.7	2.4	0.5	4.8	0.6
Pyrite Rougher Tail IV	1504.5	15.0	0.05	0.001	1.0	0.19	1	0.02	1.1	3.8	2.5	0.5	4.8	1.2
Pyrite Rougher Tail V	1503.9	15.0	0.05	0.001	1.0	0.20	1	0.02	1.1	6.4	2.5	0.5	4.8	1.2
FEED	10006	100.0	0.68	0.002	5.8	5.95	3	0.25	100.0	100.0	100.0	100.0	100.0	100.0

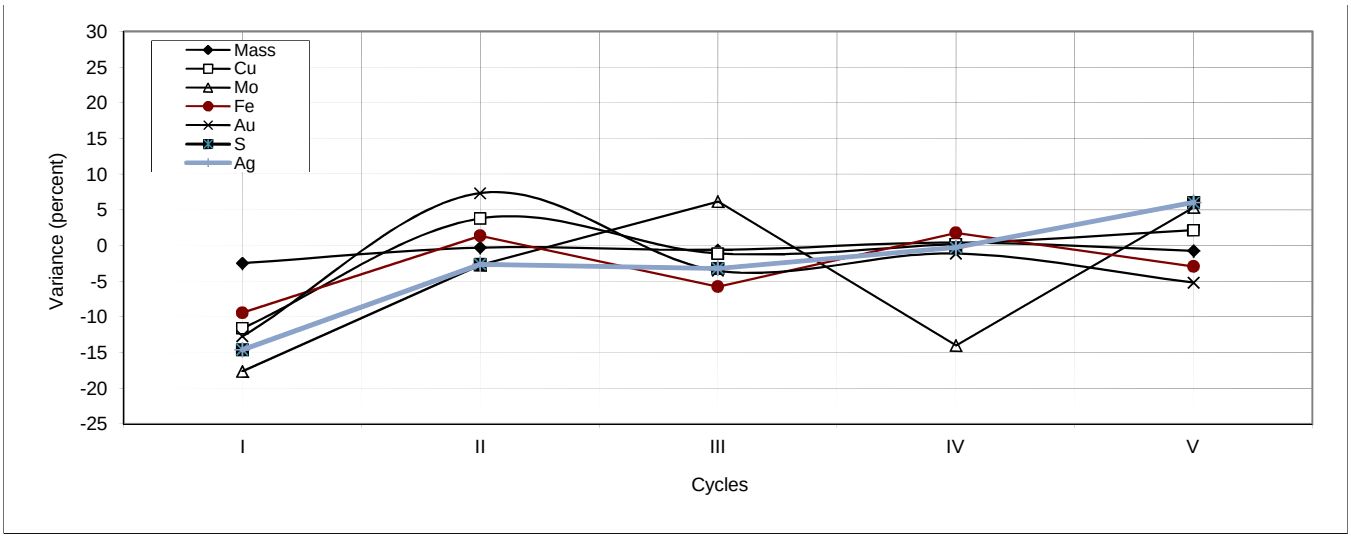
KM3174-11 Composite 11

METALLURGICAL BALANCES BY TEST CYCLES

Product	Weight	Weight	Assay - percent or g/t						Distribution - percent					
	g	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
CYCLE IV														
Flotation Feed	2009.4	100.0	0.68	0.002	5.9	6.33	3	0.25	100.0	100.0	100.0	100.0	100.0	100.0
Bulk Concentrate	37.5	1.9	29.7	0.031	28.6	36.3	78	5.20	82.0	29.9	9.1	10.7	47.2	39.2
Bulk Cleaner Scav Tail	183.2	9.1	0.37	0.008	24.9	29.9	5	0.60	5.0	38.7	38.6	43.1	14.8	22.1
Pyrite Rougher Conc	284.2	14.1	0.35	0.001	16.6	19.7	3	0.57	7.3	9.4	39.9	44.0	13.8	32.6
Pyrite Rougher Tail	1504.5	74.9	0.05	0.001	1.0	0.19	1	0.02	5.7	21.9	12.5	2.2	24.3	6.1
CYCLE V														
Flotation Feed	1986.1	100.0	0.70	0.002	5.7	5.83	3	0.24	100.0	100.0	100.0	100.0	100.0	100.0
Bulk Concentrate	41.3	2.1	28.4	0.045	29.5	36.0	76	4.96	84.8	39.0	10.8	12.8	47.6	43.0
Bulk Cleaner Scav Tail	185.4	9.3	0.32	0.006	24.7	27.6	5	0.60	4.3	24.1	40.6	44.2	14.1	23.3
Pyrite Rougher Conc	255.5	12.9	0.31	0.001	15.8	18.3	4	0.51	5.7	6.6	35.8	40.4	15.5	27.3
Pyrite Rougher Tail	1503.9	75.7	0.05	0.001	1.0	0.20	1	0.02	5.2	30.3	12.8	2.5	22.8	6.3
CYCLES IV and V														
Flotation Feed	3995.5	100.0	0.69	0.002	5.8	6.08	3	0.24	100.0	100.0	100.0	100.0	100.0	100.0
Bulk Concentrate	78.8	2.0	29.0	0.038	29.1	36.1	77	5.07	83.4	34.9	9.9	11.7	47.4	41.1
Bulk Cleaner Scav Tail	368.6	9.2	0.34	0.007	24.8	28.7	5	0.60	4.6	30.6	39.6	43.6	14.4	22.7
Pyrite Rougher Conc	539.7	13.5	0.33	0.001	16.2	19.0	3	0.54	6.5	7.9	37.9	42.3	14.7	30.0
Pyrite Rougher Tail	3008.4	75.3	0.05	0.001	1.0	0.19	1	0.02	5.4	26.6	12.6	2.4	23.5	6.2

Cycle Test Stability Data

Cycles	Mass		Calculated Head						Metal Unit Variances (%)					
	g/cycle	%Var.	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
I	1951.9	-2.46	0.61	0.002	5.4	4.64	3	0.22	-12	-18	-9	-24	-15	-13
II	1995.5	-0.28	0.70	0.002	5.9	6.35	3	0.27	4	-3	1	6	-3	7
III	1988.7	-0.62	0.67	0.002	5.5	5.75	3	0.24	-1	6	-6	-4	-3	-4
IV	2009.4	0.41	0.68	0.002	5.9	6.33	3	0.25	0	-14	2	7	0	-1
V	1986.1	-0.75	0.70	0.002	5.7	5.83	3	0.24	2	5	-3	-3	6	-5
Total	2001.14	-	0.68	0.002	5.8	5.95	3	0.25	-	-	-	-	-	-



KM3174-11 Composite 11

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

Flotation Stream		Weight	Assay (percent or g/t)						Distribution (percent)					
No.	Product	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
1	Bulk Rougher Feed	100.0	0.69	0.002	5.8	6.08	3	0.24	100.0	100.0	100.0	100.0	100.0	100.0
2	Bulk Rougher Tail	88.8	0.09	0.001	3.3	3.06	1	0.10	11.9	34.5	50.5	44.7	38.2	36.2
3	Bulk Rougher Concentrate	11.2	5.40	0.013	25.6	30.0	18	1.39	88.1	65.5	49.5	55.3	61.8	63.8
4	Bulk 1st Cleaner Feed	14.9	4.35	0.013	25.0	29.5	16	1.30	94.7	89.6	64.6	72.5	76.1	79.6
5	Bulk Cleaner Scav Con	0.7	1.65	0.020	24.1	28.8	14	1.37	1.8	6.6	2.9	3.3	3.1	3.9
6	Bulk Cleaner Scav Tail	9.2	0.34	0.007	24.8	28.7	5	0.60	4.6	30.6	39.6	43.6	14.4	22.7
7	Bulk 1st Clnr Concentrate	5.0	12.1	0.023	25.6	31.1	38	2.58	88.2	52.3	22.1	25.6	58.7	52.9
8	Bulk 2nd Cleaner Tail	2.5	0.83	0.013	22.6	27.0	10	0.85	3.0	14.5	9.6	10.9	7.7	8.6
9	Bulk 2nd Cleaner Concentrate	2.5	23.0	0.032	28.5	35.0	64	4.25	85.3	37.8	12.5	14.6	51.0	44.3
10	Bulk 3rd Cleaner Tail	0.6	2.22	0.011	26.5	31.1	20	1.40	1.8	2.9	2.6	2.9	3.6	3.3
11	Bulk 3rd Cleaner Concentrate	2.0	29.0	0.038	29.1	36.1	77	5.07	83.4	34.9	9.9	11.7	47.4	41.1
12	Pyrite Rougher Conc	13.5	0.33	0.001	16.2	19.0	3	0.54	6.5	7.9	37.9	42.3	14.7	30.0
13	Pyrite Rougher Tail	75.3	0.05	0.001	1.0	0.19	1	0.02	5.4	26.6	12.6	2.4	23.5	6.2
14	Total Tail	84.5	0.13	0.002	6.2	6.35	2	0.17	16.6	65.1	90.1	88.3	52.6	58.9

DATE: November 23, 2011

PROJECT NO: KM3174-12

PURPOSE: Preliminary Leach on Test 8 Bulk Cleaner Scavenger Tail.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hours, 1,000 ppm NaCN, 28g/L Carbon.
Carbon soaked for 16 hours in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 500 g Test 8 Bulk Cleaner Scavenger Tail III-V at a nominal 25µm $K_{80.}$

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.5	-	6.17
Aeration	16									4.31
Leach 1	6	1.00	0.67	0.06	0.01	0.94	0.66	11.0	28.00	5.54
Leach 2	24	0.94	0.15	0.15	0.00	0.85	0.16	11.0	-	1.14
Total	24	1.94	0.82	0.15	0.00	1.79	0.82	-	-	-

Mass of Sample	500
Volume of Water	1000
Pulp Density	33

NaCN Addition	3.9 kg/tonne
Lime Addition	1.6 kg/tonne

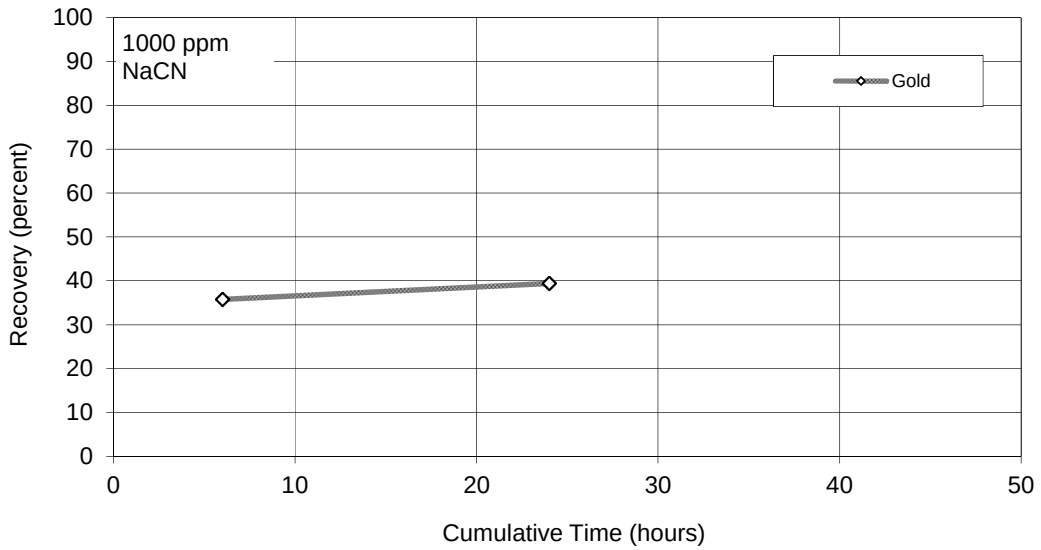
NaCN Consumption	3.6 kg/tonne
Lime Consumption	1.6 kg/tonne

KM3174-12 Test 8 Bulk Cleaner Scavenger Tail III-V
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Distribution - percent Gold
Carbon (24 hour)	24	27.1	g	16.1	39.6
Cyanide Liquor (24 hr)	24	1000.0	ml	0.01	0.9
Cyanide Tails (6 hr)	6	13.4	g	1.42	1.7
Cyanidation Tails (24hr)	24	477.1	g	1.34	57.8
Calculated Feed		500	g	2.21	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Recovery - percent Gold
Cyanide Tails (6 hr)	6	500.0	g	1.42	35.8
Cyanidation Tails (24hr)	24	500.0	g	1.34	39.4
Calculated Feed		500	g	2.21	



DATE: November 23, 2011

PROJECT NO: KM3174-13

PURPOSE: Preliminary Leach on Test 9 Bulk Cleaner Scavenger Tail.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hours, 1,000 ppm NaCN, 28g/L Carbon.
Carbon soaked for 16 hours in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 453 g Test 9 Bulk Cleaner Scavenger Tail I-V at a nominal 23µm $K_{80.}$

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.2	-	3.57
Aeration	16									0.41
Leach 1	6	0.91	0.82	0.04	0.00	0.87	0.82	11.0	25.00	1.48
Leach 2	24	0.87	0.21	0.04	0.00	0.87	0.21	11.0	-	3.11
Total	24	1.78	1.03	0.04	0.00	1.74	1.03	-	-	-

Mass of Sample	453
Volume of Water	906
Pulp Density	33

NaCN Addition	3.9 kg/tonne
Lime Addition	2.3 kg/tonne

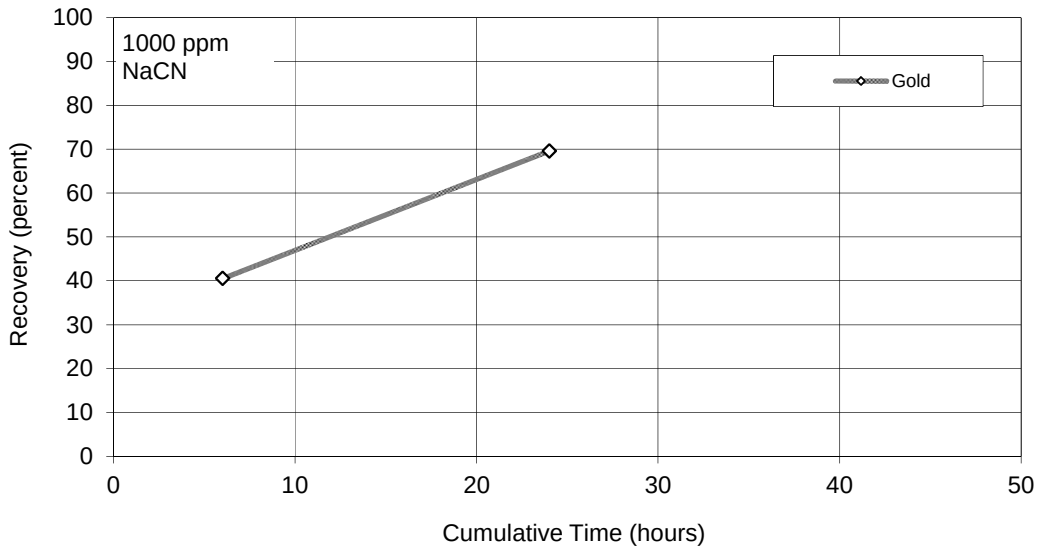
NaCN Consumption	3.8 kg/tonne
Lime Consumption	2.3 kg/tonne

KM3174-13 Test 9 Bulk Cleaner Scavenger Tail I-V
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Distribution - percent
				Gold	Gold
Carbon (24 hour)	24	28.1	g	42.6	67.4
Cyanide Liquor (24 hr)	24	906.0	ml	0.03	1.5
Cyanide Tails (6 hr)	6	20.7	g	2.33	2.7
Cyanidation Tails (24hr)	24	422.4	g	1.19	28.3
Calculated Feed		453	g	3.92	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Recovery - percent
				Gold	Gold
Cyanide Tails (6 hr)	6	453.0	g	2.33	40.5
Cyanidation Tails (24hr)	24	453.0	g	1.19	69.6
Calculated Feed		453	g	3.92	



DATE: November 23, 2011

PROJECT NO: KM3174-14

PURPOSE: Preliminary Leach on Test 10 Bulk Cleaner Scavenger Tail.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hours, 1,000 ppm NaCN, 28g/L Carbon.
Carbon soaked for 16 hours in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 500 g Test 10 Bulk Cleaner Scavenger Tail III-V at a nominal 19µm $K_{80.}$

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.2	-	2.19
Aeration	16									0.42
Leach 1	6	1.00	0.97	0.06	0.01	0.94	0.96	11.0	28.00	2.41
Leach 2	24	0.94	0.15	0.06	0.00	0.94	0.16	11.0	-	3.04
Total	24	1.94	1.12	0.06	0.00	1.88	1.12	-	-	-

Mass of Sample	500
Volume of Water	1000
Pulp Density	33

NaCN Addition	3.9 kg/tonne
Lime Addition	2.2 kg/tonne

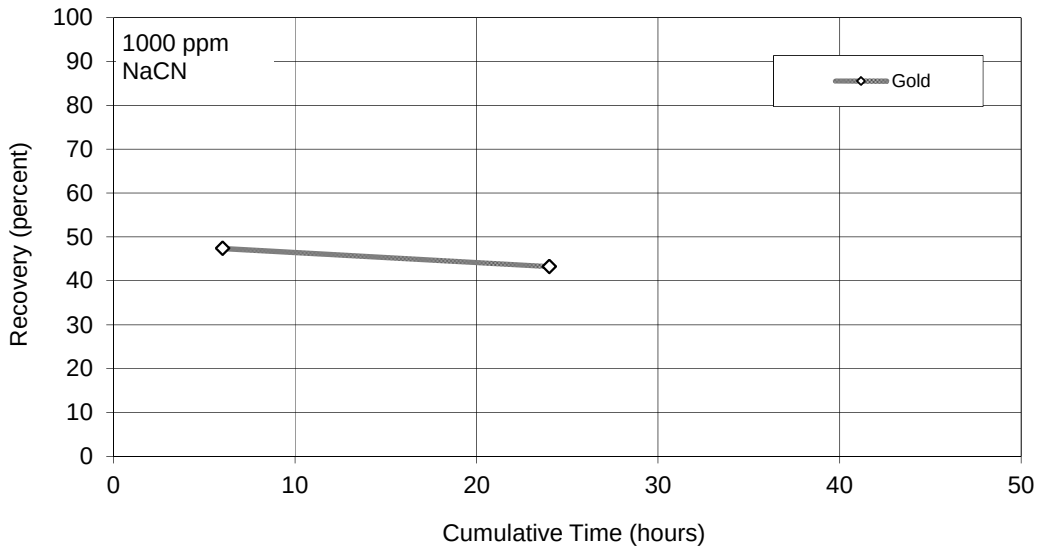
NaCN Consumption	3.8 kg/tonne
Lime Consumption	2.2 kg/tonne

KM3174-14 Test 10 Bulk Cleaner Scavenger Tail III-V
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Distribution - percent Gold
Carbon (24 hour)	24	27.8	g	5.41	41.6
Cyanide Liquor (24 hr)	24	1000.0	ml	0.01	2.8
Cyanide Tails (6 hr)	6	16.3	g	0.38	1.7
Cyanidation Tails (24hr)	24	475.2	g	0.41	53.9
Calculated Feed		500	g	0.72	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Recovery - percent Gold
Cyanide Tails (6 hr)	6	500.0	g	0.38	47.4
Cyanidation Tails (24hr)	24	500.0	g	0.41	43.3
Calculated Feed		500	g	0.72	



DATE: November 23, 2011

PROJECT NO: KM3174-15

PURPOSE: Preliminary Leach on Test 11 Bulk Cleaner Scavenger Tail.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hours, 1,000 ppm NaCN, 28g/L Carbon.
Carbon soaked for 16 hours in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 500 g Test 11 Bulk Cleaner Scavenger Tail II-V at a nominal 21µm $K_{80.}$

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	6.6	-	1.95
Aeration	16									0.52
Leach 1	6	1.00	1.45	0.04	0.06	0.96	1.39	11.0	28.00	0.72
Leach 2	24	0.96	0.00	0.07	0.00	0.93	0.06	11.3	-	3.28
Total	24	1.96	1.45	0.07	0.00	1.89	1.45	-	-	-

Mass of Sample	500
Volume of Water	1000
Pulp Density	33

NaCN Addition	3.9 kg/tonne
Lime Addition	2.9 kg/tonne

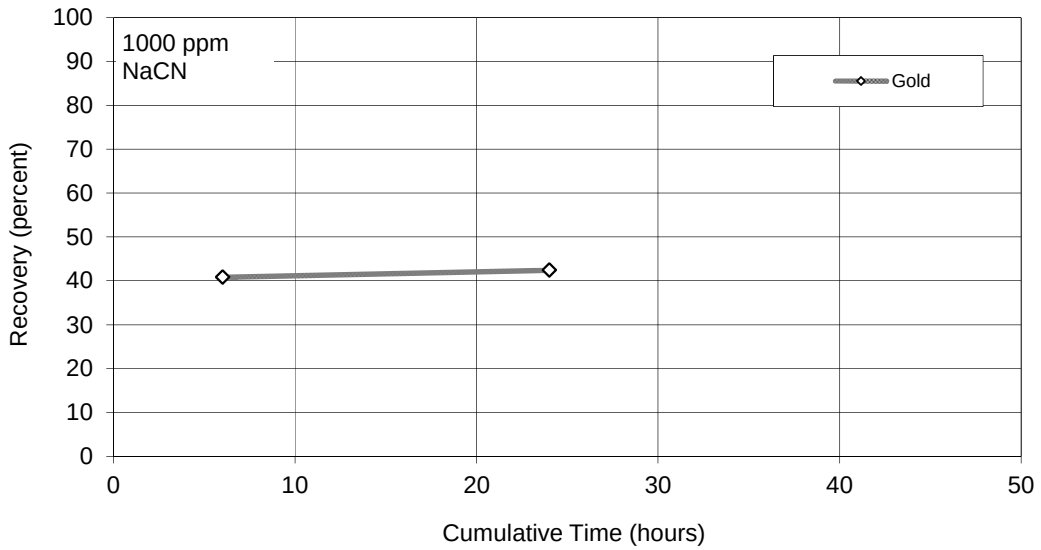
NaCN Consumption	3.8 kg/tonne
Lime Consumption	2.9 kg/tonne

KM3174-15 Test 11 Bulk Cleaner Scavenger Tail II-V
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Distribution - percent Gold
Carbon (24 hour)	24	28.2	g	4.5	40.4
Cyanide Liquor (24 hr)	24	1000.0	ml	0.01	3.2
Cyanide Tails (6 hr)	6	22.8	g	0.37	2.7
Cyanidation Tails (24hr)	24	466.4	g	0.36	53.7
Calculated Feed		500	g	0.63	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Recovery - percent Gold
Cyanide Tails (6 hr)	6	500.0	g	0.37	40.8
Cyanidation Tails (24hr)	24	500.0	g	0.36	42.4
Calculated Feed		500	g	0.63	



DATE: November 24, 2011

PROJECT NO: KM3174-16

PURPOSE: Preliminary Leach on Test 8 Pyrite Rougher Concentrate.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hours, 1,000 ppm NaCN, 28g/L Carbon.
Carbon soaked for 16 hours in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 500 g Test 8 Pyrite Rougher Concentrate I-V ground for 20 minutes to a nominal 25µm $K_{80.}$

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	8.1	-	5.92
Aeration	16									3.21
Leach 1	6	1.00	0.95	0.59	0.03	0.41	0.92	11.0	28.00	2.81
Leach 2	24	0.41	0.00	0.72	0.03	0.28	0.00	11.0	-	3.67
Total	24	1.41	0.95	0.72	0.03	0.69	0.92	-	-	-

Mass of Sample	500
Volume of Water	1000
Pulp Density	33

NaCN Addition	2.8 kg/tonne
Lime Addition	1.9 kg/tonne

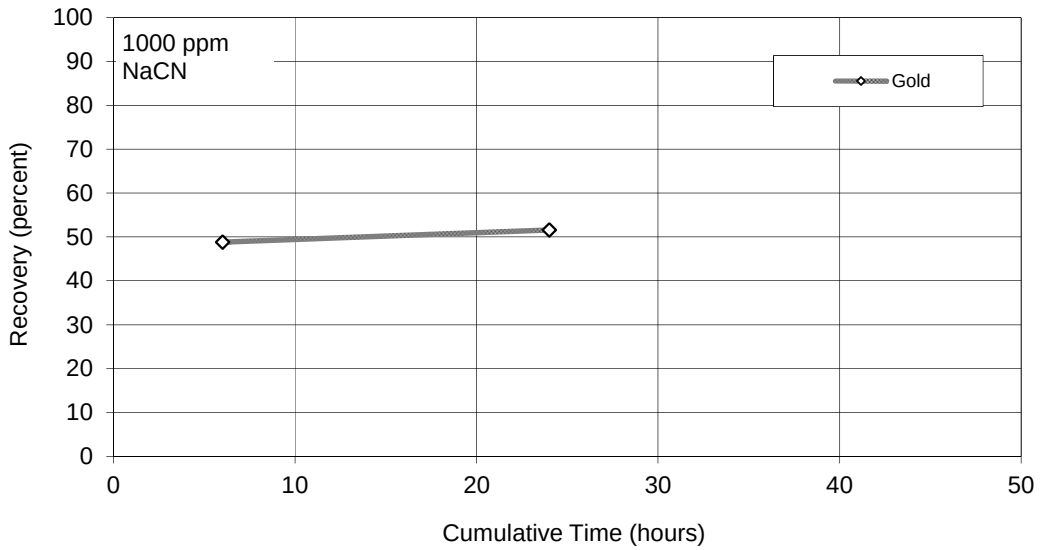
NaCN Consumption	1.4 kg/tonne
Lime Consumption	1.8 kg/tonne

KM3174-16 Test 8 Pyrite Rougher Concentrate
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Distribution - percent Gold
Carbon (24 hour)	24	26.7	g	5.5	40.6
Cyanide Liquor (24 hr)	24	1000.0	ml	0.04	11.1
Cyanide Tails (6 hr)	6	27.1	g	0.37	2.8
Cyanidation Tails (24hr)	24	471.3	g	0.35	45.6
Calculated Feed		500	g	0.72	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Recovery - percent Gold
Cyanide Tails (6 hr)	6	500.0	g	0.37	48.8
Cyanidation Tails (24hr)	24	500.0	g	0.35	51.6
Calculated Feed		500	g	0.72	



DATE: November 24, 2011

PROJECT NO: KM3174-17

PURPOSE: Preliminary Leach on Test 9 Pyrite Rougher Concentrate.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hours, 1,000 ppm NaCN, 28g/L Carbon.
Carbon soaked for 16 hours in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 468 g Test 9 Pyrite Rougher Concentrate II-V ground for 20 minutes to a nominal 15µm $K_{80.}$

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.6	-	2.95
Aeration	16									0.63
Leach 1	6	0.93	1.06	0.43	0.03	0.50	1.03	11.0	26.00	1.56
Leach 2	24	0.50	0.00	0.55	0.01	0.38	0.02	11.0	-	1.66
Total	24	1.43	1.06	0.55	0.01	0.88	1.05	-	-	-

Mass of Sample	468
Volume of Water	936
Pulp Density	33

NaCN Addition	3.1 kg/tonne
Lime Addition	2.3 kg/tonne

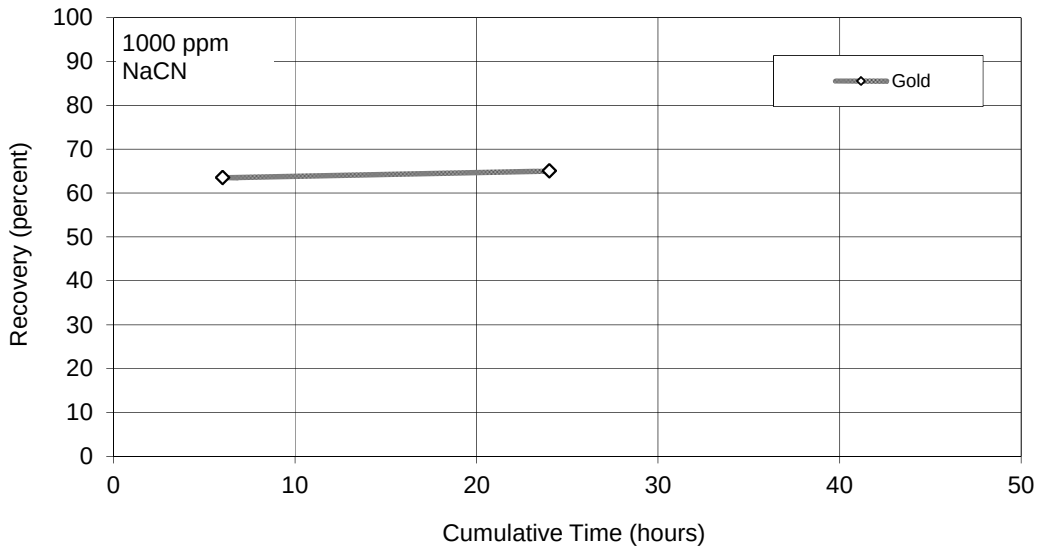
NaCN Consumption	1.9 kg/tonne
Lime Consumption	2.2 kg/tonne

KM3174-17 Test 9 Pyrite Rougher Concentrate
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Distribution - percent Gold
Carbon (24 hour)	24	25.0	g	13.4	55.5
Cyanide Liquor (24 hr)	24	936.0	ml	0.06	9.3
Cyanide Tails (6 hr)	6	22.6	g	0.47	1.8
Cyanidation Tails (24hr)	24	448.4	g	0.45	33.5
Calculated Feed		468	g	1.29	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Recovery - percent Gold
Cyanide Tails (6 hr)	6	468.0	g	0.47	63.5
Cyanidation Tails (24hr)	24	468.0	g	0.45	65.1
Calculated Feed		468	g	1.29	



DATE: November 24, 2011

PROJECT NO: KM3174-18

PURPOSE: Preliminary Leach on Test 10 Pyrite Rougher Concentrate.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hours, 1,000 ppm NaCN, 28g/L Carbon.
Carbon soaked for 16 hours in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 500 g Test 10 Pyrite Rougher Concentrate III-V ground for 20 minutes to a nominal 20µm $K_{80.}$

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.5	-	1.87
Aeration	16									0.46
Leach 1	6	1.00	0.65	0.53	0.00	0.47	0.65	11.0	28.00	2.46
Leach 2	24	0.47	0.07	0.53	0.01	0.47	0.06	11.0	-	1.85
Total	24	1.47	0.72	0.53	0.01	0.94	0.71	-	-	-

Mass of Sample	500
Volume of Water	1000
Pulp Density	33

NaCN Addition	2.9 kg/tonne
Lime Addition	1.4 kg/tonne

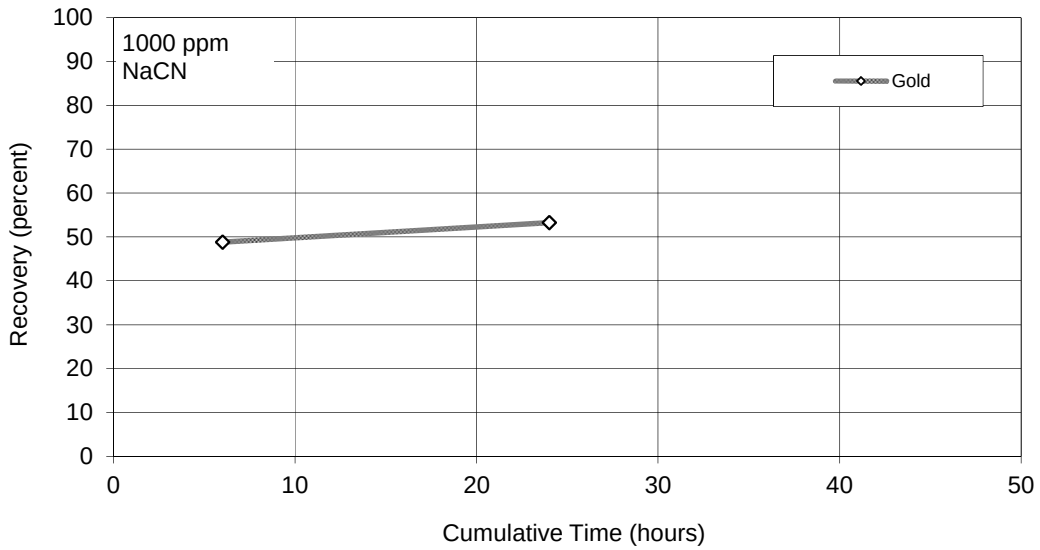
NaCN Consumption	1.9 kg/tonne
Lime Consumption	1.4 kg/tonne

KM3174-18 Test 10 Pyrite Rougher Concentrate
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Distribution - percent Gold
Carbon (24 hour)	24	26.8	g	3.36	40.0
Cyanide Liquor (24 hr)	24	1000.0	ml	0.03	13.3
Cyanide Tails (6 hr)	6	22.8	g	0.23	2.3
Cyanidation Tails (24hr)	24	474.2	g	0.21	44.3
Calculated Feed		500	g	0.45	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Recovery - percent Gold
Cyanide Tails (6 hr)	6	500.0	g	0.23	48.9
Cyanidation Tails (24hr)	24	500.0	g	0.21	53.3
Calculated Feed		500	g	0.45	



DATE: November 24, 2011

PROJECT NO: KM3174-19

PURPOSE: Preliminary Leach on Test 11 Pyrite Rougher Concentrate.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hours, 1,000 ppm NaCN, 28g/L Carbon.
Carbon soaked for 16 hours in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 500 g Test 11 Pyrite Rougher Concentrate III-V ground for 20 minutes to a nominal 19µm $K_{80.}$

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.6	-	2.41
Aeration	16									0.44
Leach 1	6	1.00	1.45	0.22	0.04	0.78	1.41	11.0	28.00	1.69
Leach 2	24	0.78	0.00	0.32	0.04	0.68	0.00	11.0	-	1.52
Total	24	1.78	1.45	0.32	0.04	1.46	1.41	-	-	-

Mass of Sample	500
Volume of Water	1000
Pulp Density	33

NaCN Addition	3.6 kg/tonne
Lime Addition	2.9 kg/tonne

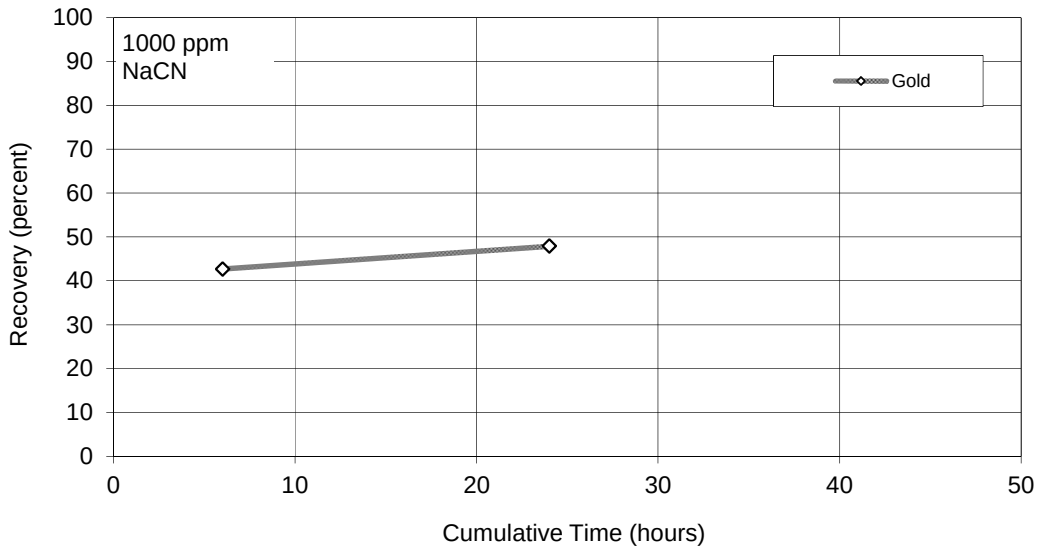
NaCN Consumption	2.9 kg/tonne
Lime Consumption	2.8 kg/tonne

KM3174-19 Test 11 Pyrite Rougher Concentrate
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Distribution - percent Gold
Carbon (24 hour)	24	26.9	g	4.4	40.6
Cyanide Liquor (24 hr)	24	1000.0	ml	0.02	6.9
Cyanide Tails (6 hr)	6	24.2	g	0.33	2.8
Cyanidation Tails (24hr)	24	476.6	g	0.30	49.6
Calculated Feed		500	g	0.58	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Recovery - percent Gold
Cyanide Tails (6 hr)	6	500.0	g	0.33	42.7
Cyanidation Tails (24hr)	24	500.0	g	0.30	47.9
Calculated Feed		500	g	0.58	



DATE: November 24, 2011

PROJECT NO: KM3174-20

PURPOSE: To Repeat Test 01.

PROCEDURE: Perform a standard two product cleaner test.

FEED: 4 kg of Composite 1 ore ground to a nominal 121μm K_{80}.
Bulk Regrind Discharge - 16μm K_{80}.
Pyrite Rougher Concentrate - 63μm K_{80}.

FLOWSHEET: 2

Stage	Reagents Added g/tonne						Time (minutes)			pH
	Lime	PE26	Fuel Oil	208	3418A	MBC	Grind	Cond.	Float	
Primary Grind	400		10				17			10.3
BULK CIRCUIT:										
Rougher 1	-			3	3	8		1	3	10.0
Rougher 2	√			3	3	8		1	4	10.0
Regrind	400		50				12			11.5
Cleaner 1	-	20		8	8	8		1	4	11.5
Cleaner 2	√		10	6	6	4		1	3	11.5
Cleaner 3	√		10	5	5	4		1	2	11.5
Cleaner Scavenger	√		20	-	-	4		1	2	11.5
PYRITE CIRCUIT:					PAX					
Rougher 1	-			30	30	8		1	4	9.5
Rougher 2	-			30	30	4		1	4	9.3

Flotation Data	Rougher	Cleaner
Flotation Machine:	D2A	D1B
Cell Size in liters:	8.0	2.2
Aspiration:	Air	
Impeller Speed in rpm:	1100	1200

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M2-Mild	Stirred Mill
Charge/Material:	20kg-Mild	1.2kg-Beads
Water:	1500 ml	estimated

KM3174-20 Composite 1

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t				
	grams	%	Pb	Zn	As	Cd	Sb
Bulk Con	22.8	0.6	0.26	0.19	0.04	42	0.02

Note: Pb, Zn and Sb values are in percent, As and Cd values are in g/t

KM3174-20 Composite 1

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Bulk Con	22.8	0.6	27.0	0.131	29.5	35.1	380	89.0	83.6	23.8	4.2	6.9	57.2	63.5
Bulk 3rd Clnr Tail	16.0	0.4	0.84	0.105	25.1	29.0	39	7.5	1.8	13.4	2.5	4.0	4.1	3.7
Bulk 2nd Clnr Tail	71.5	1.8	0.22	0.027	24.6	26.1	11	2.24	2.1	15.4	10.9	16.0	5.2	5.0
Bulk Clnr Scav Con	25.9	0.6	0.41	0.022	24.8	28.1	15	3.0	1.4	4.6	4.0	6.2	2.6	2.4
Bulk Clnr Scav Tail	171.8	4.3	0.09	0.006	25.1	27.3	4	1.54	2.0	8.2	26.6	40.2	4.5	8.3
Pyrite Ro Con	163.6	4.1	0.15	0.005	16.0	15.9	3	1.83	3.3	6.5	16.2	22.3	3.2	9.4
Pyrite Ro Tail	3515.0	88.2	0.01	0.001	1.7	0.15	1	0.07	5.7	28.1	35.8	4.4	23.2	7.7
Feed	3986.6	100	0.18	0.003	4.1	2.93	3.8	0.80	100	100	100	100	100	100

KM3174-20 Composite 1

Cumulative Metallurgical Balance

Cumulative	Cum. Weight		Assay - percent or g/t						Distribution - percent					
Product	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Product 1	22.8	0.6	27.0	0.131	29.5	35.1	380	89.0	83.6	23.8	4.2	6.9	57.2	63.5
Product 1 to 2	38.8	1.0	16.2	0.120	27.7	32.6	239	55.4	85.4	37.2	6.6	10.8	61.3	67.2
Product 1 to 3	110.3	2.8	5.85	0.060	25.7	28.4	91	20.9	87.5	52.6	17.5	26.8	66.5	72.2
Product 1 to 4	136.2	3.4	4.81	0.053	25.5	28.3	77	17.5	89.0	57.2	21.4	33.1	69.0	74.6
Product 1 to 5	308.0	7.7	2.18	0.027	25.3	27.8	36	8.60	90.9	65.4	48.1	73.3	73.6	82.9
Product 6	163.6	4.1	0.15	0.005	16.0	15.9	3	1.83	3.3	6.5	16.2	22.3	3.2	9.4
Product 7	3515.0	88.2	0.01	0.001	1.7	0.15	1	0.07	5.7	28.1	35.8	4.4	23.2	7.7
Feed	3986.6	100	0.18	0.003	4.1	2.93	3.8	0.80	100	100	100	100	100	100

DATE: November 24, 2011

PROJECT NO: KM3174-21

PURPOSE: To Repeat Test 02.

PROCEDURE: Perform a standard two product cleaner test.

FEED: 4 kg of Composite 2 ore ground to a nominal 116μm K_{80}.
Bulk Regrind Discharge - 15μm K_{80}.
Pyrite Rougher Concentrate - 85μm K_{80}.

FLOWSHEET: 2

Stage	Reagents Added g/tonne						Time (minutes)			pH
	Lime	PE26	Fuel Oil	208	3418A	MBC	Grind	Cond.	Float	
Primary Grind	400		10				18			10.4
BULK CIRCUIT:										
Rougher 1	-			3	3	8		1	3	10.0
Rougher 2	-			2	2	8		1	4	10.0
Regrind	400		50				11			11.5
Cleaner 1	-	20		8	8	4		1	6	11.5
Cleaner 2	√		10	5	5	4		1	4	11.5
Cleaner 3	√		10	4	4	4		1	3	11.5
Cleaner Scavenger	√		20	-	-	-		1	3	11.5
PYRITE CIRCUIT:					PAX					
Rougher 1	-			30	30	-		1	4	9.4
Rougher 2	-			30	30	8		1	4	8.9

Flotation Data	Rougher	Cleaner
Flotation Machine:	D2A	D1B
Cell Size in liters:	8.0	2.2
Aspiration:	Air	
Impeller Speed in rpm:	1100	1200

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M2-Mild	Stirred Mill
Charge/Material:	20kg-Mild	1.2kg-Beads
Water:	1500 ml	estimated

KM3174-21 Composite 2

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t				
	grams	%	Pb	Zn	As	Cd	Sb
Bulk Con	22.0	0.6	0.13	0.08	0.07	30	0.03

Note: Pb, Zn and Sb values are in percent, As and Cd values are in g/t

KM3174-21 Composite 2

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Bulk Con	22.0	0.6	29.2	0.100	30.2	34.6	238	79.5	81.8	24.7	4.1	6.0	39.6	55.8
Bulk 3rd Clnr Tail	14.8	0.4	1.29	0.052	26.4	28.7	39	8.3	2.4	8.6	2.4	3.3	4.4	3.9
Bulk 2nd Clnr Tail	58.3	1.5	0.45	0.019	25.4	28.2	30	2.79	3.3	12.4	9.2	13.0	13.2	5.2
Bulk Clnr Scav Con	23.0	0.6	0.45	0.012	26.7	28.9	16	3.2	1.3	3.1	3.8	5.2	2.8	2.3
Bulk Clnr Scav Tail	150.7	3.8	0.12	0.005	25.9	29.7	7	1.54	2.3	8.9	24.2	35.3	8.0	7.4
Pyrite Ro Con	174.5	4.4	0.11	0.001	22.5	24.2	4	2.46	2.4	2.4	24.3	33.3	5.3	13.7
Pyrite Ro Tail	3546.2	88.9	0.01	0.001	1.5	0.14	1	0.10	6.3	39.8	32.0	3.9	26.8	11.7
Feed	3989.5	100	0.20	0.002	4.0	3.18	3.3	0.79	100	100	100	100	100	100

KM3174-21 Composite 2

Cumulative Metallurgical Balance

Cumulative	Cum. Weight		Assay - percent or g/t						Distribution - percent					
Product	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Product 1	22.0	0.6	29.2	0.100	30.2	34.6	238	79.5	81.8	24.7	4.1	6.0	39.6	55.8
Product 1 to 2	36.8	0.9	18.0	0.081	28.7	32.2	158	50.9	84.3	33.3	6.5	9.3	43.9	59.7
Product 1 to 3	95.1	2.4	7.23	0.043	26.7	29.8	80	21.4	87.6	45.8	15.7	22.3	57.2	64.9
Product 1 to 4	118.1	3.0	5.91	0.037	26.7	29.6	67	17.9	88.9	48.9	19.5	27.5	59.9	67.2
Product 1 to 5	268.8	6.7	2.66	0.019	26.2	29.7	33	8.71	91.2	57.8	43.7	62.8	67.9	74.6
Product 6	174.5	4.4	0.11	0.001	22.5	24.2	4	2.46	2.4	2.4	24.3	33.3	5.3	13.7
Product 7	3546.2	88.9	0.01	0.001	1.5	0.14	1	0.10	6.3	39.8	32.0	3.9	26.8	11.7
Feed	3989.5	100	0.20	0.002	4.0	3.18	3.3	0.79	100	100	100	100	100	100

DATE: November 24, 2011

PROJECT NO: KM3174-22

PURPOSE: To Repeat Test 03.

PROCEDURE: Perform a standard two product cleaner test.

FEED: 4 kg of Composite 3 ore ground to a nominal 121μm K_{80}.
Bulk Regrind Discharge - 19μm K_{80}.
Pyrite Rougher Concentrate - 119μm K_{80}.

FLOWSHEET: 2

Stage	Reagents Added g/tonne						Time (minutes)			pH
	Lime	PE26	Fuel Oil	208	3418A	MBC	Grind	Cond.	Float	
Primary Grind	400		10				17			10.3
BULK CIRCUIT:										
Rougher 1	-			3	3	8		1	3	10.0
Rougher 2	-			2	2	8		1	4	10.0
Regrind	400		50				11			11.5
Cleaner 1	-	20		8	8	4		1	6	11.5
Cleaner 2	√		10	5	5	4		1	4	11.5
Cleaner 3	√		10	1	1	4		1	3	11.5
Cleaner Scavenger	√		20	-	-	-		1	3	11.5
PYRITE CIRCUIT:					PAX					
Rougher 1	-			30	30	-		1	4	9.0
Rougher 2	-			30	30	-		1	4	8.8

Flotation Data	Rougher	Cleaner
Flotation Machine:	D2A	D1B
Cell Size in liters:	8.0	2.2
Aspiration:	Air	
Impeller Speed in rpm:	1100	1200

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M2-Mild	Stirred Mill
Charge/Material:	20kg-Mild	1.2kg-Beads
Water:	1500 ml	estimated

KM3174-22 Composite 3

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t				
	grams	%	Pb	Zn	As	Cd	Sb
Bulk Con	23.7	0.6	0.20	0.09	0.08	32	0.04

Note: Pb, Zn and Sb values are in percent, As and Cd values are in g/t

KM3174-22 Composite 3

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Bulk Con	23.7	0.6	28.2	0.145	32.4	35.9	280	78.1	82.9	31.6	4.1	5.1	44.8	57.7
Bulk 3rd Clnr Tail	12.0	0.3	1.30	0.056	28.0	31.6	54	8.3	1.9	6.2	1.8	2.3	4.4	3.1
Bulk 2nd Clnr Tail	61.2	1.5	0.42	0.024	27.3	30.0	20	2.57	3.2	13.6	9.0	11.1	8.3	4.9
Bulk Clnr Scav Con	28.2	0.7	0.43	0.015	28.2	30.9	22	3.1	1.5	3.9	4.3	5.3	4.2	2.7
Bulk Clnr Scav Tail	196.1	4.9	0.10	0.005	29.9	31.6	7	1.39	2.3	9.2	31.6	37.4	9.3	8.5
Pyrite Ro Con	159.1	4.0	0.13	0.002	26.7	29.3	5	2.71	2.6	3.2	22.9	28.1	5.4	13.4
Pyrite Ro Tail	3500.9	87.9	0.01	0.001	1.4	0.51	1	0.09	5.6	32.3	26.2	10.8	23.7	9.6
Feed	3981.2	100	0.20	0.003	4.7	4.17	3.7	0.81	100	100	100	100	100	100

KM3174-22 Composite 3

Cumulative Metallurgical Balance

Cumulative	Cum. Weight		Assay - percent or g/t						Distribution - percent					
Product	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Product 1	23.7	0.6	28.2	0.145	32.4	35.9	280	78.1	82.9	31.6	4.1	5.1	44.8	57.7
Product 1 to 2	35.7	0.9	19.2	0.115	30.9	34.5	204	54.6	84.8	37.8	6.0	7.4	49.2	60.8
Product 1 to 3	96.9	2.4	7.32	0.058	28.6	31.6	88	21.8	88.0	51.4	15.0	18.5	57.5	65.8
Product 1 to 4	125.1	3.1	5.77	0.048	28.5	31.5	73	17.5	89.5	55.3	19.2	23.7	61.7	68.4
Product 1 to 5	321.2	8.1	2.31	0.022	29.4	31.6	33	7.68	91.8	64.5	50.9	61.1	71.0	77.0
Product 6	159.1	4.0	0.13	0.002	26.7	29.3	5	2.71	2.6	3.2	22.9	28.1	5.4	13.4
Product 7	3500.9	87.9	0.01	0.001	1.4	0.51	1	0.09	5.6	32.3	26.2	10.8	23.7	9.6
Feed	3981.2	100	0.20	0.003	4.7	4.17	3.7	0.81	100	100	100	100	100	100

DATE: November 24, 2011

PROJECT NO: KM3174-23

PURPOSE: To Repeat Test 04.

PROCEDURE: Perform a standard two product cleaner test.

FEED: 4 kg of Composite 4 ore ground to a nominal 131μm K_{80}.
Bulk Regrind Discharge - 18μm K_{80}.
Pyrite Rougher Concentrate - 76μm K_{80}.

FLOWSHEET: 2

Stage	Reagents Added g/tonne						Time (minutes)			pH
	Lime	PE26	Fuel Oil	208	3418A	MBC	Grind	Cond.	Float	
Primary Grind	400		10				15			10.3
BULK CIRCUIT:										
Rougher 1	-			3	3	15		1	3	10.0
Rougher 2	-			1	1	8		1	4	10.0
Regrind	400		50				13			11.5
Cleaner 1	-	20		5	5	8		1	6	11.5
Cleaner 2	√		10	3	3	8		1	4	11.5
Cleaner 3	√		10	1	1	8		1	3	11.5
Cleaner Scavenger	√		20	-	-	-		1	3	11.5
PYRITE CIRCUIT:					PAX					
Rougher 1	-			30	30	8		1	4	9.7
Rougher 2	-			30	30	4		1	4	9.4

Flotation Data	Rougher	Cleaner
Flotation Machine:	D2A	D1B
Cell Size in liters:	8.0	2.2
Aspiration:	Air	
Impeller Speed in rpm:	1100	1200

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M2-Mild	Stirred Mill
Charge/Material:	20kg-Mild	1.2kg-Beads
Water:	1500 ml	estimated

KM3174-23 Composite 4

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t				
	grams	%	Pb	Zn	As	Cd	Sb
Bulk Con	22.4	0.5	0.21	0.21	0.20	52	0.29

Note: Pb, Zn and Sb values are in percent, As and Cd values are in g/t

KM3174-23 Composite 4

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Bulk Con	22.4	0.5	29.0	0.145	28.7	34.9	418	145.5	81.8	25.3	3.6	4.9	53.7	62.4
Bulk 3rd Clnr Tail	12.4	0.3	1.03	0.180	22.6	26.3	60	9.3	1.6	17.4	1.6	2.0	4.3	2.2
Bulk 2nd Clnr Tail	52.4	1.3	0.30	0.042	22.9	25.6	20	3.32	2.0	17.2	6.7	8.4	6.0	3.3
Bulk Clnr Scav Con	17.3	0.4	0.32	0.036	25.7	29.0	24	5.3	0.7	4.9	2.5	3.1	2.4	1.7
Bulk Clnr Scav Tail	243.4	5.9	0.06	0.007	25.7	28.2	6	1.78	1.8	13.1	34.8	43.0	8.4	8.3
Pyrite Ro Con	221.7	5.4	0.10	0.003	21.1	23.6	4	2.98	2.7	5.2	26.0	32.8	5.1	12.6
Pyrite Ro Tail	3524.0	86.1	0.02	0.001	1.3	0.26	1	0.14	9.3	17.0	24.9	5.7	20.2	9.4
Feed	4093.6	100	0.19	0.003	4.4	3.90	4	1.28	100	100	100	100	100	100

KM3174-23 Composite 4

Cumulative Metallurgical Balance

Cumulative Product	Cum. Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Product 1	22.4	0.5	29.0	0.145	28.7	34.9	418	145.5	81.8	25.3	3.6	4.9	53.7	62.4
Product 1 to 2	34.8	0.9	19.0	0.157	26.5	31.8	290	97.0	83.5	42.7	5.1	6.9	57.9	64.6
Product 1 to 3	87.2	2.1	7.78	0.088	24.3	28.1	128	40.7	85.4	59.9	11.8	15.3	64.0	67.9
Product 1 to 4	104.5	2.6	6.54	0.079	24.6	28.2	111	34.8	86.1	64.8	14.3	18.5	66.3	69.6
Product 1 to 5	347.9	8.5	2.01	0.029	25.4	28.2	37	11.71	87.9	77.9	49.1	61.5	74.7	77.9
Product 6	221.7	5.4	0.10	0.003	21.1	23.6	4	2.98	2.7	5.2	26.0	32.8	5.1	12.6
Product 7	3524.0	86.1	0.02	0.001	1.3	0.26	1	0.14	9.3	17.0	24.9	5.7	20.2	9.4
Feed	4093.6	100	0.19	0.003	4.4	3.90	4	1.28	100	100	100	100	100	100

DATE: November 24, 2011

PROJECT NO: KM3174-24

PURPOSE: To Repeat Test 05.

PROCEDURE: Perform a standard two product cleaner test.

FEED: 4 kg of Composite 5 ore ground to a nominal 127μm K_{80}.
Bulk Regrind Discharge - 22μm K_{80}.
Pyrite Rougher Concentrate - 149μm K_{80}.

FLOWSHEET: 2

Stage	Reagents Added g/tonne						Time (minutes)			pH
	Lime	PE26	Fuel Oil	208	3418A	MBC	Grind	Cond.	Float	
Primary Grind	400		10				20			10.3
BULK CIRCUIT:										
Rougher 1	-			3	3	8		1	3	10.0
Rougher 2	-			1	1	-		1	4	10.0
Regrind	400		50				13			11.5
Cleaner 1	-	20		6	6	8		1	6	11.5
Cleaner 2	√		10	3	3	8		1	4	11.5
Cleaner 3	√		10	2	2	8		1	3	11.5
Cleaner Scavenger	√		20	-	-	-		1	3	11.5
PYRITE CIRCUIT:					PAX					
Rougher 1	-			30	30	-		1	4	9.4
Rougher 2	-			30	30	-		1	4	9.1

Flotation Data	Rougher	Cleaner
Flotation Machine:	D2A	D1B
Cell Size in liters:	8.0	2.2
Aspiration:	Air	
Impeller Speed in rpm:	1100	1200

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M2-Mild	Stirred Mill
Charge/Material:	20kg-Mild	1.2kg-Beads
Water:	1500 ml	estimated

KM3174-24 Composite 5

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t				
	grams	%	Pb	Zn	As	Cd	Sb
Bulk Con	25.6	0.6	0.23	0.24	0.13	46	0.19

Note: Pb, Zn and Sb values are in percent, As and Cd values are in g/t

KM3174-24 Composite 5

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Bulk Con	25.6	0.6	28.5	0.156	31.6	36.2	250	54.1	82.5	33.6	4.5	5.1	40.0	53.4
Bulk 3rd Clnr Tail	11.1	0.3	1.70	0.085	33.4	35.6	58	7.63	2.1	8.0	2.1	2.2	4.0	3.3
Bulk 2nd Clnr Tail	48.7	1.2	0.68	0.025	32.1	34.7	22	3.09	3.7	10.3	8.8	9.3	6.7	5.8
Bulk Clnr Scav Con	21.9	0.5	0.74	0.016	35.0	36.9	48	3.23	1.8	3.0	4.3	4.4	6.6	2.7
Bulk Clnr Scav Tail	220.3	5.5	0.12	0.006	34.5	35.6	10	1.55	3.0	11.2	42.6	43.1	13.8	13.1
Pyrite Ro Con	193.6	4.8	0.10	0.003	25.0	30.0	6	1.86	2.1	4.6	27.1	31.9	7.3	13.8
Pyrite Ro Tail	3480.7	87.0	0.01	0.001	0.5	0.21	1	0.06	4.7	29.3	10.5	4.1	21.7	7.8
Feed	4001.9	100	0.22	0.003	4.5	4.55	4	0.65	100	100	100	100	100	100

KM3174-24 Composite 5

Cumulative Metallurgical Balance

Cumulative	Cum. Weight		Assay - percent or g/t						Distribution - percent					
Product	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Product 1	25.6	0.6	28.5	0.156	31.6	36.2	250	54.1	82.5	33.6	4.5	5.1	40.0	53.4
Product 1 to 2	36.7	0.9	20.4	0.135	32.1	36.0	192	40.0	84.6	41.6	6.6	7.3	44.0	56.7
Product 1 to 3	85.4	2.1	9.15	0.072	32.1	35.3	95	19.0	88.4	51.9	15.4	16.5	50.7	62.5
Product 1 to 4	107.3	2.7	7.44	0.061	32.7	35.6	85	15.8	90.2	54.9	19.7	21.0	57.2	65.2
Product 1 to 5	327.6	8.2	2.52	0.024	33.9	35.6	35	6.20	93.2	66.1	62.3	64.0	71.0	78.3
Product 6	193.6	4.8	0.10	0.003	25.0	30.0	6	1.86	2.1	4.6	27.1	31.9	7.3	13.8
Product 7	3480.7	87.0	0.01	0.001	0.5	0.21	1	0.06	4.7	29.3	10.5	4.1	21.7	7.8
Feed	4001.9	100	0.22	0.003	4.5	4.55	4	0.65	100	100	100	100	100	100

DATE: November 24, 2011

PROJECT NO: KM3174-25

PURPOSE: To Repeat Test 06.

PROCEDURE: Perform a standard two product cleaner test.

FEED: 4 kg of Composite 6 ore ground to a nominal 126μm K_{80}.
Bulk Regrind Discharge - 14μm K_{80}.
Pyrite Rougher Concentrate - 99μm K_{80}.

FLOWSHEET: 2

Stage	Reagents Added g/tonne						Time (minutes)			pH
	Lime	PE26	Fuel Oil	208	3418A	MBC	Grind	Cond.	Float	
Primary Grind	400		10				17			10.4
BULK CIRCUIT:										
Rougher 1	-			4	4	15		1	3	10.0
Rougher 2	-			3	3	8		1	4	10.0
Regrind	400		50				13			11.5
Cleaner 1	-	20		8	8	8		1	6	11.5
Cleaner 2	√		10	3	3	8		1	4	11.5
Cleaner 3	√		10	2	2	8		1	3	11.5
Cleaner Scavenger	√		20	-	-	-		1	3	11.5
PYRITE CIRCUIT:					PAX					
Rougher 1	-			30	30	8		1	4	9.9
Rougher 2	-			30	30	4		1	4	9.5

Flotation Data	Rougher	Cleaner
Flotation Machine:	D2A	D1B
Cell Size in liters:	8.0	2.2
Aspiration:	Air	
Impeller Speed in rpm:	1100	1200

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M2-Mild	Stirred Mill
Charge/Material:	20kg-Mild	1.2kg-Beads
Water:	1500 ml	estimated

KM3174-25 Composite 6

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t				
	grams	%	Pb	Zn	As	Cd	Sb
Bulk Con	20.2	0.5	0.08	0.03	0.01	18	0.01

Note: Pb, Zn and Sb values are in percent, As and Cd values are in g/t

KM3174-25 Composite 6

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Bulk Con	20.2	0.5	30.9	0.088	30.1	33.9	266	66.5	81.8	19.0	3.6	6.3	43.2	56.2
Bulk 3rd Clnr Tail	9.6	0.2	1.17	0.073	21.3	22.8	34	4.94	1.5	7.5	1.2	2.0	2.6	2.0
Bulk 2nd Clnr Tail	47.5	1.2	0.44	0.033	21.1	22.8	18	2.33	2.7	17.0	6.0	9.9	6.9	4.6
Bulk Clnr Scav Con	13.1	0.3	0.59	0.018	22.5	24.2	12	2.79	1.0	2.5	1.8	2.9	1.3	1.5
Bulk Clnr Scav Tail	142.9	3.6	0.09	0.007	22.8	23.6	7	0.91	1.7	11.2	19.4	31.0	8.0	5.5
Pyrite Ro Con	194.9	4.9	0.13	0.002	19.0	19.8	6	2.05	3.3	4.7	22.0	35.4	9.4	16.7
Pyrite Ro Tail	3566.0	89.3	0.02	0.001	2.2	0.38	1	0.09	7.9	38.2	46.0	12.4	28.6	13.4
Feed	3994.2	100	0.19	0.002	4.2	2.73	3	0.60	100	100	100	100	100	100

KM3174-25 Composite 6

Cumulative Metallurgical Balance

Cumulative Product	Cum. Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Product 1	20.2	0.5	30.9	0.088	30.1	33.9	266	66.5	81.8	19.0	3.6	6.3	43.2	56.2
Product 1 to 2	29.8	0.7	21.3	0.083	27.3	30.3	191	46.7	83.3	26.5	4.8	8.3	45.8	58.2
Product 1 to 3	77.3	1.9	8.49	0.053	23.5	25.7	85	19.4	86.0	43.5	10.8	18.2	52.7	62.8
Product 1 to 4	90.4	2.3	7.35	0.048	23.3	25.5	74	17.0	87.1	46.0	12.5	21.2	53.9	64.4
Product 1 to 5	233.3	5.8	2.90	0.023	23.0	24.3	33	7.15	88.7	57.2	31.9	52.1	62.0	69.8
Product 6	194.9	4.9	0.13	0.002	19.0	19.8	6	2.05	3.3	4.7	22.0	35.4	9.4	16.7
Product 7	3566.0	89.3	0.02	0.001	2.2	0.38	1	0.09	7.9	38.2	46.0	12.4	28.6	13.4
Feed	3994.2	100	0.19	0.002	4.2	2.73	3	0.60	100	100	100	100	100	100

DATE: November 24, 2011

PROJECT NO: KM3174-26

PURPOSE: To Repeat Test 07.

PROCEDURE: Perform a standard two product cleaner test.

FEED: 4 kg of Composite 7 ore ground to a nominal 122μm K_{80}.
Bulk Regrind Discharge - 23μm K_{80}.
Pyrite Rougher Concentrate - 183μm K_{80}.

FLOWSHEET: 2

Stage	Reagents Added g/tonne						Time (minutes)			pH
	Lime	PE26	Fuel Oil	208	3418A	MBC	Grind	Cond.	Float	
Primary Grind	400		10				15			10.3
BULK CIRCUIT:										
Rougher 1	-			4	4	8		1	3	10.0
Rougher 2	-			2	2	8		1	4	10.0
Regrind	400		50				8			11.6
Cleaner 1	-	20		8	8	8		1	6	11.5
Cleaner 2	√		10	3	3	8		1	4	11.5
Cleaner 3	√		10	1	1	8		1	3	11.5
Cleaner Scavenger	√		20	-	-	-		1	3	11.5
PYRITE CIRCUIT:					PAX					
Rougher 1	-			30	30	-		1	4	8.9
Rougher 2	-			30	30	-		1	4	9.0

Flotation Data	Rougher	Cleaner
Flotation Machine:	D2A	D1B
Cell Size in liters:	8.0	2.2
Aspiration:	Air	
Impeller Speed in rpm:	1100	1200

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M2-Mild	Stirred Mill
Charge/Material:	20kg-Mild	1.2kg-Beads
Water:	1500 ml	estimated

KM3174-26 Composite 7

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t				
	grams	%	Pb	Zn	As	Cd	Sb
Bulk Con	14.0	0.4	1.80	0.12	0.02	30	0.02

Note: Pb, Zn and Sb values are in percent, As and Cd values are in g/t

KM3174-26 Composite 7

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Bulk Con	14.0	0.4	20.7	0.598	30.5	35.3	168	55.8	57.9	34.5	2.4	3.6	22.4	37.4
Bulk 3rd Clnr Tail	7.0	0.2	5.11	0.436	28.6	31.8	68	13.7	7.2	12.6	1.1	1.6	4.5	4.6
Bulk 2nd Clnr Tail	26.9	0.7	1.35	0.091	21.1	21.5	28	4.42	7.3	10.1	3.2	4.2	7.2	5.7
Bulk Clnr Scav Con	12.3	0.3	1.58	0.124	23.7	25.6	65	6.43	3.9	6.3	1.6	2.3	7.6	3.8
Bulk Clnr Scav Tail	182.5	4.6	0.21	0.020	25.1	26.9	8	2.06	7.7	15.3	25.7	35.4	13.9	18.0
Pyrite Ro Con	231.3	5.8	0.12	0.006	23.8	26.9	5	1.69	5.5	5.8	30.9	44.8	11.0	18.7
Pyrite Ro Tail	3520.8	88.1	0.02	0.001	1.8	0.32	1	0.07	10.6	15.5	35.0	8.2	33.5	11.8
Feed	3994.8	100	0.13	0.006	4.5	3.47	3	0.52	100	100	100	100	100	100

KM3174-26 Composite 7

Cumulative Metallurgical Balance

Cumulative Product	Cum. Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Product 1	14.0	0.4	20.7	0.598	30.5	35.3	168	55.8	57.9	34.5	2.4	3.6	22.4	37.4
Product 1 to 2	21.0	0.5	15.5	0.544	29.9	34.1	135	41.7	65.1	47.1	3.5	5.2	26.9	42.0
Product 1 to 3	47.9	1.2	7.56	0.290	24.9	27.0	75	20.8	72.3	57.2	6.7	9.3	34.0	47.7
Product 1 to 4	60.2	1.5	6.33	0.256	24.7	26.7	73	17.8	76.2	63.5	8.3	11.6	41.6	51.5
Product 1 to 5	242.7	6.1	1.73	0.079	25.0	26.9	24	5.98	83.9	78.7	34.1	47.0	55.5	69.5
Product 6	231.3	5.8	0.12	0.006	23.8	26.9	5	1.69	5.5	5.8	30.9	44.8	11.0	18.7
Product 7	3520.8	88.1	0.02	0.001	1.8	0.32	1	0.07	10.6	15.5	35.0	8.2	33.5	11.8
Feed	3994.8	100	0.13	0.006	4.5	3.47	3	0.52	100	100	100	100	100	100

DATE: November 28, 2011

PROJECT NO: KM3174-27

PURPOSE: Preliminary Leach on Test 20 Bulk Cleaner Scavenger Tail.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hours, 1,000 ppm NaCN, 28g/L Carbon.
Carbon soaked for 16 hours in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 150 g Test 20 Bulk Cleaner Scavenger Tail at a nominal 17µm $K_{80.}$

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.3	-	3.27
Aeration	16									1.63
Leach 1	6	0.30	0.40	0.05	0.00	0.25	0.40	11.0	8.40	5.42
Leach 2	24	0.23	0.07	0.01	0.00	0.27	0.07	11.0	-	5.68
Total	24	0.53	0.47	0.01	0.00	0.52	0.47	-	-	-

Mass of Sample	150
Volume of Water	300
Pulp Density	33

NaCN Addition	3.5 kg/tonne
Lime Addition	3.1 kg/tonne

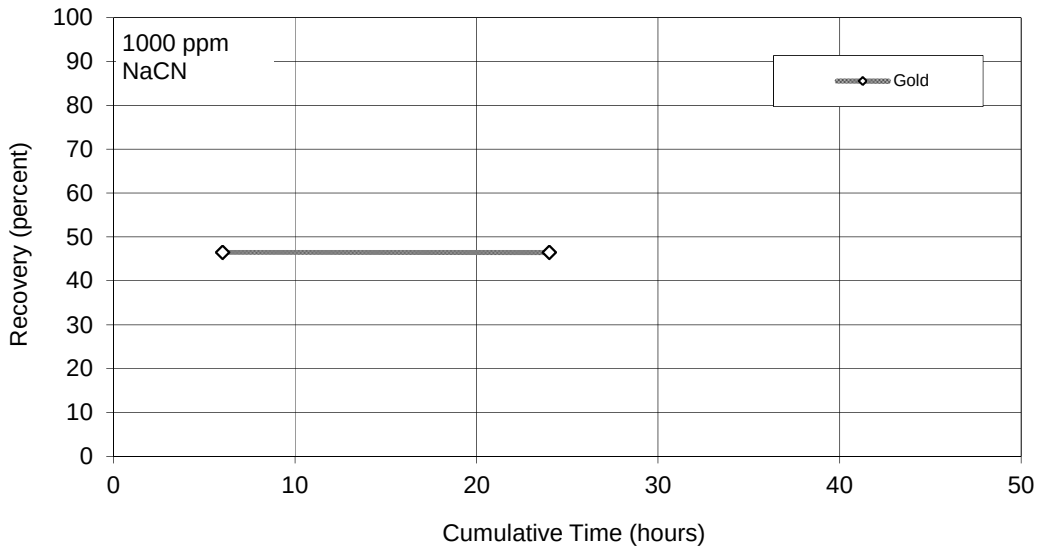
NaCN Consumption	3.4 kg/tonne
Lime Consumption	3.1 kg/tonne

KM3174-27 Test 20 Bulk Cleaner Scavenger Tail
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Distribution - percent Gold
Carbon (24 hour)	24	8.7	g	11.2	44.7
Cyanide Liquor (24 hr)	24	300.0	ml	0.02	2.7
Cyanide Tails (6 hr)	6	22.0	g	0.78	7.8
Cyanidation Tails (24hr)	24	125.2	g	0.78	44.7
Calculated Feed		150	g	1.46	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Recovery - percent Gold
Cyanide Tails (6 hr)	6	150.0	g	0.78	46.5
Cyanidation Tails (24hr)	24	150.0	g	0.78	46.5
Calculated Feed		150	g	1.46	



DATE: November 28, 2011

PROJECT NO: KM3174-28

PURPOSE: Preliminary Leach on Test 21 Bulk Cleaner Scavenger Tail.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hours, 1,000 ppm NaCN, 28g/L Carbon.
Carbon soaked for 16 hours in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 130 g Test 21 Bulk Cleaner Scavenger Tail at a nominal 16µm $K_{80.}$

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.3	-	0.62
Aeration	16								7.3	0.72
Leach 1	6	0.26	0.36	0.02	0.00	0.24	0.36	11.0		4.51
Leach 2	24	0.24	0.00	0.01	0.00	0.25	0.00	11.0	-	2.85
Total	24	0.50	0.36	0.01	0.00	0.49	0.36	-	-	-

Mass of Sample	130
Volume of Water	260
Pulp Density	33

NaCN Addition	3.8 kg/tonne
Lime Addition	2.8 kg/tonne

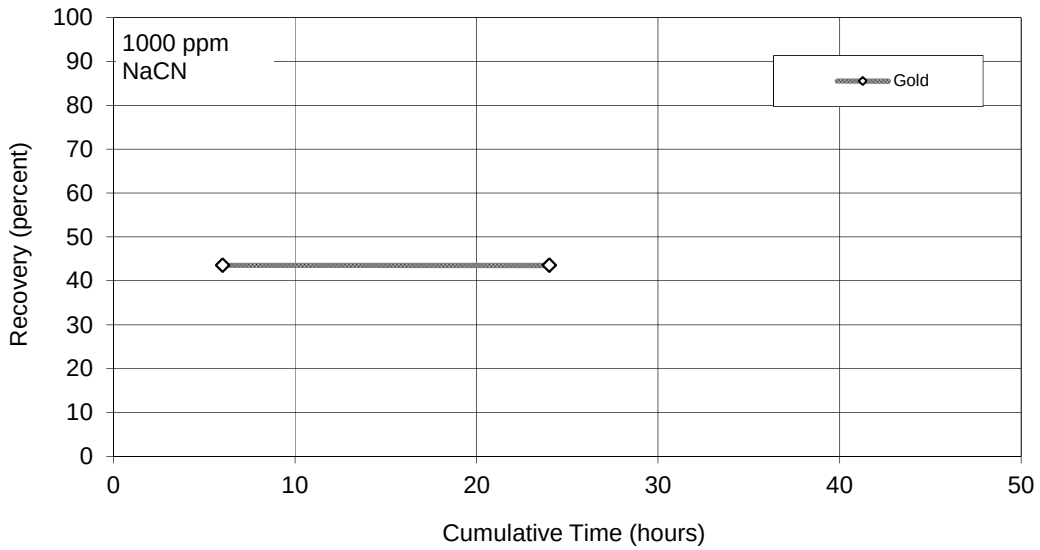
NaCN Consumption	3.8 kg/tonne
Lime Consumption	2.8 kg/tonne

KM3174-28 Test 21 Bulk Cleaner Scavenger Tail
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Distribution - percent Gold
Carbon (24 hour)	24	7.6	g	11.1	42.5
Cyanide Liquor (24 hr)	24	260.0	ml	0.02	2.6
Cyanide Tails (6 hr)	6	23.0	g	0.86	10.0
Cyanidation Tails (24hr)	24	103.4	g	0.86	44.9
Calculated Feed		130	g	1.52	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Recovery - percent Gold
Cyanide Tails (6 hr)	6	130.0	g	0.86	43.6
Cyanidation Tails (24hr)	24	130.0	g	0.86	43.6
Calculated Feed		130	g	1.52	



DATE: November 28, 2011

PROJECT NO: KM3174-29

PURPOSE: Preliminary Leach on Test 22 Bulk Cleaner Scavenger Tail.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hours, 1,000 ppm NaCN, 28g/L Carbon.
Carbon soaked for 16 hours in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 175 g Test 22 Bulk Cleaner Scavenger Tail at a nominal 21µm $K_{80.}$

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.4	-	1.82
Aeration	16									0.53
Leach 1	6	0.35	0.37	0.06	0.00	0.29	0.37	11.0	9.80	5.81
Leach 2	24	0.29	0.05	0.01	0.00	0.34	0.05	11.0	-	1.65
Total	24	0.64	0.42	0.01	0.00	0.63	0.42	-	-	-

Mass of Sample	175
Volume of Water	350
Pulp Density	33

NaCN Addition	3.7 kg/tonne
Lime Addition	2.4 kg/tonne

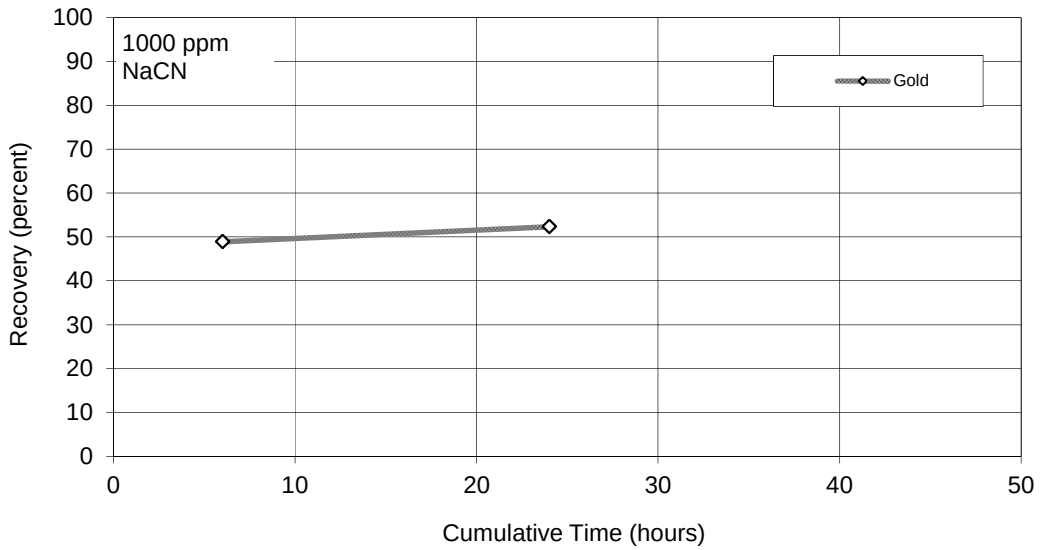
NaCN Consumption	3.6 kg/tonne
Lime Consumption	2.4 kg/tonne

KM3174-29 Test 22 Bulk Cleaner Scavenger Tail
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Distribution - percent Gold
Carbon (24 hour)	24	12.0	g	10.7	50.4
Cyanide Liquor (24 hr)	24	350.0	ml	0.02	2.8
Cyanide Tails (6 hr)	6	24.6	g	0.74	7.2
Cyanidation Tails (24hr)	24	145.7	g	0.69	39.6
Calculated Feed		175	g	1.45	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Recovery - percent Gold
Cyanide Tails (6 hr)	6	175.0	g	0.74	48.9
Cyanidation Tails (24hr)	24	175.0	g	0.69	52.4
Calculated Feed		175	g	1.45	



DATE: November 28, 2011

PROJECT NO: KM3174-30

PURPOSE: Preliminary Leach on Test 23 Bulk Cleaner Scavenger Tail.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hours, 1,000 ppm NaCN, 28g/L Carbon.
Carbon soaked for 16 hours in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 220 g Test 23 Bulk Cleaner Scavenger Tail at a nominal 18µm $K_{80.}$

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.4	-	1.05
Aeration	16								12.3	0.42
Leach 1	6	0.44	0.54	0.12	0.00	0.32	0.54	11.0		5.73
Leach 2	24	0.32	0.10	0.01	0.00	0.43	0.10	11.0	-	4.70
Total	24	0.76	0.64	0.01	0.00	0.75	0.64	-	-	-

Mass of Sample	220
Volume of Water	440
Pulp Density	33

NaCN Addition	3.5 kg/tonne
Lime Addition	2.9 kg/tonne

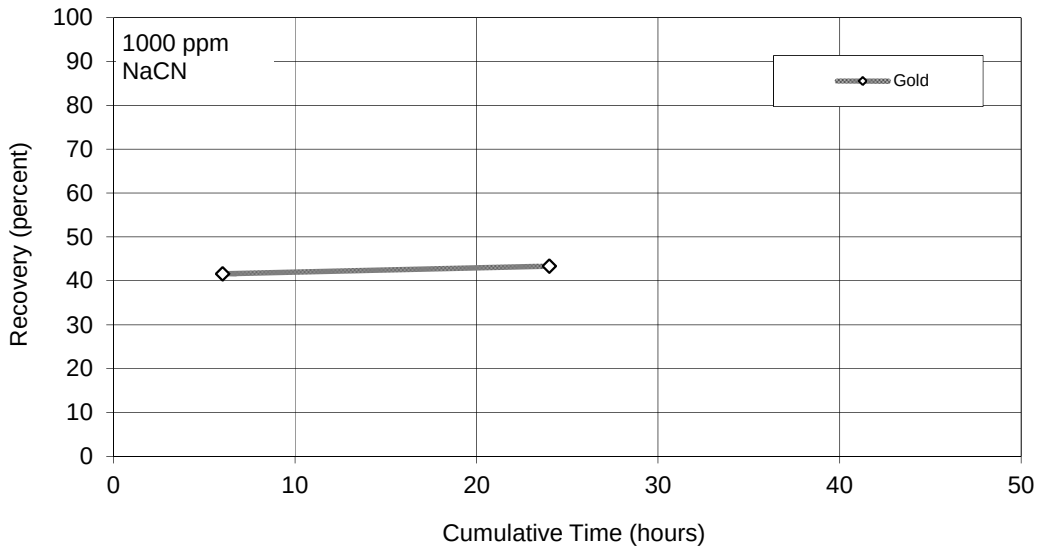
NaCN Consumption	3.4 kg/tonne
Lime Consumption	2.9 kg/tonne

KM3174-30 Test 23 Bulk Cleaner Scavenger Tail
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Distribution - percent Gold
Carbon (24 hour)	24	11.5	g	13.7	41.9
Cyanide Liquor (24 hr)	24	440.0	ml	0.02	2.3
Cyanide Tails (6 hr)	6	25.9	g	1.00	6.9
Cyanidation Tails (24hr)	24	190.1	g	0.97	48.9
Calculated Feed		220	g	1.71	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Recovery - percent Gold
Cyanide Tails (6 hr)	6	220.0	g	1.00	41.6
Cyanidation Tails (24hr)	24	220.0	g	0.97	43.4
Calculated Feed		220	g	1.71	



DATE: November 28, 2011

PROJECT NO: KM3174-31

PURPOSE: Preliminary Leach on Test 24 Bulk Cleaner Scavenger Tail.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hours, 1,000 ppm NaCN, 28g/L Carbon.
Carbon soaked for 16 hours in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 200 g Test 24 Bulk Cleaner Scavenger Tail at a nominal 22µm $K_{80.}$

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	5.4	-	0.84
Aeration	16									1.67
Leach 1	6	0.40	0.86	0.09	0.00	0.31	0.86	11.0	11.20	5.26
Leach 2	24	0.31	0.02	0.02	0.00	0.38	0.02	11.0	-	4.95
Total	24	0.71	0.88	0.02	0.00	0.69	0.88	-	-	-

Mass of Sample	200
Volume of Water	400
Pulp Density	33

NaCN Addition	3.6 kg/tonne
Lime Addition	4.4 kg/tonne

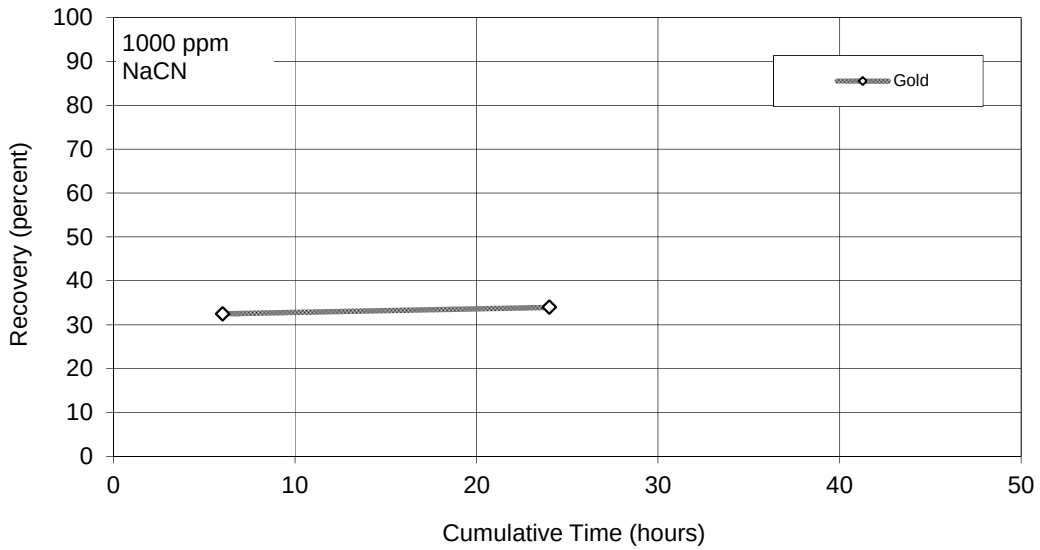
NaCN Consumption	3.5 kg/tonne
Lime Consumption	4.4 kg/tonne

KM3174-31 Test 24 Bulk Cleaner Scavenger Tail
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Distribution - percent Gold
Carbon (24 hour)	24	11.0	g	7.8	31.5
Cyanide Liquor (24 hr)	24	400.0	ml	0.02	2.9
Cyanide Tails (6 hr)	6	22.1	g	0.92	7.5
Cyanidation Tails (24hr)	24	176.0	g	0.90	58.1
Calculated Feed		200	g	1.36	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Recovery - percent Gold
Cyanide Tails (6 hr)	6	200.0	g	0.92	32.5
Cyanidation Tails (24hr)	24	200.0	g	0.90	34.0
Calculated Feed		200	g	1.36	



DATE: November 28, 2011

PROJECT NO: KM3174-32

PURPOSE: Preliminary Leach on Test 25 Bulk Cleaner Scavenger Tail.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hours, 1,000 ppm NaCN, 28g/L Carbon.
Carbon soaked for 16 hours in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 118 g Test 25 Bulk Cleaner Scavenger Tail at a nominal 13µm $K_{80.}$

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.5	-	0.72
Aeration	16									0.4
Leach 1	6	0.24	0.42	0.03	0.00	0.21	0.42	11.0	6.60	5.21
Leach 2	24	0.21	0.14	0.02	0.00	0.22	0.14	11.0	-	4.13
Total	24	0.45	0.56	0.02	0.00	0.43	0.56	-	-	-

Mass of Sample	118
Volume of Water	236
Pulp Density	33

NaCN Addition	3.8 kg/tonne
Lime Addition	4.7 kg/tonne

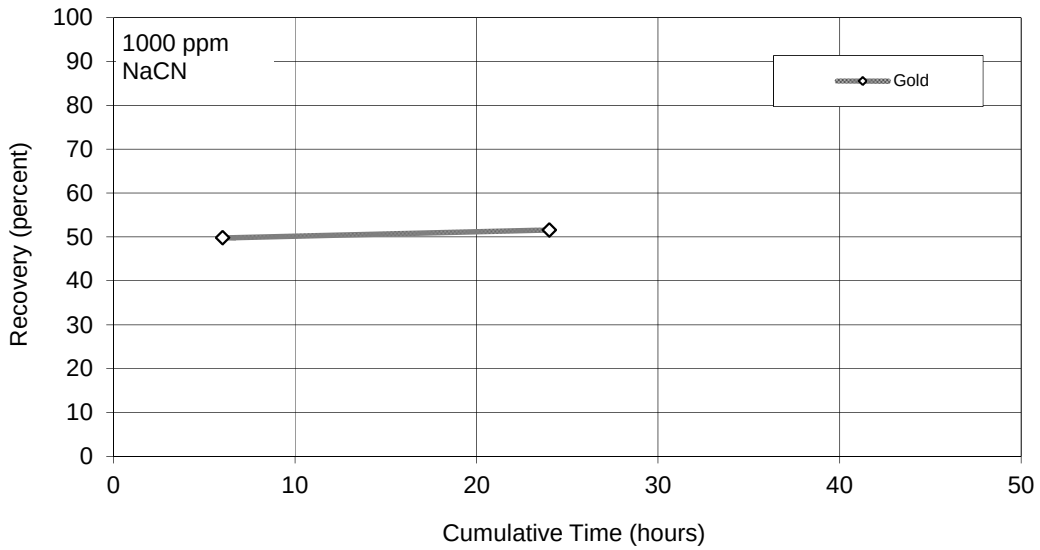
NaCN Consumption	3.6 kg/tonne
Lime Consumption	4.7 kg/tonne

KM3174-32 Test 25 Bulk Cleaner Scavenger Tail
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Distribution - percent Gold
Carbon (24 hour)	24	7.0	g	9.1	48.6
Cyanide Liquor (24 hr)	24	236.0	ml	0.02	3.6
Cyanide Tails (6 hr)	6	13.9	g	0.56	5.9
Cyanidation Tails (24hr)	24	102.2	g	0.54	41.9
Calculated Feed		118	g	1.12	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Recovery - percent Gold
Cyanide Tails (6 hr)	6	118.0	g	0.56	49.8
Cyanidation Tails (24hr)	24	118.0	g	0.54	51.6
Calculated Feed		118	g	1.12	



DATE: November 28, 2011

PROJECT NO: KM3174-33

PURPOSE: Preliminary Leach on Test 26 Bulk Cleaner Scavenger Tail.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hours, 1,000 ppm NaCN, 28g/L Carbon.
Carbon soaked for 16 hours in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 160 g Test 26 Bulk Cleaner Scavenger Tail at a nominal 25µm $K_{80.}$

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.7	-	3.95
Aeration	16									0.73
Leach 1	6	0.32	0.29	0.03	0.00	0.29	0.29	11.0	9.00	4.41
Leach 2	24	0.29	0.03	0.01	0.00	0.31	0.03	11.0	-	3.01
Total	24	0.61	0.32	0.01	0.00	0.60	0.32	-	-	-

Mass of Sample	160
Volume of Water	320
Pulp Density	33

NaCN Addition	3.8 kg/tonne
Lime Addition	2.0 kg/tonne

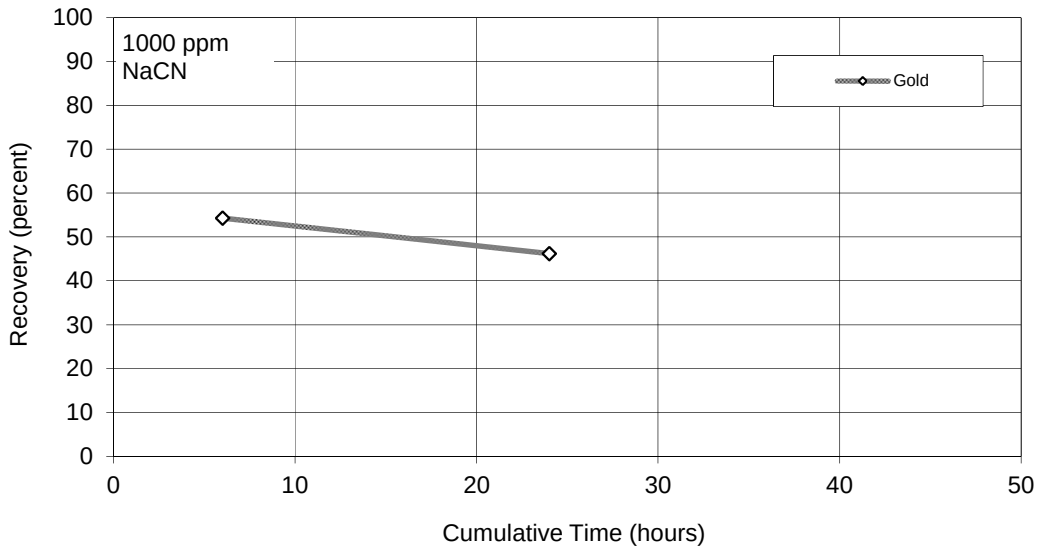
NaCN Consumption	3.8 kg/tonne
Lime Consumption	2.0 kg/tonne

KM3174-33 Test 26 Bulk Cleaner Scavenger Tail
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Distribution - percent Gold
Carbon (24 hour)	24	11.7	g	14.1	46.3
Cyanide Liquor (24 hr)	24	320.0	ml	0.03	2.7
Cyanide Tails (6 hr)	6	26.4	g	1.02	7.5
Cyanidation Tails (24hr)	24	129.5	g	1.20	43.5
Calculated Feed		160	g	2.23	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Recovery - percent Gold
Cyanide Tails (6 hr)	6	160.0	g	1.02	54.3
Cyanidation Tails (24hr)	24	160.0	g	1.20	46.2
Calculated Feed		160	g	2.23	



DATE: November 29, 2011

PROJECT NO: KM3174-34

PURPOSE: Preliminary Leach on Test 20 Pyrite Rougher Concentrate.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hours, 1,000 ppm NaCN, 28g/L Carbon.
Carbon soaked for 16 hours in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 140 g Test 20 Pyrite Rougher Concentrate ground for 20 minutes to a nominal 10µm $K_{80.}$

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.3	-	0.42
Aeration	16									0.38
Leach 1	6	0.28	0.77	0.05	0.00	0.23	0.77	11.0	7.80	1.96
Leach 2	24	0.23	0.00	0.06	0.00	0.22	0.00	11.0	-	1.68
Total	24	0.51	0.77	0.06	0.00	0.45	0.77	-	-	-

Mass of Sample	140
Volume of Water	280
Pulp Density	33

NaCN Addition	3.6 kg/tonne
Lime Addition	5.5 kg/tonne

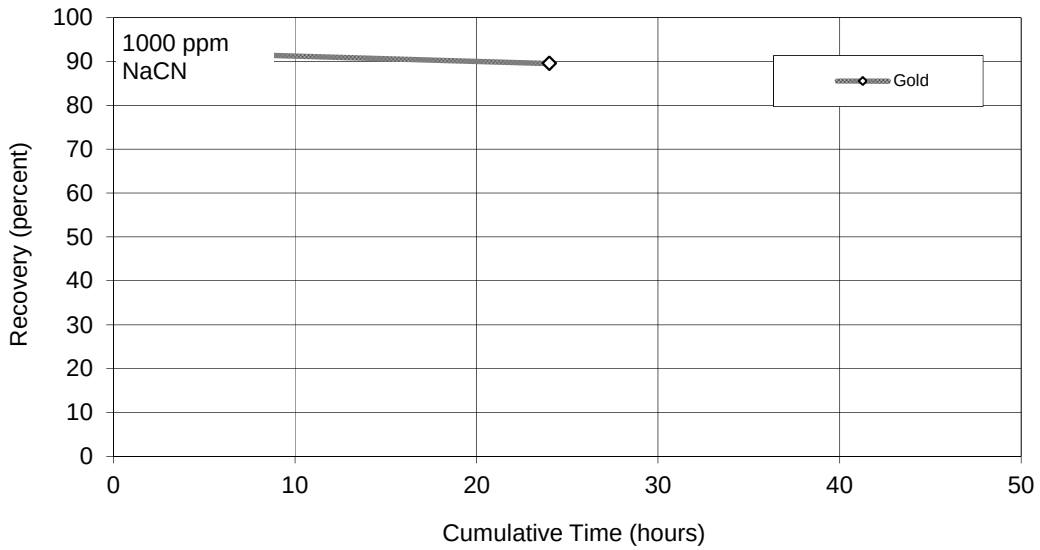
NaCN Consumption	3.2 kg/tonne
Lime Consumption	5.5 kg/tonne

KM3174-34 Test 20 Pyrite Rougher Concentrate
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Distribution - percent
				Gold	Gold
Carbon (24 hour)	24	9.4	g	23.7	87.2
Cyanide Liquor (24 hr)	24	280.0	ml	0.02	2.2
Cyanide Tails (6 hr)	6	19.9	g	0.15	1.2
Cyanidation Tails (24hr)	24	126.9	g	0.19	9.4
Calculated Feed		140	g	1.82	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Recovery - percent
				Gold	Gold
Cyanide Tails (6 hr)	6	140.0	g	0.15	91.8
Cyanidation Tails (24hr)	24	140.0	g	0.19	89.6
Calculated Feed		140	g	1.82	



DATE: November 29, 2011

PROJECT NO: KM3174-35

PURPOSE: Preliminary Leach on Test 21 Pyrite Rougher Concentrate.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hours, 1,000 ppm NaCN, 28g/L Carbon.
Carbon soaked for 16 hours in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 150 g Test 21 Pyrite Rougher Concentrate ground for 20 minutes to a nominal 10µm $K_{80.}$

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.4	-	0.54
Aeration	16									0.39
Leach 1	6	0.30	0.52	0.02	0.00	0.28	0.52	11.0	8.40	2.38
Leach 2	24	0.28	0.05	0.05	0.00	0.25	0.05	11.0	-	1.33
Total	24	0.58	0.57	0.05	0.00	0.53	0.57	-	-	-

Mass of Sample	150
Volume of Water	300
Pulp Density	33

NaCN Addition	3.9 kg/tonne
Lime Addition	3.8 kg/tonne

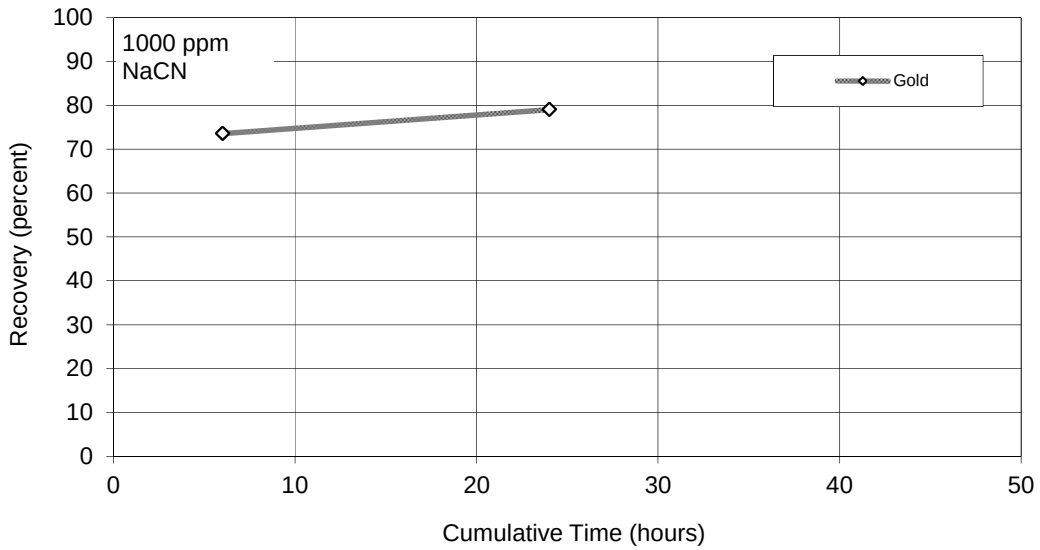
NaCN Consumption	3.5 kg/tonne
Lime Consumption	3.8 kg/tonne

KM3174-35 Test 21 Pyrite Rougher Concentrate
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Distribution - percent Gold
Carbon (24 hour)	24	7.7	g	29.6	75.7
Cyanide Liquor (24 hr)	24	300.0	ml	0.02	2.0
Cyanide Tails (6 hr)	6	17.1	g	0.53	3.0
Cyanidation Tails (24hr)	24	138.3	g	0.42	19.3
Calculated Feed		150	g	2.01	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Recovery - percent Gold
Cyanide Tails (6 hr)	6	150.0	g	0.53	73.6
Cyanidation Tails (24hr)	24	150.0	g	0.42	79.1
Calculated Feed		150	g	2.01	



DATE: November 29, 2011

PROJECT NO: KM3174-36

PURPOSE: Preliminary Leach on Test 22 Pyrite Rougher Concentrate.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hours, 1,000 ppm NaCN, 28g/L Carbon.
Carbon soaked for 16 hours in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 135 g Test 22 Pyrite Rougher Concentrate ground for 20 minutes to a nominal 11µm $K_{80.}$

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.3	-	0.51
Aeration	16									0.34
Leach 1	6	0.27	0.58	0.01	0.00	0.26	0.58	11.0	7.60	1.04
Leach 2	24	0.26	0.04	0.04	0.00	0.23	0.04	11.0	-	1.31
Total	24	0.53	0.62	0.04	0.00	0.49	0.62	-	-	-

Mass of Sample	135
Volume of Water	270
Pulp Density	33

NaCN Addition	3.9 kg/tonne
Lime Addition	4.6 kg/tonne

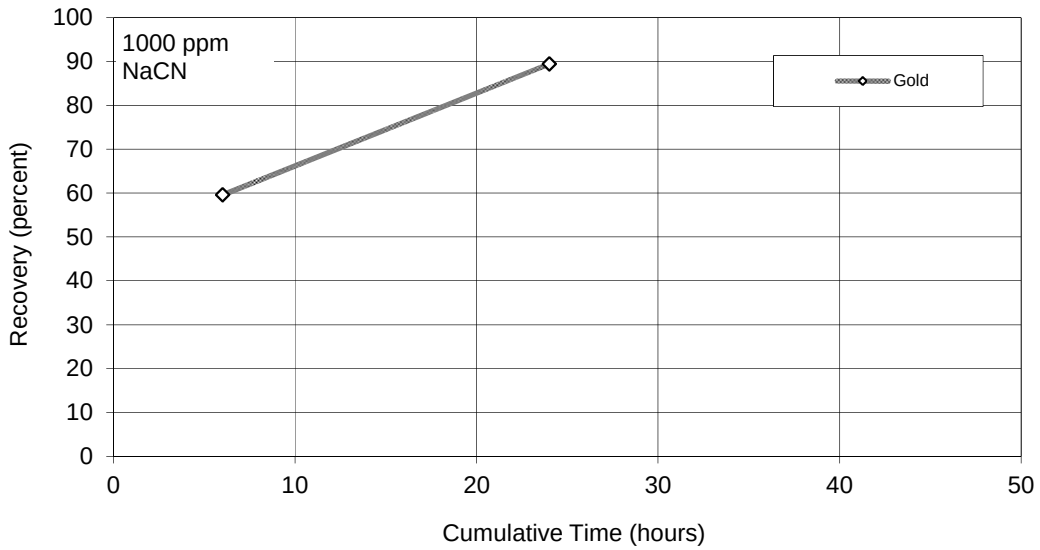
NaCN Consumption	3.6 kg/tonne
Lime Consumption	4.6 kg/tonne

KM3174-36 Test 22 Pyrite Rougher Concentrate
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Distribution - percent Gold
Carbon (24 hour)	24	7.1	g	36.3	83.8
Cyanide Liquor (24 hr)	24	270.0	ml	0.02	1.8
Cyanide Tails (6 hr)	6	16.5	g	0.92	4.9
Cyanidation Tails (24hr)	24	122.2	g	0.24	9.5
Calculated Feed		135	g	2.28	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Recovery - percent Gold
Cyanide Tails (6 hr)	6	135.0	g	0.92	59.6
Cyanidation Tails (24hr)	24	135.0	g	0.24	89.5
Calculated Feed		135	g	2.28	



DATE: November 29, 2011

PROJECT NO: KM3174-37

PURPOSE: Preliminary Leach on Test 23 Pyrite Rougher Concentrate.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hours, 1,000 ppm NaCN, 28g/L Carbon.
Carbon soaked for 16 hours in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 200 g Test 23 Pyrite Rougher Concentrate ground for 20 minutes to a nominal 11µm $K_{80.}$

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.4	-	0.51
Aeration	16									0.33
Leach 1	6	0.40	0.59	0.06	0.00	0.34	0.59	11.0	11.20	1.71
Leach 2	24	0.34	0.00	0.11	0.00	0.29	0.00	11.0	-	1.42
Total	24	0.74	0.59	0.11	0.00	0.63	0.59	-	-	-

Mass of Sample	200
Volume of Water	400
Pulp Density	33

NaCN Addition	3.7 kg/tonne
Lime Addition	3.0 kg/tonne

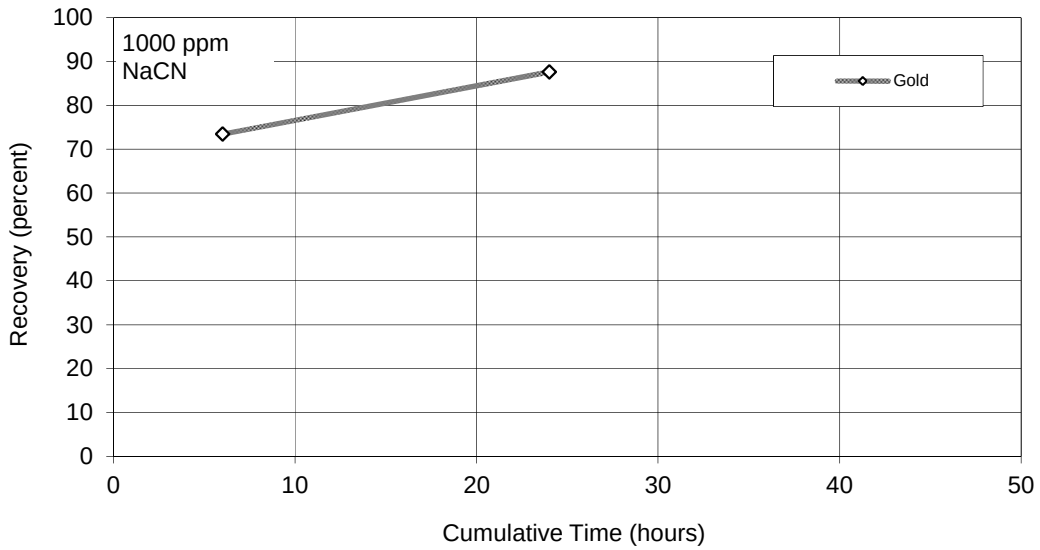
NaCN Consumption	3.2 kg/tonne
Lime Consumption	3.0 kg/tonne

KM3174-37 Test 23 Pyrite Rougher Concentrate
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Distribution - percent Gold
Carbon (24 hour)	24	10.3	g	45.1	84.3
Cyanide Liquor (24 hr)	24	400.0	ml	0.02	1.5
Cyanide Tails (6 hr)	6	22.6	g	0.73	3.0
Cyanidation Tails (24hr)	24	181.6	g	0.34	11.2
Calculated Feed		200	g	2.75	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Recovery - percent Gold
Cyanide Tails (6 hr)	6	200.0	g	0.73	73.5
Cyanidation Tails (24hr)	24	200.0	g	0.34	87.7
Calculated Feed		200	g	2.75	



DATE: November 29, 2011

PROJECT NO: KM3174-38

PURPOSE: Preliminary Leach on Test 24 Pyrite Rougher Concentrate.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hours, 1,000 ppm NaCN, 28g/L Carbon.
Carbon soaked for 16 hours in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 170 g Test 24 Pyrite Rougher Concentrate ground for 20 minutes to a nominal 12µm $K_{80.}$

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	6.2	-	0.44
Aeration	16									0.32
Leach 1	6	0.34	0.77	0.04	0.00	0.30	0.77	11.0	9.50	1.41
Leach 2	24	0.30	0.00	0.12	0.00	0.22	0.00	11.0	-	1.52
Total	24	0.64	0.77	0.12	0.00	0.52	0.77	-	-	-

Mass of Sample	170
Volume of Water	340
Pulp Density	33

NaCN Addition	3.8 kg/tonne
Lime Addition	4.5 kg/tonne

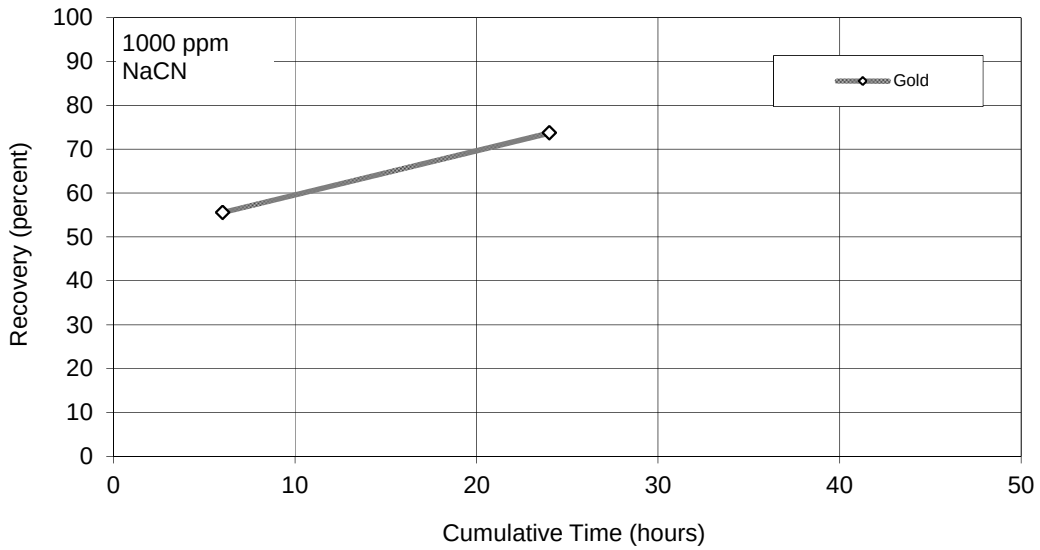
NaCN Consumption	3.1 kg/tonne
Lime Consumption	4.5 kg/tonne

KM3174-38 Test 24 Pyrite Rougher Concentrate
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Distribution - percent Gold
Carbon (24 hour)	24	8.8	g	19.9	69.3
Cyanide Liquor (24 hr)	24	340.0	ml	0.01	1.3
Cyanide Tails (6 hr)	6	24.1	g	0.66	6.3
Cyanidation Tails (24hr)	24	149.5	g	0.39	23.1
Calculated Feed		170	g	1.49	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Recovery - percent Gold
Cyanide Tails (6 hr)	6	170.0	g	0.66	55.6
Cyanidation Tails (24hr)	24	170.0	g	0.39	73.8
Calculated Feed		170	g	1.49	



DATE: November 29, 2011

PROJECT NO: KM3174-39

PURPOSE: Preliminary Leach on Test 25 Pyrite Rougher Concentrate.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hours, 1,000 ppm NaCN, 28g/L Carbon.
Carbon soaked for 16 hours in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 175 g Test 25 Pyrite Rougher Concentrate ground for 20 minutes to a nominal 10µm $K_{80.}$

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	11.0	-	0.43
Aeration	16									0.31
Leach 1	6	0.34	0.65	0.04	0.00	0.30	0.65	11.0	9.80	1.71
Leach 2	24	0.30	0.00	0.07	0.00	0.27	0.00	11.0	-	1.54
Total	24	0.64	0.65	0.07	0.00	0.57	0.65	-	-	-

Mass of Sample	175
Volume of Water	350
Pulp Density	33

NaCN Addition	3.7 kg/tonne
Lime Addition	3.7 kg/tonne

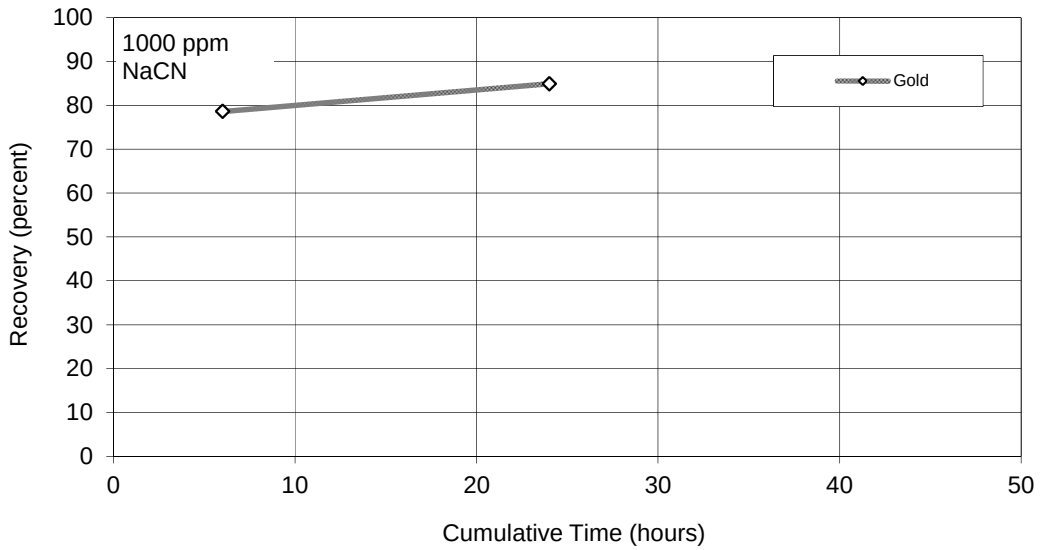
NaCN Consumption	3.3 kg/tonne
Lime Consumption	3.7 kg/tonne

KM3174-39 Test 25 Pyrite Rougher Concentrate
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Distribution - percent Gold
Carbon (24 hour)	24	9.0	g	33.1	82.7
Cyanide Liquor (24 hr)	24	350.0	ml	0.01	1.0
Cyanide Tails (6 hr)	6	28.4	g	0.44	3.5
Cyanidation Tails (24hr)	24	149.4	g	0.31	12.9
Calculated Feed		175	g	2.06	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Recovery - percent Gold
Cyanide Tails (6 hr)	6	175.0	g	0.44	78.6
Cyanidation Tails (24hr)	24	175.0	g	0.31	84.9
Calculated Feed		175	g	2.06	



DATE: November 29, 2011

PROJECT NO: KM3174-40

PURPOSE: Preliminary Leach on Test 26 Pyrite Rougher Concentrate.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hours, 1,000 ppm NaCN, 28g/L Carbon.
Carbon soaked for 16 hours in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 205 g Test 26 Pyrite Rougher Concentrate ground for 20 minutes to a nominal 10µm $K_{80.}$

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.3	-	0.45
Aeration	16									0.3
Leach 1	6	0.41	0.69	0.03	0.00	0.38	0.69	11.0	11.80	1.58
Leach 2	24	0.38	0.05	0.07	0.00	0.34	0.05	11.0	-	1.02
Total	24	0.79	0.74	0.07	0.00	0.72	0.74	-	-	-

Mass of Sample	205
Volume of Water	410
Pulp Density	33

NaCN Addition	3.9 kg/tonne
Lime Addition	3.6 kg/tonne

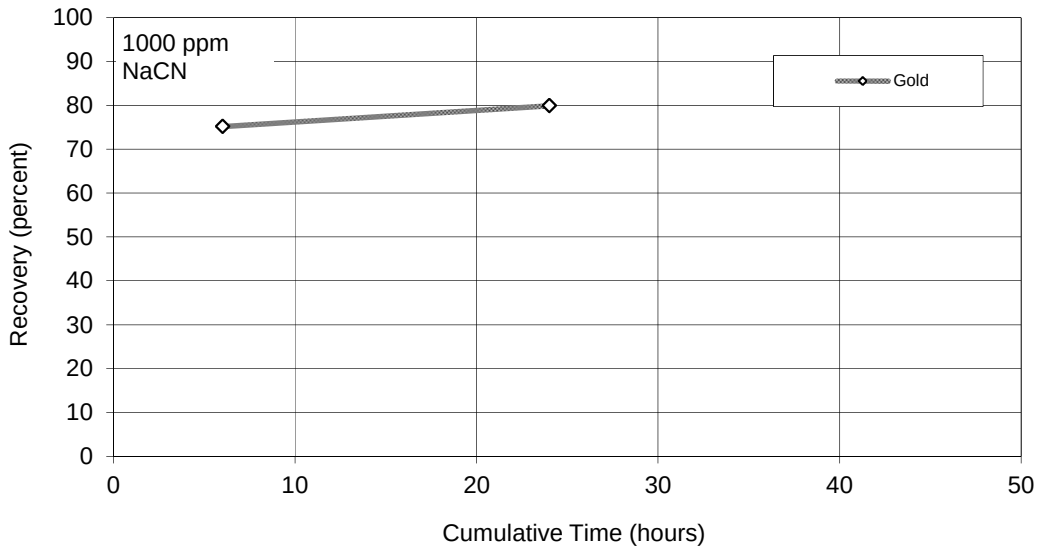
NaCN Consumption	3.5 kg/tonne
Lime Consumption	3.6 kg/tonne

KM3174-40 Test 26 Pyrite Rougher Concentrate
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Distribution - percent Gold
Carbon (24 hour)	24	10.8	g	22.0	76.9
Cyanide Liquor (24 hr)	24	410.0	ml	0.02	2.7
Cyanide Tails (6 hr)	6	16.2	g	0.36	1.9
Cyanidation Tails (24hr)	24	194.0	g	0.29	18.5
Calculated Feed		210	g	1.47	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Recovery - percent Gold
Cyanide Tails (6 hr)	6	210.0	g	0.36	75.2
Cyanidation Tails (24hr)	24	210.0	g	0.29	80.0
Calculated Feed		210	g	1.47	



DATE: December 2, 2011

PROJECT NO: KM3174-41

PURPOSE: To Repeat Test 09 as a Cleaner Test.

PROCEDURE: Perform a standard two product cleaner test.

FEED: 4 kg of Composite 9 ore ground to a nominal 127μm K_{80}.
Bulk Regrind Discharge - 21μm K_{80}.
Pyrite Rougher Concentrate - 205μm K_{80}.

FLOWSHEET: 2

Stage	Reagents Added g/tonne						Time (minutes)			pH
	Lime	PE26	Fuel Oil	208	3418A	MBC	Grind	Cond.	Float	
Primary Grind	400		10				22			9.5
BULK CIRCUIT:										
Rougher 1	145			2	2	23		1	3	10.0
Rougher 2	-			2	2	8		1	4	10.0
Regrind	400		50				3			11.3
Cleaner 1	500	20		4	4	15		1	3	11.5
Cleaner 2	√		10	3	3	15		1	3	11.5
Cleaner Scavenger	√		20	-	-	15		1	2	11.5
PYRITE CIRCUIT:					PAX					
Rougher 1	-			30	30	-		1	4	9.3
Rougher 2	-			30	30	8		1	4	9.0

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

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M2-Mild	Stirred Mill
Charge/Material:	20kg-Mild	1.2kg-Beads
Water:	1500 ml	estimated

KM3174-41 Composite 9

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t				
	grams	%	Pb	Zn	As	Cd	Sb
Bulk Con	5.8	0.4	0.27	0.44	0.02	52	0.02

Note: Pb, Zn and Sb values are in percent, As and Cd values are in g/t

KM3174-41 Composite 9

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Bulk Con	5.8	0.3	22.7	0.303	27.2	30.8	122	68.0	41.3	19.4	1.6	2.8	14.4	29.8
Bulk 2nd Clnr Tail	14.8	0.7	3.09	0.074	19.8	20.1	26	10.0	14.4	12.2	2.9	4.6	7.8	11.2
Bulk Clnr Scav Con	9.9	0.5	3.76	0.106	21.1	21.8	34	21.7	11.7	11.6	2.1	3.4	6.8	16.2
Bulk Clnr Scav Tail	94.5	4.7	0.72	0.031	14.9	24.9	12	3.12	21.4	32.4	13.9	36.6	23.0	22.3
Pyrite Ro Con	161.7	8.1	0.07	0.003	17.8	19.8	4	1.24	3.8	5.4	28.5	49.8	13.1	15.2
Pyrite Ro Tail	1714.8	85.7	0.01	0.001	3.0	0.11	1	0.04	7.5	19.0	51.1	2.8	34.8	5.2
Feed	2001.5	100	0.16	0.005	5.0	3.21	2	0.66	100	100	100	100	100	100

KM3174-41 Composite 9

Cumulative Metallurgical Balance

Cumulative	Cum. Weight		Assay - percent or g/t						Distribution - percent					
Product	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Product 1	5.8	0.3	22.7	0.303	27.2	30.8	122	68.0	41.3	19.4	1.6	2.8	14.4	29.8
Product 1 to 2	20.6	1.0	8.61	0.139	21.9	23.1	53	26.4	55.7	31.6	4.5	7.4	22.2	41.1
Product 1 to 3	30.5	1.5	7.04	0.128	21.6	22.7	47	24.8	67.4	43.2	6.5	10.8	29.0	57.3
Product 1 to 4	125.0	6.2	2.26	0.055	16.5	24.4	21	8.42	88.7	75.6	20.5	47.4	52.0	79.6
Product 5	286.7	14.3	1.03	0.026	17.3	21.8	11	4.37	92.5	81.0	48.9	97.2	65.2	94.8
Product 6	1714.8	85.7	0.01	0.001	3.0	0.11	1	0.04	7.5	19.0	51.1	2.8	34.8	5.2
Feed	2001.5	100	0.16	0.005	5.0	3.21	2	0.66	100	100	100	100	100	100

DATE: December 21, 2011

PROJECT NO: KM3174-42

PURPOSE: To Repeat Test 20.

PROCEDURE: Perform a standard two product cleaner test.

FEED: 4 kg of Composite 1 ore ground to a nominal 121μm K_{80}.
Bulk Regrind Discharge - 16μm K_{80}.
Pyrite Rougher Concentrate - 104μm K_{80}.

FLOWSHEET: 2

Stage	Reagents Added g/tonne						Time (minutes)			pH
	Lime	PE26	Fuel Oil	208	3418A	MBC	Grind	Cond.	Float	
Primary Grind	400		10				17			9.6
BULK CIRCUIT:										
Rougher 1	200			3	3	8		1	3	10.0
Rougher 2	√			3	3	4		1	4	10.0
Regrind	400		50				12			11.5
Cleaner 1	-	20		8	8	4		1	6	11.5
Cleaner 2	√		10	6	6	4		1	4	11.5
Cleaner 3	√		10	5	5	4		1	3	11.5
Cleaner Scavenger	-		20	-	-	-		1	3	11.5
PYRITE CIRCUIT:					PAX					
Rougher 1	-			30	30	4		1	4	9.8
Rougher 2	-			30	30	4		1	4	9.7

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

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M2-Mild	Stirred Mill
Charge/Material:	20kg-Mild	1.2kg-Beads
Water:	1500 ml	estimated

KM3174-42 Composite 1

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t				
	grams	%	Pb	Zn	As	Cd	Sb
Bulk Con	23.0	0.6	0.29	0.36	0.03	96	0.02

Note: Pb, Zn and Sb values are in percent, As and Cd values are in g/t

KM3174-42 Composite 1

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Bulk Con	23.0	0.6	28.5	0.511	28.7	46.8	444	92.7	82.1	52.4	4.4	9.0	57.1	56.9
Bulk 3rd Clnr Tail	8.8	0.2	1.00	0.186	17.3	26.2	58	6.5	1.1	7.3	1.0	1.9	2.9	1.5
Bulk 2nd Clnr Tail	47.4	1.2	0.22	0.041	14.9	19.9	18	2.28	1.3	8.6	4.7	7.9	4.8	2.9
Bulk Clnr Scav Con	15.2	0.4	0.32	0.057	15.7	21.6	22	3.2	0.6	3.9	1.6	2.8	1.9	1.3
Bulk Clnr Scav Tail	213.9	5.3	0.07	0.008	16.1	18.9	6	1.48	1.9	7.7	23.1	33.9	7.2	8.4
Pyrite Ro Con	334.2	8.3	0.10	0.003	13.7	14.6	4	1.73	4.2	5.1	30.8	40.9	7.5	15.5
Pyrite Ro Tail	3360.4	83.9	0.02	0.001	1.5	0.13	1	0.15	8.8	15.0	34.3	3.5	18.8	13.5
Feed	4002.9	100	0.20	0.006	3.7	2.98	4.5	0.94	100	100	100	100	100	100

KM3174-42 Composite 1

Cumulative Metallurgical Balance

Cumulative	Cum. Weight		Assay - percent or g/t						Distribution - percent					
Product	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Product 1	23.0	0.6	28.5	0.511	28.7	46.8	444	92.7	82.1	52.4	4.4	9.0	57.1	56.9
Product 1 to 2	31.8	0.8	20.9	0.421	25.5	41.1	337	68.8	83.2	59.7	5.5	11.0	59.9	58.5
Product 1 to 3	79.2	2.0	8.52	0.193	19.2	28.4	146	29.0	84.5	68.3	10.2	18.9	64.7	61.3
Product 1 to 4	94.4	2.4	7.20	0.171	18.6	27.3	126	24.8	85.1	72.2	11.8	21.6	66.6	62.6
Product 1 to 5	308.3	7.7	2.25	0.058	16.9	21.5	43	8.63	87.0	79.9	34.9	55.5	73.7	71.0
Product 6	334.2	8.3	0.10	0.003	13.7	14.6	4	1.73	4.2	5.1	30.8	40.9	7.5	15.5
Product 7	3360.4	83.9	0.02	0.001	1.5	0.13	1	0.15	8.8	15.0	34.3	3.5	18.8	13.5
Feed	4002.9	100	0.20	0.006	3.7	2.98	4.5	0.94	100	100	100	100	100	100

DATE: December 21, 2011

PROJECT NO: KM3174-43

PURPOSE: To Repeat Test 26 With More Collector in the Cleaner.

PROCEDURE: Perform a standard two product cleaner test.

FEED: 4 kg of Composite 7 ore ground to a nominal 122μm K_{80}.
Bulk Regrind Discharge - 21μm K_{80}.
Pyrite Rougher Concentrate - 104μm K_{80}.

FLOWSHEET: 2

Stage	Reagents Added g/tonne						Time (minutes)			pH
	Lime	PE26	Fuel Oil	208	3418A	MBC	Grind	Cond.	Float	
Primary Grind	400		10				15			10.0
BULK CIRCUIT:										
Rougher 1	-			4	4	12		1	3	10.0
Rougher 2	√			3	3	4		1	4	10.0
Regrind	400		50				8			11.5
Cleaner 1	-	20		16	16	4		1	5	11.5
Cleaner 2	√		10	6	6	4		1	3	11.5
Cleaner 3	√		10	2	2	4		1	2	11.5
Cleaner Scavenger	-		20	-	-	-		1	3	11.5
PYRITE CIRCUIT:					PAX					
Rougher 1	-			30	30			1	4	9.7
Rougher 2	-			30	30			1	4	9.1

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

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M2-Mild	Stirred Mill
Charge/Material:	20kg-Mild	1.2kg-Beads
Water:	1500 ml	estimated

KM3174-42 Composite 1

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t				
	grams	%	Pb	Zn	As	Cd	Sb
Bulk Con	16.5	0.4	3.15	0.23	0.03	72	0.02

Note: Pb, Zn and Sb values are in percent, As and Cd values are in g/t

KM3174-43 Composite 7

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Bulk Con	16.5	0.4	21.8	1.008	26.9	30.7	220	73.7	74.3	50.3	2.8	3.7	33.8	48.7
Bulk 3rd Clnr Tail	10.7	0.3	2.20	0.313	19.4	22.2	40	7.50	4.9	10.1	1.3	1.7	4.0	3.2
Bulk 2nd Clnr Tail	45.5	1.1	0.40	0.063	14.6	16.5	14	2.50	3.8	8.7	4.2	5.4	5.9	4.6
Bulk Clnr Scav Con	16.9	0.4	0.31	0.163	18.8	21.7	17	4.30	1.1	8.3	2.0	2.7	2.7	2.9
Bulk Clnr Scav Tail	256.6	6.4	0.05	0.010	19.4	23.9	6	1.64	2.8	7.5	31.2	44.3	14.4	16.9
Pyrite Ro Con	268.9	6.7	0.09	0.006	14.2	17.6	3	1.20	4.7	4.9	24.0	34.2	7.5	12.9
Pyrite Ro Tail	3396.7	84.7	0.01	0.001	1.6	0.33	1	0.08	8.4	10.3	34.5	8.0	31.7	10.9
Feed	4011.8	100	0.12	0.008	4.0	3.45	2.7	0.62	100	100	100	100	100	100

KM3174-43 Composite 7

Cumulative Metallurgical Balance

Cumulative Product	Cum. Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Product 1	16.5	0.4	21.8	1.008	26.9	30.7	220	73.7	74.3	50.3	2.8	3.7	33.8	48.7
Product 1 to 2	27.2	0.7	14.1	0.734	23.9	27.4	149	47.6	79.2	60.4	4.1	5.4	37.8	51.9
Product 1 to 3	72.7	1.8	5.52	0.314	18.1	20.6	65	19.4	83.0	69.1	8.3	10.8	43.8	56.5
Product 1 to 4	89.6	2.2	4.54	0.286	18.2	20.8	56	16.5	84.0	77.4	10.3	13.5	46.5	59.4
Product 1 to 5	346.2	8.6	1.21	0.081	19.1	23.1	19	5.50	86.9	84.9	41.5	57.8	60.8	76.2
Product 6	268.9	6.7	0.09	0.006	14.2	17.6	3	1.20	4.7	4.9	24.0	34.2	7.5	12.9
Product 7	3396.7	84.7	0.01	0.001	1.6	0.33	1	0.08	8.4	10.3	34.5	8.0	31.7	10.9
Feed	4011.8	100	0.12	0.008	4.0	3.45	2.7	0.62	100	100	100	100	100	100

APPENDIX III – KM3174

PARTICLE SIZING DATA

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TABLE III-1
SCREEN ANALYSIS
KM3174 Composite 1 - 17 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
48 Mesh	300	0.00	100.0
65 Mesh	212	0.20	99.8
100 Mesh	150	7.10	92.7
150 Mesh	106	19.90	72.8
200 Mesh	75	16.70	56.1
270 Mesh	53	11.70	44.4
400 Mesh	38	8.50	35.9
TOTAL		100.00	**

K80 =121µm

Note: 17 min. grind calibration using 2 kg. Ore, 1000 ml water and 20 kg. of Mild Steel rods in Mill: M2

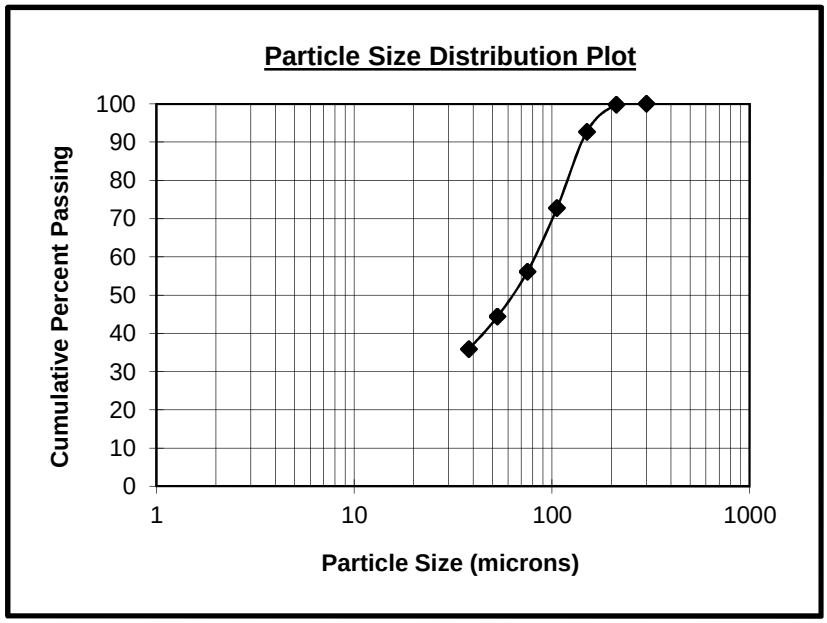


TABLE III-2
SCREEN ANALYSIS
KM3174 Composite 1 - 18 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
48 Mesh	300	0.00	100.0
65 Mesh	212	0.10	99.9
100 Mesh	150	4.10	95.8
150 Mesh	106	17.60	78.2
200 Mesh	75	15.90	62.3
270 Mesh	53	11.20	51.1
400 Mesh	38	8.50	42.6
TOTAL		100.00	**

K80 =110µm

Note: 18 min. grind calibration using 2 kg. Ore, 1000 ml water and 20 kg. of Mild Steel rods in Mill: M2

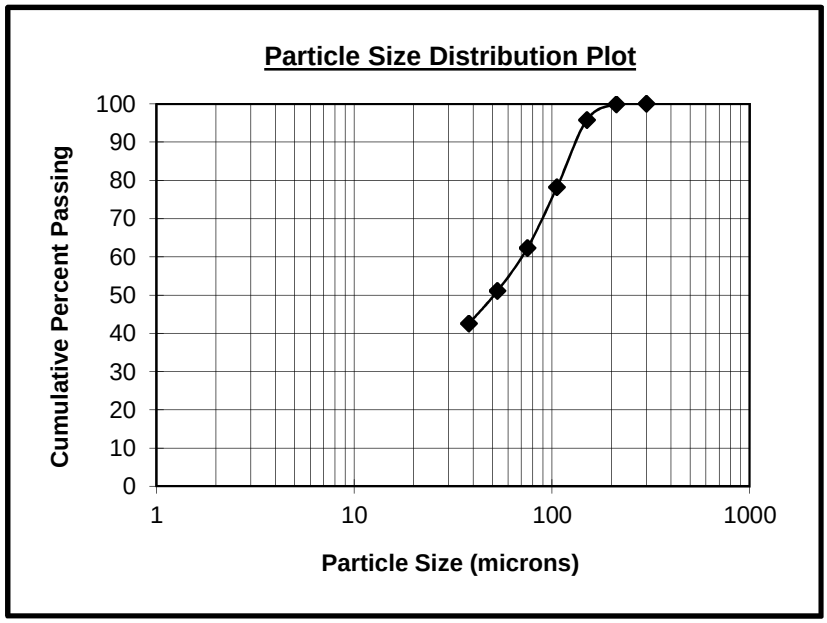


TABLE III-3
SCREEN ANALYSIS
KM3174 Composite 2 - 18 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
48 Mesh	300	0.00	100.0
65 Mesh	212	0.10	99.9
100 Mesh	150	6.00	93.9
150 Mesh	106	18.50	75.4
200 Mesh	75	17.20	58.2
270 Mesh	53	12.10	46.1
400 Mesh	38	8.10	38.0
TOTAL		100.00	**

K80 =116µm

Note: 18 min. grind calibration using 2 kg. Ore, 1000 ml water and 20 kg. of Mild Steel rods in Mill: M2

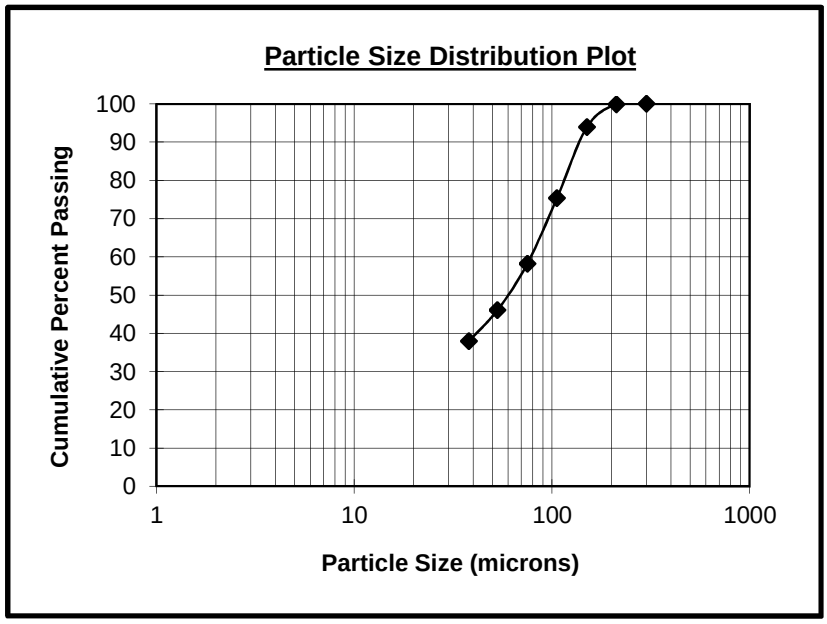


TABLE III-4
SCREEN ANALYSIS
KM3174 Composite 3 - 17 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
48 Mesh	300	0.00	100.0
65 Mesh	212	0.20	99.8
100 Mesh	150	8.10	91.7
150 Mesh	106	18.00	73.7
200 Mesh	75	17.30	56.4
270 Mesh	53	11.90	44.5
400 Mesh	38	7.90	36.6
TOTAL		100.00	**

K80 =121µm

Note: 17 min. grind calibration using 2 kg. Ore, 1000 ml water and 20 kg. of Mild Steel rods in Mill: M2

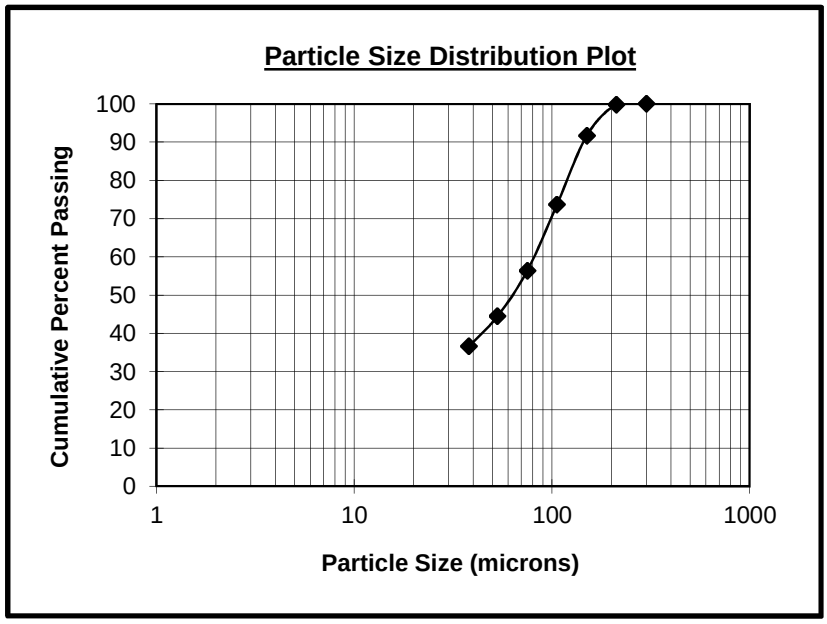


TABLE III-5
SCREEN ANALYSIS
KM3174 Composite 3 - 18 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
48 Mesh	300	0.00	100.0
65 Mesh	212	0.10	99.9
100 Mesh	150	4.30	95.6
150 Mesh	106	18.20	77.4
200 Mesh	75	17.40	60.0
270 Mesh	53	12.80	47.2
400 Mesh	38	9.90	37.3
TOTAL		100.00	**

K80 =112µm

Note: 18 min. grind calibration using 2 kg. Ore, 1000 ml water and 20 kg. of Mild Steel rods in Mill: M2

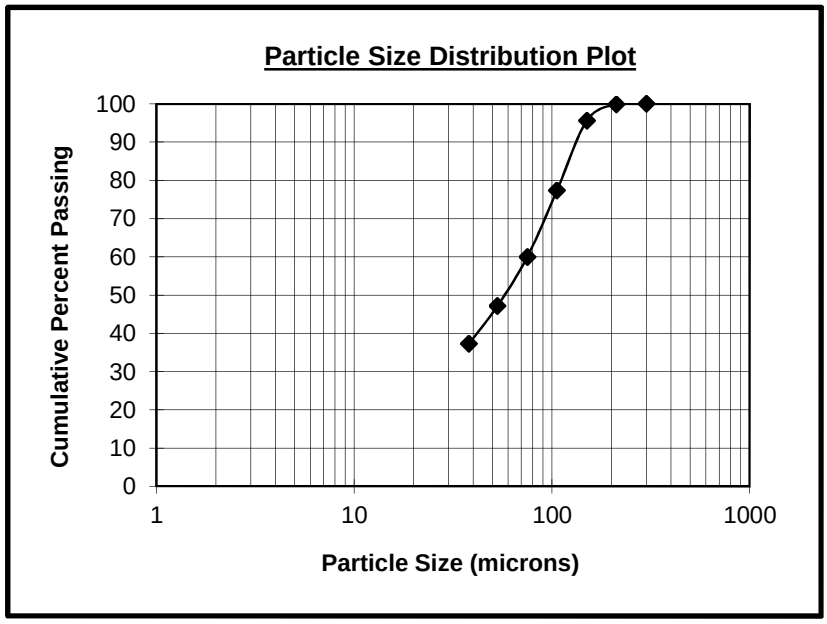


TABLE III-6
SCREEN ANALYSIS
KM3174 Composite 4 - 15 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
48 Mesh	300	0.00	100.0
65 Mesh	212	0.54	99.5
100 Mesh	150	11.00	88.5
150 Mesh	106	19.70	68.8
200 Mesh	75	15.20	53.6
270 Mesh	53	10.00	43.6
400 Mesh	38	7.10	36.5
TOTAL		100.00	**

K80 =131µm

Note: 15 min. grind calibration using 2 kg. Ore, 1500 ml water and 20 kg. of Mild Steel rods in Mill: M2

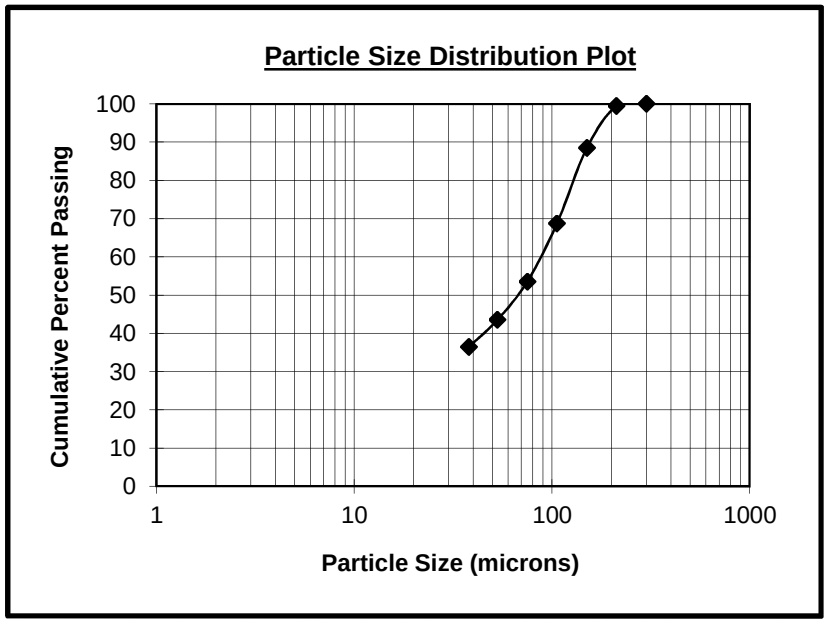


TABLE III-7
SCREEN ANALYSIS
KM3174 Composite 4 - 17 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
65 Mesh	212	0.00	100.0
100 Mesh	150	4.70	95.3
150 Mesh	106	17.00	78.3
200 Mesh	75	18.00	60.3
270 Mesh	53	12.40	47.9
400 Mesh	38	8.30	39.6
TOTAL		100.00	**

K80 =110µm

Note: 17 min. grind calibration using 2 kg. Ore, 1000 ml water and 20 kg. of Mild Steel rods in Mill: M2

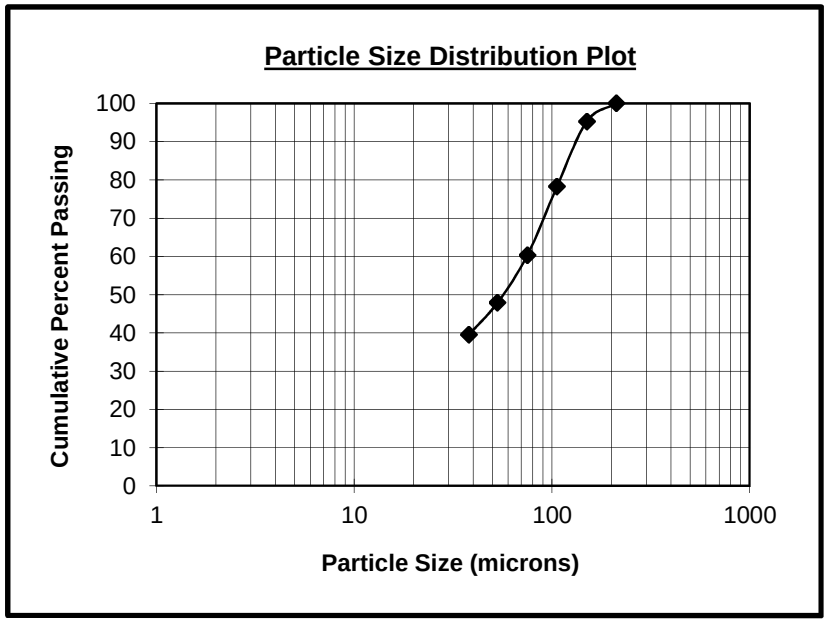


TABLE III-8
SCREEN ANALYSIS
KM3174 Composite 4 - 18 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
65 Mesh	212	0.00	100.0
100 Mesh	150	1.70	98.3
150 Mesh	106	12.70	85.6
200 Mesh	75	19.00	66.6
270 Mesh	53	14.30	52.3
400 Mesh	38	9.20	43.1
TOTAL		100.00	**

K80 =97µm

Note: 18 min. grind calibration using 2 kg. Ore, 1000 ml water and 20 kg. of Mild Steel rods in Mill: M2

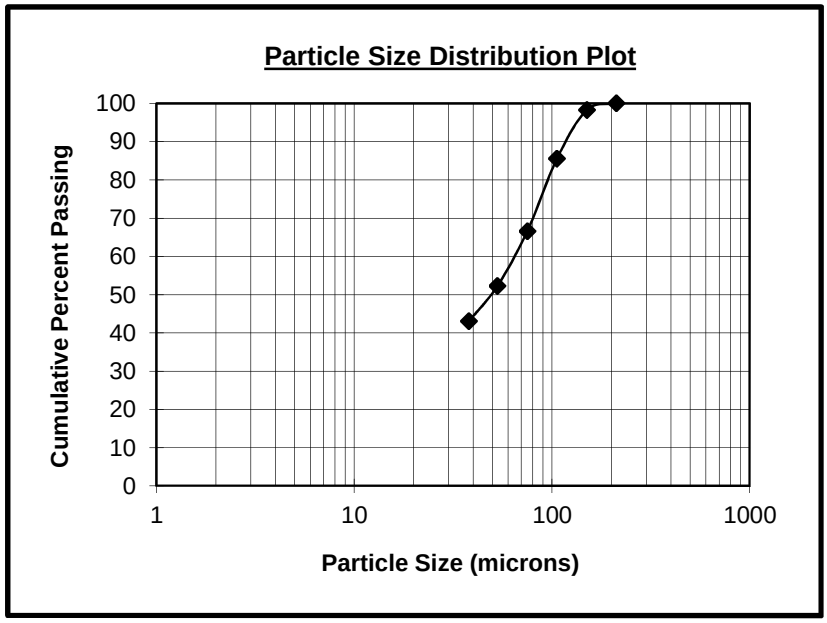


TABLE III-9
SCREEN ANALYSIS
KM3174 Composite 5 - 18 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
48 Mesh	300	0.00	100.0
65 Mesh	212	1.50	98.5
100 Mesh	150	16.50	82.0
150 Mesh	106	20.40	61.6
200 Mesh	75	14.90	46.7
270 Mesh	53	9.90	36.8
400 Mesh	38	7.10	29.7
TOTAL		100.00	**

K80 =146µm

Note: 18 min. grind calibration using 2 kg. Ore, 1000 ml water and 20 kg. of Mild Steel rods in Mill: M2

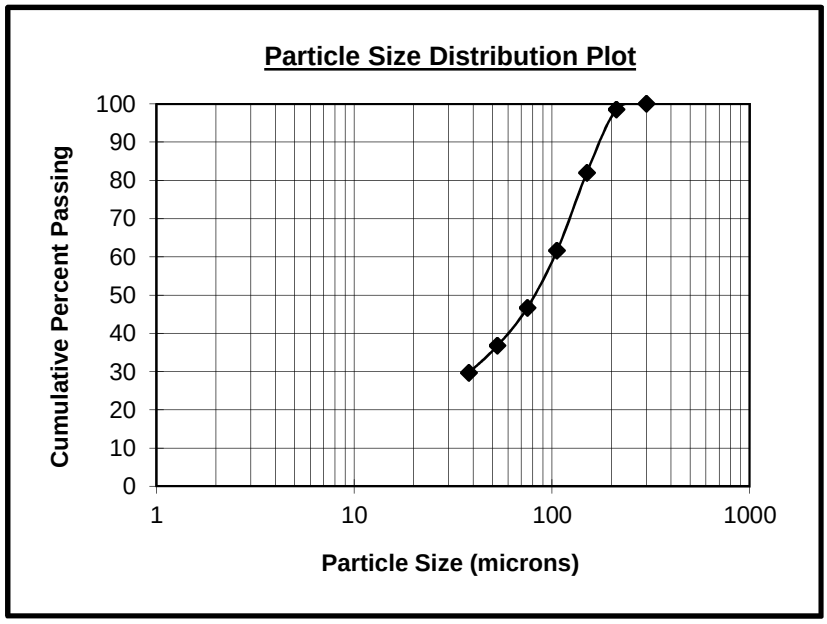


TABLE III-10
SCREEN ANALYSIS
KM3174 Composite 5 - 20 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
48 Mesh	300	0.00	100.0
65 Mesh	212	0.20	99.8
100 Mesh	150	8.40	91.4
150 Mesh	106	21.90	69.5
200 Mesh	75	17.30	52.2
270 Mesh	53	12.00	40.2
400 Mesh	38	8.80	31.4
TOTAL		100.00	**

K80 =127µm

Note: 20 min. grind calibration using 2 kg. Ore, 1000 ml water and 20 kg. of Mild Steel rods in Mill: M2

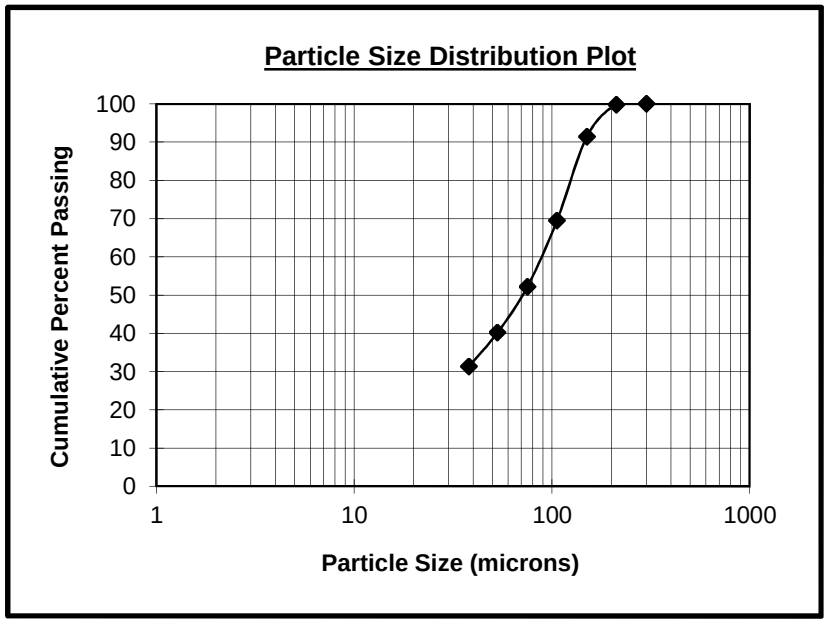


TABLE III-11
SCREEN ANALYSIS
KM3174 Composite 6 - 17 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
48 Mesh	300	0.00	100.0
65 Mesh	212	0.30	99.7
100 Mesh	150	10.00	89.7
150 Mesh	106	18.30	71.4
200 Mesh	75	16.40	55.0
270 Mesh	53	11.40	43.6
400 Mesh	38	7.60	36.0
TOTAL		100.00	**

K80 =126µm

Note: 17 min. grind calibration using 2 kg. Ore, 1000 ml water and 20 kg. of Mild Steel rods in Mill: M2

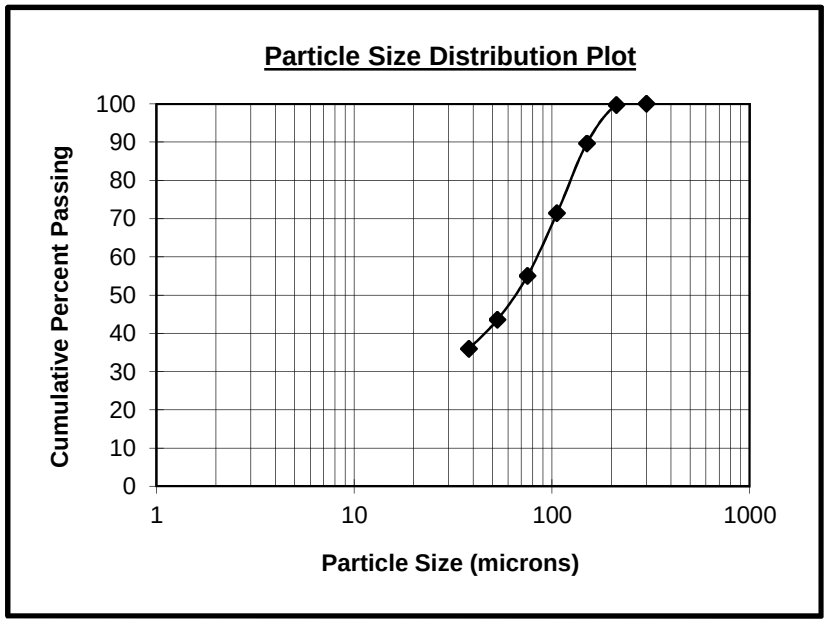


TABLE III-12
SCREEN ANALYSIS
KM3174 Composite 6 - 18 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
48 Mesh	300	0.00	100.0
65 Mesh	212	0.10	99.9
100 Mesh	150	5.00	94.9
150 Mesh	106	18.50	76.4
200 Mesh	75	16.70	59.7
270 Mesh	53	12.50	47.2
400 Mesh	38	9.20	38.0
TOTAL		100.00	**

K80 =114µm

Note: 18 min. grind calibration using 2 kg. Ore, 1000 ml water and 20 kg. of Mild Steel rods in Mill: M2

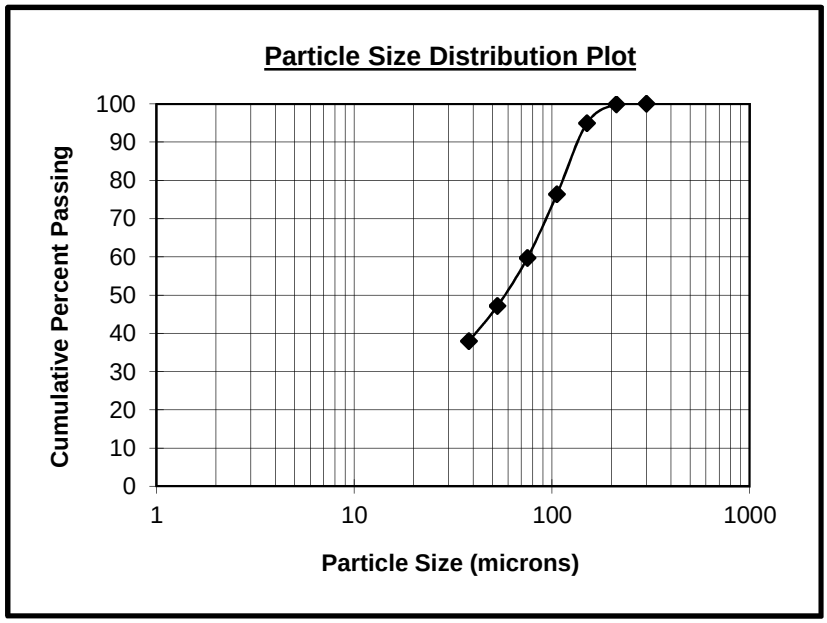


TABLE III-13
SCREEN ANALYSIS
KM3174 Composite 7 - 15 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
48 Mesh	300	0.00	100.0
65 Mesh	212	0.30	99.7
100 Mesh	150	8.10	91.6
150 Mesh	106	18.80	72.8
200 Mesh	75	14.70	58.1
270 Mesh	53	9.80	48.3
400 Mesh	38	14.50	33.8
TOTAL		100.00	**

K80 =122µm

Note: 16 min. grind calibration using 2 kg. Ore, 1500 ml water and 20 kg. of Mild Steel rods in Mill: M2

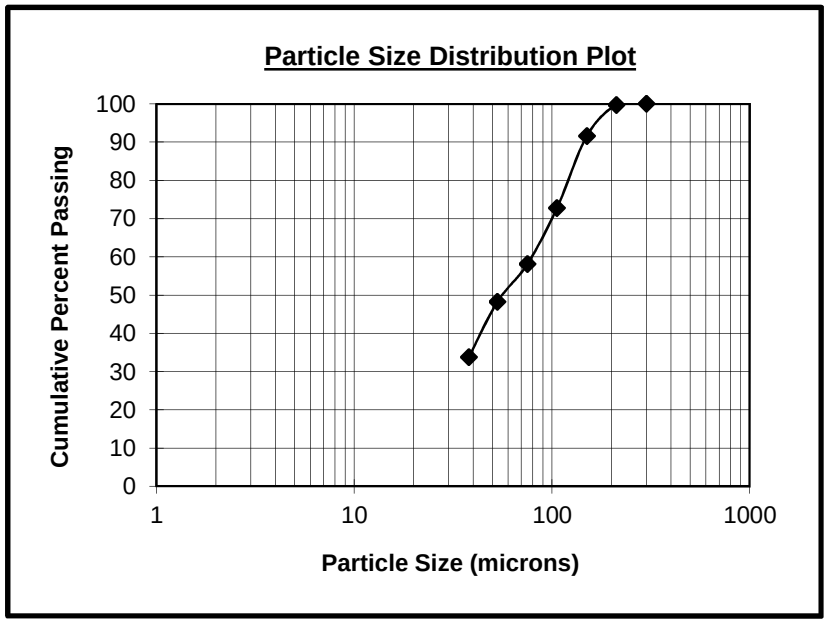


TABLE III-14
SCREEN ANALYSIS
KM3174 Composite 7 - 16 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
48 Mesh	300	0.00	100.0
65 Mesh	212	0.10	99.9
100 Mesh	150	5.40	94.5
150 Mesh	106	17.40	77.1
200 Mesh	75	17.10	60.0
270 Mesh	53	11.70	48.3
400 Mesh	38	8.10	40.2
TOTAL		100.00	**

K80 =113µm

Note: 16 min. grind calibration using 2 kg. Ore, 1000 ml water and 20 kg. of Mild Steel rods in Mill: M2

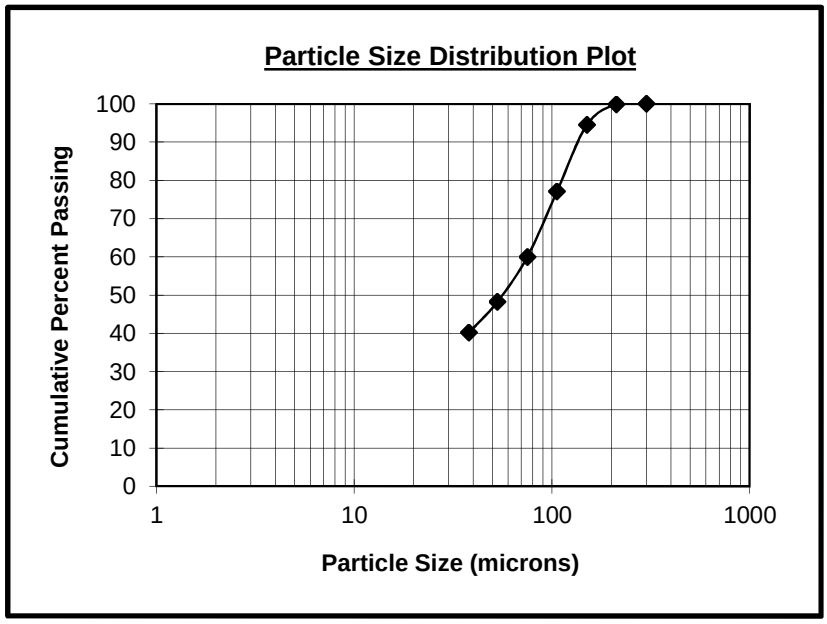


TABLE III-15
SCREEN ANALYSIS
KM3174 Composite 7 - 18 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
65 Mesh	212	0.00	100.0
100 Mesh	150	2.60	97.4
150 Mesh	106	11.00	86.4
200 Mesh	75	18.00	68.4
270 Mesh	53	14.00	54.4
400 Mesh	38	9.10	45.3
TOTAL		100.00	**

K80 =95µm

Note: 18 min. grind calibration using 2 kg. Ore, 1000 ml water and 20 kg. of Mild Steel rods in Mill: M2

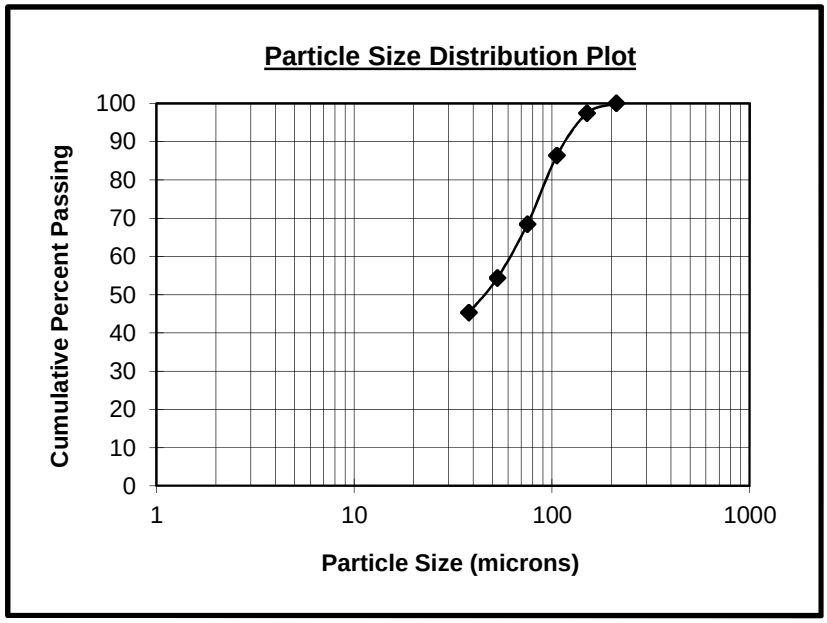


TABLE III-16
SCREEN ANALYSIS
KM3174 Composite 8 - 18 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
35 Mesh	425	0.00	100.0
48 Mesh	300	11.50	88.5
65 Mesh	212	17.00	71.5
100 Mesh	150	12.80	58.7
150 Mesh	106	9.70	49.0
200 Mesh	75	8.00	41.0
270 Mesh	53	6.40	34.6
400 Mesh	38	5.30	29.3
TOTAL		100.00	**

K80 =255µm

Note: 18 min. grind calibration using 2 kg. Ore, 1000 ml water and 20 kg. of Mild Steel rods in Mill: M2

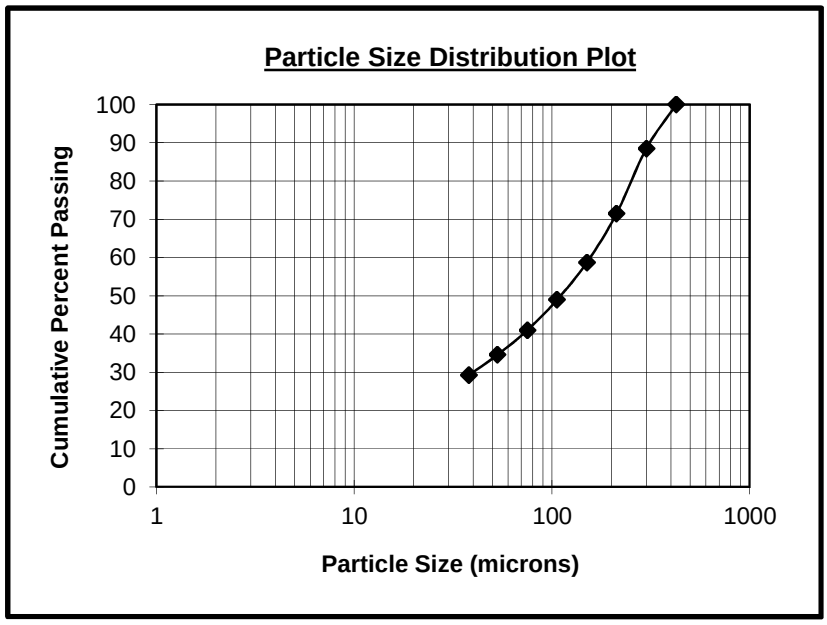


TABLE III-17
SCREEN ANALYSIS
KM3174 Composite 8 - 23 Minute Grind Calibration

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	6.70	93.2
100 Mesh	150	17.90	75.3
150 Mesh	106	17.00	58.3
200 Mesh	75	11.10	47.2
270 Mesh	53	8.30	38.9
400 Mesh	38	7.60	31.3
TOTAL		100.00	**

K80 =165µm

Note: 23 min. grind calibration using 2 kg. Ore, 1000 ml water and 20 kg. of Mild Steel rods in Mill: M2

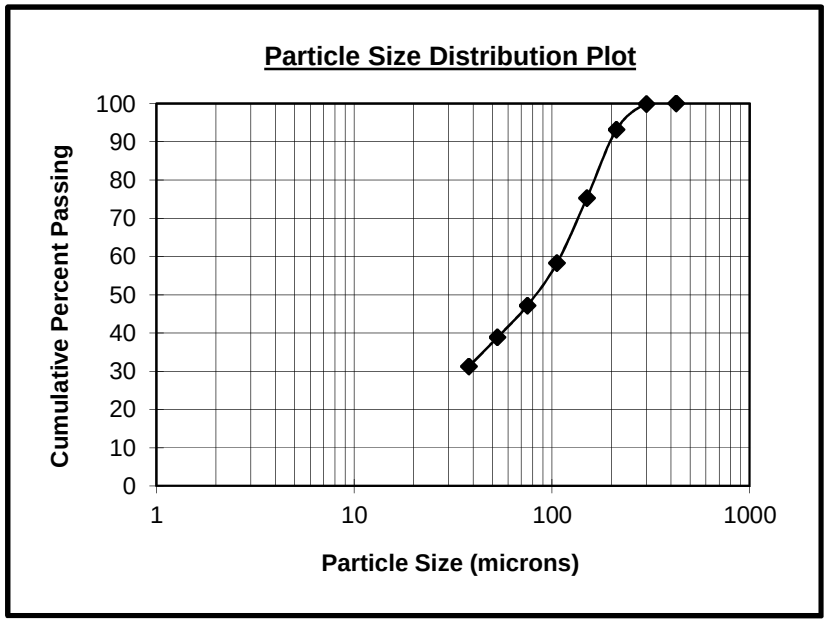


TABLE III-18
SCREEN ANALYSIS
KM3174 Composite 8 - 27 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
35 Mesh	425	0.00	100.0
48 Mesh	300	0.00	100.0
65 Mesh	212	0.20	99.8
100 Mesh	150	8.70	91.1
150 Mesh	106	17.30	73.8
200 Mesh	75	15.70	58.1
270 Mesh	53	10.90	47.2
400 Mesh	38	7.50	39.7
TOTAL		100.00	**

K80 =121µm

Note: 27 min. grind calibration using 2 kg. Ore, 1500 ml water and 20 kg. of Mild Steel rods in Mill: M2

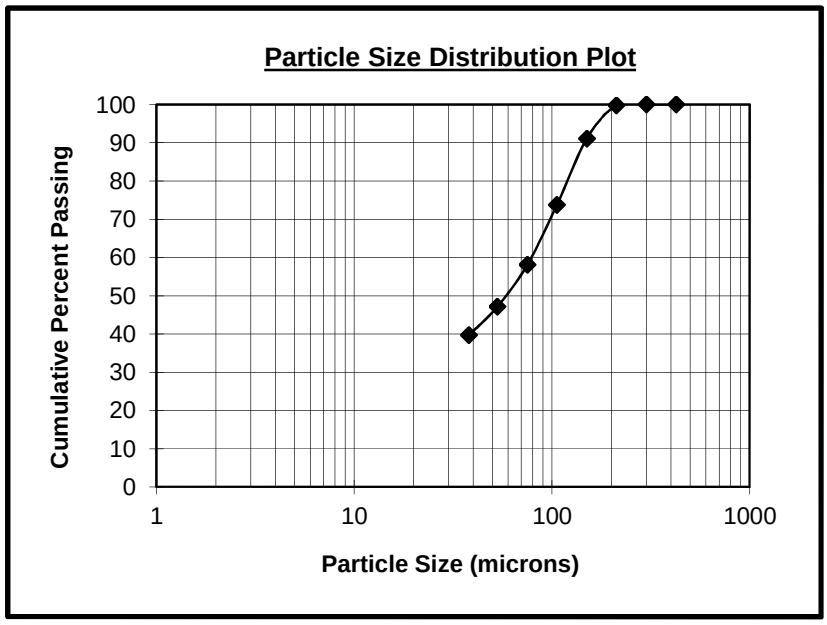


TABLE III-19
SCREEN ANALYSIS
KM3174 Composite 9 - 18 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
35 Mesh	425	0.00	100.0
48 Mesh	300	0.20	99.8
65 Mesh	212	8.30	91.5
100 Mesh	150	16.40	75.1
150 Mesh	106	15.00	60.1
200 Mesh	75	10.20	49.9
270 Mesh	53	8.00	41.9
400 Mesh	38	7.10	34.8
TOTAL		100.00	**

K80 =168µm

Note: 18 min. grind calibration using 2 kg. Ore, 1000 ml water and 20 kg. of Mild Steel rods in Mill: M2

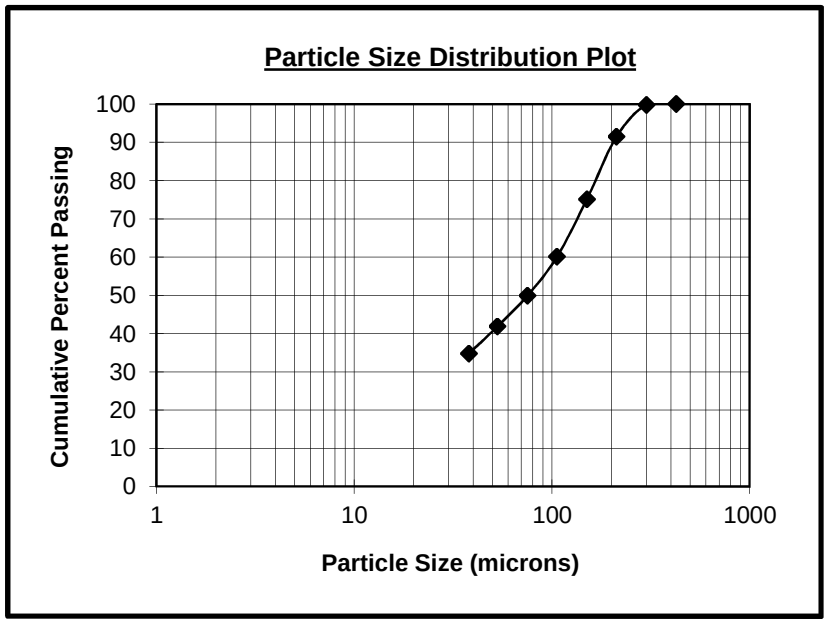


TABLE III-20
SCREEN ANALYSIS
KM3174 Composite 9 - 21 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
48 Mesh	300	0.00	100.0
65 Mesh	212	1.40	98.6
100 Mesh	150	13.70	84.9
150 Mesh	106	17.50	67.4
200 Mesh	75	14.10	53.3
270 Mesh	53	10.10	43.2
400 Mesh	38	7.10	36.1
TOTAL		100.00	**

K80 =137µm

Note: 21 min. grind calibration using 2 kg. Ore, 1000 ml water and 20 kg. of Mild Steel rods in Mill: M2

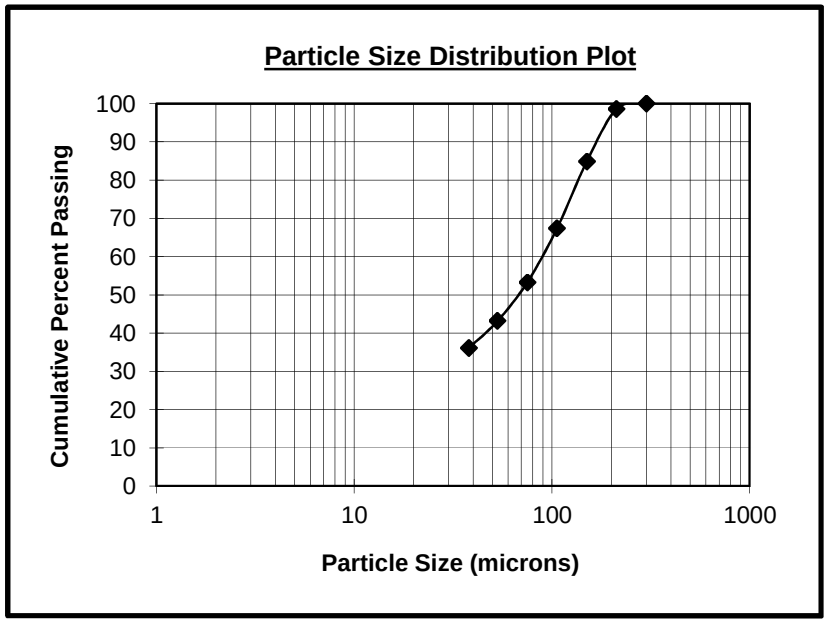


TABLE III-21
SCREEN ANALYSIS
KM3174 Composite 9 - 22 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
48 Mesh	300	0.00	100.0
65 Mesh	212	0.40	99.6
100 Mesh	150	10.00	89.6
150 Mesh	106	18.60	71.0
200 Mesh	75	14.60	56.4
270 Mesh	53	9.80	46.6
400 Mesh	38	12.60	34.0
TOTAL		100.00	**

K80 =127µm

Note: 22 min. grind calibration using 2 kg. Ore, 1000 ml water and 20 kg. of Mild Steel rods in Mill: M2

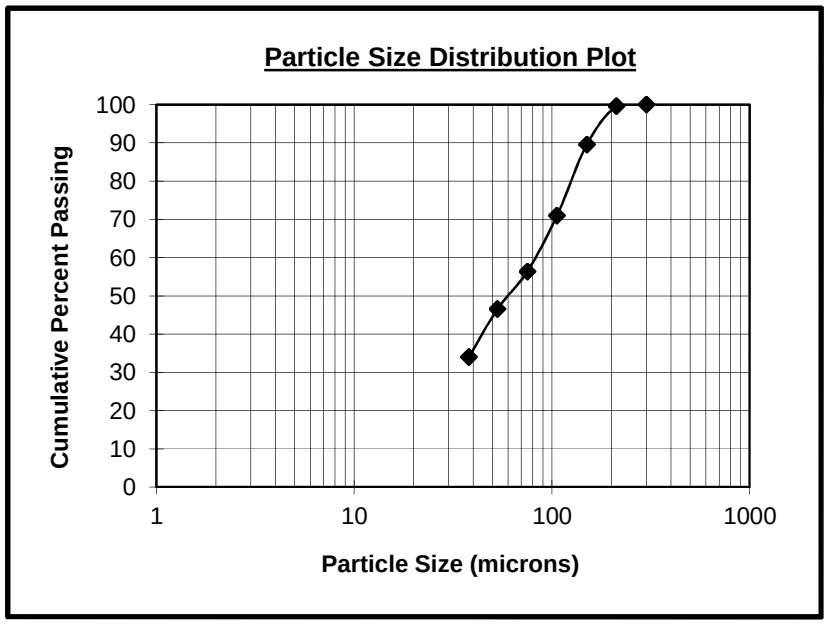


TABLE III-22
SCREEN ANALYSIS
KM3174 Composite 10 - 14 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
48 Mesh	300	0.00	100.0
65 Mesh	212	0.50	99.5
100 Mesh	150	8.80	90.7
150 Mesh	106	18.70	72.0
200 Mesh	75	14.20	57.8
270 Mesh	53	9.70	48.1
400 Mesh	38	8.40	39.7
TOTAL		100.00	**

K80 =124µm

Note: 14 min. grind calibration using 2 kg. Ore, 1000 ml water and 20 kg. of Mild Steel rods in Mill: M2

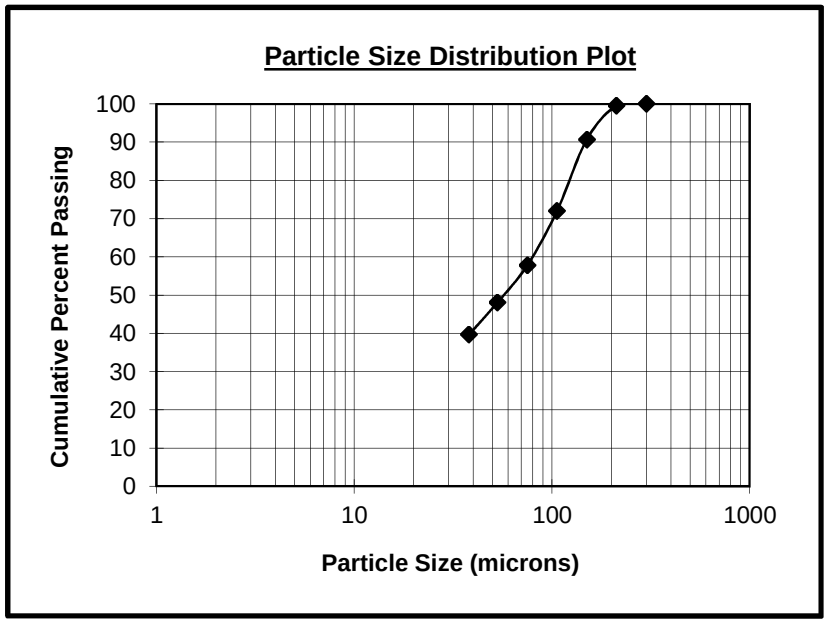


TABLE III-23
SCREEN ANALYSIS
KM3174 Composite 10 - 15 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
48 Mesh	300	0.00	100.0
65 Mesh	212	0.10	99.9
100 Mesh	150	5.50	94.4
150 Mesh	106	17.10	77.3
200 Mesh	75	17.50	59.8
270 Mesh	53	11.90	47.9
400 Mesh	38	8.30	39.6
TOTAL		100.00	**

K80 =113µm

Note: 15 min. grind calibration using 2 kg. Ore, 1000 ml water and
20 kg. of Mild Steel rods in Mill: M2

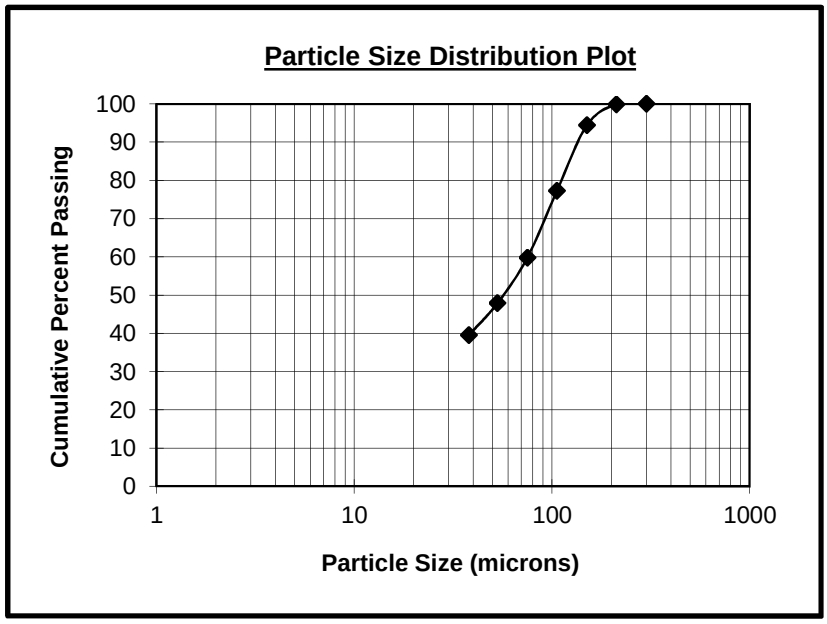


TABLE III-24
SCREEN ANALYSIS
KM3174 Composite 10 - 18 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
65 Mesh	212	0.00	100.0
100 Mesh	150	1.10	98.9
150 Mesh	106	9.20	89.7
200 Mesh	75	18.30	71.4
270 Mesh	53	15.60	55.8
400 Mesh	38	10.00	45.8
TOTAL		100.00	**

K80 =89µm

Note: 18 min. grind calibration using 2 kg. Ore, 1000 ml water and 20 kg. of Mild Steel rods in Mill: M2

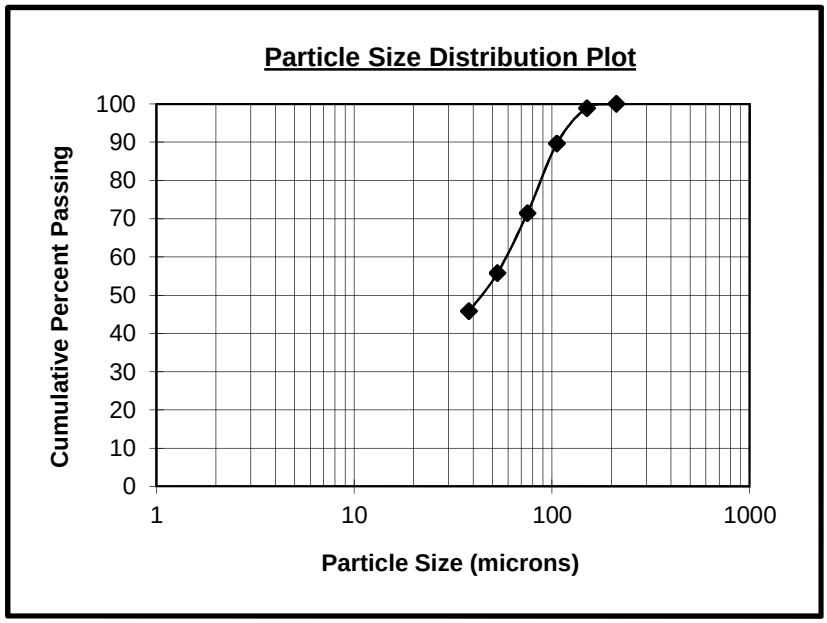


TABLE III-25
SCREEN ANALYSIS
KM3174 Composite 11 - 13 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
48 Mesh	300	0.00	100.0
65 Mesh	212	0.80	99.2
100 Mesh	150	11.90	87.3
150 Mesh	106	17.00	70.3
200 Mesh	75	14.30	56.0
270 Mesh	53	10.00	46.0
400 Mesh	38	6.60	39.4
TOTAL		100.00	**

K80 =130µm

Note: 13 min. grind calibration using 2 kg. Ore, 1000 ml water and 20 kg. of Mild Steel rods in Mill: M2

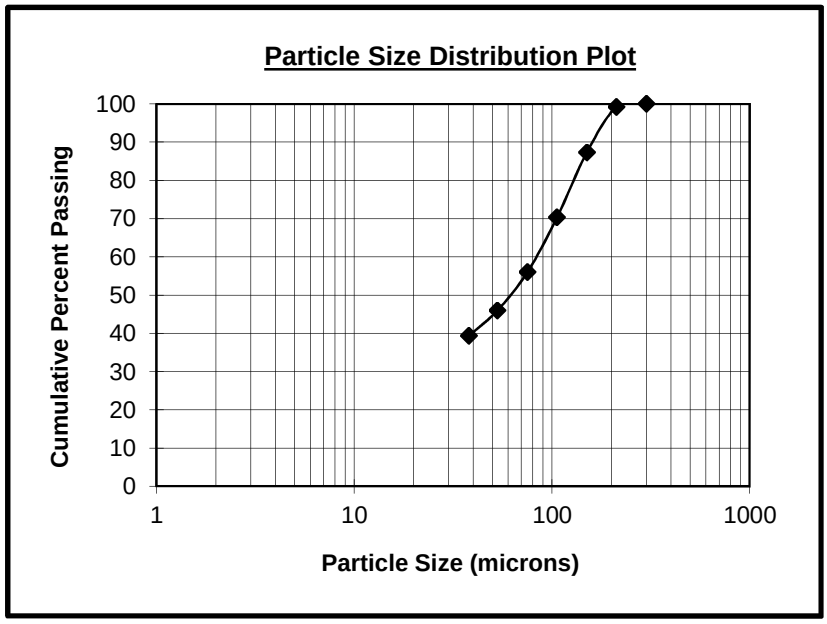


TABLE III-26
SCREEN ANALYSIS
KM3174 Composite 11 - 15 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
65 Mesh	212	0.00	100.0
100 Mesh	150	3.70	96.3
150 Mesh	106	13.50	82.8
200 Mesh	75	18.00	64.8
270 Mesh	53	13.10	51.7
400 Mesh	38	8.40	43.3
TOTAL		100.00	**

K80 =101µm

Note: 15 min. grind calibration using 2 kg. Ore, 1000 ml water and 20 kg. of Mild Steel rods in Mill: M2

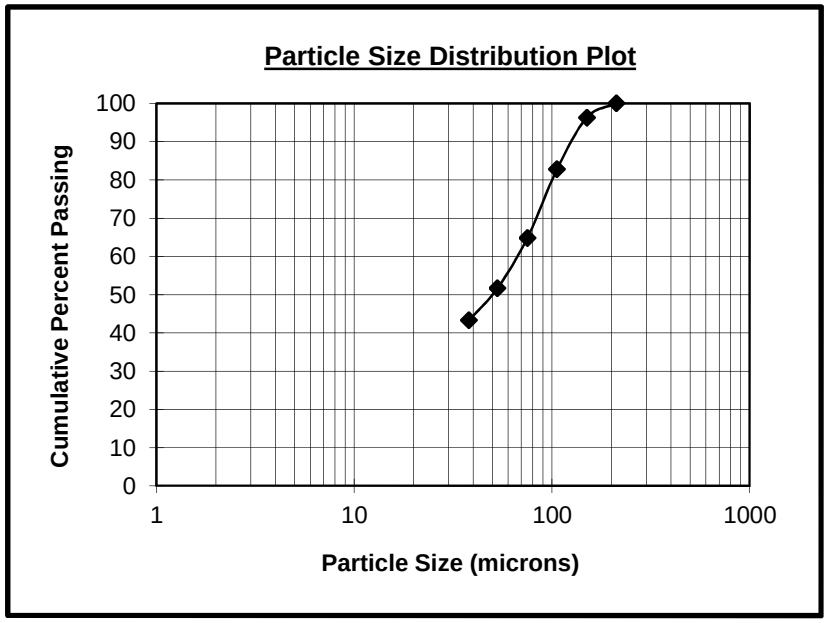
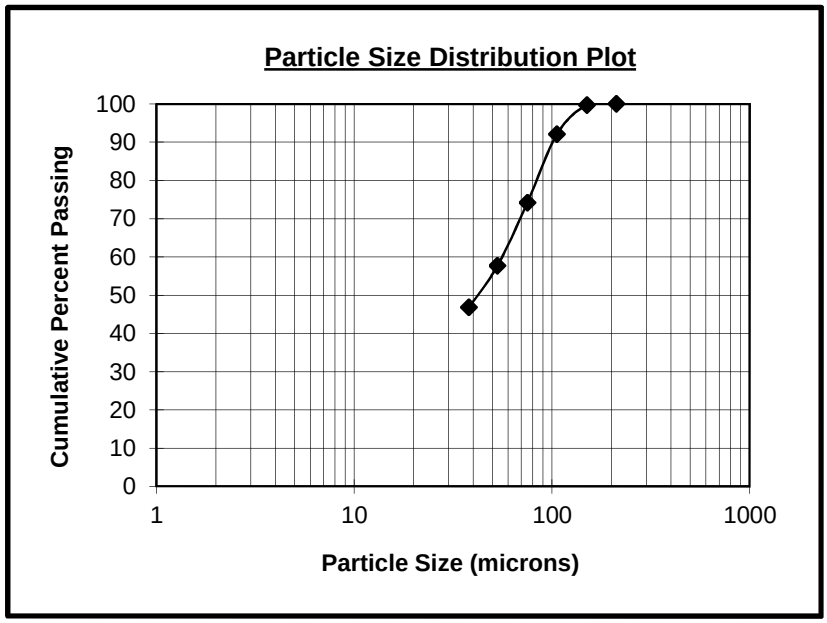


TABLE III-27
SCREEN ANALYSIS
KM3174 Composite 11 - 18 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
65 Mesh	212	0.00	100.0
100 Mesh	150	0.30	99.7
150 Mesh	106	7.60	92.1
200 Mesh	75	17.90	74.2
270 Mesh	53	16.50	57.7
400 Mesh	38	10.90	46.8
TOTAL		100.00	**

K80 =85µm

Note: 18 min. grind calibration using 2 kg. Ore, 1000 ml water and 20 kg. of Mild Steel rods in Mill: M2



G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-01

Sample Name:
Bulk Regrind Discharge - Average

Measured by:
Hoang

Edited by:
Hoang

Measured:
Friday, November 11, 2011 9:27:46 AM

Analysed:
Friday, November 11, 2011 9:27:47 AM

Particle Name: Silica 1.0
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 1
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.304 %

Sensitivity: Normal
Obscuration: 20.07 %
Result Emulation: Off

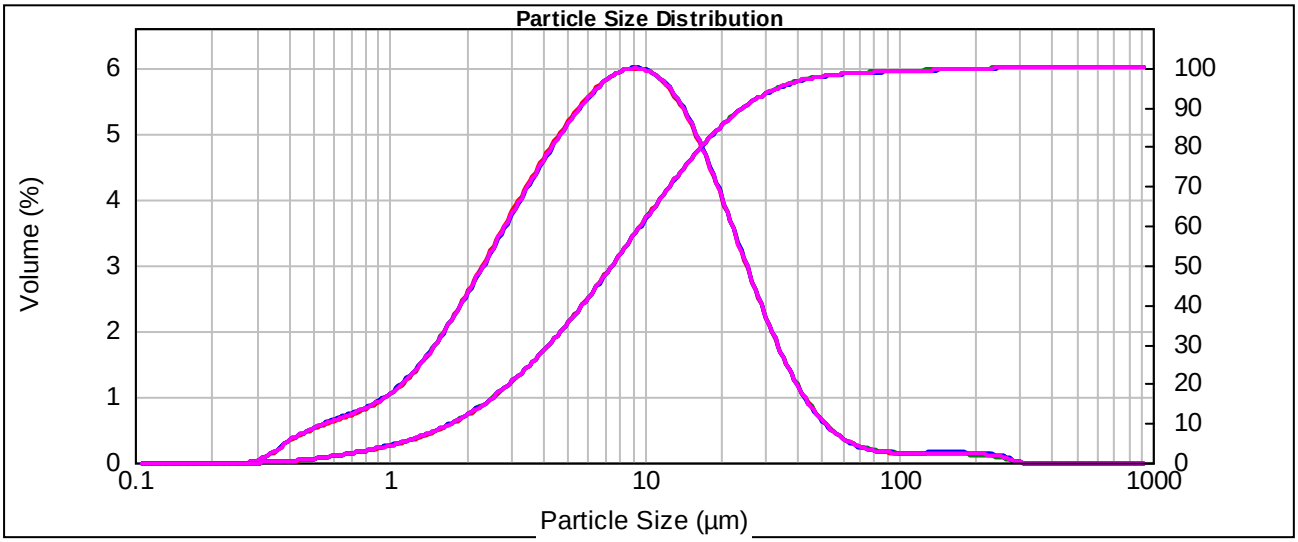
Concentration: 0.0110 %Vol
Specific Surface Area: 1.52 m²/g

Span : 3.051
Surface Weighted Mean D[3,2]: 3.948 um

Uniformity: 1.13
Vol. Weighted Mean D[4,3]: 12.218 um

Result units: Volume

d(0.1): 1.763 um d(0.5): 7.522 um **d(0.8): 16.839 um** d(0.9): 24.713 um d(0.98): 52.45 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	0.04
0.331	0.08
0.363	0.16
0.398	0.22
0.437	0.26
0.479	

Size (µm)	Volume In %
0.479	0.31
0.525	0.35
0.575	0.39
0.631	0.42
0.692	0.45
0.759	0.49
0.832	0.54
0.912	0.59
1.000	0.66
1.096	0.74
1.202	0.84
1.318	0.95
1.445	1.08
1.585	1.22
1.738	1.36
1.905	1.52
2.089	1.68
2.291	

Size (µm)	Volume In %
2.291	1.85
2.512	2.01
2.754	2.18
3.020	2.35
3.311	2.51
3.631	2.67
3.981	2.82
4.365	2.96
4.786	3.10
5.248	3.22
5.754	3.34
6.310	3.43
6.918	3.51
7.586	3.57
8.318	3.60
9.120	3.61
10.000	3.58
10.965	

Size (µm)	Volume In %
10.965	3.52
12.023	3.43
13.183	3.29
14.454	3.13
15.849	2.93
17.378	2.71
19.055	2.47
20.893	2.21
22.909	1.95
25.119	1.70
27.542	1.44
30.200	1.21
33.113	1.00
36.308	0.80
39.811	0.64
43.652	0.50
47.863	0.38
52.481	

Size (µm)	Volume In %
52.481	0.29
57.544	0.22
63.096	0.17
69.183	0.14
75.858	0.11
83.176	0.10
91.201	0.09
100.000	0.09
109.648	0.08
120.226	0.08
131.826	0.09
144.544	0.09
158.489	0.09
173.780	0.08
190.546	0.08
208.930	0.07
229.087	0.06
251.189	

Size (µm)	Volume In %
251.189	0.05
275.423	0.01
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174 - 01

Sample Name:
Pyrite Rougher Concentrate - Average

Measured by:
Neville

Edited by:
Neville

Measured:
Monday, November 14, 2011 11:04:54 AM

Analysed:
Monday, November 14, 2011 11:04:55 AM

Particle Name:
Silica 0.01

Particle RI:
1.544

Dispersant Name:
Water

Accessory Name:
Hydro 2000MU (A)

Absorption:
0.01

Dispersant RI:
1.330

Analysis model:
General purpose

Size range:
0.100 to 1000.000 um

Weighted Residual:
0.600 %

Sensitivity:
Normal

Obscuration:
13.59 %

Result Emulation:
Off

Concentration:
0.0118 %Vol

Span :
12.530

Uniformity:
3.55

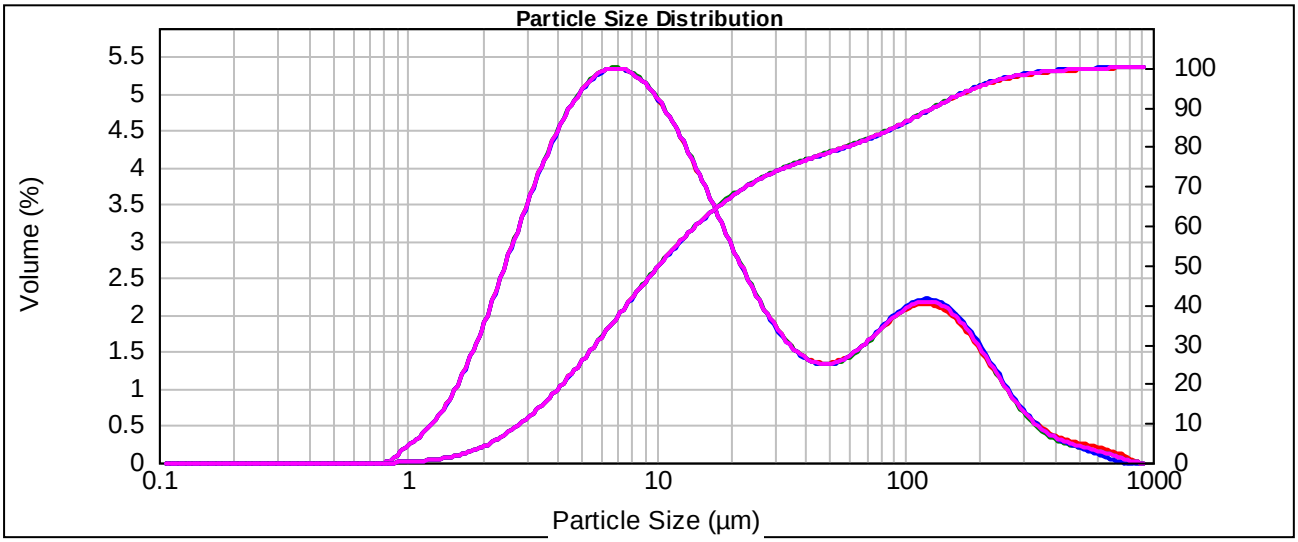
Result units:
Volume

Specific Surface Area:
0.328 m²/g

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

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

d(0.1): 2.878 um d(0.5): 10.299 um **d(0.8): 58.572 um** d(0.9): 131.923 um d(0.98): 285.1 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.02
0.912	0.11
1.000	0.15
1.096	0.24
1.202	0.32
1.318	0.42
1.445	0.55
1.585	0.71
1.738	0.89
1.905	1.09
2.089	1.31
2.291	1.53

Size (µm)	Volume In %
2.291	1.53
2.512	1.76
2.754	1.99
3.020	2.20
3.311	2.41
3.631	2.60
3.981	2.77
4.365	2.91
4.786	3.03
5.248	3.12
5.754	3.18
6.310	3.21
6.918	3.21
7.586	3.18
8.318	3.12
9.120	3.04
10.000	2.93
10.965	2.80

Size (µm)	Volume In %
10.965	2.80
12.023	2.65
13.183	2.49
14.454	2.32
15.849	2.14
17.378	1.96
19.055	1.79
20.893	1.62
22.909	1.45
25.119	1.31
27.542	1.17
30.200	1.05
33.113	0.96
36.308	0.88
39.811	0.83
43.652	0.80
47.863	0.80
52.481	0.82

Size (µm)	Volume In %
52.481	0.82
57.544	0.87
63.096	0.93
69.183	1.00
75.858	1.08
83.176	1.16
91.201	1.22
100.000	1.28
109.648	1.31
120.226	1.31
131.826	1.29
144.544	1.24
158.489	1.17
173.780	1.07
190.546	0.95
208.930	0.83
229.087	0.70
251.189	0.58

Size (µm)	Volume In %
251.189	0.58
275.423	0.47
301.995	0.37
331.131	0.29
363.078	0.23
398.107	0.19
436.516	0.16
478.630	0.14
524.807	0.12
575.440	0.09
630.957	0.07
691.831	0.04
758.578	0.01
831.764	0.00
912.011	0.00
1000.000	0.00

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-02

Sample Name:
Bulk Regrind Discharge - Average

Measured by:
Hoang

Edited by:
Hoang

Measured:
Friday, November 11, 2011 10:43:32 AM

Analysed:
Friday, November 11, 2011 10:43:33 AM

Particle Name: Silica 1.0
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 1
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.391 %

Sensitivity: Normal
Obscuration: 17.24 %
Result Emulation: Off

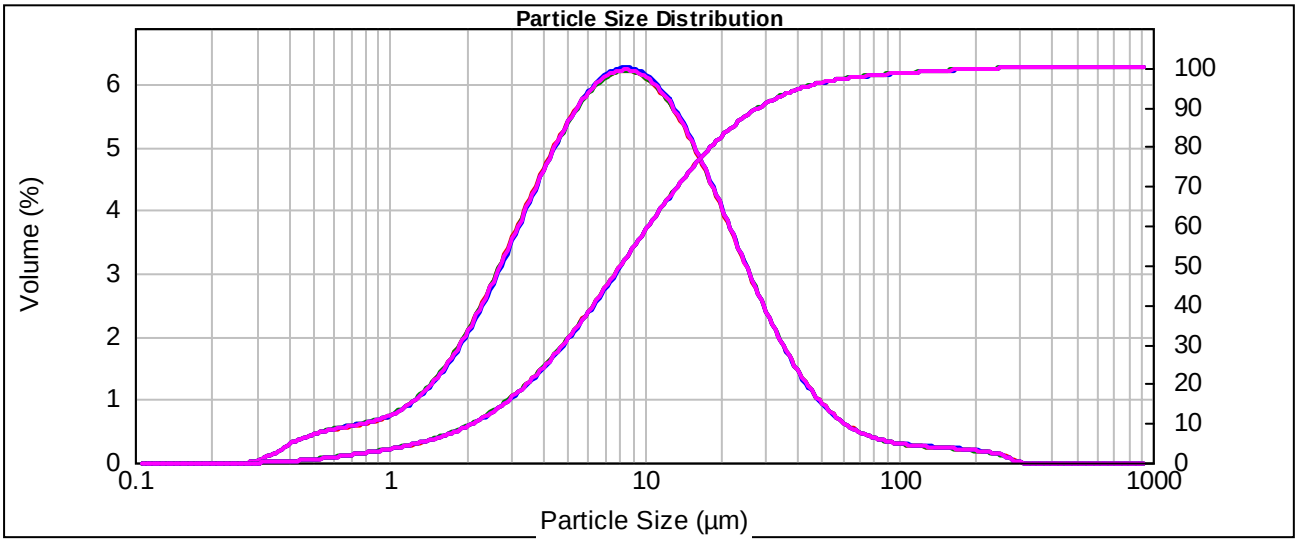
Concentration: 0.0106 %Vol
Specific Surface Area: 1.34 m²/g

Span : 3.233
Surface Weighted Mean D[3,2]: 4.463 um

Uniformity: 1.23
Vol. Weighted Mean D[4,3]: 14.224 um

Result units: Volume

d(0.1): 2.137 um d(0.5): 8.141 um **d(0.8): 18.420 um** d(0.9): 28.459 um d(0.98): 77.46 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	0.04
0.331	0.07
0.363	0.14
0.398	0.19
0.437	0.23
0.479	

Size (µm)	Volume In %
0.479	0.27
0.525	0.30
0.575	0.32
0.631	0.34
0.692	0.36
0.759	0.37
0.832	0.40
0.912	0.43
1.000	0.47
1.096	0.52
1.202	0.59
1.318	0.68
1.445	0.79
1.585	0.91
1.738	1.06
1.905	1.21
2.089	1.39
2.291	

Size (µm)	Volume In %
2.291	1.58
2.512	1.79
2.754	2.00
3.020	2.22
3.311	2.44
3.631	2.65
3.981	2.86
4.365	3.06
4.786	3.24
5.248	3.39
5.754	3.52
6.310	3.63
6.918	3.70
7.586	3.74
8.318	3.74
9.120	3.72
10.000	3.65
10.965	

Size (µm)	Volume In %
10.965	3.56
12.023	3.44
13.183	3.28
14.454	3.11
15.849	2.91
17.378	2.69
19.055	2.47
20.893	2.23
22.909	2.00
25.119	1.77
27.542	1.55
30.200	1.34
33.113	1.15
36.308	0.97
39.811	0.82
43.652	0.68
47.863	0.56
52.481	

Size (µm)	Volume In %
52.481	0.47
57.544	0.39
63.096	0.32
69.183	0.27
75.858	0.24
83.176	0.21
91.201	0.19
100.000	0.17
109.648	0.16
120.226	0.15
131.826	0.15
144.544	0.14
158.489	0.13
173.780	0.13
190.546	0.12
208.930	0.10
229.087	0.08
251.189	

Size (µm)	Volume In %
251.189	0.07
275.423	0.01
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174 - 02

Sample Name:
Pyrite Rougher Concentrate - Average

Measured by:
Neville

Edited by:
Dean

Measured:
Monday, November 14, 2011 10:56:25 AM

Analysed:
Monday, November 14, 2011 10:56:26 AM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.532 %

Sensitivity: Normal
Obscuration: 11.31 %
Result Emulation: Off

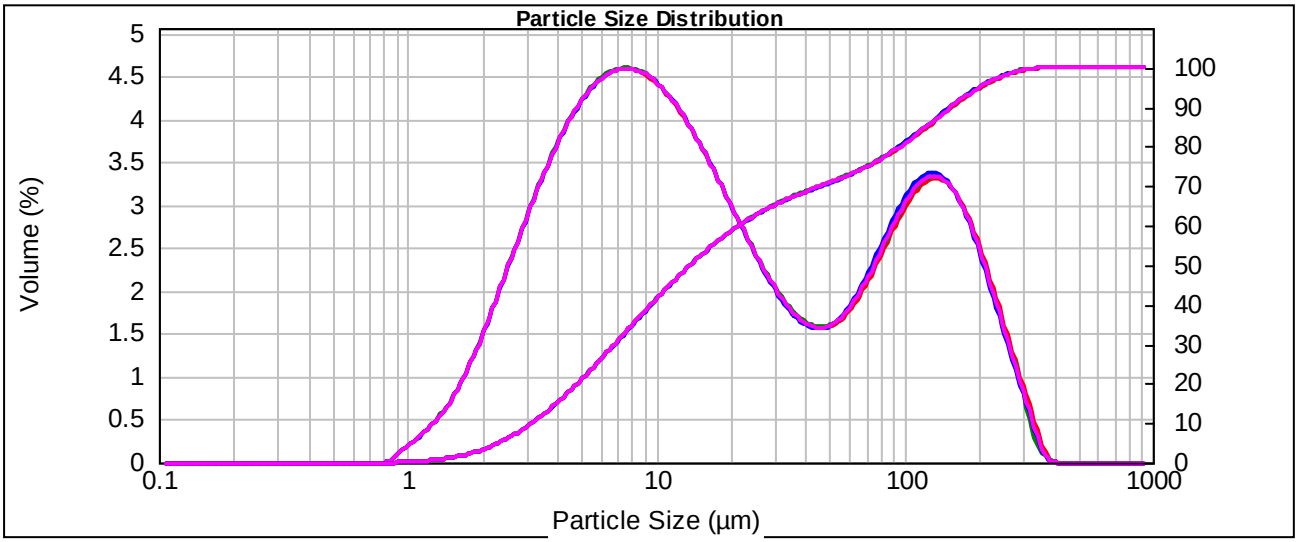
Concentration: 0.0114 %Vol
Specific Surface Area: 0.282 m²/g

Span : 10.992
Surface Weighted Mean D[3,2]: 8.042 um

Uniformity: 3.08
Vol. Weighted Mean D[4,3]: 48.543 um

Result units: Volume

d(0.1): 3.166 um d(0.5): 13.711 um **d(0.8): 95.854 um** d(0.9): 153.877 um d(0.98): 250.46 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.02
0.912	0.10
1.000	0.14
1.096	0.20
1.202	0.27
1.318	0.35
1.445	0.45
1.585	0.58
1.738	0.72
1.905	0.89
2.089	1.07
2.291	

Size (µm)	Volume In %
2.291	1.25
2.512	1.44
2.754	1.63
3.020	1.81
3.311	1.99
3.631	2.15
3.981	2.30
4.365	2.43
4.786	2.54
5.248	2.63
5.754	2.70
6.310	2.74
6.918	2.76
7.586	2.76
8.318	2.74
9.120	2.70
10.000	2.63
10.965	

Size (µm)	Volume In %
10.965	2.55
12.023	2.46
13.183	2.35
14.454	2.22
15.849	2.09
17.378	1.95
19.055	1.81
20.893	1.67
22.909	1.53
25.119	1.40
27.542	1.28
30.200	1.17
33.113	1.08
36.308	1.00
39.811	0.96
43.652	0.94
47.863	0.96
52.481	

Size (µm)	Volume In %
52.481	1.00
57.544	1.08
63.096	1.19
69.183	1.32
75.858	1.46
83.176	1.61
91.201	1.75
100.000	1.87
109.648	1.96
120.226	2.01
131.826	2.01
144.544	1.95
158.489	1.85
173.780	1.70
190.546	1.51
208.930	1.29
229.087	1.06
251.189	

Size (µm)	Volume In %
251.189	0.83
275.423	0.61
301.995	0.37
331.131	0.15
363.078	0.01
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-03

Sample Name:
Bulk Regrind Discharge - Average

Measured by:
Hoang

Edited by:
Hoang

Measured:
Friday, November 11, 2011 10:48:03 AM

Analysed:
Friday, November 11, 2011 10:48:04 AM

Particle Name: Silica 1.0
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 1
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.444 %

Sensitivity: Normal
Obscuration: 20.86 %
Result Emulation: Off

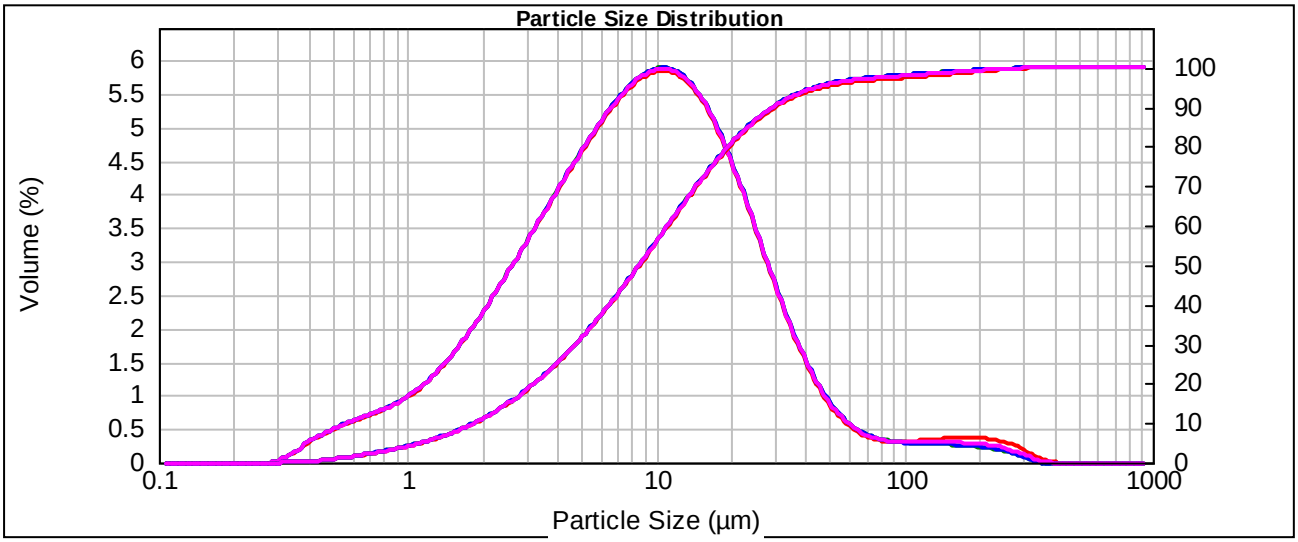
Concentration: 0.0123 %Vol
Specific Surface Area: 1.42 m²/g

Span : 3.237
Surface Weighted Mean D[3,2]: 4.229 um

Uniformity: 1.34
Vol. Weighted Mean D[4,3]: 15.617 um

Result units: Volume

d(0.1): 1.856 um d(0.5): 8.565 um **d(0.8): 19.569 um** d(0.9): 29.585 um d(0.98): 100.87 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	0.04
0.331	0.08
0.363	0.15
0.398	0.21
0.437	0.25
0.479	

Size (µm)	Volume In %
0.479	0.30
0.525	0.34
0.575	0.37
0.631	0.41
0.692	0.44
0.759	0.47
0.832	0.51
0.912	0.56
1.000	0.62
1.096	0.69
1.202	0.77
1.318	0.86
1.445	0.97
1.585	1.09
1.738	1.21
1.905	1.34
2.089	1.48
2.291	

Size (µm)	Volume In %
2.291	1.62
2.512	1.76
2.754	1.91
3.020	2.06
3.311	2.21
3.631	2.36
3.981	2.50
4.365	2.65
4.786	2.80
5.248	2.93
5.754	3.07
6.310	3.19
6.918	3.30
7.586	3.39
8.318	3.46
9.120	3.51
10.000	3.54
10.965	

Size (µm)	Volume In %
10.965	3.53
12.023	3.48
13.183	3.40
14.454	3.28
15.849	3.13
17.378	2.94
19.055	2.73
20.893	2.49
22.909	2.24
25.119	1.98
27.542	1.73
30.200	1.47
33.113	1.24
36.308	1.02
39.811	0.83
43.652	0.67
47.863	0.53
52.481	

Size (µm)	Volume In %
52.481	0.42
57.544	0.34
63.096	0.28
69.183	0.23
75.858	0.21
83.176	0.19
91.201	0.18
100.000	0.18
109.648	0.18
120.226	0.18
131.826	0.18
144.544	0.18
158.489	0.18
173.780	0.18
190.546	0.17
208.930	0.16
229.087	0.15
251.189	

Size (µm)	Volume In %
251.189	0.12
275.423	0.09
301.995	0.06
331.131	0.02
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174 - 03

Sample Name:
Pyrite Rougher Concentrate - Average

Measured by:
Neville

Edited by:
Dean

Measured:
Monday, November 14, 2011 10:48:45 AM

Analysed:
Monday, November 14, 2011 10:48:46 AM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.514 %

Sensitivity: Normal
Obscuration: 12.97 %
Result Emulation: Off

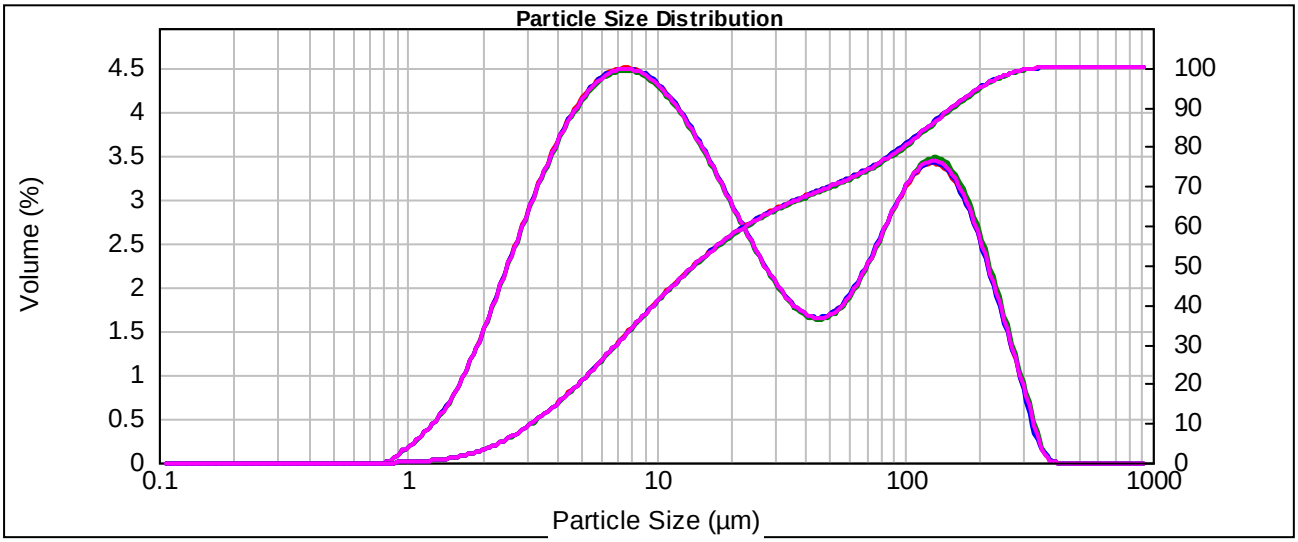
Concentration: 0.0134 %Vol
Specific Surface Area: 0.276 m²/g

Span : 10.703
Surface Weighted Mean D[3,2]: 8.193 um

Uniformity: 3.04
Vol. Weighted Mean D[4,3]: 49.948 um

Result units: Volume

d(0.1): 3.191 um d(0.5): 14.315 um **d(0.8): 98.995 um** d(0.9): 156.405 um d(0.98): 252.64 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.02
0.912	0.09
1.000	0.12
1.096	0.19
1.202	0.26
1.318	0.34
1.445	0.44
1.585	0.57
1.738	0.72
1.905	0.88
2.089	1.06
2.291	1.24

Size (µm)	Volume In %
2.291	1.24
2.512	1.42
2.754	1.61
3.020	1.78
3.311	1.95
3.631	2.11
3.981	2.25
4.365	2.38
4.786	2.48
5.248	2.57
5.754	2.63
6.310	2.67
6.918	2.69
7.586	2.69
8.318	2.67
9.120	2.63
10.000	2.57
10.965	2.49

Size (µm)	Volume In %
10.965	2.49
12.023	2.40
13.183	2.29
14.454	2.18
15.849	2.05
17.378	1.92
19.055	1.79
20.893	1.66
22.909	1.53
25.119	1.40
27.542	1.29
30.200	1.18
33.113	1.10
36.308	1.04
39.811	1.00
43.652	0.99
47.863	1.01
52.481	1.06

Size (µm)	Volume In %
52.481	1.06
57.544	1.14
63.096	1.25
69.183	1.38
75.858	1.53
83.176	1.68
91.201	1.81
100.000	1.93
109.648	2.02
120.226	2.06
131.826	2.06
144.544	2.00
158.489	1.90
173.780	1.75
190.546	1.56
208.930	1.34
229.087	1.11
251.189	0.87

Size (µm)	Volume In %
251.189	0.87
275.423	0.64
301.995	0.39
331.131	0.15
363.078	0.01
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:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-04

Sample Name:
Bulk Regrind Discharge - Average

Measured by:
Neville

Edited by:
Neville

Measured:
Monday, November 14, 2011 9:09:40 AM

Analysed:
Monday, November 14, 2011 9:09:41 AM

Particle Name: Silica 1.0
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 1
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.293 %

Sensitivity: Normal
Obscuration: 14.41 %
Result Emulation: Off

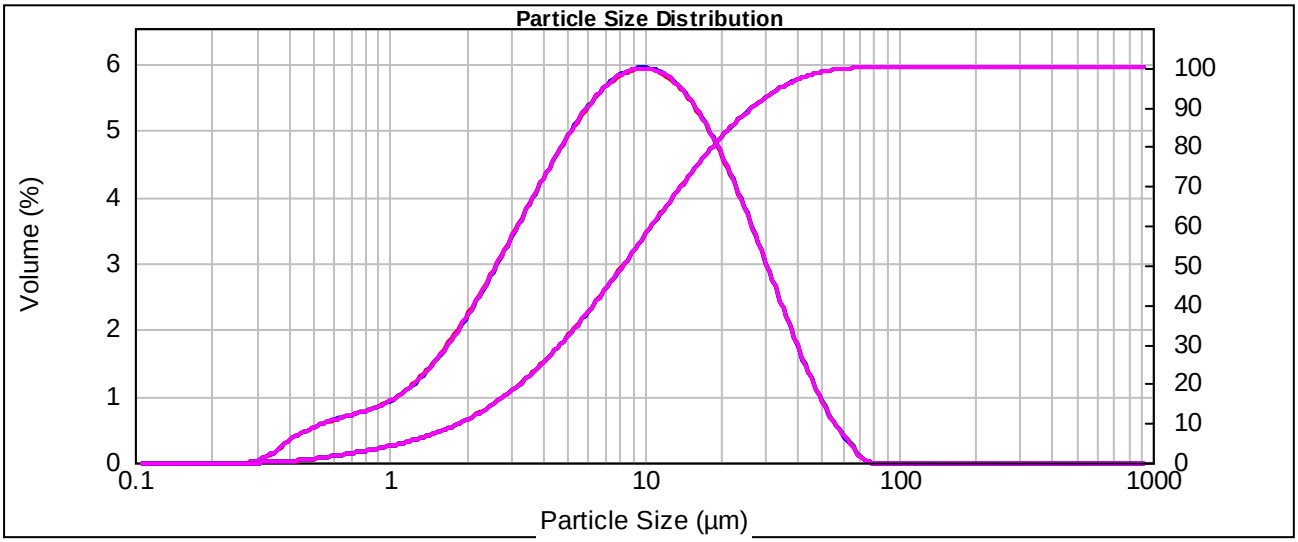
Concentration: 0.0081 %Vol
Specific Surface Area: 1.43 m²/g

Span : 2.993
Surface Weighted Mean D[3,2]: 4.195 um

Uniformity: 0.928
Vol. Weighted Mean D[4,3]: 11.803 um

Result units: Volume

d(0.1): 1.899 um d(0.5): 8.305 um **d(0.8): 18.670 um** d(0.9): 26.754 um d(0.98): 44.26 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	0.04
0.331	0.08
0.363	0.16
0.398	0.23
0.437	0.27
0.479	

Size (µm)	Volume In %
0.479	0.32
0.525	0.36
0.575	0.39
0.631	0.41
0.692	0.44
0.759	0.46
0.832	0.49
0.912	0.53
1.000	0.58
1.096	0.64
1.202	0.72
1.318	0.81
1.445	0.92
1.585	1.04
1.738	1.17
1.905	1.31
2.089	1.46
2.291	

Size (µm)	Volume In %
2.291	1.62
2.512	1.78
2.754	1.95
3.020	2.12
3.311	2.30
3.631	2.47
3.981	2.64
4.365	2.80
4.786	2.96
5.248	3.10
5.754	3.23
6.310	3.34
6.918	3.43
7.586	3.50
8.318	3.55
9.120	3.57
10.000	3.57
10.965	

Size (µm)	Volume In %
10.965	3.54
12.023	3.49
13.183	3.40
14.454	3.30
15.849	3.16
17.378	3.00
19.055	2.82
20.893	2.62
22.909	2.40
25.119	2.17
27.542	1.93
30.200	1.68
33.113	1.44
36.308	1.20
39.811	0.97
43.652	0.76
47.863	0.56
52.481	

Size (µm)	Volume In %
52.481	0.39
57.544	0.26
63.096	0.15
69.183	0.02
75.858	0.00
83.176	0.00
91.201	0.00
100.000	0.00
109.648	0.00
120.226	0.00
131.826	0.00
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	

Size (µm)	Volume In %
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174 - 04

Sample Name:
Pyrite Rougher Concentrate - Average

Measured by:
Neville

Edited by:
Dean

Measured:
Monday, November 14, 2011 10:42:46 AM

Analysed:
Monday, November 14, 2011 10:42:47 AM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.497 %

Sensitivity: Normal
Obscuration: 10.71 %
Result Emulation: Off

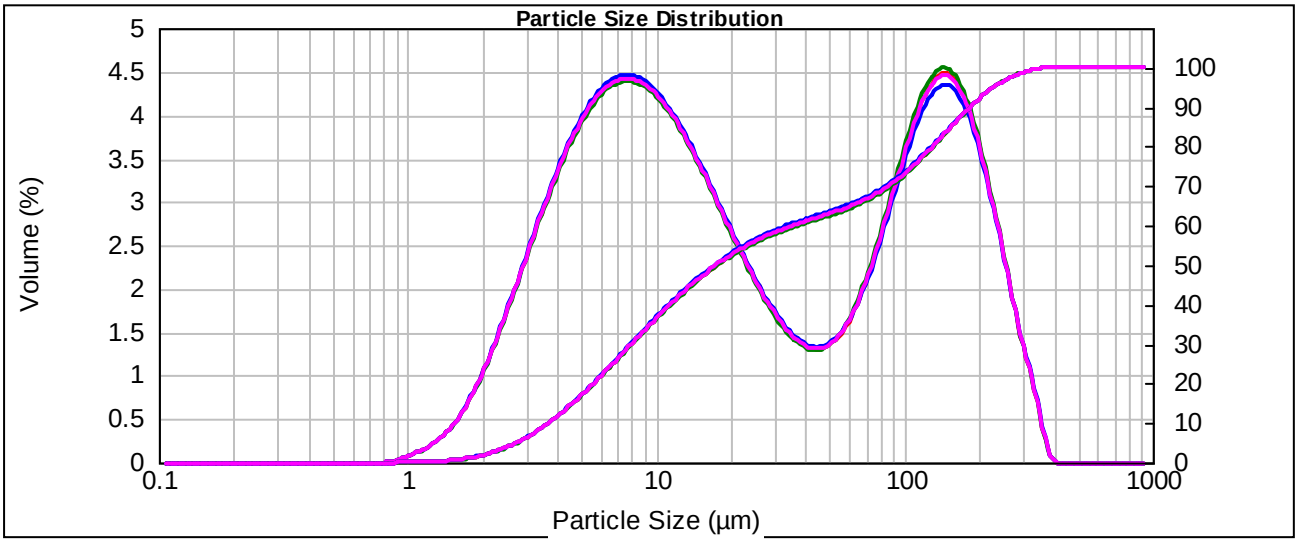
Concentration: 0.0132 %Vol
Specific Surface Area: 0.235 m²/g

Span : 10.336
Surface Weighted Mean D[3,2]: 9.652 um

Uniformity: 3.15
Vol. Weighted Mean D[4,3]: 62.444 um

Result units: Volume

d(0.1): 3.697 um d(0.5): 17.428 um **d(0.8): 129.507 um** d(0.9): 183.836 um d(0.98): 276.73 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.03
1.000	0.06
1.096	0.08
1.202	0.12
1.318	0.18
1.445	0.25
1.585	0.35
1.738	0.47
1.905	0.61
2.089	0.78
2.291	0.95

Size (µm)	Volume In %
2.291	0.95
2.512	1.14
2.754	1.34
3.020	1.54
3.311	1.73
3.631	1.92
3.981	2.09
4.365	2.24
4.786	2.38
5.248	2.49
5.754	2.57
6.310	2.63
6.918	2.66
7.586	2.67
8.318	2.64
9.120	2.59
10.000	2.52
10.965	2.43

Size (µm)	Volume In %
10.965	2.43
12.023	2.32
13.183	2.19
14.454	2.05
15.849	1.91
17.378	1.76
19.055	1.62
20.893	1.47
22.909	1.33
25.119	1.20
27.542	1.08
30.200	0.98
33.113	0.89
36.308	0.83
39.811	0.79
43.652	0.79
47.863	0.82
52.481	0.88

Size (µm)	Volume In %
52.481	0.88
57.544	0.99
63.096	1.14
69.183	1.33
75.858	1.54
83.176	1.78
91.201	2.02
100.000	2.25
109.648	2.45
120.226	2.60
131.826	2.68
144.544	2.69
158.489	2.61
173.780	2.45
190.546	2.21
208.930	1.93
229.087	1.60
251.189	1.27

Size (µm)	Volume In %
251.189	1.27
275.423	0.95
301.995	0.66
331.131	0.39
363.078	0.06
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:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-05

Sample Name:
Bulk Regrind Discharge - Average

Measured by:
Neville

Edited by:
Neville

Measured:
Monday, November 14, 2011 9:02:31 AM

Analysed:
Monday, November 14, 2011 9:02:32 AM

Particle Name: Silica 1.0
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 1
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.160 %

Sensitivity: Normal
Obscuration: 16.30 %
Result Emulation: Off

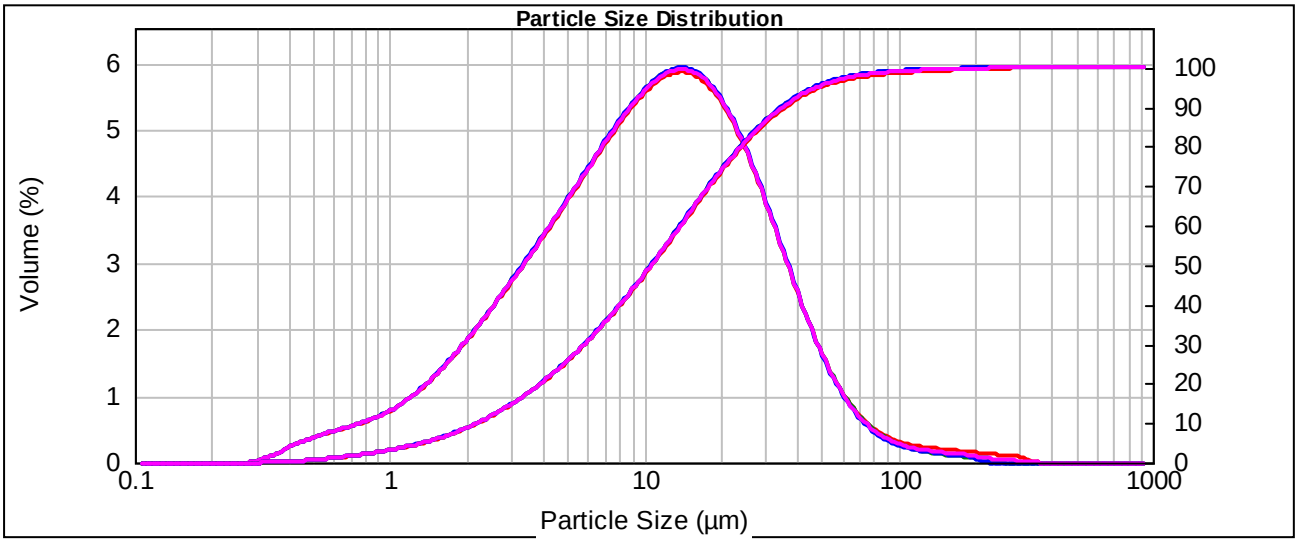
Concentration: 0.0112 %Vol
Specific Surface Area: 1.2 m²/g

Span : 3.068
Surface Weighted Mean D[3,2]: 5.010 um

Uniformity: 1.05
Vol. Weighted Mean D[4,3]: 16.334 um

Result units: Volume

d(0.1): 2.209 um d(0.5): 10.687 um **d(0.8): 24.050 um** d(0.9): 34.993 um d(0.98): 69.58 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	0.03
0.331	0.06
0.363	0.11
0.398	0.16
0.437	0.19
0.479	

Size (µm)	Volume In %
0.479	0.22
0.525	0.26
0.575	0.28
0.631	0.31
0.692	0.34
0.759	0.37
0.832	0.40
0.912	0.44
1.000	0.49
1.096	0.55
1.202	0.62
1.318	0.70
1.445	0.79
1.585	0.88
1.738	0.99
1.905	1.10
2.089	1.21
2.291	

Size (µm)	Volume In %
2.291	1.33
2.512	1.45
2.754	1.58
3.020	1.70
3.311	1.83
3.631	1.97
3.981	2.10
4.365	2.24
4.786	2.38
5.248	2.52
5.754	2.66
6.310	2.80
6.918	2.94
7.586	3.07
8.318	3.19
9.120	3.30
10.000	3.40
10.965	

Size (µm)	Volume In %
10.965	3.48
12.023	3.53
13.183	3.56
14.454	3.55
15.849	3.50
17.378	3.42
19.055	3.29
20.893	3.14
22.909	2.94
25.119	2.73
27.542	2.48
30.200	2.22
33.113	1.96
36.308	1.69
39.811	1.44
43.652	1.20
47.863	0.98
52.481	

Size (µm)	Volume In %
52.481	0.79
57.544	0.63
63.096	0.49
69.183	0.38
75.858	0.30
83.176	0.23
91.201	0.19
100.000	0.16
109.648	0.13
120.226	0.11
131.826	0.10
144.544	0.09
158.489	0.08
173.780	0.07
190.546	0.06
208.930	0.04
229.087	0.03
251.189	

Size (µm)	Volume In %
251.189	0.02
275.423	0.02
301.995	0.01
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174 - 05

Sample Name:
Pyrite Rougher Concentrate - Average

Measured by:
Neville

Edited by:
Dean

Measured:
Monday, November 14, 2011 10:35:52 AM

Analysed:
Monday, November 14, 2011 10:35:53 AM

Particle Name:
Silica 0.01

Particle RI:
1.544

Dispersant Name:
Water

Accessory Name:
Hydro 2000MU (A)

Absorption:
0.01

Dispersant RI:
1.330

Analysis model:
General purpose

Size range:
0.100 to 1000.000 um

Weighted Residual:
0.445 %

Sensitivity:
Normal

Obscuration:
12.53 %

Result Emulation:
Off

Concentration:
0.0143 %Vol

Specific Surface Area:
0.252 m²/g

Span :
8.913

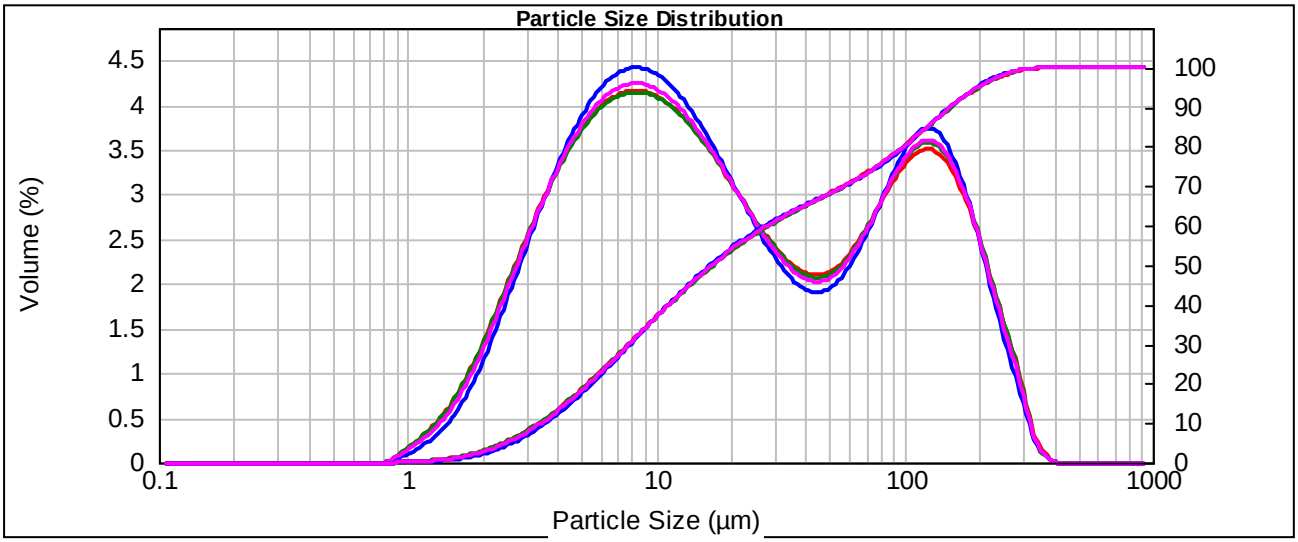
Surface Weighted Mean D[3,2]:
8.980 um

Uniformity:
2.6

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

Result units:
Volume

d(0.1): 3.452 um d(0.5): 16.818 um **d(0.8): 99.520 um** d(0.9): 153.349 um d(0.98): 246.19 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.01
0.912	0.07
1.000	0.10
1.096	0.16
1.202	0.21
1.318	0.28
1.445	0.37
1.585	0.48
1.738	0.61
1.905	0.75
2.089	0.91
2.291	

Size (µm)	Volume In %
2.291	1.07
2.512	1.24
2.754	1.41
3.020	1.58
3.311	1.74
3.631	1.89
3.981	2.03
4.365	2.16
4.786	2.27
5.248	2.36
5.754	2.44
6.310	2.49
6.918	2.53
7.586	2.55
8.318	2.55
9.120	2.53
10.000	2.50
10.965	

Size (µm)	Volume In %
10.965	2.45
12.023	2.38
13.183	2.30
14.454	2.21
15.849	2.11
17.378	2.01
19.055	1.90
20.893	1.79
22.909	1.67
25.119	1.57
27.542	1.47
30.200	1.38
33.113	1.31
36.308	1.25
39.811	1.22
43.652	1.22
47.863	1.24
52.481	

Size (µm)	Volume In %
52.481	1.29
57.544	1.37
63.096	1.48
69.183	1.60
75.858	1.74
83.176	1.87
91.201	1.99
100.000	2.09
109.648	2.16
120.226	2.17
131.826	2.14
144.544	2.05
158.489	1.92
173.780	1.73
190.546	1.52
208.930	1.28
229.087	1.03
251.189	

Size (µm)	Volume In %
251.189	0.79
275.423	0.59
301.995	0.29
331.131	0.10
363.078	0.03
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-06

Measured by:
Dean

Measured:
Monday, November 14, 2011 8:49:50 AM

Sample Name:
Bulk Regrind Discharge

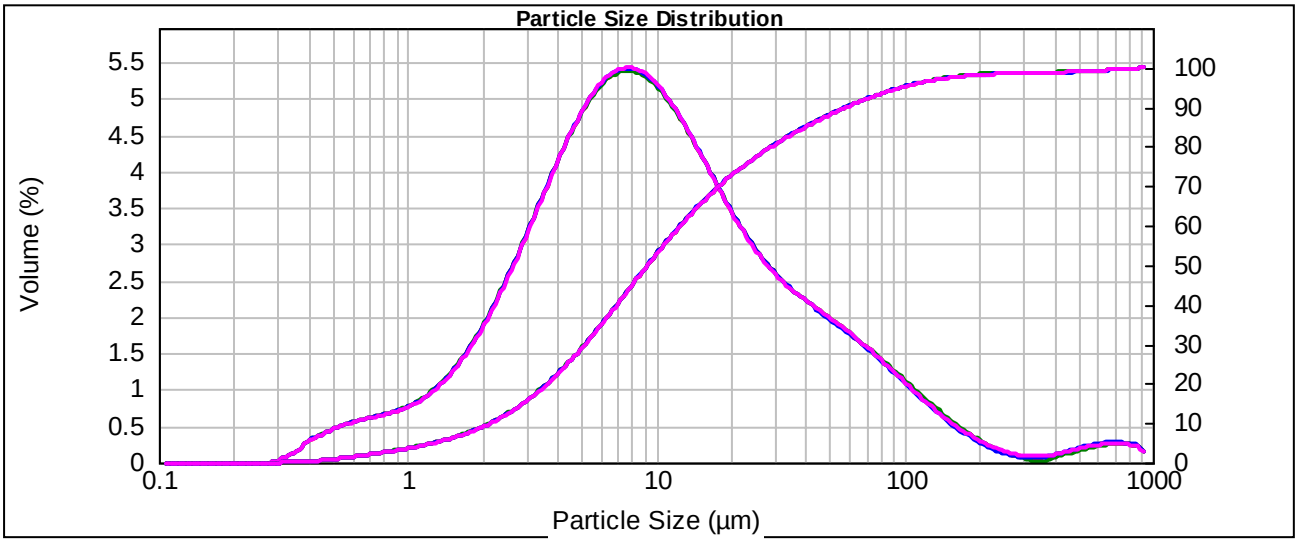
Edited by:

Analysed:
Monday, November 14, 2011 8:49:51 AM

Particle Name: Silica 1.0
Accessory Name: Hydro 2000MU (A)
Analysis model: General purpose
Sensitivity: Normal
Particle RI: 1.544
Absorption: 1
Size range: 0.100 to 1000.000 um
Obscuration: 16.68 %
Dispersant Name: Water
Dispersant RI: 1.330
Weighted Residual: 0.210 %
Result Emulation: Off

Concentration: 0.0108 %Vol
Span : 6.085
Uniformity: 2.61
Result units: Volume
Specific Surface Area: 1.27 m²/g
Surface Weighted Mean D[3,2]: 4.738 um
Vol. Weighted Mean D[4,3]: 28.733 um

d(0.1): 2.173 um d(0.5): 9.276 um **d(0.8): 29.217 um** d(0.9): 58.618 um d(0.98): 184.96 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	0.04
0.331	0.07
0.363	0.14
0.398	0.20
0.437	0.24
0.479	

Size (µm)	Volume In %
0.479	0.28
0.525	0.31
0.575	0.33
0.631	0.35
0.692	0.37
0.759	0.39
0.832	0.41
0.912	0.44
1.000	0.48
1.096	0.52
1.202	0.58
1.318	0.66
1.445	0.74
1.585	0.85
1.738	0.97
1.905	1.11
2.089	1.26
2.291	

Size (µm)	Volume In %
2.291	1.42
2.512	1.60
2.754	1.78
3.020	1.98
3.311	2.17
3.631	2.37
3.981	2.56
4.365	2.74
4.786	2.90
5.248	3.03
5.754	3.14
6.310	3.22
6.918	3.26
7.586	3.27
8.318	3.24
9.120	3.18
10.000	3.09
10.965	

Size (µm)	Volume In %
10.965	2.98
12.023	2.85
13.183	2.70
14.454	2.55
15.849	2.39
17.378	2.24
19.055	2.09
20.893	1.95
22.909	1.82
25.119	1.71
27.542	1.60
30.200	1.52
33.113	1.44
36.308	1.37
39.811	1.31
43.652	1.25
47.863	1.19
52.481	

Size (µm)	Volume In %
52.481	1.13
57.544	1.07
63.096	1.00
69.183	0.94
75.858	0.86
83.176	0.78
91.201	0.71
100.000	0.63
109.648	0.55
120.226	0.48
131.826	0.41
144.544	0.34
158.489	0.29
173.780	0.23
190.546	0.18
208.930	0.14
229.087	0.11
251.189	

Size (µm)	Volume In %
251.189	0.08
275.423	0.06
301.995	0.05
331.131	0.05
363.078	0.06
398.107	0.07
436.516	0.09
478.630	0.11
524.807	0.13
575.440	0.15
630.957	0.16
691.831	0.16
758.578	0.15
831.764	0.14
912.011	0.04
1000.000	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-06

Sample Name:
Pyrite Rougher Concentrate - Average

Measured by:
Neville

Edited by:
Neville

Measured:
Monday, November 14, 2011 9:35:03 AM

Analysed:
Monday, November 14, 2011 9:35:04 AM

Particle Name: Silica 1.0
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 1
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.432 %

Sensitivity: Normal
Obscuration: 7.19 %
Result Emulation: Off

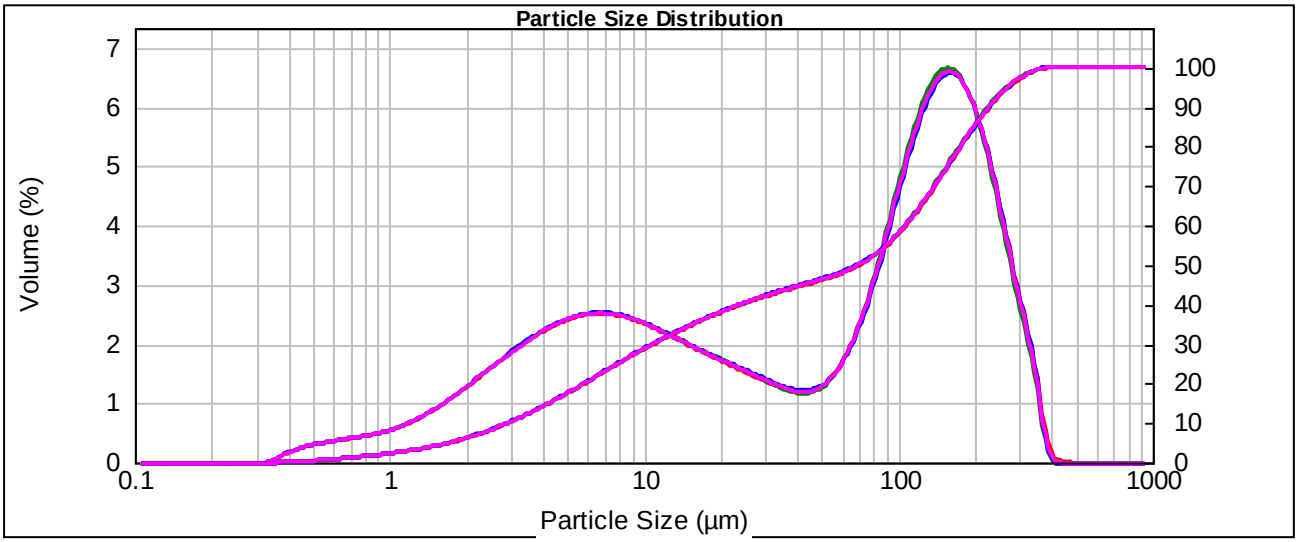
Concentration: 0.0072 %Vol
Specific Surface Area: 0.773 m²/g

Span : 3.216
Surface Weighted Mean D[3,2]: 7.760 um

Uniformity: 1.11
Vol. Weighted Mean D[4,3]: 91.653 um

Result units: Volume

d(0.1): 2.910 um d(0.5): 69.347 um **d(0.8): 174.797 um** d(0.9): 225.960 um d(0.98): 311.59 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	0.09
0.398	0.12
0.437	0.15
0.479	

Size (µm)	Volume In %
0.479	0.18
0.525	0.20
0.575	0.22
0.631	0.24
0.692	0.25
0.759	0.27
0.832	0.29
0.912	0.31
1.000	0.34
1.096	0.38
1.202	0.43
1.318	0.48
1.445	0.55
1.585	0.62
1.738	0.69
1.905	0.77
2.089	0.85
2.291	

Size (µm)	Volume In %
2.291	0.93
2.512	1.01
2.754	1.09
3.020	1.16
3.311	1.23
3.631	1.30
3.981	1.36
4.365	1.42
4.786	1.46
5.248	1.49
5.754	1.51
6.310	1.52
6.918	1.52
7.586	1.50
8.318	1.47
9.120	1.44
10.000	1.40
10.965	

Size (µm)	Volume In %
10.965	1.35
12.023	1.30
13.183	1.25
14.454	1.20
15.849	1.14
17.378	1.10
19.055	1.05
20.893	1.00
22.909	0.95
25.119	0.91
27.542	0.86
30.200	0.81
33.113	0.77
36.308	0.73
39.811	0.72
43.652	0.73
47.863	0.77
52.481	

Size (µm)	Volume In %
52.481	0.87
57.544	1.01
63.096	1.23
69.183	1.49
75.858	1.82
83.176	2.19
91.201	2.57
100.000	2.96
109.648	3.33
120.226	3.63
131.826	3.85
144.544	3.97
158.489	3.97
173.780	3.85
190.546	3.60
208.930	3.26
229.087	2.83
251.189	

Size (µm)	Volume In %
251.189	2.35
275.423	1.84
301.995	1.39
331.131	0.92
363.078	0.20
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-07

Sample Name:
Bulk Regrind Discharge - Average

Measured by:
Dean

Edited by:
Dean

Measured:
Monday, November 14, 2011 8:16:33 AM

Analysed:
Monday, November 14, 2011 8:16:34 AM

Particle Name:
Silica 1.0

Particle RI:
1.544

Dispersant Name:
Water

Accessory Name:
Hydro 2000MU (A)

Absorption:
1

Dispersant RI:
1.330

Analysis model:
General purpose

Size range:
0.100 to 1000.000 um

Weighted Residual:
0.235 %

Sensitivity:
Normal

Obscuration:
17.10 %

Result Emulation:
Off

Concentration:
0.0097 %Vol

Span :
3.077

Uniformity:
0.977

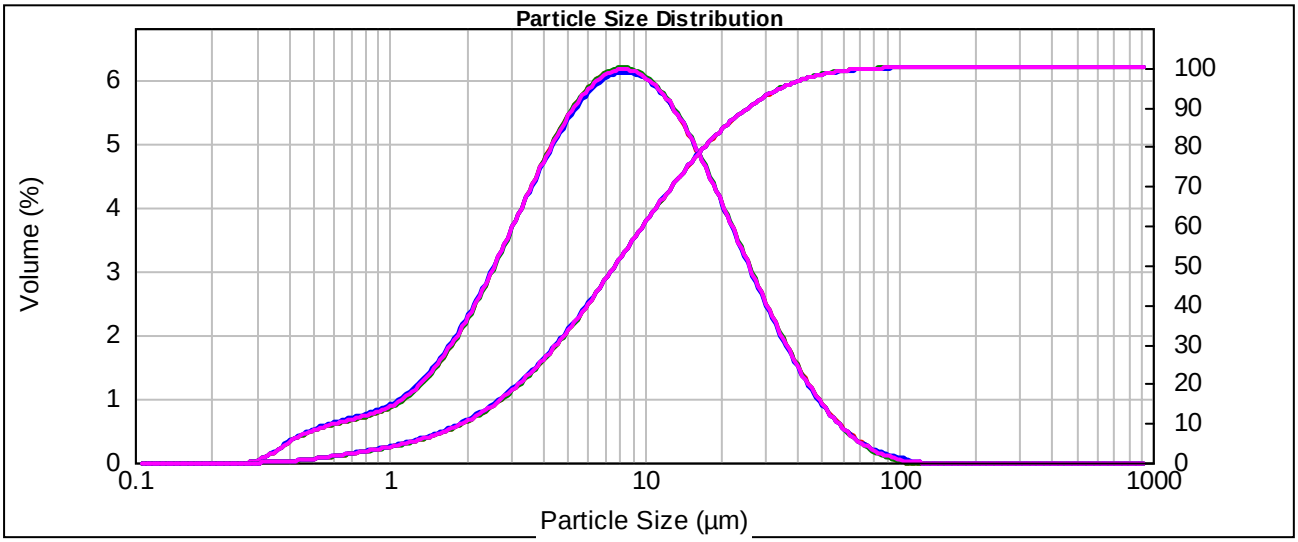
Result units:
Volume

Specific Surface Area:
1.44 m²/g

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

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

d(0.1): 1.947 um d(0.5): 7.746 um **d(0.8): 17.385 um** d(0.9): 25.778 um d(0.98): 47.71 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	0.04
0.331	0.08
0.363	0.16
0.398	0.22
0.437	0.26
0.479	

Size (µm)	Volume In %
0.479	0.30
0.525	0.34
0.575	0.37
0.631	0.39
0.692	0.41
0.759	0.44
0.832	0.46
0.912	0.50
1.000	0.55
1.096	0.61
1.202	0.69
1.318	0.78
1.445	0.90
1.585	1.03
1.738	1.17
1.905	1.33
2.089	1.51
2.291	

Size (µm)	Volume In %
2.291	1.69
2.512	1.89
2.754	2.09
3.020	2.30
3.311	2.51
3.631	2.71
3.981	2.90
4.365	3.09
4.786	3.25
5.248	3.40
5.754	3.52
6.310	3.61
6.918	3.67
7.586	3.70
8.318	3.70
9.120	3.67
10.000	3.61
10.965	

Size (µm)	Volume In %
10.965	3.52
12.023	3.40
13.183	3.25
14.454	3.08
15.849	2.90
17.378	2.69
19.055	2.48
20.893	2.26
22.909	2.04
25.119	1.82
27.542	1.60
30.200	1.39
33.113	1.20
36.308	1.01
39.811	0.84
43.652	0.69
47.863	0.55
52.481	

Size (µm)	Volume In %
52.481	0.43
57.544	0.33
63.096	0.24
69.183	0.18
75.858	0.12
83.176	0.07
91.201	0.05
100.000	0.01
109.648	0.00
120.226	0.00
131.826	0.00
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	

Size (µm)	Volume In %
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	

Operator notes:

TABLE III-41

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-07

Sample Name:
Pyrite Rougher Concentrate - Average

Measured by:
Neville

Edited by:
Neville

Measured:
Monday, November 14, 2011 9:26:59 AM

Analysed:
Monday, November 14, 2011 9:27:00 AM

Particle Name:
Silica 1.0

Particle RI:
1.544

Dispersant Name:
Water

Accessory Name:
Hydro 2000MU (A)

Absorption:
1

Dispersant RI:
1.330

Analysis model:
General purpose

Size range:
0.100 to 1000.000 um

Weighted Residual:
0.311 %

Sensitivity:
Normal

Obscuration:
12.99 %

Result Emulation:
Off

Concentration:
0.0096 %Vol

Span :
11.973

Uniformity:
3.57

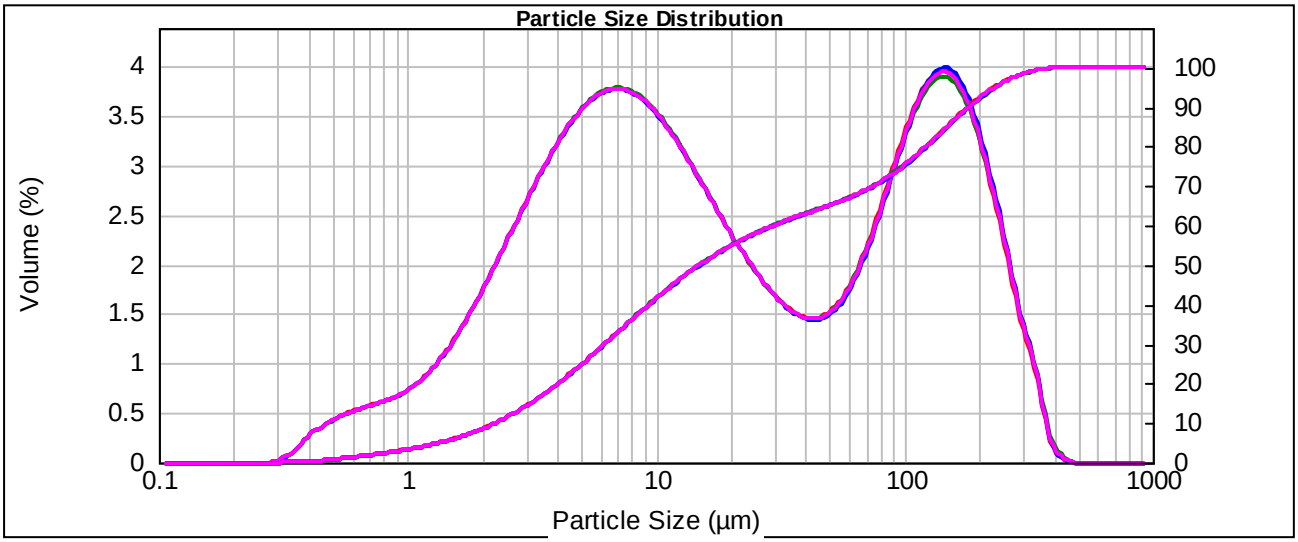
Result units:
Volume

Specific Surface Area:
1.08 m²/g

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

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

d(0.1): 2.257 um d(0.5): 14.963 um **d(0.8): 122.175 um** d(0.9): 181.417 um d(0.98): 284.96 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	0.03
0.331	0.06
0.363	0.13
0.398	0.19
0.437	0.22
0.479	

Size (µm)	Volume In %
0.479	0.26
0.525	0.29
0.575	0.31
0.631	0.33
0.692	0.35
0.759	0.37
0.832	0.39
0.912	0.42
1.000	0.46
1.096	0.51
1.202	0.57
1.318	0.64
1.445	0.73
1.585	0.82
1.738	0.93
1.905	1.04
2.089	1.16
2.291	

Size (µm)	Volume In %
2.291	1.28
2.512	1.40
2.754	1.53
3.020	1.65
3.311	1.77
3.631	1.88
3.981	1.98
4.365	2.07
4.786	2.15
5.248	2.20
5.754	2.25
6.310	2.27
6.918	2.27
7.586	2.25
8.318	2.21
9.120	2.16
10.000	2.09
10.965	

Size (µm)	Volume In %
10.965	2.01
12.023	1.91
13.183	1.81
14.454	1.71
15.849	1.60
17.378	1.50
19.055	1.40
20.893	1.30
22.909	1.20
25.119	1.12
27.542	1.04
30.200	0.98
33.113	0.93
36.308	0.89
39.811	0.87
43.652	0.88
47.863	0.91
52.481	

Size (µm)	Volume In %
52.481	0.97
57.544	1.06
63.096	1.19
69.183	1.34
75.858	1.51
83.176	1.70
91.201	1.89
100.000	2.06
109.648	2.21
120.226	2.32
131.826	2.37
144.544	2.37
158.489	2.30
173.780	2.18
190.546	1.99
208.930	1.76
229.087	1.50
251.189	

Size (µm)	Volume In %
251.189	1.22
275.423	0.94
301.995	0.71
331.131	0.50
363.078	0.17
398.107	0.06
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174 - 08

Sample Name:
Bulk Regrind Discharge V - Average

Measured by:
Neville

Edited by:
Neville

Measured:
Monday, November 14, 2011 12:25:58 PM

Analysed:
Monday, November 14, 2011 12:25:59 PM

Particle Name:
Silica 0.01

Particle RI:
1.544

Dispersant Name:
Water

Accessory Name:
Hydro 2000MU (A)

Absorption:
0.01

Dispersant RI:
1.330

Analysis model:
General purpose

Size range:
0.100 to 1000.000 um

Weighted Residual:
0.372 %

Sensitivity:
Normal

Obscuration:
17.72 %

Result Emulation:
Off

Concentration:
0.0120 %Vol

Span :
3.396

Uniformity:
1.22

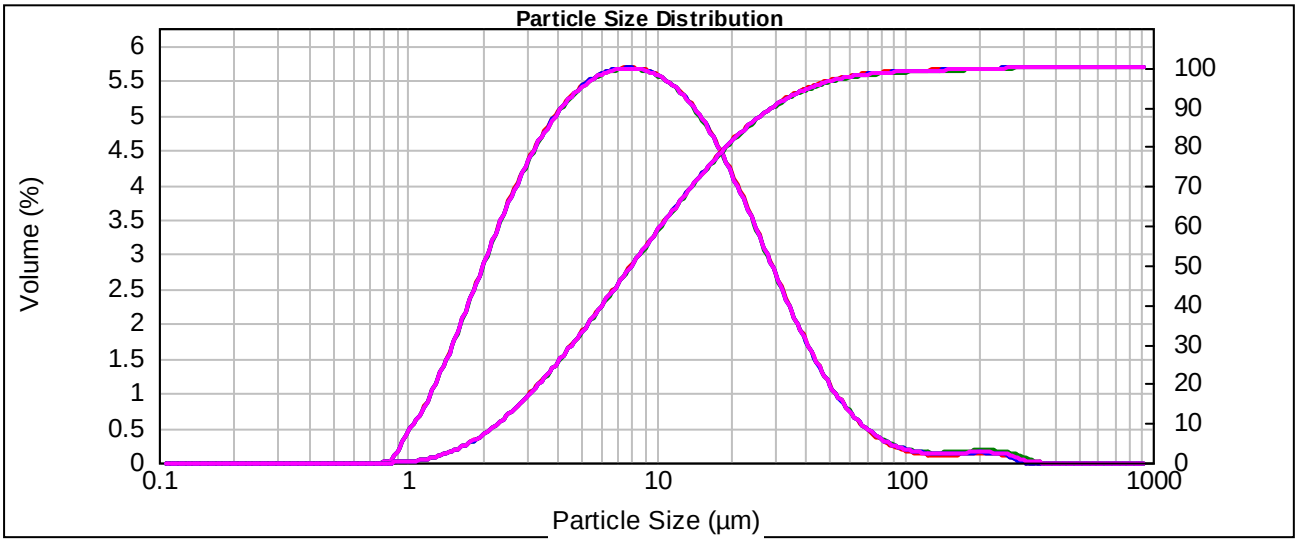
Result units:
Volume

Specific Surface Area:
0.422 m²/g

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

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

d(0.1): 2.325 um d(0.5): 8.000 um **d(0.8): 19.245 um** d(0.9): 29.494 um d(0.98): 64.34 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.02
0.912	0.19
1.000	0.32
1.096	0.44
1.202	0.62
1.318	0.81
1.445	1.01
1.585	1.23
1.738	1.46
1.905	1.68
2.089	1.90
2.291	

Size (µm)	Volume In %
2.291	2.11
2.512	2.31
2.754	2.50
3.020	2.67
3.311	2.82
3.631	2.96
3.981	3.07
4.365	3.17
4.786	3.25
5.248	3.31
5.754	3.36
6.310	3.39
6.918	3.41
7.586	3.42
8.318	3.41
9.120	3.38
10.000	3.34
10.965	

Size (µm)	Volume In %
10.965	3.28
12.023	3.21
13.183	3.11
14.454	2.99
15.849	2.86
17.378	2.70
19.055	2.53
20.893	2.34
22.909	2.15
25.119	1.95
27.542	1.74
30.200	1.54
33.113	1.34
36.308	1.15
39.811	0.98
43.652	0.82
47.863	0.67
52.481	

Size (µm)	Volume In %
52.481	0.55
57.544	0.44
63.096	0.35
69.183	0.27
75.858	0.21
83.176	0.16
91.201	0.13
100.000	0.10
109.648	0.09
120.226	0.08
131.826	0.08
144.544	0.08
158.489	0.08
173.780	0.09
190.546	0.09
208.930	0.09
229.087	0.08
251.189	

Size (µm)	Volume In %
251.189	0.07
275.423	0.03
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	

Operator notes: *Average of 3 measurements from 3174*

TABLE III-43

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-08

Sample Name:
Pyrite Rougher Concentrate - Average

Measured by:
Neville

Edited by:
Neville

Measured:
Monday, November 14, 2011 3:17:02 PM

Analysed:
Monday, November 14, 2011 3:17:03 PM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.678 %

Sensitivity: Normal
Obscuration: 17.96 %
Result Emulation: Off

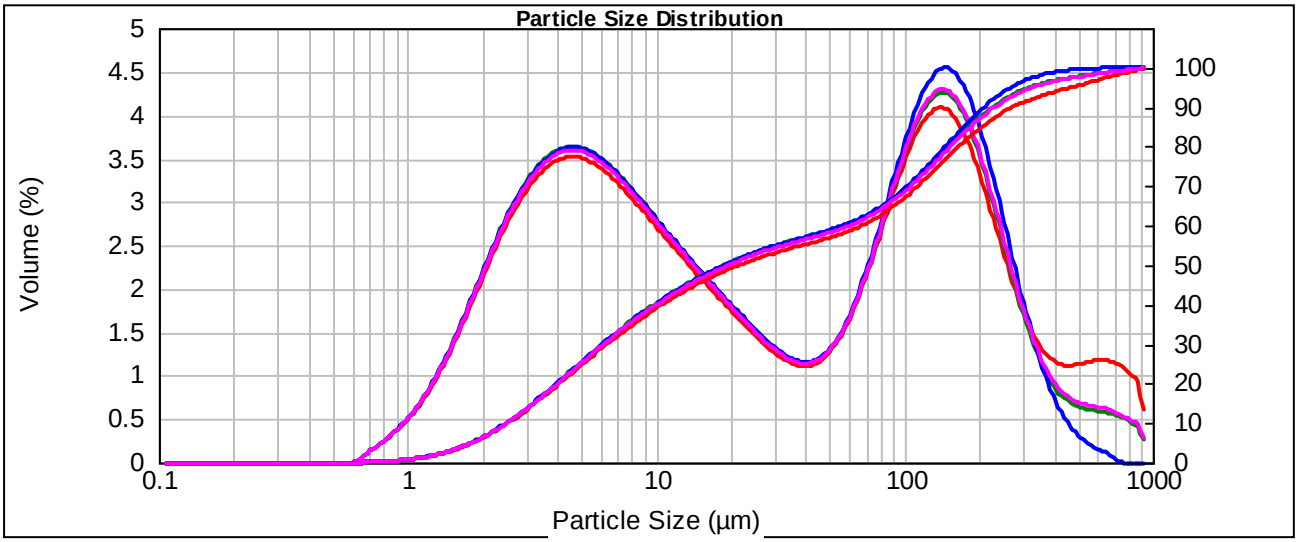
Concentration: 0.0164 %Vol
Specific Surface Area: 0.318 m²/g

Span : 11.591
Surface Weighted Mean D[3,2]: 7.128 um

Uniformity: 4.09
Vol. Weighted Mean D[4,3]: 86.768 um

Result units: Volume

d(0.1): 2.510 um d(0.5): 19.666 um **d(0.8): 153.382 um** d(0.9): 230.454 um d(0.98): 542.14 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.04
0.692	0.10
0.759	0.14
0.832	0.20
0.912	0.26
1.000	0.34
1.096	0.43
1.202	0.54
1.318	0.67
1.445	0.81
1.585	0.97
1.738	1.13
1.905	1.30
2.089	1.46
2.291	

Size (µm)	Volume In %
2.291	1.62
2.512	1.75
2.754	1.88
3.020	1.98
3.311	2.06
3.631	2.12
3.981	2.15
4.365	2.17
4.786	2.16
5.248	2.13
5.754	2.08
6.310	2.03
6.918	1.96
7.586	1.88
8.318	1.80
9.120	1.72
10.000	1.63
10.965	

Size (µm)	Volume In %
10.965	1.55
12.023	1.47
13.183	1.39
14.454	1.31
15.849	1.24
17.378	1.16
19.055	1.09
20.893	1.01
22.909	0.94
25.119	0.87
27.542	0.81
30.200	0.75
33.113	0.71
36.308	0.69
39.811	0.69
43.652	0.71
47.863	0.78
52.481	

Size (µm)	Volume In %
52.481	0.87
57.544	1.01
63.096	1.18
69.183	1.37
75.858	1.59
83.176	1.82
91.201	2.04
100.000	2.24
109.648	2.41
120.226	2.53
131.826	2.59
144.544	2.58
158.489	2.50
173.780	2.36
190.546	2.17
208.930	1.94
229.087	1.68
251.189	

Size (µm)	Volume In %
251.189	1.42
275.423	1.17
301.995	0.94
331.131	0.76
363.078	0.62
398.107	0.52
436.516	0.45
478.630	0.42
524.807	0.40
575.440	0.39
630.957	0.37
691.831	0.34
758.578	0.30
831.764	0.27
912.011	0.08
1000.000	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-09

Sample Name:
Bulk Regrind Discharge V - Average

Measured by:
Hoang

Edited by:
Hoang

Measured:
Tuesday, November 15, 2011 1:01:04 PM

Analysed:
Tuesday, November 15, 2011 1:01:05 PM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.171 %

Sensitivity: Normal
Obscuration: 15.91 %
Result Emulation: Off

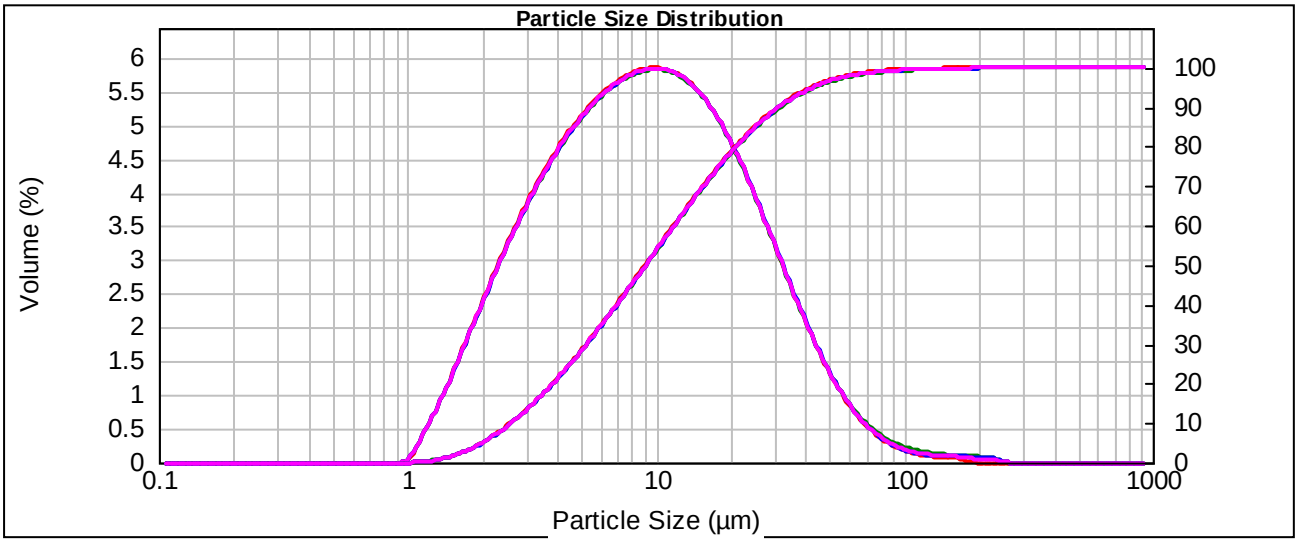
Concentration: 0.0121 %Vol
Specific Surface Area: 0.374 m²/g

Span : 3.148
Surface Weighted Mean D[3,2]: 6.049 um

Uniformity: 1.05
Vol. Weighted Mean D[4,3]: 14.312 um

Result units: Volume

d(0.1): 2.610 um d(0.5): 9.090 um **d(0.8): 21.011 um** d(0.9): 31.230 um d(0.98): 60.7 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.00
1.096	0.06
1.202	0.25
1.318	0.41
1.445	0.58
1.585	0.79
1.738	1.00
1.905	1.21
2.089	1.42
2.291	1.63

Size (µm)	Volume In %
2.291	1.83
2.512	2.03
2.754	2.21
3.020	2.39
3.311	2.55
3.631	2.70
3.981	2.84
4.365	2.97
4.786	3.08
5.248	3.18
5.754	3.27
6.310	3.35
6.918	3.41
7.586	3.46
8.318	3.49
9.120	3.51
10.000	3.51
10.965	3.51

Size (µm)	Volume In %
10.965	3.49
12.023	3.45
13.183	3.38
14.454	3.29
15.849	3.17
17.378	3.03
19.055	2.87
20.893	2.68
22.909	2.48
25.119	2.27
27.542	2.04
30.200	1.82
33.113	1.59
36.308	1.37
39.811	1.17
43.652	0.98
47.863	0.80
52.481	0.80

Size (µm)	Volume In %
52.481	0.65
57.544	0.51
63.096	0.40
69.183	0.31
75.858	0.23
83.176	0.18
91.201	0.13
100.000	0.10
109.648	0.08
120.226	0.07
131.826	0.06
144.544	0.06
158.489	0.05
173.780	0.04
190.546	0.03
208.930	0.03
229.087	0.01
251.189	0.01

Size (µm)	Volume In %
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:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-09

Measured by:
mike

Measured:
Tuesday, November 15, 2011 3:41:33 PM

Sample Name:
Pyrite Rougher Concentrate V - Average

Edited by:
mike

Analysed:
Tuesday, November 15, 2011 3:41:34 PM

Particle Name:
Silica 0.01

Accessory Name:
Hydro 2000MU (A)

Analysis model:
General purpose

Sensitivity:
Normal

Particle RI:
1.544

Absorption:
0.01

Size range:
0.100 to 1000.000 um

Obscuration:
13.07 %

Dispersant Name:
Water

Dispersant RI:
1.330

Weighted Residual:
0.419 %

Result Emulation:
Off

Concentration:
0.0088 %Vol

Span :
11.558

Uniformity:
3.07

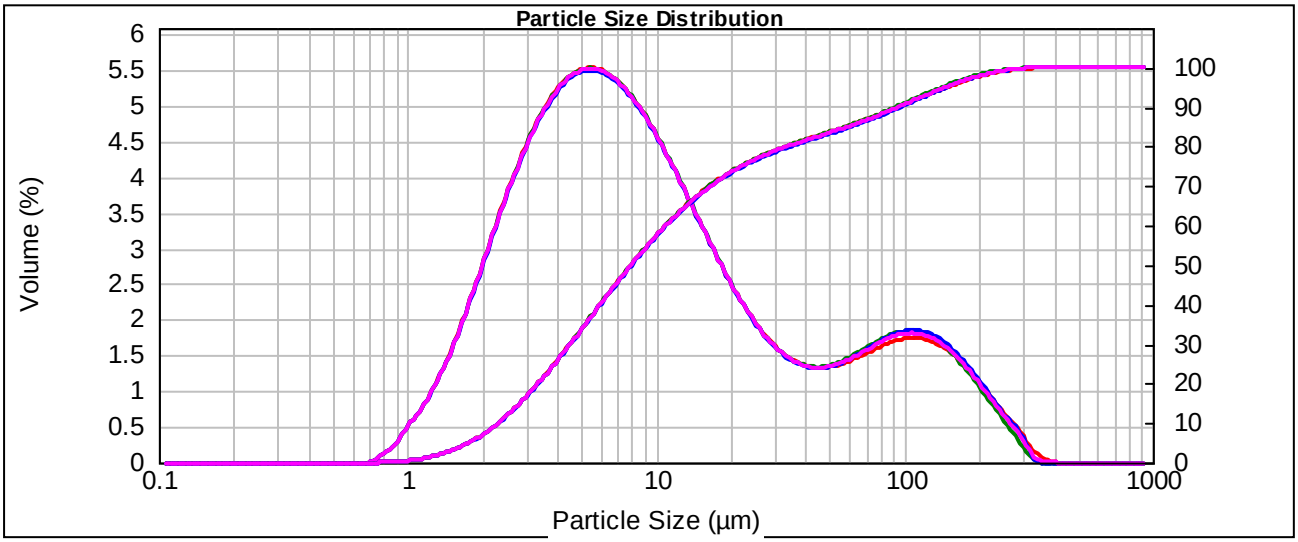
Result units:
Volume

Specific Surface Area:
0.414 m²/g

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

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

d(0.1): 2.317 um d(0.5): 7.938 um **d(0.8): 33.528 um** d(0.9): 94.067 um d(0.98): 201.12 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.07
0.832	0.12
0.912	0.25
1.000	0.35
1.096	0.46
1.202	0.61
1.318	0.77
1.445	0.96
1.585	1.18
1.738	1.41
1.905	1.65
2.089	1.90
2.291	

Size (µm)	Volume In %
2.291	2.14
2.512	2.37
2.754	2.58
3.020	2.77
3.311	2.94
3.631	3.08
3.981	3.19
4.365	3.26
4.786	3.31
5.248	3.32
5.754	3.30
6.310	3.26
6.918	3.19
7.586	3.09
8.318	2.97
9.120	2.84
10.000	2.69
10.965	

Size (µm)	Volume In %
10.965	2.53
12.023	2.36
13.183	2.19
14.454	2.02
15.849	1.84
17.378	1.68
19.055	1.52
20.893	1.37
22.909	1.24
25.119	1.12
27.542	1.02
30.200	0.94
33.113	0.87
36.308	0.83
39.811	0.81
43.652	0.80
47.863	0.81
52.481	

Size (µm)	Volume In %
52.481	0.83
57.544	0.87
63.096	0.92
69.183	0.96
75.858	1.01
83.176	1.05
91.201	1.08
100.000	1.09
109.648	1.09
120.226	1.06
131.826	1.02
144.544	0.95
158.489	0.87
173.780	0.78
190.546	0.67
208.930	0.56
229.087	0.45
251.189	

Size (µm)	Volume In %
251.189	0.34
275.423	0.25
301.995	0.11
331.131	0.02
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-10

Sample Name:
Bulk Regrind Discharge V - Average

Measured by:
Unknown

Edited by:
Unknown

Measured:
Thursday, November 17, 2011 12:53:56 PM

Analysed:
Thursday, November 17, 2011 12:53:57 PM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.222 %

Sensitivity: Normal
Obscuration: 19.17 %
Result Emulation: Off

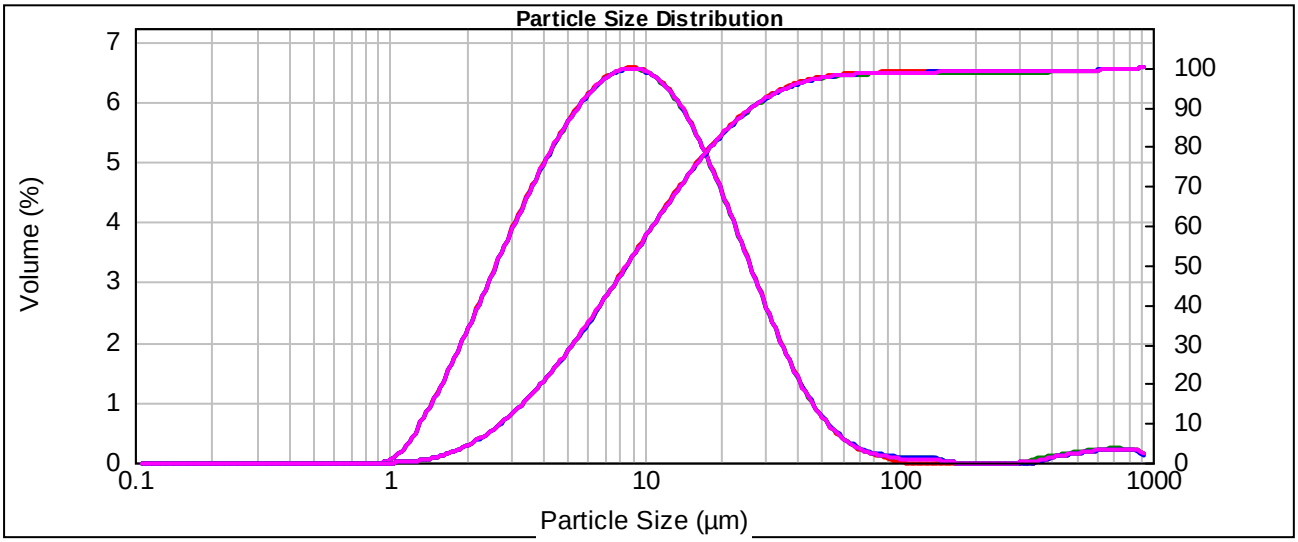
Concentration: 0.0152 %Vol
Specific Surface Area: 0.373 m²/g

Span : 2.799
Surface Weighted Mean D[3,2]: 6.072 um

Uniformity: 1.65
Vol. Weighted Mean D[4,3]: 18.924 um

Result units: Volume

d(0.1): 2.748 um d(0.5): 8.583 um **d(0.8): 18.369 um** d(0.9): 26.771 um d(0.98): 56.97 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.05
1.096	0.13
1.202	0.29
1.318	0.48
1.445	0.65
1.585	0.85
1.738	1.07
1.905	1.29
2.089	1.52
2.291	1.74

Size (µm)	Volume In %
2.291	1.74
2.512	1.98
2.754	2.21
3.020	2.43
3.311	2.65
3.631	2.86
3.981	3.05
4.365	3.23
4.786	3.40
5.248	3.55
5.754	3.68
6.310	3.78
6.918	3.86
7.586	3.92
8.318	3.94
9.120	3.93
10.000	3.89
10.965	3.82

Size (µm)	Volume In %
10.965	3.82
12.023	3.72
13.183	3.58
14.454	3.41
15.849	3.21
17.378	2.99
19.055	2.75
20.893	2.49
22.909	2.22
25.119	1.95
27.542	1.69
30.200	1.43
33.113	1.19
36.308	0.97
39.811	0.77
43.652	0.60
47.863	0.46
52.481	0.34

Size (µm)	Volume In %
52.481	0.34
57.544	0.25
63.096	0.17
69.183	0.12
75.858	0.09
83.176	0.07
91.201	0.05
100.000	0.03
109.648	0.03
120.226	0.03
131.826	0.03
144.544	0.01
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	0.00

Size (µm)	Volume In %
251.189	0.00
275.423	0.00
301.995	0.00
331.131	0.01
363.078	0.04
398.107	0.06
436.516	0.08
478.630	0.10
524.807	0.11
575.440	0.12
630.957	0.13
691.831	0.14
758.578	0.13
831.764	0.12
912.011	0.04
1000.000	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-10

Measured by:
mike

Measured:
Wednesday, November 16, 2011 11:11:57 AM

Sample Name:
Pyrite Rougher Concentrate V - Average

Edited by:
mike

Analysed:
Wednesday, November 16, 2011 11:11:59 AM

Particle Name:
Silica 0.01

Accessory Name:
Hydro 2000MU (A)

Analysis model:
General purpose

Sensitivity:
Normal

Particle RI:
1.544

Absorption:
0.01

Size range:
0.100 to 1000.000 um

Obscuration:
16.12 %

Dispersant Name:
Water

Dispersant RI:
1.330

Weighted Residual:
0.547 %

Result Emulation:
Off

Concentration:
0.0145 %Vol

Span :
13.289

Uniformity:
4.08

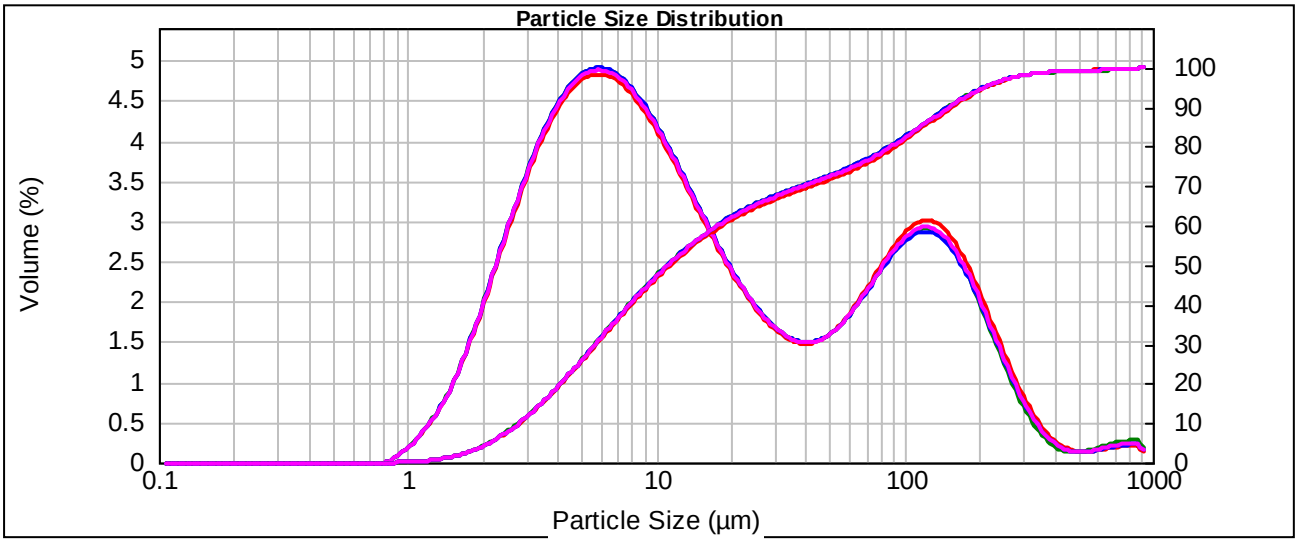
Result units:
Volume

Specific Surface Area:
0.32 m²/g

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

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

d(0.1): 2.820 um d(0.5): 11.198 um **d(0.8): 88.454 um** d(0.9): 151.628 um d(0.98): 295.02 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.02
0.912	0.08
1.000	0.13
1.096	0.23
1.202	0.32
1.318	0.43
1.445	0.58
1.585	0.75
1.738	0.95
1.905	1.16
2.089	1.39
2.291	1.61

Size (µm)	Volume In %
2.291	1.61
2.512	1.84
2.754	2.06
3.020	2.25
3.311	2.44
3.631	2.59
3.981	2.72
4.365	2.82
4.786	2.89
5.248	2.93
5.754	2.94
6.310	2.92
6.918	2.87
7.586	2.79
8.318	2.70
9.120	2.58
10.000	2.45
10.965	2.32

Size (µm)	Volume In %
10.965	2.32
12.023	2.17
13.183	2.02
14.454	1.87
15.849	1.73
17.378	1.58
19.055	1.45
20.893	1.33
22.909	1.22
25.119	1.12
27.542	1.04
30.200	0.97
33.113	0.93
36.308	0.90
39.811	0.90
43.652	0.92
47.863	0.96
52.481	1.02

Size (µm)	Volume In %
52.481	1.02
57.544	1.11
63.096	1.21
69.183	1.32
75.858	1.43
83.176	1.55
91.201	1.64
100.000	1.71
109.648	1.76
120.226	1.76
131.826	1.73
144.544	1.66
158.489	1.55
173.780	1.40
190.546	1.24
208.930	1.06
229.087	0.87
251.189	0.69

Size (µm)	Volume In %
251.189	0.69
275.423	0.53
301.995	0.38
331.131	0.27
363.078	0.18
398.107	0.12
436.516	0.09
478.630	0.08
524.807	0.08
575.440	0.10
630.957	0.12
691.831	0.13
758.578	0.14
831.764	0.14
912.011	0.04
1000.000	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-11

Sample Name:
Bulk Regrind Discharge V - Average

Measured by:
Neville

Edited by:
Neville

Measured:
Thursday, November 17, 2011 12:20:25 PM

Analysed:
Thursday, November 17, 2011 12:20:26 PM

Particle Name:
Silica 0.01

Particle RI:
1.544

Dispersant Name:
Water

Accessory Name:
Hydro 2000MU (A)

Absorption:
0.01

Dispersant RI:
1.330

Analysis model:
General purpose

Size range:
0.100 to 1000.000 um

Weighted Residual:
0.360 %

Sensitivity:
Normal

Obscuration:
15.87 %

Result Emulation:
Off

Concentration:
0.0133 %Vol

Span :
2.625

Uniformity:
0.828

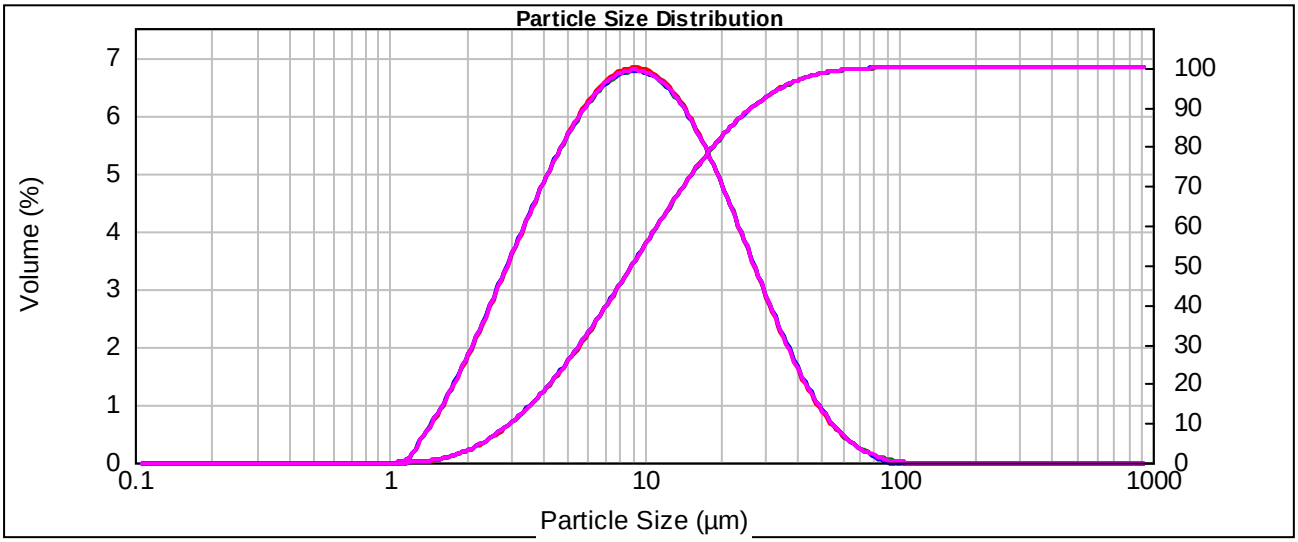
Result units:
Volume

Specific Surface Area:
0.348 m²/g

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

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

d(0.1): 3.004 um d(0.5): 8.993 um **d(0.8): 18.725 um** d(0.9): 26.615 um d(0.98): 45.77 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.00
1.096	0.00
1.202	0.13
1.318	0.31
1.445	0.46
1.585	0.65
1.738	0.86
1.905	1.07
2.089	1.30
2.291	1.54

Size (µm)	Volume In %
2.291	1.54
2.512	1.78
2.754	2.03
3.020	2.28
3.311	2.52
3.631	2.77
3.981	2.99
4.365	3.21
4.786	3.41
5.248	3.59
5.754	3.75
6.310	3.88
6.918	3.98
7.586	4.05
8.318	4.08
9.120	4.09
10.000	4.06
10.965	3.99

Size (µm)	Volume In %
10.965	3.99
12.023	3.89
13.183	3.76
14.454	3.59
15.849	3.40
17.378	3.18
19.055	2.94
20.893	2.68
22.909	2.41
25.119	2.14
27.542	1.87
30.200	1.61
33.113	1.35
36.308	1.12
39.811	0.90
43.652	0.71
47.863	0.54
52.481	0.40

Size (µm)	Volume In %
52.481	0.40
57.544	0.29
63.096	0.20
69.183	0.12
75.858	0.08
83.176	0.04
91.201	0.01
100.000	0.00
109.648	0.00
120.226	0.00
131.826	0.00
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	0.00

Size (µm)	Volume In %
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:

TABLE III-49

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-11

Sample Name:
Pyrite Rougher Concentrate V - Average

Measured by:
Neville

Edited by:
Neville

Measured:
Thursday, November 17, 2011 1:24:06 PM

Analysed:
Thursday, November 17, 2011 1:24:07 PM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.400 %

Sensitivity: Normal
Obscuration: 18.22 %
Result Emulation: Off

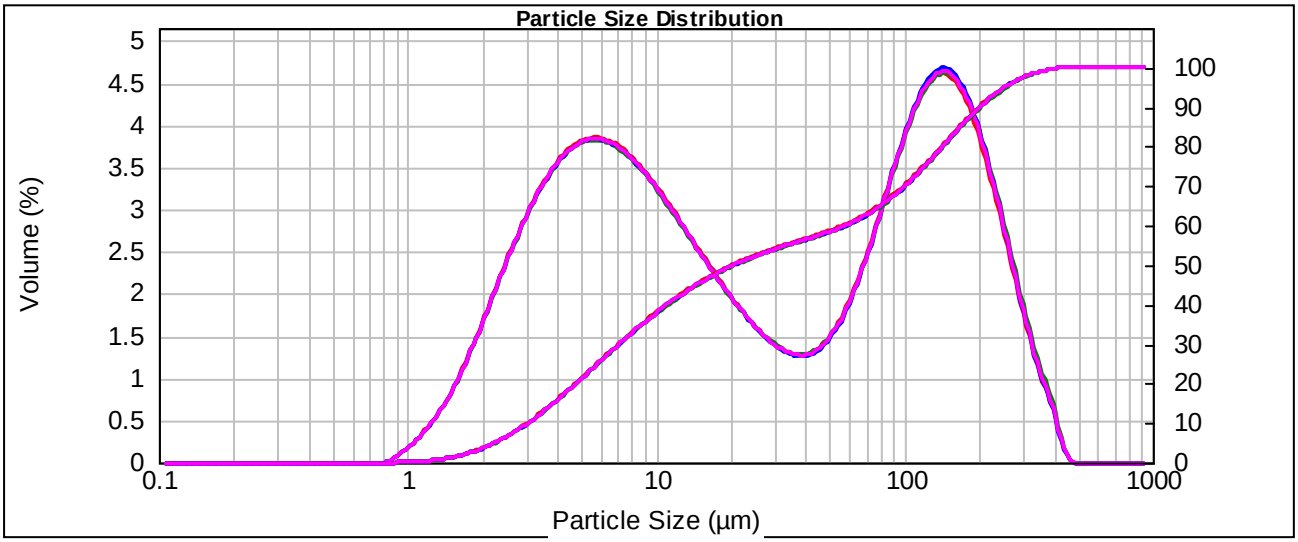
Concentration: 0.0199 %Vol
Specific Surface Area: 0.265 m²/g

Span : 9.661
Surface Weighted Mean D[3,2]: 8.528 um

Uniformity: 3.11
Vol. Weighted Mean D[4,3]: 70.901 um

Result units: Volume

d(0.1): 3.049 um d(0.5): 20.526 um **d(0.8): 142.250 um** d(0.9): 201.365 um d(0.98): 312.28 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.02
0.912	0.08
1.000	0.12
1.096	0.21
1.202	0.29
1.318	0.39
1.445	0.51
1.585	0.66
1.738	0.82
1.905	0.99
2.089	1.17
2.291	

Size (µm)	Volume In %
2.291	1.35
2.512	1.52
2.754	1.69
3.020	1.84
3.311	1.97
3.631	2.08
3.981	2.18
4.365	2.24
4.786	2.29
5.248	2.31
5.754	2.31
6.310	2.28
6.918	2.24
7.586	2.18
8.318	2.10
9.120	2.01
10.000	1.92
10.965	

Size (µm)	Volume In %
10.965	1.81
12.023	1.71
13.183	1.60
14.454	1.49
15.849	1.39
17.378	1.28
19.055	1.19
20.893	1.09
22.909	1.01
25.119	0.93
27.542	0.87
30.200	0.81
33.113	0.78
36.308	0.76
39.811	0.78
43.652	0.82
47.863	0.89
52.481	

Size (µm)	Volume In %
52.481	1.00
57.544	1.15
63.096	1.33
69.183	1.53
75.858	1.76
83.176	1.99
91.201	2.22
100.000	2.43
109.648	2.60
120.226	2.72
131.826	2.79
144.544	2.78
158.489	2.71
173.780	2.57
190.546	2.37
208.930	2.12
229.087	1.83
251.189	

Size (µm)	Volume In %
251.189	1.53
275.423	1.23
301.995	0.93
331.131	0.67
363.078	0.50
398.107	0.26
436.516	0.01
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-12

Sample Name:
24 hour Cyanide Tail - Average

Measured by:
Neville

Edited by:
Neville

Measured:
Friday, November 25, 2011 9:58:30 AM

Analysed:
Friday, November 25, 2011 9:58:31 AM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.802 %

Sensitivity: Normal
Obscuration: 12.33 %
Result Emulation: Off

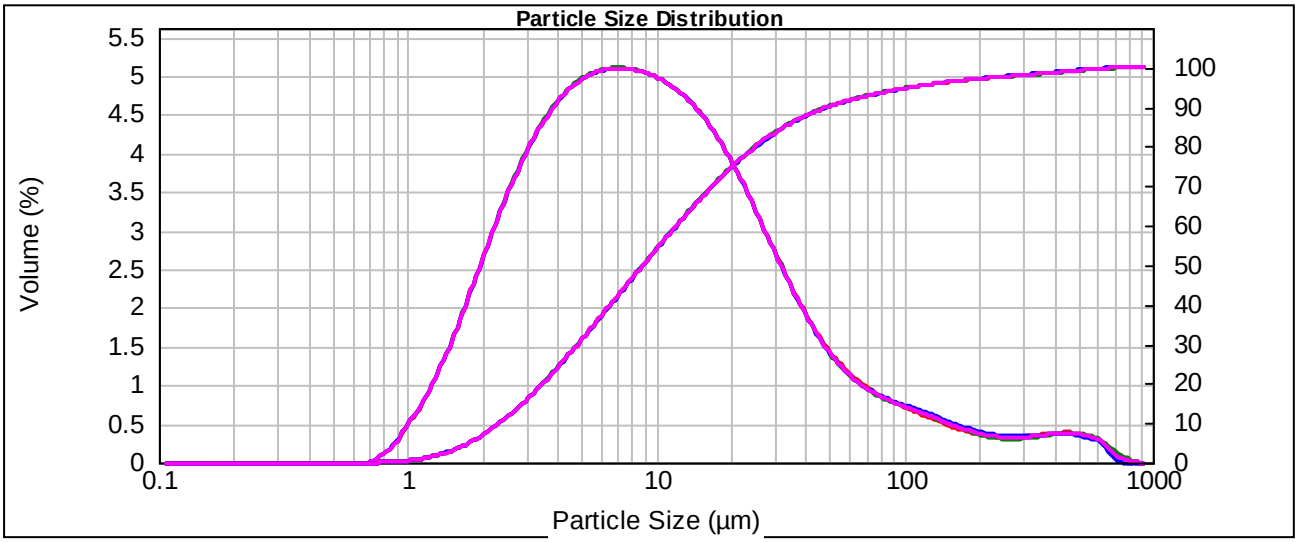
Concentration: 0.0085 %Vol
Specific Surface Area: 0.402 m²/g

Span : 5.221
Surface Weighted Mean D[3,2]: 5.639 um

Uniformity: 2.63
Vol. Weighted Mean D[4,3]: 27.774 um

Result units: Volume

d(0.1): 2.355 um d(0.5): 8.876 um **d(0.8): 25.135 um** d(0.9): 48.696 um d(0.98): 283.71 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.07
0.832	0.12
0.912	0.23
1.000	0.34
1.096	0.46
1.202	0.61
1.318	0.77
1.445	0.95
1.585	1.15
1.738	1.36
1.905	1.57
2.089	1.78
2.291	1.98

Size (µm)	Volume In %
2.291	1.98
2.512	2.17
2.754	2.34
3.020	2.50
3.311	2.63
3.631	2.75
3.981	2.85
4.365	2.93
4.786	2.98
5.248	3.03
5.754	3.05
6.310	3.07
6.918	3.07
7.586	3.06
8.318	3.05
9.120	3.02
10.000	2.98
10.965	2.94

Size (µm)	Volume In %
10.965	2.94
12.023	2.88
13.183	2.81
14.454	2.72
15.849	2.62
17.378	2.50
19.055	2.36
20.893	2.21
22.909	2.05
25.119	1.89
27.542	1.72
30.200	1.55
33.113	1.39
36.308	1.23
39.811	1.09
43.652	0.97
47.863	0.86
52.481	0.76

Size (µm)	Volume In %
52.481	0.76
57.544	0.68
63.096	0.62
69.183	0.56
75.858	0.52
83.176	0.48
91.201	0.45
100.000	0.42
109.648	0.39
120.226	0.36
131.826	0.33
144.544	0.30
158.489	0.27
173.780	0.25
190.546	0.23
208.930	0.21
229.087	0.20
251.189	0.20

Size (µm)	Volume In %
251.189	0.20
275.423	0.20
301.995	0.20
331.131	0.21
363.078	0.22
398.107	0.23
436.516	0.23
478.630	0.22
524.807	0.20
575.440	0.18
630.957	0.12
691.831	0.04
758.578	0.02
831.764	0.00
912.011	0.00
1000.000	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-13

Sample Name:
24 hour Cyanide Tail - Average

Measured by:
Neville

Edited by:
Neville

Measured:
Friday, November 25, 2011 10:05:36 AM

Analysed:
Friday, November 25, 2011 10:05:37 AM

Particle Name:
Silica 0.01

Particle RI:
1.544

Dispersant Name:
Water

Accessory Name:
Hydro 2000MU (A)

Absorption:
0.01

Dispersant RI:
1.330

Analysis model:
General purpose

Size range:
0.100 to 1000.000 um

Weighted Residual:
0.600 %

Sensitivity:
Normal

Obscuration:
16.58 %

Result Emulation:
Off

Concentration:
0.0125 %Vol

Span :
4.050

Uniformity:
2.13

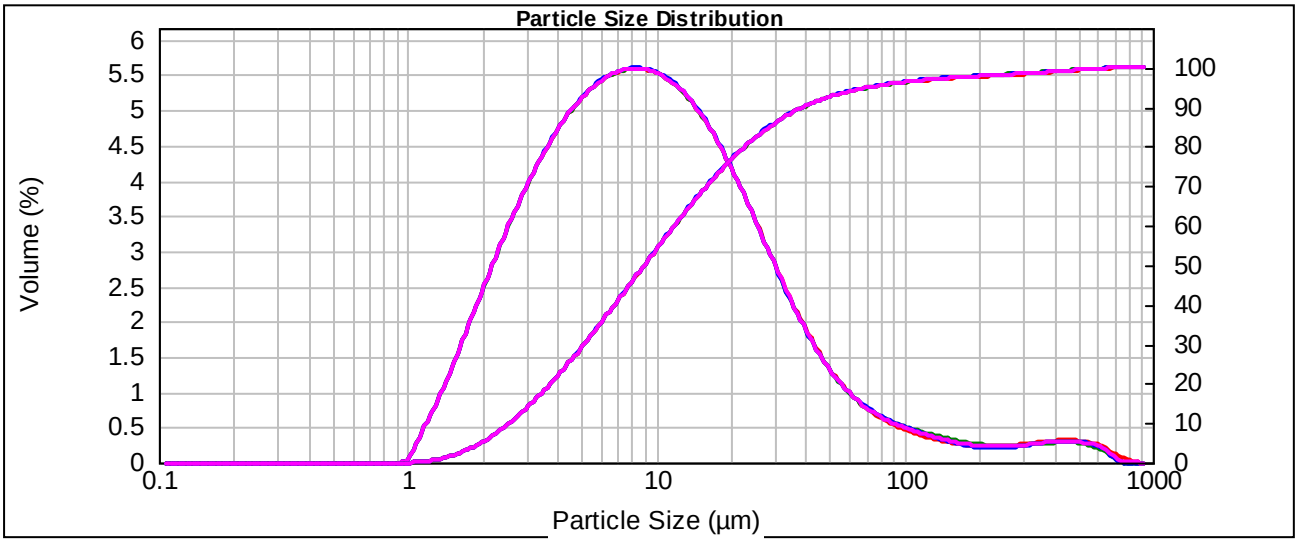
Result units:
Volume

Specific Surface Area:
0.376 m²/g

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

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

d(0.1): 2.570 um d(0.5): 8.987 um **d(0.8): 22.772 um** d(0.9): 38.963 um d(0.98): 213.16 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.07
1.096	0.28
1.202	0.43
1.318	0.61
1.445	0.82
1.585	1.03
1.738	1.24
1.905	1.46
2.089	1.68
2.291	1.88

Size (µm)	Volume In %
2.291	1.88
2.512	2.08
2.754	2.27
3.020	2.45
3.311	2.61
3.631	2.76
3.981	2.89
4.365	3.01
4.786	3.11
5.248	3.20
5.754	3.26
6.310	3.31
6.918	3.35
7.586	3.36
8.318	3.36
9.120	3.35
10.000	3.31
10.965	3.26

Size (µm)	Volume In %
10.965	3.26
12.023	3.19
13.183	3.09
14.454	2.98
15.849	2.85
17.378	2.70
19.055	2.53
20.893	2.35
22.909	2.17
25.119	1.97
27.542	1.78
30.200	1.58
33.113	1.40
36.308	1.22
39.811	1.06
43.652	0.92
47.863	0.79
52.481	0.68

Size (µm)	Volume In %
52.481	0.68
57.544	0.59
63.096	0.51
69.183	0.45
75.858	0.40
83.176	0.35
91.201	0.32
100.000	0.28
109.648	0.26
120.226	0.23
131.826	0.21
144.544	0.18
158.489	0.17
173.780	0.15
190.546	0.14
208.930	0.14
229.087	0.14
251.189	0.14

Size (µm)	Volume In %
251.189	0.14
275.423	0.15
301.995	0.16
331.131	0.16
363.078	0.17
398.107	0.18
436.516	0.18
478.630	0.18
524.807	0.16
575.440	0.15
630.957	0.09
691.831	0.02
758.578	0.01
831.764	0.00
912.011	0.00
1000.000	0.00

Operator notes:

TABLE III-52

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-14

Sample Name:
24 hour Cyanide Tail - Average

Measured by:
Neville

Edited by:
Neville

Measured:
Friday, November 25, 2011 10:16:49 AM

Analysed:
Friday, November 25, 2011 10:16:50 AM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.427 %

Sensitivity: Normal
Obscuration: 16.38 %
Result Emulation: Off

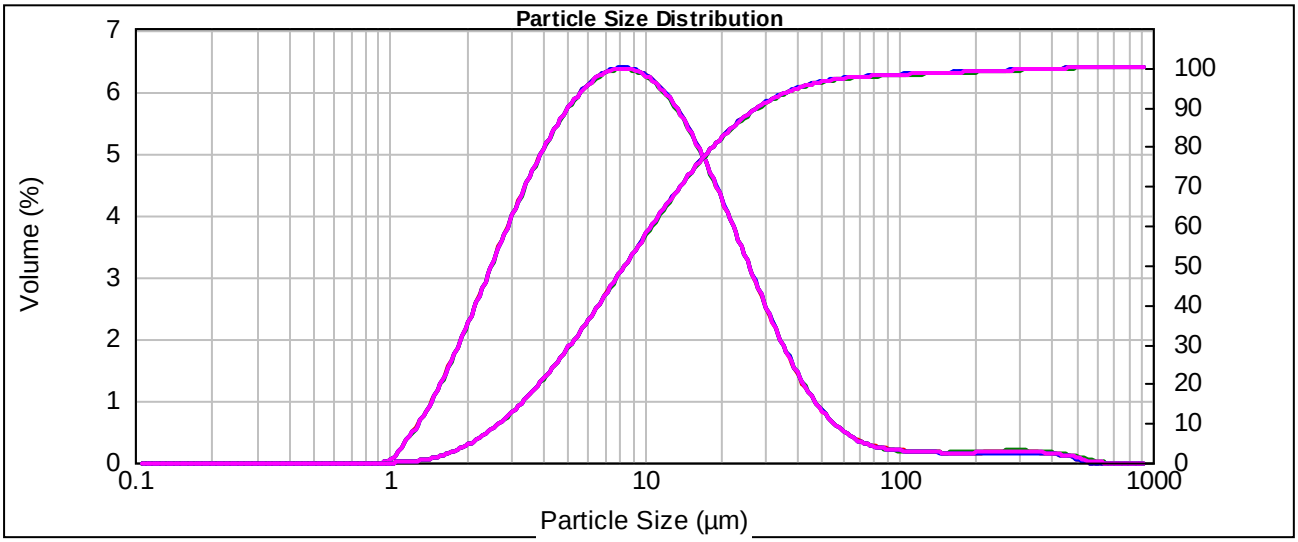
Concentration: 0.0125 %Vol
Specific Surface Area: 0.377 m²/g

Span : 3.019
Surface Weighted Mean D[3,2]: 6.007 um

Uniformity: 1.37
Vol. Weighted Mean D[4,3]: 16.196 um

Result units: Volume

d(0.1): 2.715 um d(0.5): 8.445 um **d(0.8): 18.702 um** d(0.9): 28.213 um d(0.98): 83.47 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.05
1.096	0.19
1.202	0.32
1.318	0.48
1.445	0.66
1.585	0.86
1.738	1.08
1.905	1.31
2.089	1.55
2.291	1.79

Size (µm)	Volume In %
2.291	1.79
2.512	2.03
2.754	2.28
3.020	2.51
3.311	2.73
3.631	2.94
3.981	3.13
4.365	3.30
4.786	3.45
5.248	3.58
5.754	3.69
6.310	3.77
6.918	3.82
7.586	3.85
8.318	3.85
9.120	3.82
10.000	3.76
10.965	3.67

Size (µm)	Volume In %
10.965	3.67
12.023	3.56
13.183	3.41
14.454	3.24
15.849	3.05
17.378	2.84
19.055	2.61
20.893	2.37
22.909	2.13
25.119	1.88
27.542	1.64
30.200	1.40
33.113	1.18
36.308	0.98
39.811	0.80
43.652	0.64
47.863	0.51
52.481	0.40

Size (µm)	Volume In %
52.481	0.40
57.544	0.31
63.096	0.24
69.183	0.19
75.858	0.16
83.176	0.14
91.201	0.12
100.000	0.11
109.648	0.11
120.226	0.10
131.826	0.10
144.544	0.10
158.489	0.09
173.780	0.10
190.546	0.10
208.930	0.10
229.087	0.10
251.189	0.11

Size (µm)	Volume In %
251.189	0.11
275.423	0.11
301.995	0.11
331.131	0.10
363.078	0.10
398.107	0.08
436.516	0.07
478.630	0.05
524.807	0.01
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:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-15

Sample Name:
24 hour Cyanide Tail - Average

Measured by:
Neville

Edited by:
Neville

Measured:
Friday, November 25, 2011 10:28:49 AM

Analysed:
Friday, November 25, 2011 10:28:50 AM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.274 %

Sensitivity: Normal
Obscuration: 13.68 %
Result Emulation: Off

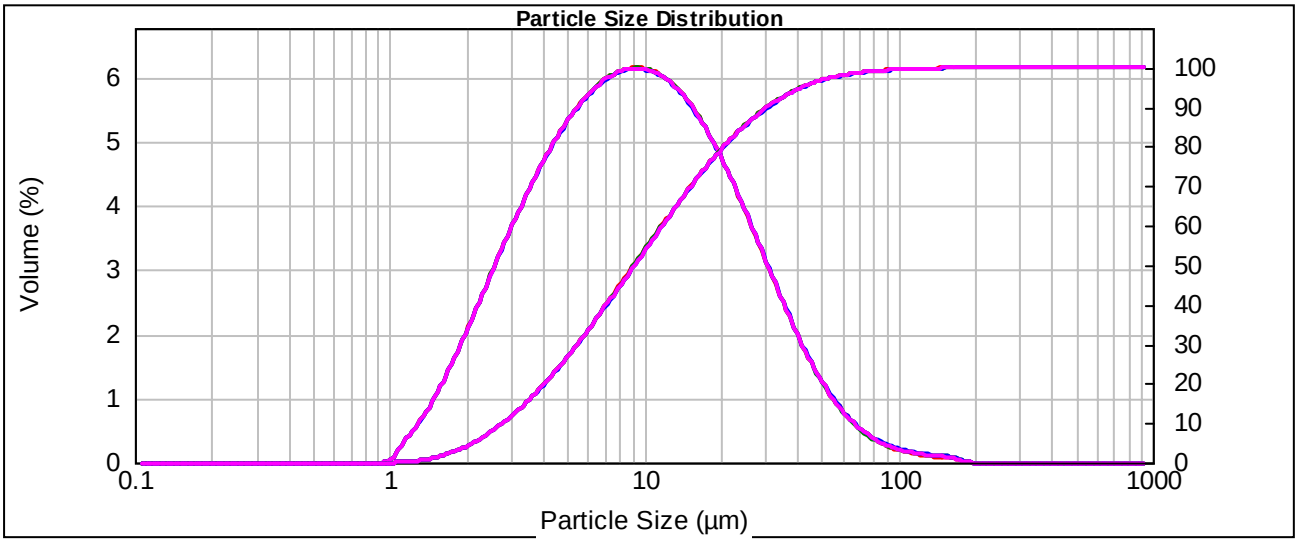
Concentration: 0.0108 %Vol
Specific Surface Area: 0.36 m²/g

Span : 3.019
Surface Weighted Mean D[3,2]: 6.295 um

Uniformity: 0.994
Vol. Weighted Mean D[4,3]: 14.058 um

Result units: Volume

d(0.1): 2.798 um d(0.5): 9.170 um **d(0.8): 20.606 um** d(0.9): 30.481 um d(0.98): 58.98 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.05
1.096	0.20
1.202	0.32
1.318	0.45
1.445	0.62
1.585	0.81
1.738	1.00
1.905	1.22
2.089	1.44
2.291	

Size (µm)	Volume In %
2.291	1.66
2.512	1.88
2.754	2.10
3.020	2.32
3.311	2.52
3.631	2.72
3.981	2.89
4.365	3.06
4.786	3.21
5.248	3.34
5.754	3.45
6.310	3.54
6.918	3.61
7.586	3.67
8.318	3.69
9.120	3.70
10.000	3.68
10.965	

Size (µm)	Volume In %
10.965	3.64
12.023	3.58
13.183	3.49
14.454	3.37
15.849	3.23
17.378	3.07
19.055	2.88
20.893	2.68
22.909	2.46
25.119	2.24
27.542	2.01
30.200	1.77
33.113	1.54
36.308	1.32
39.811	1.12
43.652	0.93
47.863	0.76
52.481	

Size (µm)	Volume In %
52.481	0.61
57.544	0.48
63.096	0.38
69.183	0.29
75.858	0.23
83.176	0.18
91.201	0.14
100.000	0.11
109.648	0.09
120.226	0.08
131.826	0.06
144.544	0.06
158.489	0.04
173.780	0.01
190.546	0.00
208.930	0.00
229.087	0.00
251.189	

Size (µm)	Volume In %
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-16

Sample Name:
24 hour Cyanide Tail - Average

Measured by:
mel

Edited by:
mel

Measured:
Monday, November 28, 2011 9:17:22 AM

Analysed:
Monday, November 28, 2011 9:17:23 AM

Particle Name:
Silica 0.01

Particle RI:
1.544

Dispersant Name:
Water

Accessory Name:
Hydro 2000MU (A)

Absorption:
0.01

Dispersant RI:
1.330

Analysis model:
General purpose

Size range:
0.100 to 1000.000 um

Weighted Residual:
0.663 %

Sensitivity:
Normal

Obscuration:
10.53 %

Result Emulation:
Off

Concentration:
0.0067 %Vol

Span :
5.169

Uniformity:
1.73

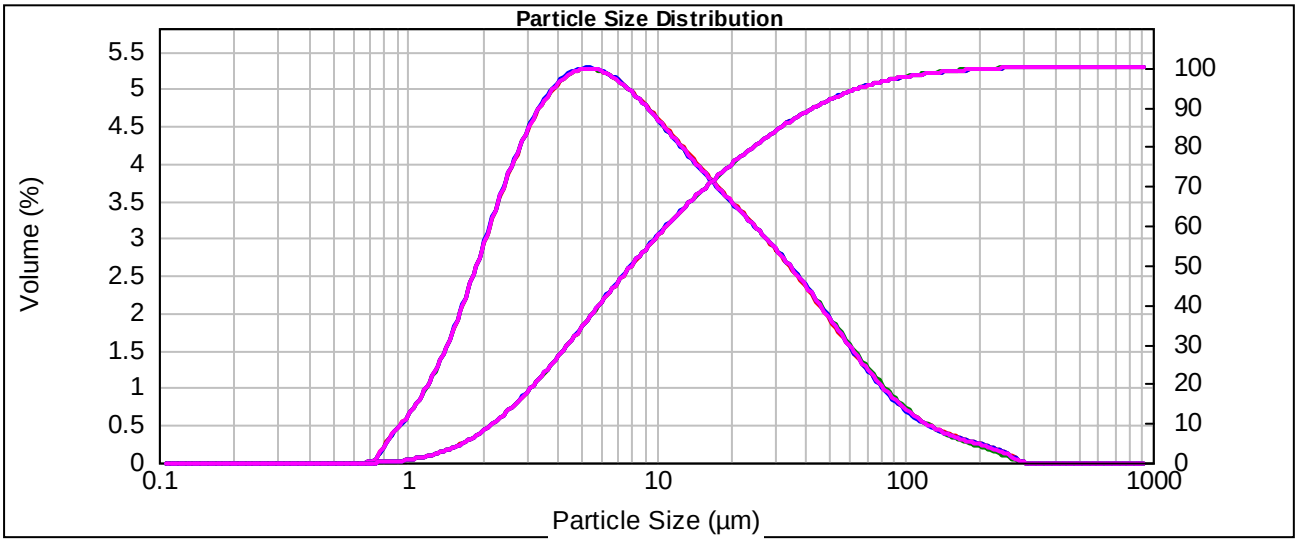
Result units:
Volume

Specific Surface Area:
0.432 m²/g

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

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

d(0.1): 2.227 um d(0.5): 7.998 um **d(0.8): 24.765 um** d(0.9): 43.564 um d(0.98): 107.63 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.10
0.832	0.24
0.912	0.32
1.000	0.42
1.096	0.55
1.202	0.69
1.318	0.85
1.445	1.04
1.585	1.26
1.738	1.48
1.905	1.72
2.089	1.96
2.291	

Size (µm)	Volume In %
2.291	2.18
2.512	2.39
2.754	2.58
3.020	2.74
3.311	2.88
3.631	3.00
3.981	3.08
4.365	3.14
4.786	3.17
5.248	3.17
5.754	3.15
6.310	3.11
6.918	3.06
7.586	2.99
8.318	2.91
9.120	2.83
10.000	2.73
10.965	

Size (µm)	Volume In %
10.965	2.64
12.023	2.55
13.183	2.46
14.454	2.37
15.849	2.28
17.378	2.19
19.055	2.11
20.893	2.02
22.909	1.94
25.119	1.86
27.542	1.77
30.200	1.68
33.113	1.58
36.308	1.48
39.811	1.38
43.652	1.27
47.863	1.16
52.481	

Size (µm)	Volume In %
52.481	1.05
57.544	0.94
63.096	0.83
69.183	0.73
75.858	0.64
83.176	0.55
91.201	0.47
100.000	0.41
109.648	0.35
120.226	0.30
131.826	0.26
144.544	0.22
158.489	0.19
173.780	0.17
190.546	0.15
208.930	0.13
229.087	0.09
251.189	

Size (µm)	Volume In %
251.189	0.07
275.423	0.01
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	

Operator notes:

TABLE III-55

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-17

Sample Name:
24 hour Cyanide Tail - Average

Measured by:
mel

Edited by:
mel

Measured:
Monday, November 28, 2011 10:11:10 AM

Analysed:
Monday, November 28, 2011 10:11:11 AM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.128 %

Sensitivity: Normal
Obscuration: 16.28 %
Result Emulation: Off

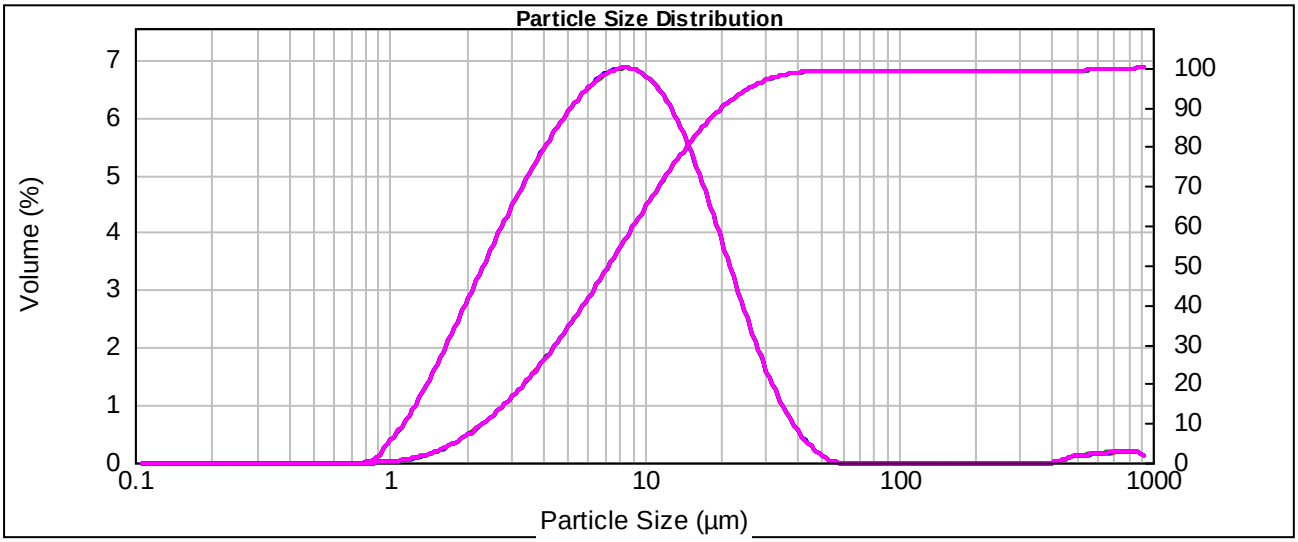
Concentration: 0.0105 %Vol
Specific Surface Area: 0.441 m²/g

Span : 2.471
Surface Weighted Mean D[3,2]: 5.137 um

Uniformity: 1.44
Vol. Weighted Mean D[4,3]: 14.578 um

Result units: Volume

d(0.1): 2.349 um d(0.5): 7.300 um **d(0.8): 14.756 um** d(0.9): 20.385 um d(0.98): 34.52 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.01
0.912	0.16
1.000	0.29
1.096	0.41
1.202	0.59
1.318	0.78
1.445	0.98
1.585	1.21
1.738	1.44
1.905	1.67
2.089	1.90
2.291	2.13

Size (µm)	Volume In %
2.291	2.13
2.512	2.35
2.754	2.57
3.020	2.77
3.311	2.97
3.631	3.16
3.981	3.34
4.365	3.51
4.786	3.66
5.248	3.80
5.754	3.92
6.310	4.01
6.918	4.08
7.586	4.12
8.318	4.13
9.120	4.09
10.000	4.02
10.965	3.90

Size (µm)	Volume In %
10.965	3.90
12.023	3.74
13.183	3.53
14.454	3.29
15.849	3.01
17.378	2.70
19.055	2.37
20.893	2.04
22.909	1.71
25.119	1.40
27.542	1.10
30.200	0.84
33.113	0.62
36.308	0.42
39.811	0.27
43.652	0.16
47.863	0.08
52.481	0.00

Size (µm)	Volume In %
52.481	0.00
57.544	0.00
63.096	0.00
69.183	0.00
75.858	0.00
83.176	0.00
91.201	0.00
100.000	0.00
109.648	0.00
120.226	0.00
131.826	0.00
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	0.00

Size (µm)	Volume In %
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	0.04
478.630	0.07
524.807	0.08
575.440	0.09
630.957	0.10
691.831	0.11
758.578	0.11
831.764	0.11
912.011	0.03
1000.000	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-18

Measured by:
mel

Measured:
Monday, November 28, 2011 10:15:30 AM

Sample Name:
24 hour Cyanide Tail - Average

Edited by:
mel

Analysed:
Monday, November 28, 2011 10:15:31 AM

Particle Name: Silica 0.01
Accessory Name: Hydro 2000MU (A)
Analysis model: General purpose
Sensitivity: Normal

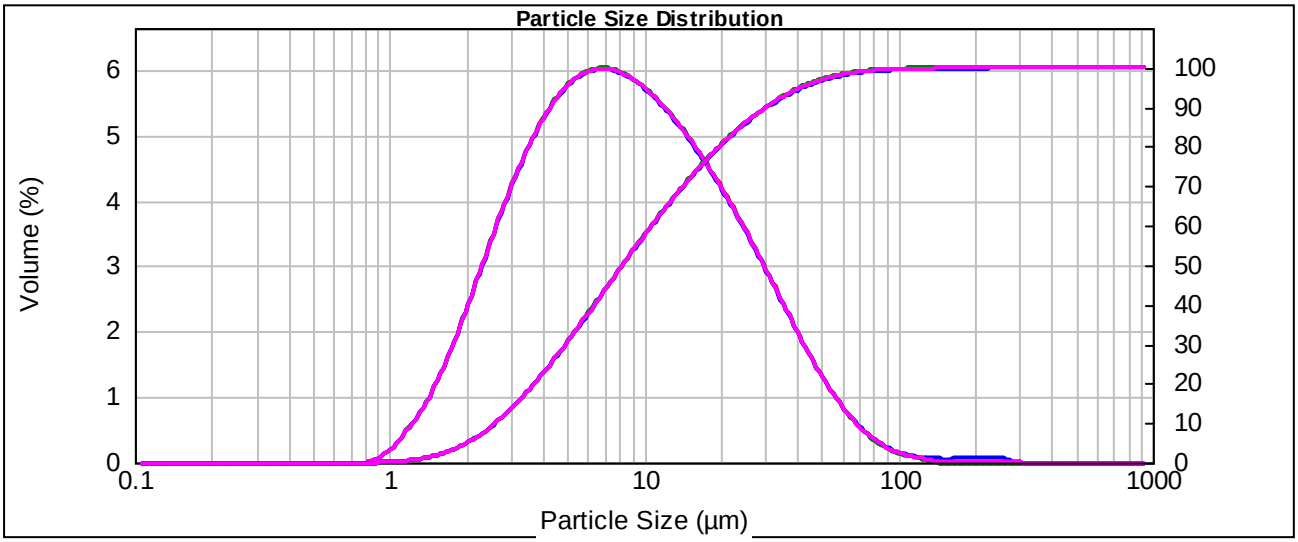
Particle RI: 1.544
Absorption: 0.01
Size range: 0.100 to 1000.000 um
Obscuration: 13.63 %

Dispersant Name: Water
Dispersant RI: 1.330
Weighted Residual: 0.508 %
Result Emulation: Off

Concentration: 0.0099 %Vol
Span : 3.346
Uniformity: 1.08
Result units: Volume

Specific Surface Area: 0.391 m²/g
Surface Weighted Mean D[3,2]: 5.794 um
Vol. Weighted Mean D[4,3]: 13.330 um

d(0.1): 2.605 um d(0.5): 8.230 um **d(0.8): 19.756 um** d(0.9): 30.144 um d(0.98): 57.2 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.02
0.912	0.09
1.000	0.15
1.096	0.27
1.202	0.39
1.318	0.53
1.445	0.71
1.585	0.92
1.738	1.14
1.905	1.39
2.089	1.66
2.291	1.92

Size (µm)	Volume In %
2.291	1.92
2.512	2.18
2.754	2.43
3.020	2.66
3.311	2.87
3.631	3.06
3.981	3.23
4.365	3.36
4.786	3.47
5.248	3.55
5.754	3.60
6.310	3.62
6.918	3.62
7.586	3.60
8.318	3.55
9.120	3.49
10.000	3.41
10.965	3.32

Size (µm)	Volume In %
10.965	3.32
12.023	3.21
13.183	3.10
14.454	2.97
15.849	2.84
17.378	2.69
19.055	2.55
20.893	2.39
22.909	2.22
25.119	2.04
27.542	1.86
30.200	1.68
33.113	1.49
36.308	1.31
39.811	1.13
43.652	0.96
47.863	0.79
52.481	0.64

Size (µm)	Volume In %
52.481	0.64
57.544	0.51
63.096	0.39
69.183	0.30
75.858	0.22
83.176	0.16
91.201	0.11
100.000	0.08
109.648	0.05
120.226	0.04
131.826	0.02
144.544	0.01
158.489	0.01
173.780	0.01
190.546	0.01
208.930	0.01
229.087	0.01
251.189	0.01

Size (µm)	Volume In %
251.189	0.01
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-19

Sample Name:
24 hour Cyanide Tail - Average

Measured by:
mel

Edited by:
mel

Measured:
Monday, November 28, 2011 10:46:19 AM

Analysed:
Monday, November 28, 2011 10:46:20 AM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.419 %

Sensitivity: Normal
Obscuration: 11.93 %
Result Emulation: Off

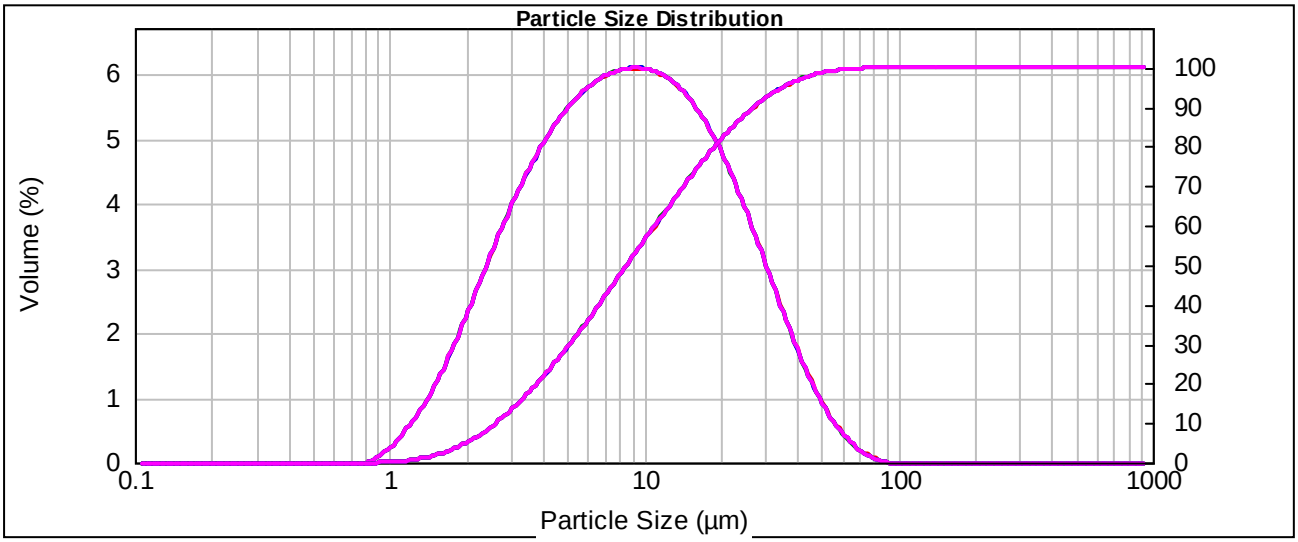
Concentration: 0.0087 %Vol
Specific Surface Area: 0.387 m²/g

Span : 2.839
Surface Weighted Mean D[3,2]: 5.852 um

Uniformity: 0.89
Vol. Weighted Mean D[4,3]: 12.250 um

Result units: Volume

d(0.1): 2.620 um d(0.5): 8.591 um **d(0.8): 18.980 um** d(0.9): 27.010 um d(0.98): 45.09 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.02
0.912	0.11
1.000	0.17
1.096	0.30
1.202	0.41
1.318	0.55
1.445	0.72
1.585	0.92
1.738	1.13
1.905	1.36
2.089	1.59
2.291	1.83

Size (µm)	Volume In %
2.291	1.83
2.512	2.06
2.754	2.28
3.020	2.49
3.311	2.69
3.631	2.87
3.981	3.03
4.365	3.18
4.786	3.30
5.248	3.40
5.754	3.49
6.310	3.56
6.918	3.61
7.586	3.65
8.318	3.67
9.120	3.67
10.000	3.66
10.965	3.62

Size (µm)	Volume In %
10.965	3.62
12.023	3.57
13.183	3.49
14.454	3.39
15.849	3.26
17.378	3.10
19.055	2.92
20.893	2.71
22.909	2.47
25.119	2.23
27.542	1.97
30.200	1.70
33.113	1.44
36.308	1.19
39.811	0.96
43.652	0.75
47.863	0.56
52.481	0.40

Size (µm)	Volume In %
52.481	0.40
57.544	0.27
63.096	0.17
69.183	0.09
75.858	0.05
83.176	0.00
91.201	0.00
100.000	0.00
109.648	0.00
120.226	0.00
131.826	0.00
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	0.00

Size (µm)	Volume In %
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:

TABLE III-58

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-20

Sample Name:
Bulk Regrind Discharge

Measured by:
Neville

Edited by:

Measured:
Friday, November 25, 2011 7:27:25 AM

Analysed:
Friday, November 25, 2011 7:27:26 AM

Particle Name:
Silica 0.01

Particle RI:
1.544

Dispersant Name:
Water

Accessory Name:
Hydro 2000MU (A)

Absorption:
0.01

Dispersant RI:
1.330

Analysis model:
General purpose

Size range:
0.100 to 1000.000 um

Weighted Residual:
0.373 %

Sensitivity:
Normal

Obscuration:
16.23 %

Result Emulation:
Off

Concentration:
0.0124 %Vol

Specific Surface Area:
0.379 m²/g

Span :
2.443

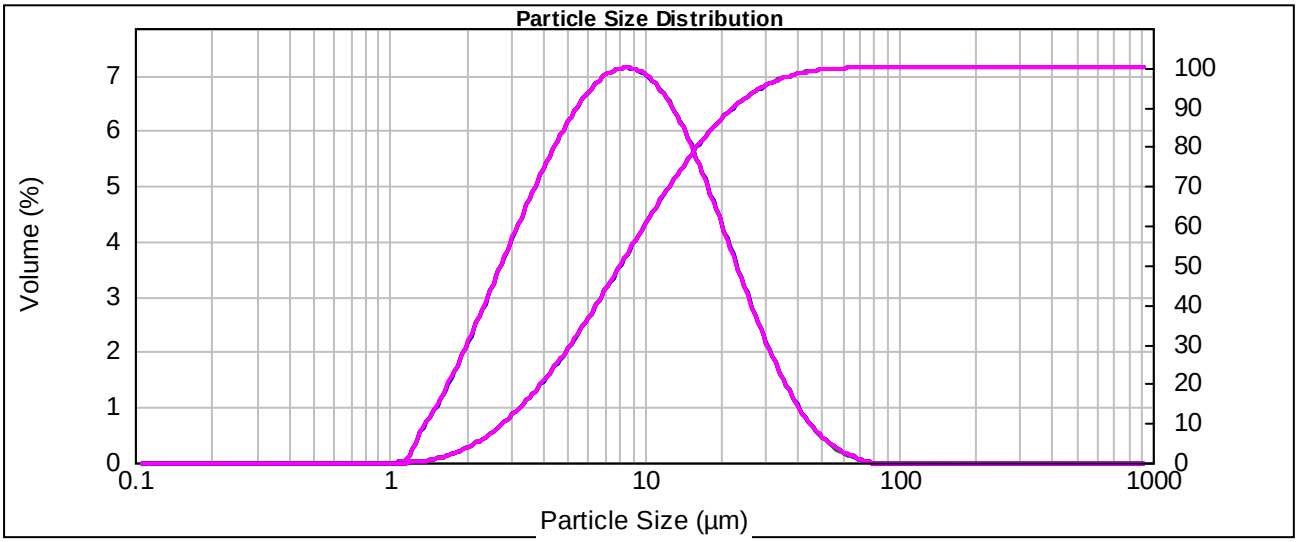
Surface Weighted Mean D[3,2]:
5.967 um

Uniformity:
0.769

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

Result units:
Volume

d(0.1): 2.804 um d(0.5): 8.090 um **d(0.8): 16.193 um** d(0.9): 22.571 um d(0.98): 37.78 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.00
1.096	0.00
1.202	0.19
1.318	0.42
1.445	0.58
1.585	0.79
1.738	1.03
1.905	1.26
2.089	1.51
2.291	1.76

Size (µm)	Volume In %
2.291	1.76
2.512	2.02
2.754	2.29
3.020	2.54
3.311	2.80
3.631	3.05
3.981	3.28
4.365	3.50
4.786	3.70
5.248	3.87
5.754	4.03
6.310	4.15
6.918	4.23
7.586	4.28
8.318	4.29
9.120	4.26
10.000	4.19
10.965	4.07

Size (µm)	Volume In %
10.965	4.07
12.023	3.91
13.183	3.71
14.454	3.49
15.849	3.22
17.378	2.94
19.055	2.64
20.893	2.33
22.909	2.02
25.119	1.73
27.542	1.44
30.200	1.18
33.113	0.94
36.308	0.73
39.811	0.55
43.652	0.40
47.863	0.28
52.481	0.19

Size (µm)	Volume In %
52.481	0.19
57.544	0.11
63.096	0.07
69.183	0.02
75.858	0.00
83.176	0.00
91.201	0.00
100.000	0.00
109.648	0.00
120.226	0.00
131.826	0.00
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	0.00

Size (µm)	Volume In %
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:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-20

Sample Name:
Pyrite Rougher Concentrate - Average

Measured by:
mike

Edited by:
mike

Measured:
Thursday, November 24, 2011 11:37:59 AM

Analysed:
Thursday, November 24, 2011 11:38:00 AM

Particle Name:
Silica 0.01

Particle RI:
1.544

Dispersant Name:
Water

Accessory Name:
Hydro 2000MU (A)

Absorption:
0.01

Dispersant RI:
1.330

Analysis model:
General purpose

Size range:
0.100 to 1000.000 um

Weighted Residual:
0.539 %

Sensitivity:
Normal

Obscuration:
9.51 %

Result Emulation:
Off

Concentration:
0.0088 %Vol

Span :
10.528

Uniformity:
2.88

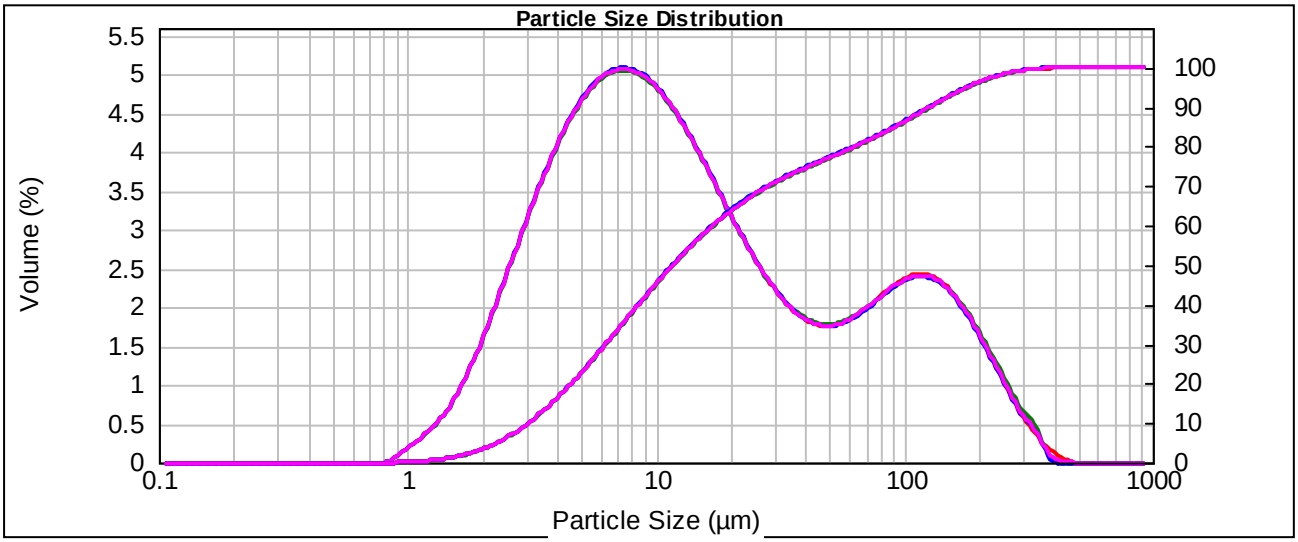
Result units:
Volume

Specific Surface Area:
0.303 m²/g

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

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

d(0.1): 3.066 um d(0.5): 11.678 um **d(0.8): 63.148 um** d(0.9): 126.018 um d(0.98): 237.86 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.02
0.912	0.09
1.000	0.13
1.096	0.20
1.202	0.27
1.318	0.35
1.445	0.47
1.585	0.61
1.738	0.77
1.905	0.95
2.089	1.15
2.291	1.35

Size (µm)	Volume In %
2.291	1.35
2.512	1.56
2.754	1.78
3.020	1.98
3.311	2.18
3.631	2.37
3.981	2.53
4.365	2.68
4.786	2.81
5.248	2.91
5.754	2.98
6.310	3.03
6.918	3.05
7.586	3.04
8.318	3.01
9.120	2.95
10.000	2.87
10.965	2.77

Size (µm)	Volume In %
10.965	2.77
12.023	2.65
13.183	2.52
14.454	2.38
15.849	2.23
17.378	2.08
19.055	1.93
20.893	1.78
22.909	1.64
25.119	1.51
27.542	1.39
30.200	1.29
33.113	1.20
36.308	1.14
39.811	1.09
43.652	1.07
47.863	1.06
52.481	1.08

Size (µm)	Volume In %
52.481	1.08
57.544	1.11
63.096	1.16
69.183	1.22
75.858	1.28
83.176	1.34
91.201	1.39
100.000	1.43
109.648	1.45
120.226	1.44
131.826	1.41
144.544	1.34
158.489	1.25
173.780	1.13
190.546	1.00
208.930	0.86
229.087	0.71
251.189	0.56

Size (µm)	Volume In %
251.189	0.56
275.423	0.42
301.995	0.31
331.131	0.22
363.078	0.07
398.107	0.02
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:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-21

Sample Name:
Bulk Regrind Discharge - Average

Measured by:
Neville

Edited by:
Neville

Measured:
Friday, November 25, 2011 7:39:51 AM

Analysed:
Friday, November 25, 2011 7:39:52 AM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.287 %

Sensitivity: Normal
Obscuration: 18.27 %
Result Emulation: Off

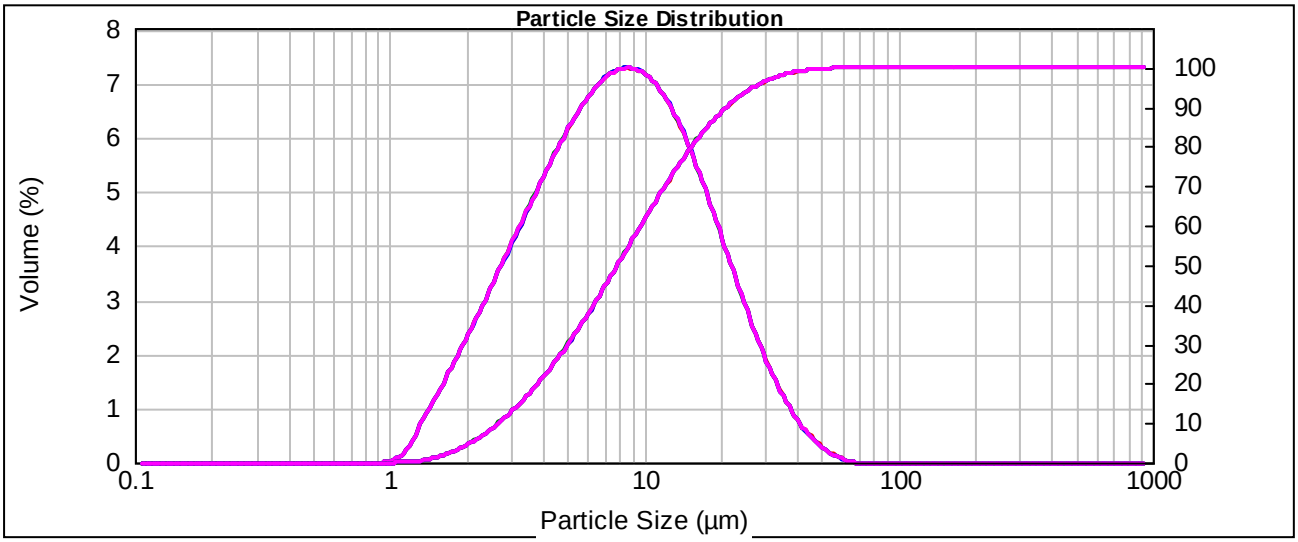
Concentration: 0.0135 %Vol
Specific Surface Area: 0.395 m²/g

Span : 2.344
Surface Weighted Mean D[3,2]: 5.735 um

Uniformity: 0.735
Vol. Weighted Mean D[4,3]: 10.292 um

Result units: Volume

d(0.1): 2.684 um d(0.5): 7.877 um **d(0.8): 15.411 um** d(0.9): 21.146 um d(0.98): 34.35 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.04
1.096	0.10
1.202	0.29
1.318	0.53
1.445	0.71
1.585	0.93
1.738	1.15
1.905	1.37
2.089	1.60
2.291	

Size (µm)	Volume In %
2.291	1.83
2.512	2.07
2.754	2.31
3.020	2.55
3.311	2.79
3.631	3.03
3.981	3.27
4.365	3.49
4.786	3.70
5.248	3.89
5.754	4.06
6.310	4.20
6.918	4.31
7.586	4.37
8.318	4.39
9.120	4.36
10.000	4.29
10.965	

Size (µm)	Volume In %
10.965	4.16
12.023	3.98
13.183	3.76
14.454	3.50
15.849	3.21
17.378	2.89
19.055	2.56
20.893	2.22
22.909	1.89
25.119	1.57
27.542	1.28
30.200	1.01
33.113	0.78
36.308	0.57
39.811	0.41
43.652	0.28
47.863	0.17
52.481	

Size (µm)	Volume In %
52.481	0.09
57.544	0.04
63.096	0.00
69.183	0.00
75.858	0.00
83.176	0.00
91.201	0.00
100.000	0.00
109.648	0.00
120.226	0.00
131.826	0.00
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	

Size (µm)	Volume In %
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	

Operator notes:

TABLE III-61

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-21

Sample Name:
Pyrite Rougher Concentrate - Average

Measured by:
mike

Edited by:
mike

Measured:
Thursday, November 24, 2011 11:44:54 AM

Analysed:
Thursday, November 24, 2011 11:44:55 AM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.525 %

Sensitivity: Normal
Obscuration: 16.37 %
Result Emulation: Off

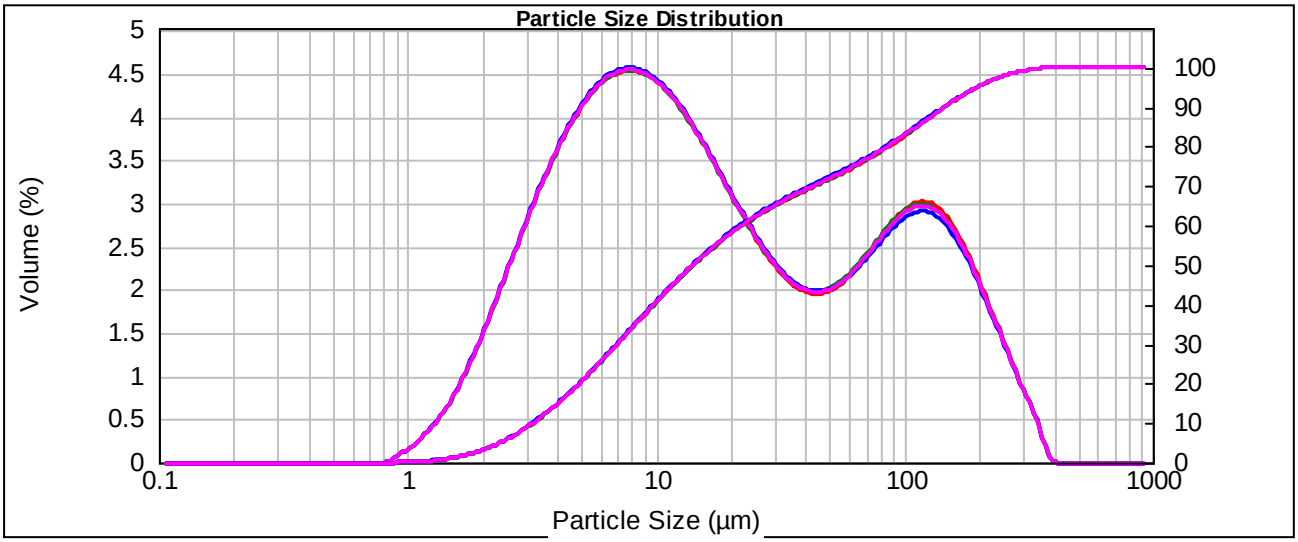
Concentration: 0.0172 %Vol
Specific Surface Area: 0.278 m²/g

Span : 10.019
Surface Weighted Mean D[3,2]: 8.157 um

Uniformity: 2.84
Vol. Weighted Mean D[4,3]: 46.486 um

Result units: Volume

d(0.1): 3.199 um d(0.5): 14.086 um **d(0.8): 85.106 um** d(0.9): 144.331 um d(0.98): 253.1 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.01
0.912	0.07
1.000	0.11
1.096	0.18
1.202	0.25
1.318	0.34
1.445	0.45
1.585	0.58
1.738	0.72
1.905	0.89
2.089	1.06
2.291	1.24

Size (µm)	Volume In %
2.291	1.24
2.512	1.42
2.754	1.60
3.020	1.77
3.311	1.94
3.631	2.10
3.981	2.24
4.365	2.37
4.786	2.48
5.248	2.58
5.754	2.65
6.310	2.70
6.918	2.73
7.586	2.74
8.318	2.72
9.120	2.69
10.000	2.63
10.965	2.56

Size (µm)	Volume In %
10.965	2.56
12.023	2.47
13.183	2.37
14.454	2.25
15.849	2.13
17.378	2.01
19.055	1.88
20.893	1.75
22.909	1.63
25.119	1.52
27.542	1.42
30.200	1.33
33.113	1.27
36.308	1.22
39.811	1.19
43.652	1.19
47.863	1.20
52.481	1.24

Size (µm)	Volume In %
52.481	1.24
57.544	1.30
63.096	1.38
69.183	1.47
75.858	1.55
83.176	1.64
91.201	1.71
100.000	1.76
109.648	1.79
120.226	1.78
131.826	1.74
144.544	1.66
158.489	1.55
173.780	1.42
190.546	1.26
208.930	1.09
229.087	0.92
251.189	0.75

Size (µm)	Volume In %
251.189	0.75
275.423	0.58
301.995	0.43
331.131	0.27
363.078	0.04
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:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-22

Sample Name:
Bulk Regrind Discharge - Average

Measured by:
Neville

Edited by:
Neville

Measured:
Friday, November 25, 2011 7:52:52 AM

Analysed:
Friday, November 25, 2011 7:52:53 AM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.211 %

Sensitivity: Normal
Obscuration: 17.38 %
Result Emulation: Off

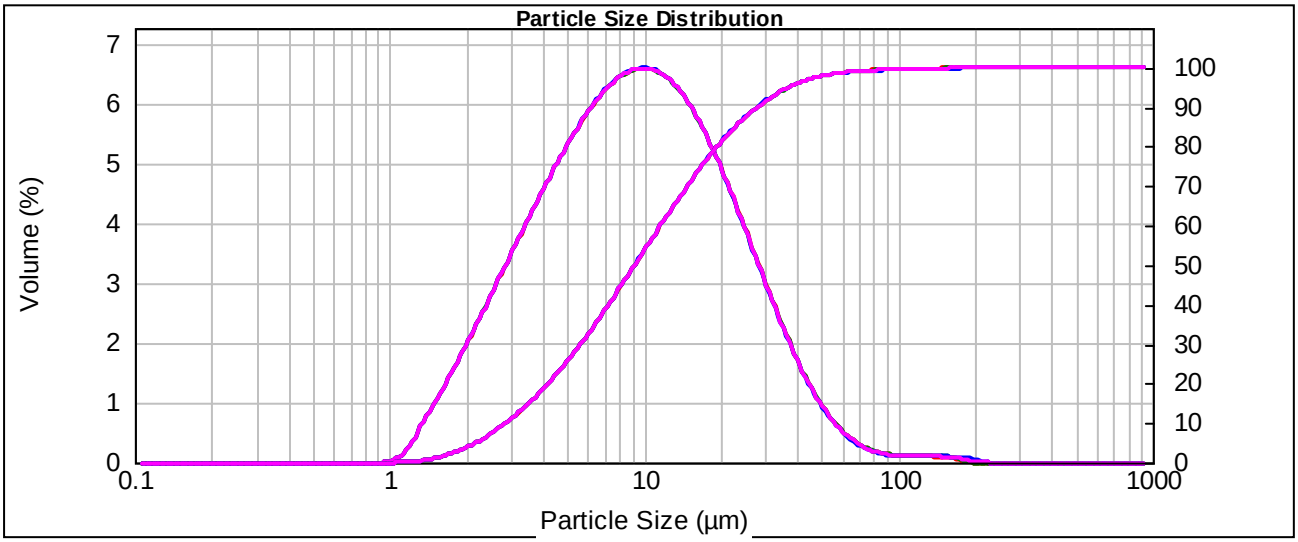
Concentration: 0.0143 %Vol
Specific Surface Area: 0.355 m²/g

Span : 2.713
Surface Weighted Mean D[3,2]: 6.379 um

Uniformity: 0.9
Vol. Weighted Mean D[4,3]: 13.320 um

Result units: Volume

d(0.1): 2.867 um d(0.5): 9.194 um **d(0.8): 19.411 um** d(0.9): 27.810 um d(0.98): 50.76 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.04
1.096	0.09
1.202	0.25
1.318	0.45
1.445	0.60
1.585	0.79
1.738	0.98
1.905	1.18
2.089	1.38
2.291	

Size (µm)	Volume In %
2.291	1.59
2.512	1.79
2.754	2.01
3.020	2.21
3.311	2.42
3.631	2.63
3.981	2.83
4.365	3.02
4.786	3.21
5.248	3.38
5.754	3.53
6.310	3.67
6.918	3.78
7.586	3.88
8.318	3.94
9.120	3.97
10.000	3.97
10.965	

Size (µm)	Volume In %
10.965	3.93
12.023	3.86
13.183	3.75
14.454	3.61
15.849	3.43
17.378	3.22
19.055	2.99
20.893	2.74
22.909	2.47
25.119	2.20
27.542	1.93
30.200	1.66
33.113	1.40
36.308	1.16
39.811	0.94
43.652	0.74
47.863	0.57
52.481	

Size (µm)	Volume In %
52.481	0.43
57.544	0.31
63.096	0.22
69.183	0.16
75.858	0.12
83.176	0.09
91.201	0.07
100.000	0.07
109.648	0.07
120.226	0.06
131.826	0.06
144.544	0.06
158.489	0.05
173.780	0.03
190.546	0.01
208.930	0.00
229.087	0.00
251.189	

Size (µm)	Volume In %
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-22

Sample Name:
Pyrite Rougher Concentrate - Average

Measured by:
Neville

Edited by:
Neville

Measured:
Friday, November 25, 2011 9:18:21 AM

Analysed:
Friday, November 25, 2011 9:18:22 AM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.663 %

Sensitivity: Normal
Obscuration: 8.19 %
Result Emulation: Off

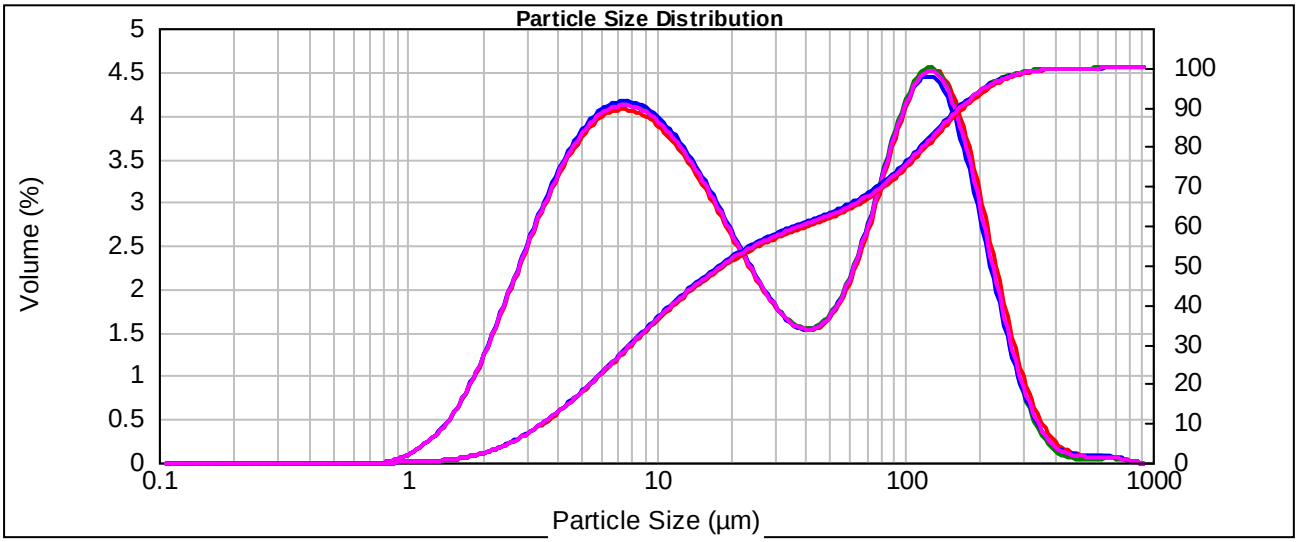
Concentration: 0.0096 %Vol
Specific Surface Area: 0.241 m²/g

Span : 8.939
Surface Weighted Mean D[3,2]: 9.400 um

Uniformity: 2.84
Vol. Weighted Mean D[4,3]: 60.219 um

Result units: Volume

d(0.1): 3.526 um d(0.5): 18.507 um **d(0.8): 118.812 um** d(0.9): 168.964 um d(0.98): 269.62 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.01
0.912	0.04
1.000	0.07
1.096	0.12
1.202	0.17
1.318	0.24
1.445	0.32
1.585	0.44
1.738	0.57
1.905	0.71
2.089	0.88
2.291	1.05

Size (µm)	Volume In %
2.291	1.05
2.512	1.23
2.754	1.41
3.020	1.58
3.311	1.75
3.631	1.91
3.981	2.05
4.365	2.18
4.786	2.28
5.248	2.36
5.754	2.42
6.310	2.46
6.918	2.48
7.586	2.48
8.318	2.45
9.120	2.41
10.000	2.35
10.965	2.28

Size (µm)	Volume In %
10.965	2.28
12.023	2.19
13.183	2.09
14.454	1.98
15.849	1.86
17.378	1.74
19.055	1.61
20.893	1.48
22.909	1.36
25.119	1.24
27.542	1.13
30.200	1.04
33.113	0.97
36.308	0.93
39.811	0.92
43.652	0.95
47.863	1.01
52.481	1.12

Size (µm)	Volume In %
52.481	1.12
57.544	1.27
63.096	1.46
69.183	1.67
75.858	1.91
83.176	2.15
91.201	2.37
100.000	2.55
109.648	2.67
120.226	2.72
131.826	2.69
144.544	2.57
158.489	2.37
173.780	2.12
190.546	1.81
208.930	1.50
229.087	1.17
251.189	0.88

Size (µm)	Volume In %
251.189	0.88
275.423	0.63
301.995	0.42
331.131	0.26
363.078	0.16
398.107	0.09
436.516	0.06
478.630	0.05
524.807	0.04
575.440	0.04
630.957	0.04
691.831	0.03
758.578	0.01
831.764	0.00
912.011	0.00
1000.000	0.00

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-23

Sample Name:
Bulk Regrind Discharge - Average

Measured by:
Neville

Edited by:
Neville

Measured:
Friday, November 25, 2011 8:07:24 AM

Analysed:
Friday, November 25, 2011 8:07:25 AM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.269 %

Sensitivity: Normal
Obscuration: 16.08 %
Result Emulation: Off

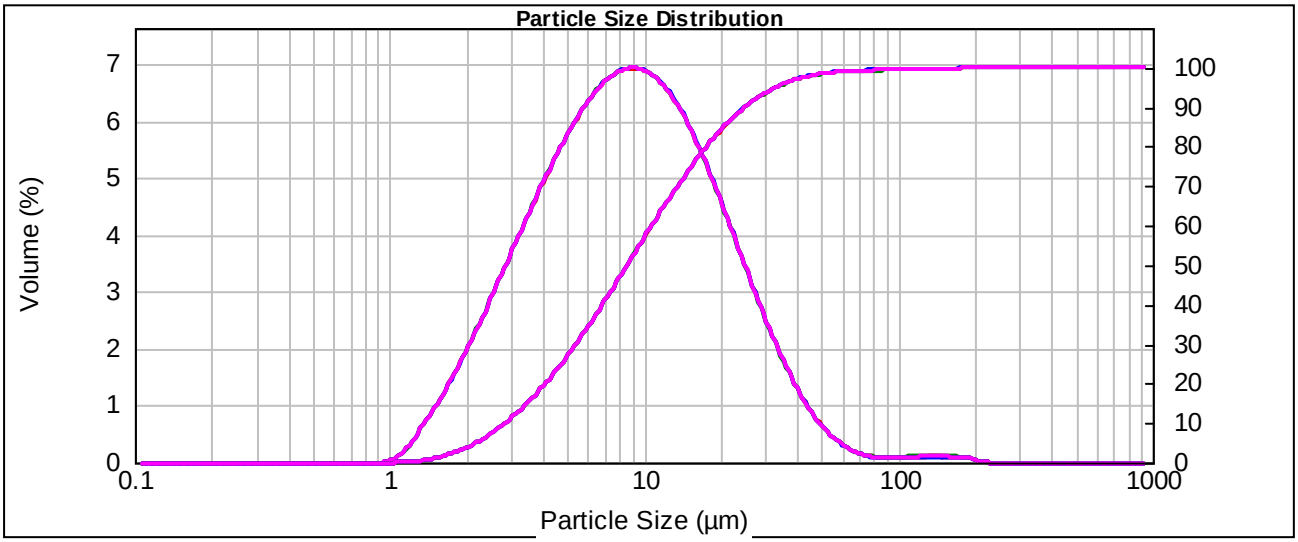
Concentration: 0.0127 %Vol
Specific Surface Area: 0.367 m²/g

Span : 2.574
Surface Weighted Mean D[3,2]: 6.163 um

Uniformity: 0.874
Vol. Weighted Mean D[4,3]: 12.327 um

Result units: Volume

d(0.1): 2.852 um d(0.5): 8.588 um **d(0.8): 17.586 um** d(0.9): 24.955 um d(0.98): 45.12 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.05
1.096	0.12
1.202	0.26
1.318	0.43
1.445	0.58
1.585	0.77
1.738	0.97
1.905	1.17
2.089	1.40
2.291	1.63

Size (µm)	Volume In %
2.291	1.63
2.512	1.86
2.754	2.11
3.020	2.35
3.311	2.59
3.631	2.83
3.981	3.05
4.365	3.27
4.786	3.48
5.248	3.66
5.754	3.82
6.310	3.96
6.918	4.07
7.586	4.14
8.318	4.17
9.120	4.17
10.000	4.12
10.965	4.04

Size (µm)	Volume In %
10.965	4.04
12.023	3.91
13.183	3.75
14.454	3.55
15.849	3.32
17.378	3.06
19.055	2.79
20.893	2.50
22.909	2.21
25.119	1.92
27.542	1.64
30.200	1.37
33.113	1.12
36.308	0.90
39.811	0.70
43.652	0.53
47.863	0.39
52.481	0.27

Size (µm)	Volume In %
52.481	0.27
57.544	0.19
63.096	0.12
69.183	0.08
75.858	0.06
83.176	0.05
91.201	0.05
100.000	0.06
109.648	0.06
120.226	0.06
131.826	0.07
144.544	0.07
158.489	0.06
173.780	0.06
190.546	0.03
208.930	0.00
229.087	0.00
251.189	0.00

Size (µm)	Volume In %
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:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-23

Sample Name:
Pyrite Rougher Concentrate

Measured by:
Neville

Edited by:

Measured:
Friday, November 25, 2011 9:24:12 AM

Analysed:
Friday, November 25, 2011 9:24:13 AM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.814 %

Sensitivity: Normal
Obscuration: 7.19 %
Result Emulation: Off

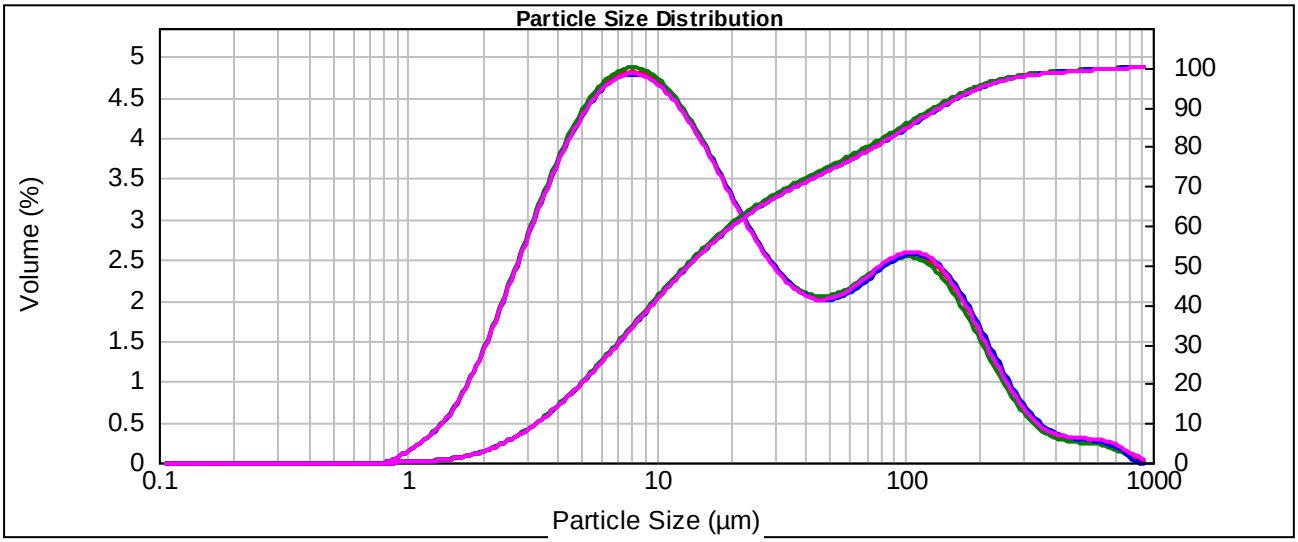
Concentration: 0.0073 %Vol
Specific Surface Area: 0.274 m²/g

Span : 10.046
Surface Weighted Mean D[3,2]: 8.251 um

Uniformity: 3.17
Vol. Weighted Mean D[4,3]: 49.454 um

Result units: Volume

d(0.1): 3.312 um d(0.5): 13.588 um **d(0.8): 76.268 um** d(0.9): 139.817 um d(0.98): 317.65 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.01
0.912	0.07
1.000	0.10
1.096	0.16
1.202	0.22
1.318	0.29
1.445	0.38
1.585	0.51
1.738	0.65
1.905	0.81
2.089	0.98
2.291	1.17

Size (µm)	Volume In %
2.291	1.17
2.512	1.36
2.754	1.56
3.020	1.75
3.311	1.94
3.631	2.11
3.981	2.28
4.365	2.43
4.786	2.56
5.248	2.67
5.754	2.76
6.310	2.83
6.918	2.87
7.586	2.88
8.318	2.87
9.120	2.84
10.000	2.79
10.965	2.71

Size (µm)	Volume In %
10.965	2.71
12.023	2.62
13.183	2.51
14.454	2.39
15.849	2.26
17.378	2.12
19.055	1.98
20.893	1.85
22.909	1.72
25.119	1.60
27.542	1.48
30.200	1.39
33.113	1.31
36.308	1.26
39.811	1.22
43.652	1.21
47.863	1.21
52.481	1.24

Size (µm)	Volume In %
52.481	1.24
57.544	1.28
63.096	1.33
69.183	1.39
75.858	1.45
83.176	1.51
91.201	1.54
100.000	1.56
109.648	1.56
120.226	1.52
131.826	1.46
144.544	1.37
158.489	1.25
173.780	1.12
190.546	0.98
208.930	0.84
229.087	0.70
251.189	0.57

Size (µm)	Volume In %
251.189	0.57
275.423	0.45
301.995	0.35
331.131	0.28
363.078	0.23
398.107	0.20
436.516	0.19
478.630	0.18
524.807	0.18
575.440	0.17
630.957	0.15
691.831	0.13
758.578	0.08
831.764	0.05
912.011	0.01
1000.000	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-24

Sample Name:
Bulk Regrind Discharge - Average

Measured by:
Neville

Edited by:
Neville

Measured:
Friday, November 25, 2011 8:12:36 AM

Analysed:
Friday, November 25, 2011 8:12:37 AM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.242 %

Sensitivity: Normal
Obscuration: 14.43 %
Result Emulation: Off

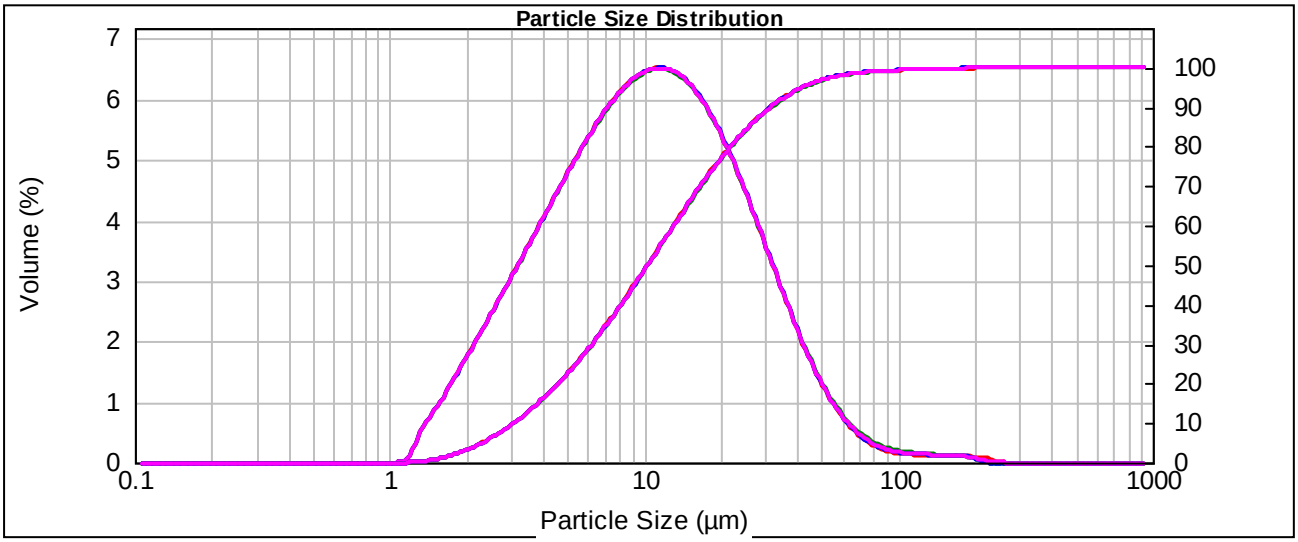
Concentration: 0.0128 %Vol
Specific Surface Area: 0.325 m²/g

Span : 2.743
Surface Weighted Mean D[3,2]: 6.974 um

Uniformity: 0.922
Vol. Weighted Mean D[4,3]: 15.100 um

Result units: Volume

d(0.1): 3.079 um d(0.5): 10.336 um **d(0.8): 21.924 um** d(0.9): 31.435 um d(0.98): 58.57 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.00
1.096	0.00
1.202	0.18
1.318	0.39
1.445	0.52
1.585	0.69
1.738	0.87
1.905	1.04
2.089	1.21
2.291	1.39

Size (µm)	Volume In %
2.291	1.39
2.512	1.57
2.754	1.75
3.020	1.94
3.311	2.13
3.631	2.32
3.981	2.51
4.365	2.70
4.786	2.88
5.248	3.06
5.754	3.23
6.310	3.40
6.918	3.54
7.586	3.67
8.318	3.77
9.120	3.85
10.000	3.91
10.965	3.92

Size (µm)	Volume In %
10.965	3.92
12.023	3.91
13.183	3.86
14.454	3.77
15.849	3.64
17.378	3.48
19.055	3.29
20.893	3.06
22.909	2.82
25.119	2.56
27.542	2.28
30.200	2.01
33.113	1.73
36.308	1.47
39.811	1.22
43.652	0.99
47.863	0.78
52.481	0.61

Size (µm)	Volume In %
52.481	0.61
57.544	0.46
63.096	0.34
69.183	0.25
75.858	0.18
83.176	0.14
91.201	0.11
100.000	0.10
109.648	0.09
120.226	0.08
131.826	0.08
144.544	0.07
158.489	0.07
173.780	0.06
190.546	0.05
208.930	0.02
229.087	0.00
251.189	0.00

Size (µm)	Volume In %
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:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-24

Sample Name:
Pyrite Rougher Concentrate - Average

Measured by:
Neville

Edited by:
Neville

Measured:
Friday, November 25, 2011 9:33:24 AM

Analysed:
Friday, November 25, 2011 9:33:25 AM

Particle Name:
Silica 0.01

Particle RI:
1.544

Dispersant Name:
Water

Accessory Name:
Hydro 2000MU (A)

Absorption:
0.01

Dispersant RI:
1.330

Analysis model:
General purpose

Size range:
0.100 to 1000.000 um

Weighted Residual:
0.704 %

Sensitivity:
Normal

Obscuration:
8.14 %

Result Emulation:
Off

Concentration:
0.0100 %Vol

Span :
8.839

Uniformity:
2.79

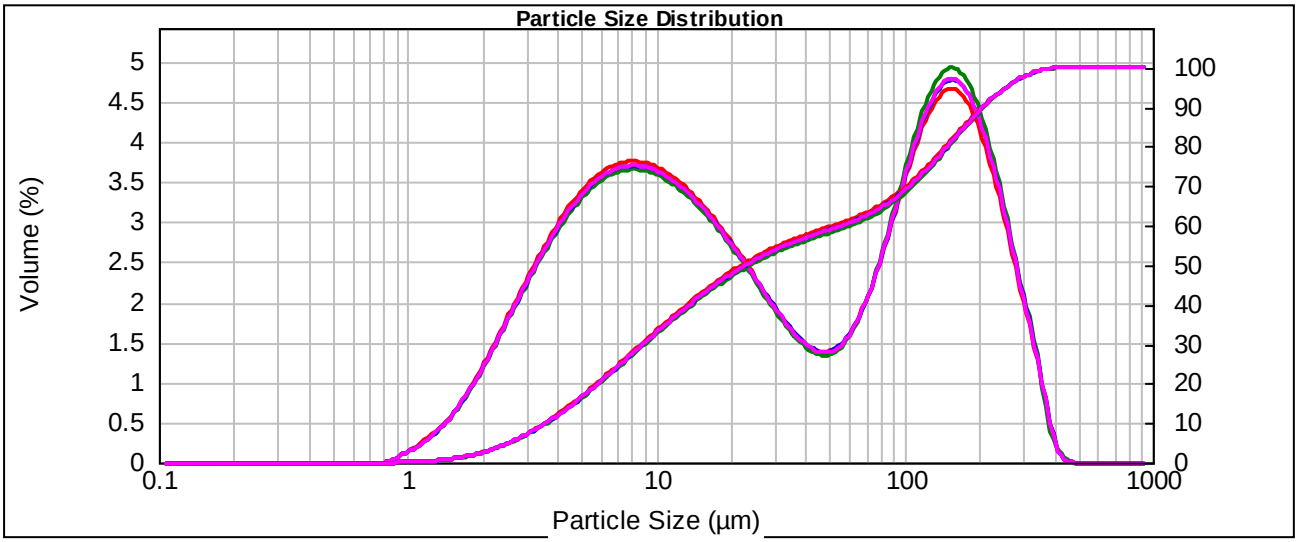
Result units:
Volume

Specific Surface Area:
0.228 m²/g

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

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

d(0.1): 3.606 um d(0.5): 23.026 um **d(0.8): 148.626 um** d(0.9): 207.141 um d(0.98): 307.48 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.01
0.912	0.07
1.000	0.09
1.096	0.15
1.202	0.20
1.318	0.27
1.445	0.36
1.585	0.46
1.738	0.57
1.905	0.70
2.089	0.84
2.291	0.99

Size (µm)	Volume In %
2.291	0.99
2.512	1.13
2.754	1.28
3.020	1.42
3.311	1.56
3.631	1.69
3.981	1.81
4.365	1.92
4.786	2.01
5.248	2.08
5.754	2.14
6.310	2.19
6.918	2.22
7.586	2.23
8.318	2.22
9.120	2.21
10.000	2.17
10.965	2.13

Size (µm)	Volume In %
10.965	2.13
12.023	2.07
13.183	2.00
14.454	1.93
15.849	1.84
17.378	1.75
19.055	1.65
20.893	1.54
22.909	1.43
25.119	1.32
27.542	1.21
30.200	1.10
33.113	1.00
36.308	0.92
39.811	0.86
43.652	0.82
47.863	0.83
52.481	0.87

Size (µm)	Volume In %
52.481	0.87
57.544	0.96
63.096	1.10
69.183	1.28
75.858	1.50
83.176	1.75
91.201	2.01
100.000	2.26
109.648	2.50
120.226	2.69
131.826	2.82
144.544	2.88
158.489	2.86
173.780	2.76
190.546	2.59
208.930	2.35
229.087	2.06
251.189	1.73

Size (µm)	Volume In %
251.189	1.73
275.423	1.40
301.995	1.06
331.131	0.73
363.078	0.36
398.107	0.07
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:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-25

Sample Name:
Bulk Regrind Discharge

Measured by:
Neville

Edited by:

Measured:
Friday, November 25, 2011 8:59:16 AM

Analysed:
Friday, November 25, 2011 8:59:17 AM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.392 %

Sensitivity: Normal
Obscuration: 18.15 %
Result Emulation: Off

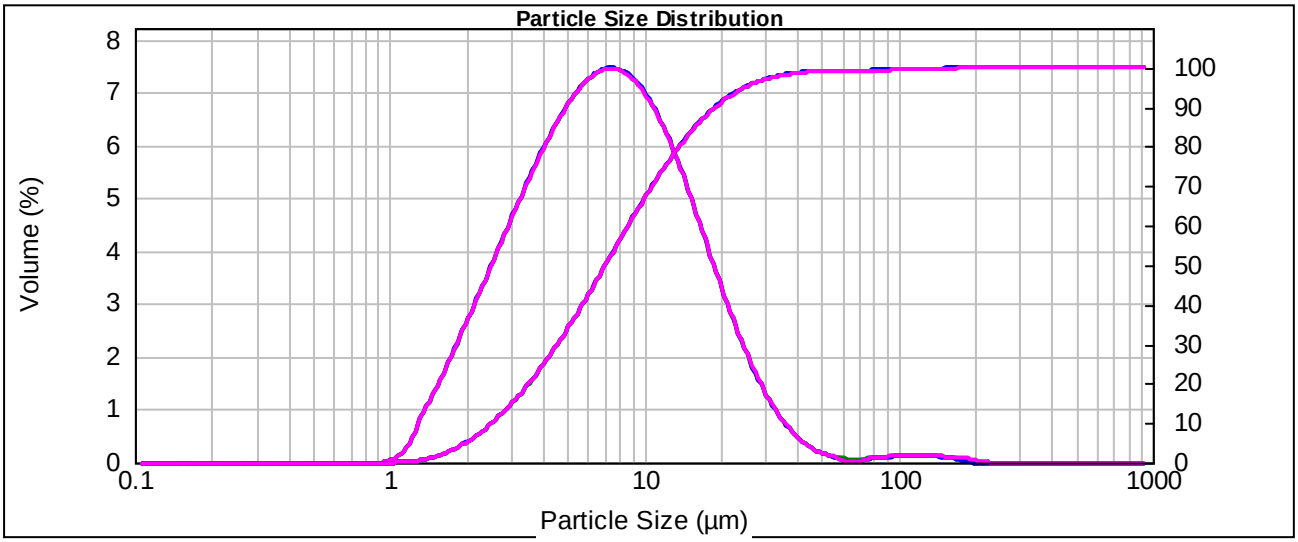
Concentration: 0.0123 %Vol
Specific Surface Area: 0.427 m²/g

Span : 2.353
Surface Weighted Mean D[3,2]: 5.309 um

Uniformity: 0.841
Vol. Weighted Mean D[4,3]: 10.044 um

Result units: Volume

d(0.1): 2.527 um d(0.5): 7.060 um **d(0.8): 13.768 um** d(0.9): 19.137 um d(0.98): 34.42 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.05
1.096	0.12
1.202	0.35
1.318	0.61
1.445	0.82
1.585	1.07
1.738	1.32
1.905	1.58
2.089	1.84
2.291	2.10

Size (µm)	Volume In %
2.291	2.10
2.512	2.37
2.754	2.64
3.020	2.91
3.311	3.17
3.631	3.42
3.981	3.66
4.365	3.88
4.786	4.07
5.248	4.23
5.754	4.36
6.310	4.44
6.918	4.48
7.586	4.47
8.318	4.41
9.120	4.29
10.000	4.13
10.965	3.92

Size (µm)	Volume In %
10.965	3.92
12.023	3.66
13.183	3.37
14.454	3.06
15.849	2.72
17.378	2.38
19.055	2.04
20.893	1.72
22.909	1.41
25.119	1.14
27.542	0.89
30.200	0.68
33.113	0.50
36.308	0.36
39.811	0.25
43.652	0.16
47.863	0.11
52.481	0.07

Size (µm)	Volume In %
52.481	0.07
57.544	0.03
63.096	0.00
69.183	0.02
75.858	0.06
83.176	0.06
91.201	0.07
100.000	0.08
109.648	0.09
120.226	0.08
131.826	0.08
144.544	0.07
158.489	0.06
173.780	0.05
190.546	0.03
208.930	0.00
229.087	0.00
251.189	0.00

Size (µm)	Volume In %
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:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-25

Sample Name:
Pyrite Rougher Concentrate - Average

Measured by:
Neville

Edited by:
Neville

Measured:
Friday, November 25, 2011 9:40:44 AM

Analysed:
Friday, November 25, 2011 9:40:45 AM

Particle Name:
Silica 0.01

Particle RI:
1.544

Dispersant Name:
Water

Accessory Name:
Hydro 2000MU (A)

Absorption:
0.01

Dispersant RI:
1.330

Analysis model:
General purpose

Size range:
0.100 to 1000.000 um

Weighted Residual:
0.654 %

Sensitivity:
Normal

Obscuration:
10.09 %

Result Emulation:
Off

Concentration:
0.0104 %Vol

Span :
10.472

Uniformity:
3.02

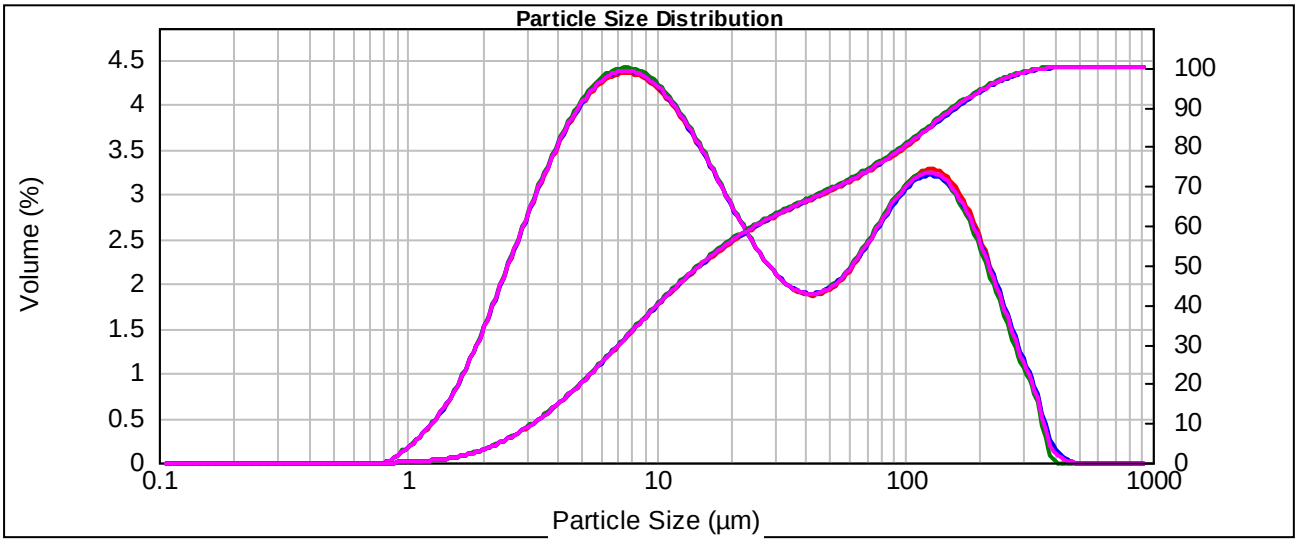
Result units:
Volume

Specific Surface Area:
0.272 m²/g

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

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

d(0.1): 3.213 um d(0.5): 15.051 um **d(0.8): 99.332 um** d(0.9): 160.830 um d(0.98): 273.55 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.02
0.912	0.08
1.000	0.12
1.096	0.20
1.202	0.26
1.318	0.35
1.445	0.45
1.585	0.58
1.738	0.72
1.905	0.87
2.089	1.04
2.291	1.21

Size (µm)	Volume In %
2.291	1.21
2.512	1.39
2.754	1.56
3.020	1.73
3.311	1.89
3.631	2.05
3.981	2.19
4.365	2.31
4.786	2.42
5.248	2.50
5.754	2.57
6.310	2.61
6.918	2.63
7.586	2.63
8.318	2.61
9.120	2.57
10.000	2.51
10.965	2.43

Size (µm)	Volume In %
10.965	2.43
12.023	2.34
13.183	2.23
14.454	2.12
15.849	1.99
17.378	1.87
19.055	1.74
20.893	1.62
22.909	1.51
25.119	1.40
27.542	1.31
30.200	1.24
33.113	1.18
36.308	1.14
39.811	1.13
43.652	1.14
47.863	1.17
52.481	1.22

Size (µm)	Volume In %
52.481	1.22
57.544	1.30
63.096	1.39
69.183	1.49
75.858	1.60
83.176	1.71
91.201	1.80
100.000	1.88
109.648	1.93
120.226	1.95
131.826	1.93
144.544	1.88
158.489	1.78
173.780	1.66
190.546	1.50
208.930	1.33
229.087	1.14
251.189	0.95

Size (µm)	Volume In %
251.189	0.95
275.423	0.75
301.995	0.59
331.131	0.41
363.078	0.13
398.107	0.04
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:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-26

Sample Name:
Bulk Regrind Discharge

Measured by:
Neville

Edited by:

Measured:
Friday, November 25, 2011 9:07:24 AM

Analysed:
Friday, November 25, 2011 9:07:25 AM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.354 %

Sensitivity: Normal
Obscuration: 18.41 %
Result Emulation: Off

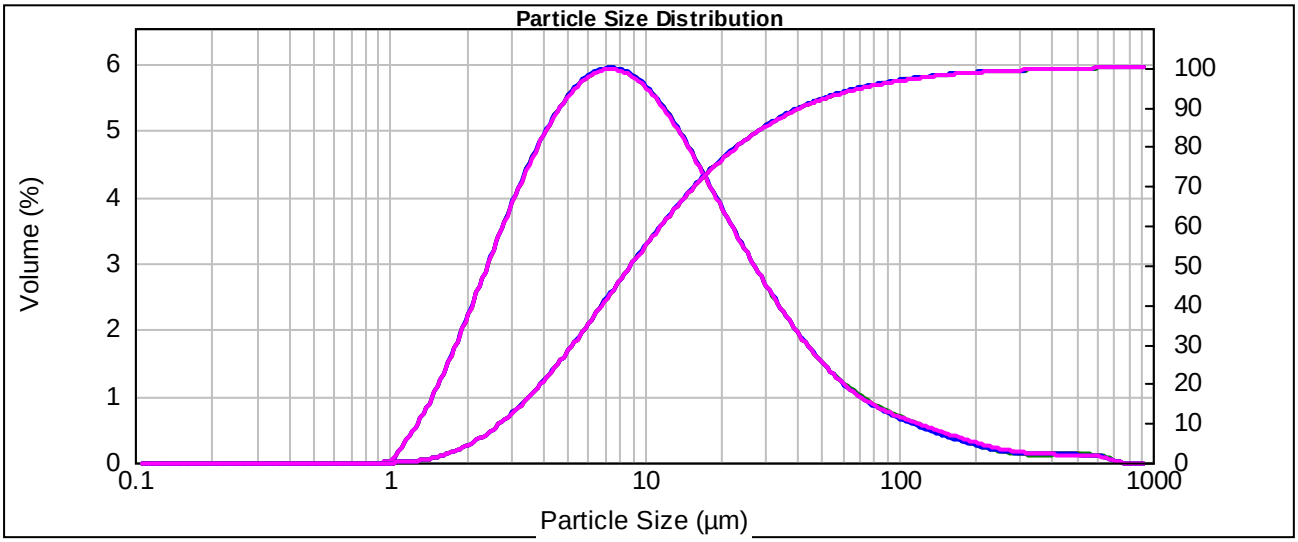
Concentration: 0.0148 %Vol
Specific Surface Area: 0.362 m²/g

Span : 4.410
Surface Weighted Mean D[3,2]: 6.262 um

Uniformity: 1.84
Vol. Weighted Mean D[4,3]: 21.175 um

Result units: Volume

d(0.1): 2.742 um d(0.5): 8.914 um **d(0.8): 23.309 um** d(0.9): 42.055 um d(0.98): 146.45 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.04
1.096	0.18
1.202	0.31
1.318	0.46
1.445	0.65
1.585	0.85
1.738	1.06
1.905	1.29
2.089	1.52
2.291	1.76

Size (µm)	Volume In %
2.291	1.76
2.512	1.99
2.754	2.22
3.020	2.44
3.311	2.65
3.631	2.85
3.981	3.02
4.365	3.18
4.786	3.31
5.248	3.42
5.754	3.49
6.310	3.54
6.918	3.56
7.586	3.56
8.318	3.52
9.120	3.46
10.000	3.37
10.965	3.26

Size (µm)	Volume In %
10.965	3.26
12.023	3.14
13.183	2.99
14.454	2.84
15.849	2.68
17.378	2.51
19.055	2.34
20.893	2.17
22.909	2.00
25.119	1.84
27.542	1.68
30.200	1.53
33.113	1.39
36.308	1.26
39.811	1.13
43.652	1.02
47.863	0.91
52.481	0.81

Size (µm)	Volume In %
52.481	0.81
57.544	0.72
63.096	0.65
69.183	0.58
75.858	0.53
83.176	0.48
91.201	0.44
100.000	0.40
109.648	0.36
120.226	0.33
131.826	0.30
144.544	0.27
158.489	0.24
173.780	0.21
190.546	0.19
208.930	0.16
229.087	0.14
251.189	0.12

Size (µm)	Volume In %
251.189	0.12
275.423	0.10
301.995	0.09
331.131	0.08
363.078	0.07
398.107	0.07
436.516	0.07
478.630	0.07
524.807	0.06
575.440	0.06
630.957	0.04
691.831	0.00
758.578	0.00
831.764	0.00
912.011	0.00
1000.000	0.00

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-26

Sample Name:
Pyrite Rougher Concentrate - Average

Measured by:
Neville

Edited by:
Neville

Measured:
Friday, November 25, 2011 9:45:29 AM

Analysed:
Friday, November 25, 2011 9:45:30 AM

Particle Name:
Silica 0.01

Particle RI:
1.544

Dispersant Name:
Water

Accessory Name:
Hydro 2000MU (A)

Absorption:
0.01

Dispersant RI:
1.330

Analysis model:
General purpose

Size range:
0.100 to 1000.000 um

Weighted Residual:
0.610 %

Sensitivity:
Normal

Obscuration:
18.88 %

Result Emulation:
Off

Concentration:
0.0321 %Vol

Span :
3.026

Uniformity:
1.03

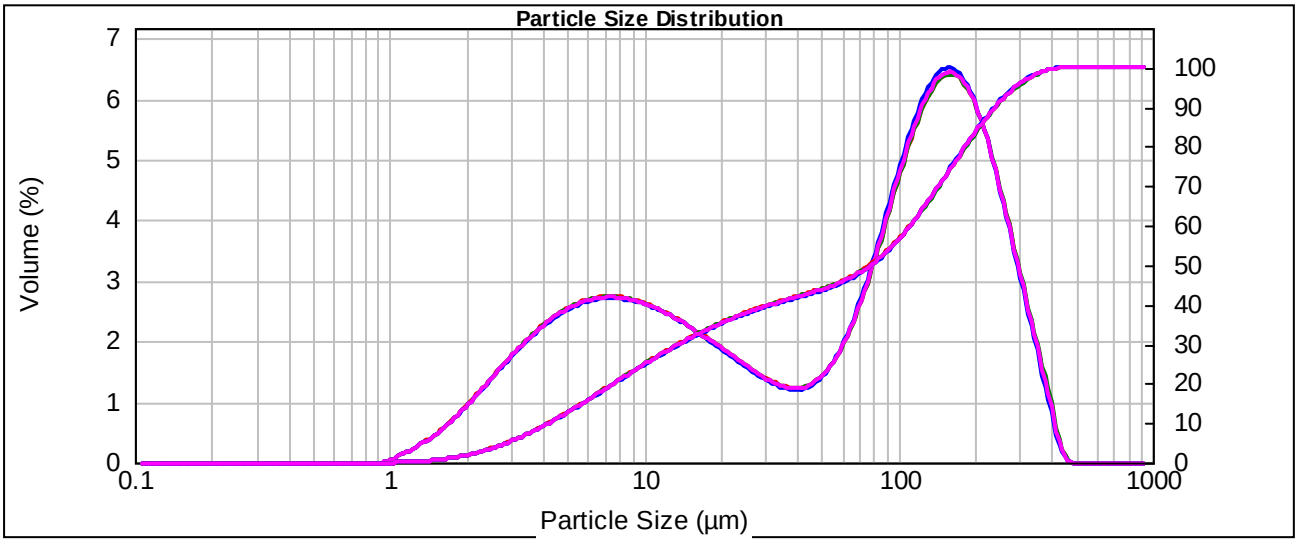
Result units:
Volume

Specific Surface Area:
0.175 m²/g

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

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

d(0.1): 4.226 um d(0.5): 77.842 um **d(0.8): 183.013 um** d(0.9): 239.748 um d(0.98): 338.59 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.00
1.096	0.04
1.202	0.10
1.318	0.14
1.445	0.21
1.585	0.27
1.738	0.36
1.905	0.45
2.089	0.55
2.291	0.67

Size (µm)	Volume In %
2.291	0.78
2.512	0.89
2.754	1.00
3.020	1.11
3.311	1.21
3.631	1.31
3.981	1.39
4.365	1.47
4.786	1.53
5.248	1.58
5.754	1.61
6.310	1.64
6.918	1.64
7.586	1.64
8.318	1.63
9.120	1.60
10.000	1.56
10.965	

Size (µm)	Volume In %
10.965	1.52
12.023	1.47
13.183	1.41
14.454	1.35
15.849	1.28
17.378	1.21
19.055	1.14
20.893	1.07
22.909	1.00
25.119	0.93
27.542	0.86
30.200	0.80
33.113	0.76
36.308	0.74
39.811	0.74
43.652	0.78
47.863	0.86
52.481	

Size (µm)	Volume In %
52.481	0.98
57.544	1.15
63.096	1.38
69.183	1.66
75.858	1.97
83.176	2.31
91.201	2.66
100.000	3.01
109.648	3.32
120.226	3.58
131.826	3.77
144.544	3.87
158.489	3.88
173.780	3.78
190.546	3.58
208.930	3.29
229.087	2.93
251.189	

Size (µm)	Volume In %
251.189	2.52
275.423	2.08
301.995	1.64
331.131	1.20
363.078	0.79
398.107	0.33
436.516	0.01
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:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-27

Sample Name:
24 hour Cyanide Tail - Average

Measured by:
Mel

Edited by:
Mel

Measured:
Friday, December 02, 2011 9:02:41 AM

Analysed:
Friday, December 02, 2011 9:02:42 AM

Particle Name: Silica 0.1
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.1
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.682 %

Sensitivity: Normal
Obscuration: 13.56 %
Result Emulation: Off

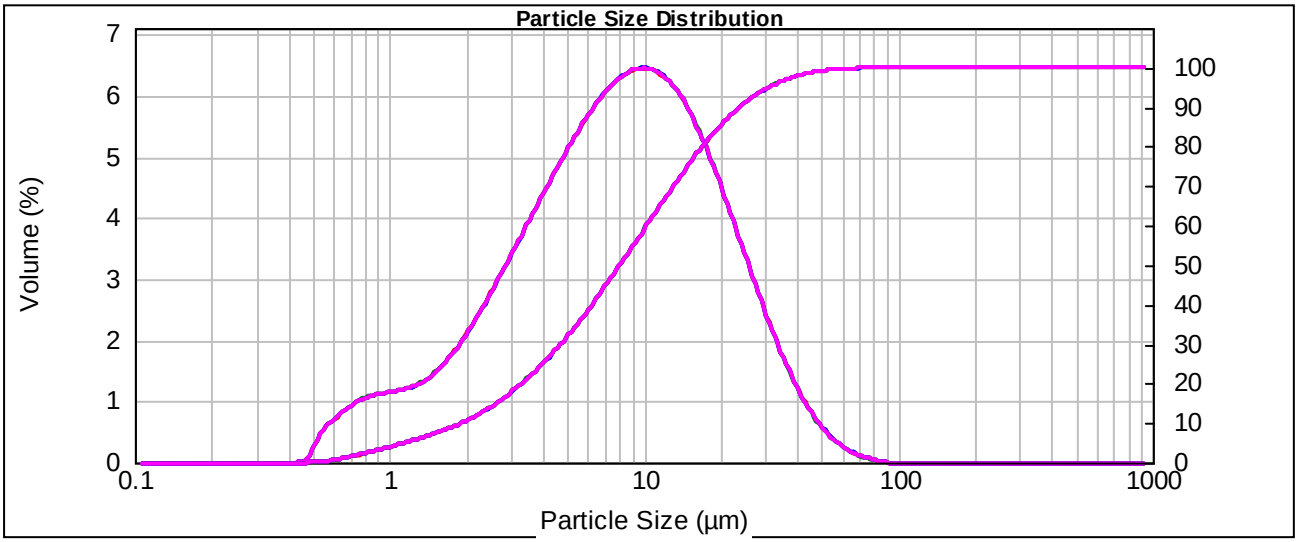
Concentration: 0.0088 %Vol
Specific Surface Area: 0.519 m²/g

Span : 2.719
Surface Weighted Mean D[3,2]: 4.365 um

Uniformity: 0.857
Vol. Weighted Mean D[4,3]: 10.987 um

Result units: Volume

d(0.1): 1.916 um d(0.5): 8.058 um **d(0.8): 16.967 um** d(0.9): 23.823 um d(0.98): 40.16 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.13
0.525	0.34
0.575	0.42
0.631	0.51
0.692	0.59
0.759	0.63
0.832	0.66
0.912	0.68
1.000	0.70
1.096	0.72
1.202	0.75
1.318	0.81
1.445	0.88
1.585	0.99
1.738	1.11
1.905	1.26
2.089	1.42
2.291	

Size (µm)	Volume In %
2.291	1.59
2.512	1.77
2.754	1.95
3.020	2.14
3.311	2.34
3.631	2.53
3.981	2.72
4.365	2.90
4.786	3.09
5.248	3.25
5.754	3.41
6.310	3.56
6.918	3.68
7.586	3.78
8.318	3.85
9.120	3.88
10.000	3.88
10.965	

Size (µm)	Volume In %
10.965	3.83
12.023	3.75
13.183	3.62
14.454	3.46
15.849	3.25
17.378	3.01
19.055	2.75
20.893	2.46
22.909	2.17
25.119	1.88
27.542	1.59
30.200	1.32
33.113	1.07
36.308	0.85
39.811	0.65
43.652	0.49
47.863	0.35
52.481	

Size (µm)	Volume In %
52.481	0.24
57.544	0.16
63.096	0.10
69.183	0.05
75.858	0.04
83.176	0.00
91.201	0.00
100.000	0.00
109.648	0.00
120.226	0.00
131.826	0.00
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	

Size (µm)	Volume In %
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-28

Measured by:
Mel

Measured:
Friday, December 02, 2011 9:06:13 AM

Sample Name:
24 hour Cyanide Tail - Average

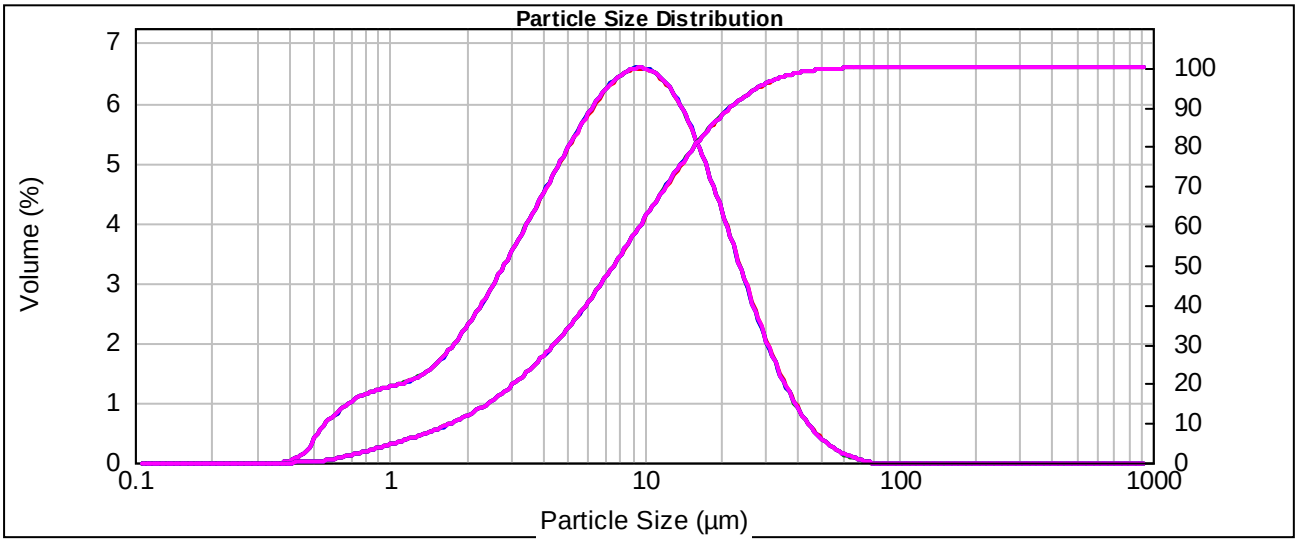
Edited by:
Mel

Analysed:
Friday, December 02, 2011 9:06:14 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: 17.73 %
Dispersant Name: Water
Dispersant RI: 1.330
Weighted Residual: 0.574 %
Result Emulation: Off

Concentration: 0.0111 %Vol
Span : 2.645
Uniformity: 0.833
Result units: Volume
Specific Surface Area: 0.555 m²/g
Surface Weighted Mean D[3,2]: 4.083 um
Vol. Weighted Mean D[4,3]: 10.191 um

d(0.1): 1.754 um d(0.5): 7.623 um **d(0.8): 15.776 um** d(0.9): 21.920 um d(0.98): 36.41 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	0.00
0.363	0.00
0.398	0.00
0.437	0.02
0.479	0.08

Size (µm)	Volume In %
0.479	0.21
0.525	0.38
0.575	0.47
0.631	0.55
0.692	0.63
0.759	0.68
0.832	0.72
0.912	0.75
1.000	0.77
1.096	0.80
1.202	0.84
1.318	0.90
1.445	0.98
1.585	1.08
1.738	1.21
1.905	1.35
2.089	1.50
2.291	1.66

Size (µm)	Volume In %
2.291	1.66
2.512	1.84
2.754	2.02
3.020	2.20
3.311	2.39
3.631	2.58
3.981	2.78
4.365	2.97
4.786	3.16
5.248	3.33
5.754	3.50
6.310	3.65
6.918	3.78
7.586	3.88
8.318	3.94
9.120	3.96
10.000	3.94
10.965	3.88

Size (µm)	Volume In %
10.965	3.88
12.023	3.77
13.183	3.60
14.454	3.40
15.849	3.16
17.378	2.88
19.055	2.58
20.893	2.27
22.909	1.96
25.119	1.65
27.542	1.36
30.200	1.10
33.113	0.86
36.308	0.65
39.811	0.48
43.652	0.34
47.863	0.23
52.481	0.15

Size (µm)	Volume In %
52.481	0.15
57.544	0.09
63.096	0.06
69.183	0.01
75.858	0.00
83.176	0.00
91.201	0.00
100.000	0.00
109.648	0.00
120.226	0.00
131.826	0.00
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	0.00

Size (µm)	Volume In %
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:

TABLE III-74

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-29

Measured by:
Mel

Measured:
Friday, December 02, 2011 9:09:31 AM

Sample Name:
24 hour Cyanide Tail - Average

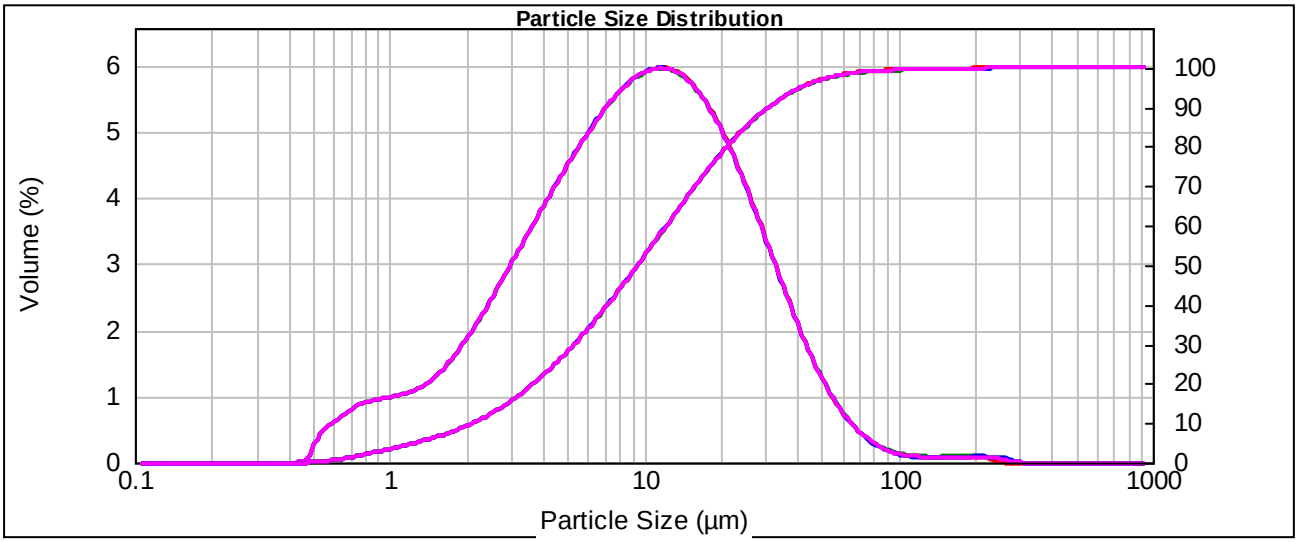
Edited by:
Mel

Analysed:
Friday, December 02, 2011 9:09:32 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: 16.23 %
Dispersant Name: Water
Dispersant RI: 1.330
Weighted Residual: 0.533 %
Result Emulation: Off

Concentration: 0.0119 %Vol
Span : 3.036
Uniformity: 1.02
Result units: Volume
Specific Surface Area: 0.466 m²/g
Surface Weighted Mean D[3,2]: 4.860 um
Vol. Weighted Mean D[4,3]: 14.332 um

d(0.1): 2.125 um d(0.5): 9.455 um **d(0.8): 21.212 um** d(0.9): 30.829 um d(0.98): 57.54 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.13
0.525	0.31
0.575	0.37
0.631	0.44
0.692	0.50
0.759	0.54
0.832	0.57
0.912	0.59
1.000	0.60
1.096	0.62
1.202	0.66
1.318	0.71
1.445	0.78
1.585	0.87
1.738	0.98
1.905	1.11
2.089	1.26
2.291	

Size (µm)	Volume In %
2.291	1.41
2.512	1.56
2.754	1.73
3.020	1.89
3.311	2.06
3.631	2.23
3.981	2.39
4.365	2.55
4.786	2.71
5.248	2.86
5.754	3.00
6.310	3.13
6.918	3.26
7.586	3.36
8.318	3.45
9.120	3.52
10.000	3.57
10.965	

Size (µm)	Volume In %
10.965	3.59
12.023	3.58
13.183	3.54
14.454	3.46
15.849	3.36
17.378	3.22
19.055	3.05
20.893	2.85
22.909	2.63
25.119	2.40
27.542	2.15
30.200	1.90
33.113	1.65
36.308	1.40
39.811	1.17
43.652	0.96
47.863	0.77
52.481	

Size (µm)	Volume In %
52.481	0.60
57.544	0.46
63.096	0.34
69.183	0.25
75.858	0.18
83.176	0.13
91.201	0.09
100.000	0.07
109.648	0.06
120.226	0.05
131.826	0.05
144.544	0.05
158.489	0.05
173.780	0.05
190.546	0.05
208.930	0.05
229.087	0.05
251.189	0.04

Size (µm)	Volume In %
251.189	0.03
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-30

Measured by:
Mel

Measured:
Friday, December 02, 2011 9:12:53 AM

Sample Name:
24 hour Cyanide Tail - Average

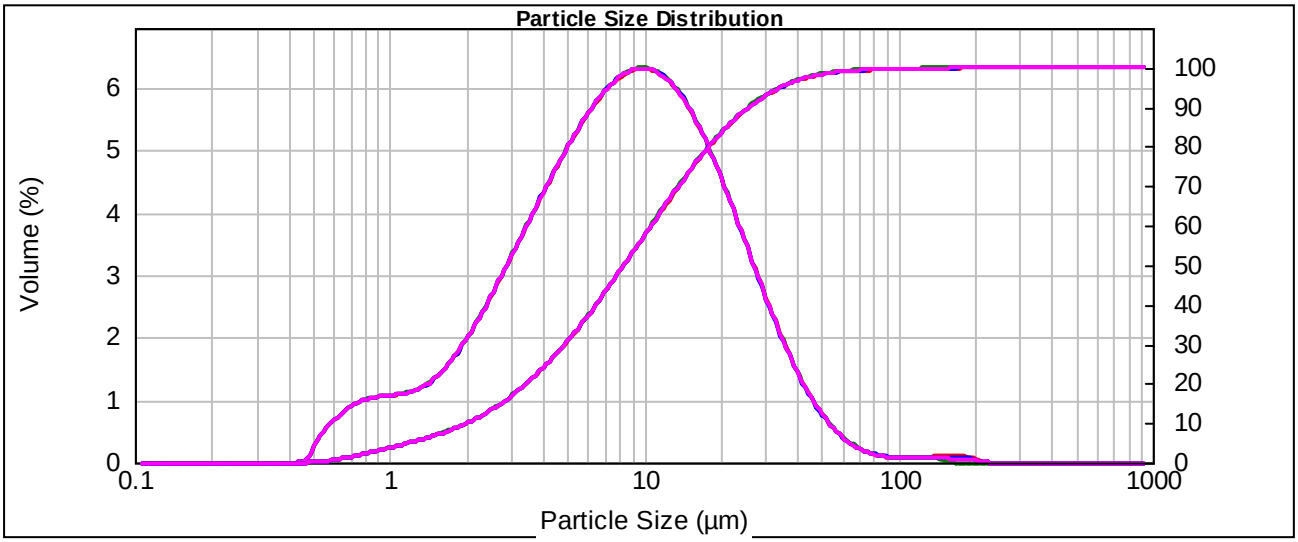
Edited by:
Mel

Analysed:
Friday, December 02, 2011 9:12:54 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: 12.04 %
Dispersant Name: Water
Dispersant RI: 1.330
Weighted Residual: 0.709 %
Result Emulation: Off

Concentration: 0.0080 %Vol
Span : 2.849
Uniformity: 0.944
Result units: Volume
Specific Surface Area: 0.499 m²/g
Surface Weighted Mean D[3,2]: 4.536 um
Vol. Weighted Mean D[4,3]: 12.128 um

d(0.1): 2.020 um d(0.5): 8.365 um **d(0.8): 18.019 um** d(0.9): 25.851 um d(0.98): 46.86 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.12
0.525	0.31
0.575	0.40
0.631	0.49
0.692	0.56
0.759	0.60
0.832	0.63
0.912	0.64
1.000	0.65
1.096	0.67
1.202	0.69
1.318	0.74
1.445	0.81
1.585	0.91
1.738	1.04
1.905	1.18
2.089	1.34
2.291	

Size (µm)	Volume In %
2.291	1.52
2.512	1.70
2.754	1.89
3.020	2.09
3.311	2.29
3.631	2.48
3.981	2.68
4.365	2.87
4.786	3.05
5.248	3.21
5.754	3.37
6.310	3.50
6.918	3.62
7.586	3.71
8.318	3.77
9.120	3.80
10.000	3.80
10.965	

Size (µm)	Volume In %
10.965	3.76
12.023	3.68
13.183	3.56
14.454	3.41
15.849	3.23
17.378	3.01
19.055	2.78
20.893	2.52
22.909	2.25
25.119	1.98
27.542	1.72
30.200	1.46
33.113	1.22
36.308	0.99
39.811	0.79
43.652	0.62
47.863	0.47
52.481	

Size (µm)	Volume In %
52.481	0.34
57.544	0.25
63.096	0.17
69.183	0.12
75.858	0.08
83.176	0.06
91.201	0.05
100.000	0.05
109.648	0.05
120.226	0.05
131.826	0.05
144.544	0.04
158.489	0.04
173.780	0.04
190.546	0.02
208.930	0.00
229.087	0.00
251.189	

Size (µm)	Volume In %
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-31

Sample Name:
24 hour Cyanide Tail - Average

Measured by:
Mel

Edited by:
Mel

Measured:
Friday, December 02, 2011 9:16:27 AM

Analysed:
Friday, December 02, 2011 9:16:28 AM

Particle Name: Silica 0.1
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.1
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.380 %

Sensitivity: Normal
Obscuration: 16.57 %
Result Emulation: Off

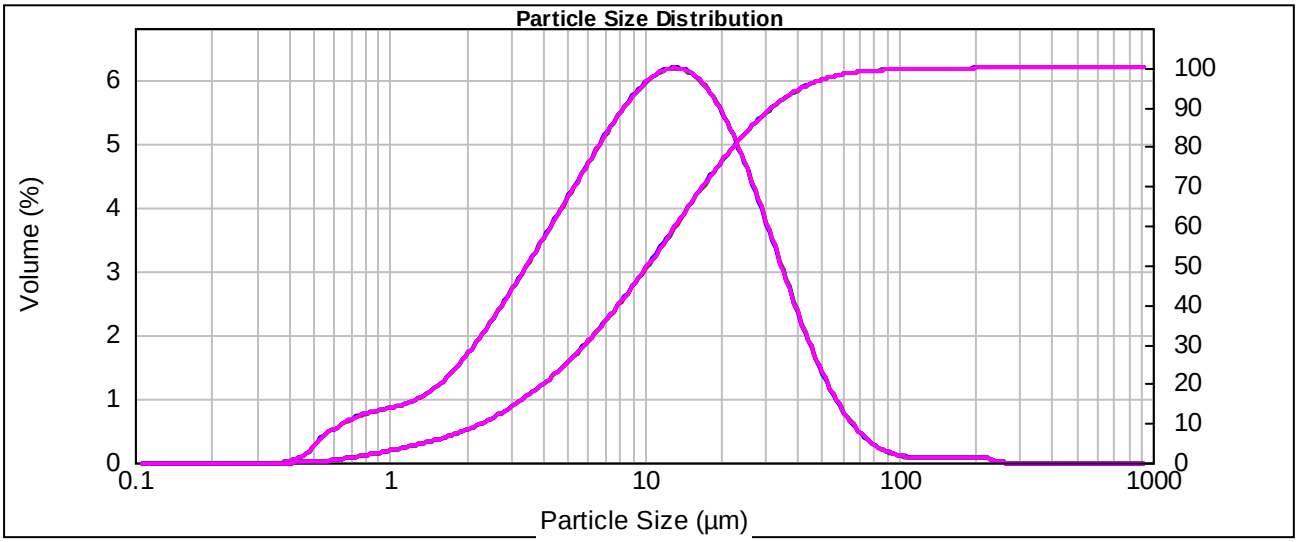
Concentration: 0.0131 %Vol
Specific Surface Area: 0.433 m²/g

Span : 2.861
Surface Weighted Mean D[3,2]: 5.226 um

Uniformity: 0.946
Vol. Weighted Mean D[4,3]: 14.940 um

Result units: Volume

d(0.1): 2.317 um d(0.5): 10.394 um **d(0.8): 22.534 um** d(0.9): 32.055 um d(0.98): 56.87 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	0.00
0.363	0.00
0.398	0.00
0.437	0.02
0.479	0.06

Size (µm)	Volume In %
0.479	0.14
0.525	0.25
0.575	0.31
0.631	0.37
0.692	0.42
0.759	0.46
0.832	0.48
0.912	0.51
1.000	0.53
1.096	0.55
1.202	0.59
1.318	0.64
1.445	0.71
1.585	0.79
1.738	0.89
1.905	1.00
2.089	1.13
2.291	1.26

Size (µm)	Volume In %
2.291	1.26
2.512	1.41
2.754	1.55
3.020	1.70
3.311	1.86
3.631	2.02
3.981	2.18
4.365	2.34
4.786	2.50
5.248	2.66
5.754	2.83
6.310	2.98
6.918	3.13
7.586	3.28
8.318	3.41
9.120	3.52
10.000	3.62
10.965	3.69

Size (µm)	Volume In %
10.965	3.69
12.023	3.72
13.183	3.73
14.454	3.69
15.849	3.62
17.378	3.50
19.055	3.35
20.893	3.15
22.909	2.93
25.119	2.69
27.542	2.42
30.200	2.14
33.113	1.86
36.308	1.58
39.811	1.32
43.652	1.08
47.863	0.85
52.481	0.66

Size (µm)	Volume In %
52.481	0.66
57.544	0.50
63.096	0.36
69.183	0.26
75.858	0.18
83.176	0.12
91.201	0.08
100.000	0.06
109.648	0.05
120.226	0.04
131.826	0.04
144.544	0.04
158.489	0.05
173.780	0.05
190.546	0.05
208.930	0.05
229.087	0.05
251.189	0.02

Size (µm)	Volume In %
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:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

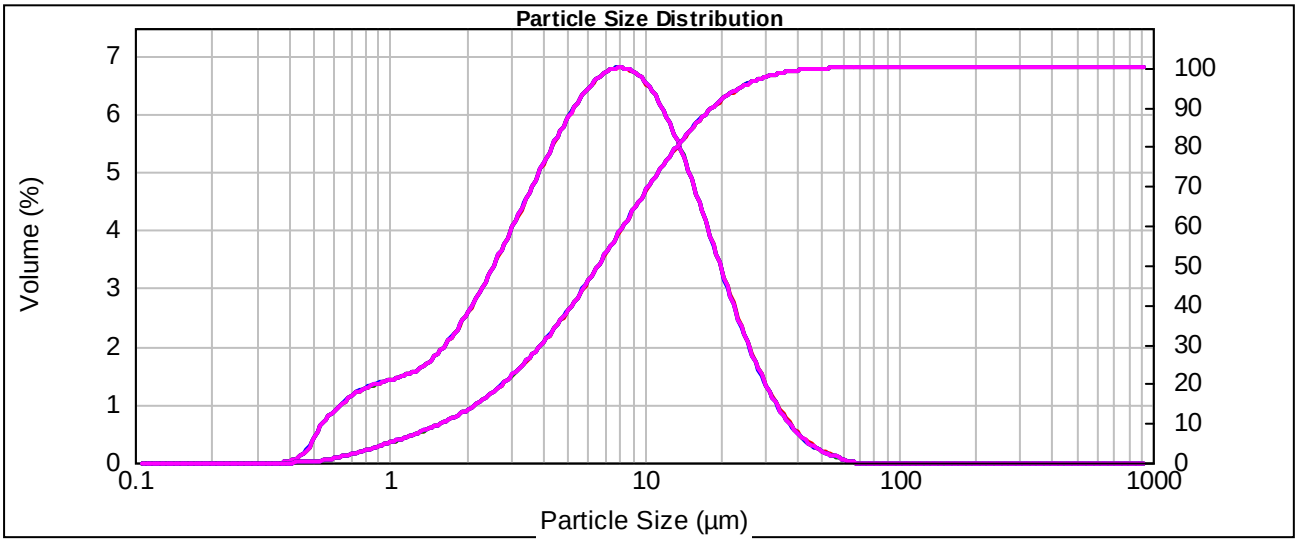
Result Analysis Report

Project and Test number: KM3174-32
Measured by: Mel
Measured: Friday, December 02, 2011 9:20:04 AM
Sample Name: 24 hour Cyanide Tail - Average
Edited by: Mel
Analysed: Friday, December 02, 2011 9:20:05 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: 18.64 %
Dispersant Name: Water
Dispersant RI: 1.330
Weighted Residual: 0.649 %
Result Emulation: Off

Concentration: 0.0107 %Vol
Span : 2.573
Uniformity: 0.81
Result units: Volume
Specific Surface Area: 0.606 m²/g
Surface Weighted Mean D[3,2]: 3.735 um
Vol. Weighted Mean D[4,3]: 8.795 um

d(0.1): 1.606 um d(0.5): 6.634 um **d(0.8): 13.478 um** d(0.9): 18.675 um d(0.98): 31.14 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	0.00
0.363	0.00
0.398	0.00
0.437	0.02
0.479	0.08

Size (µm)	Volume In %
0.479	0.23
0.525	0.42
0.575	0.52
0.631	0.62
0.692	0.71
0.759	0.77
0.832	0.81
0.912	0.84
1.000	0.87
1.096	0.90
1.202	0.94
1.318	1.01
1.445	1.10
1.585	1.22
1.738	1.36
1.905	1.52
2.089	1.70
2.291	

Size (µm)	Volume In %
2.291	1.89
2.512	2.09
2.754	2.30
3.020	2.52
3.311	2.74
3.631	2.96
3.981	3.17
4.365	3.38
4.786	3.56
5.248	3.73
5.754	3.87
6.310	3.99
6.918	4.06
7.586	4.09
8.318	4.07
9.120	4.01
10.000	3.89
10.965	

Size (µm)	Volume In %
10.965	3.73
12.023	3.52
13.183	3.27
14.454	2.99
15.849	2.68
17.378	2.36
19.055	2.04
20.893	1.73
22.909	1.43
25.119	1.15
27.542	0.91
30.200	0.70
33.113	0.52
36.308	0.37
39.811	0.26
43.652	0.18
47.863	0.11
52.481	

Size (µm)	Volume In %
52.481	0.07
57.544	0.04
63.096	0.00
69.183	0.00
75.858	0.00
83.176	0.00
91.201	0.00
100.000	0.00
109.648	0.00
120.226	0.00
131.826	0.00
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	

Size (µm)	Volume In %
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-33

Measured by:
Mel

Measured:
Friday, December 02, 2011 9:23:34 AM

Sample Name:
24 hour Cyanide Tail - Average

Edited by:
Mel

Analysed:
Friday, December 02, 2011 9:23:35 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:
14.36 %

Dispersant Name:
Water

Dispersant RI:
1.330

Weighted Residual:
0.758 %

Result Emulation:
Off

Concentration:
0.0096 %Vol

Span :
5.133

Uniformity:
2.08

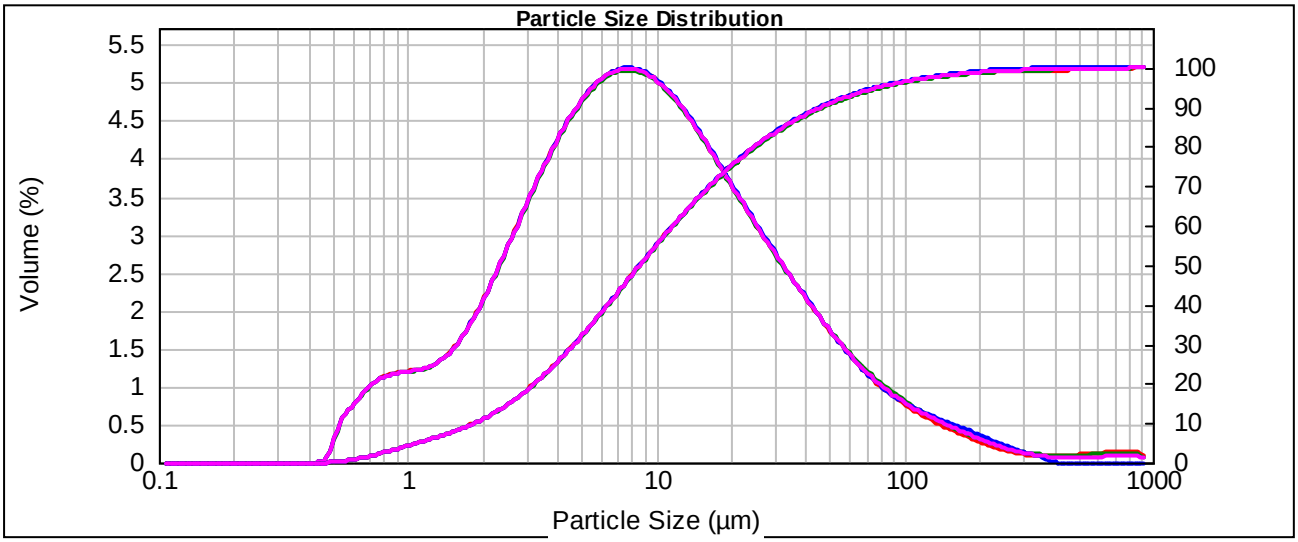
Result units:
Volume

Specific Surface Area:
0.507 m²/g

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

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

d(0.1): 1.865 um d(0.5): 8.625 um **d(0.8): 25.057 um** d(0.9): 46.135 um d(0.98): 145.62 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.15
0.525	0.36
0.575	0.45
0.631	0.55
0.692	0.63
0.759	0.67
0.832	0.70
0.912	0.72
1.000	0.73
1.096	0.74
1.202	0.77
1.318	0.82
1.445	0.89
1.585	0.99
1.738	1.12
1.905	1.27
2.089	1.43
2.291	

Size (µm)	Volume In %
2.291	1.60
2.512	1.78
2.754	1.96
3.020	2.14
3.311	2.31
3.631	2.47
3.981	2.62
4.365	2.75
4.786	2.87
5.248	2.96
5.754	3.04
6.310	3.09
6.918	3.11
7.586	3.12
8.318	3.10
9.120	3.06
10.000	3.00
10.965	

Size (µm)	Volume In %
10.965	2.92
12.023	2.82
13.183	2.71
14.454	2.60
15.849	2.47
17.378	2.34
19.055	2.21
20.893	2.08
22.909	1.96
25.119	1.83
27.542	1.71
30.200	1.59
33.113	1.48
36.308	1.37
39.811	1.26
43.652	1.15
47.863	1.05
52.481	

Size (µm)	Volume In %
52.481	0.95
57.544	0.86
63.096	0.77
69.183	0.69
75.858	0.62
83.176	0.55
91.201	0.50
100.000	0.45
109.648	0.40
120.226	0.36
131.826	0.33
144.544	0.29
158.489	0.26
173.780	0.22
190.546	0.19
208.930	0.16
229.087	0.13
251.189	

Size (µm)	Volume In %
251.189	0.11
275.423	0.08
301.995	0.07
331.131	0.06
363.078	0.04
398.107	0.04
436.516	0.04
478.630	0.04
524.807	0.04
575.440	0.04
630.957	0.05
691.831	0.05
758.578	0.05
831.764	0.05
912.011	0.05
1000.000	0.01

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-34

Sample Name:
24 hour Cyanide Tail - Average

Measured by:
Mel

Edited by:
Mel

Measured:
Friday, December 02, 2011 7:44:23 AM

Analysed:
Friday, December 02, 2011 7:44:24 AM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.189 %

Sensitivity: Normal
Obscuration: 15.87 %
Result Emulation: Off

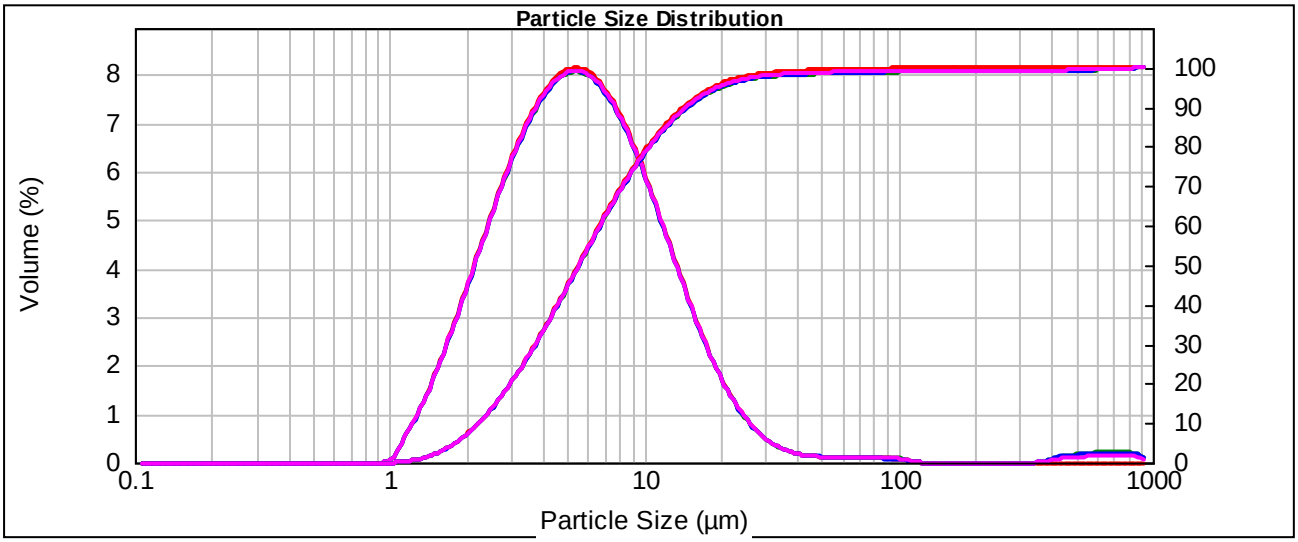
Concentration: 0.0088 %Vol
Specific Surface Area: 0.507 m²/g

Span : 2.232
Surface Weighted Mean D[3,2]: 4.461 um

Uniformity: 1.51
Vol. Weighted Mean D[4,3]: 11.763 um

Result units: Volume

d(0.1): 2.241 um d(0.5): 5.543 um **d(0.8): 10.480 um** d(0.9): 14.615 um d(0.98): 29.69 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.07
1.096	0.32
1.202	0.53
1.318	0.79
1.445	1.09
1.585	1.42
1.738	1.77
1.905	2.13
2.089	2.51
2.291	2.88

Size (µm)	Volume In %
2.291	2.88
2.512	3.24
2.754	3.59
3.020	3.91
3.311	4.19
3.631	4.43
3.981	4.63
4.365	4.77
4.786	4.85
5.248	4.86
5.754	4.82
6.310	4.71
6.918	4.55
7.586	4.33
8.318	4.06
9.120	3.76
10.000	3.42
10.965	3.07

Size (µm)	Volume In %
10.965	3.07
12.023	2.70
13.183	2.33
14.454	1.98
15.849	1.65
17.378	1.34
19.055	1.07
20.893	0.83
22.909	0.63
25.119	0.47
27.542	0.34
30.200	0.24
33.113	0.18
36.308	0.13
39.811	0.10
43.652	0.08
47.863	0.07
52.481	0.07

Size (µm)	Volume In %
52.481	0.07
57.544	0.06
63.096	0.06
69.183	0.06
75.858	0.06
83.176	0.05
91.201	0.05
100.000	0.04
109.648	0.01
120.226	0.00
131.826	0.00
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	0.00

Size (µm)	Volume In %
251.189	0.00
275.423	0.00
301.995	0.00
331.131	0.00
363.078	0.01
398.107	0.05
436.516	0.06
478.630	0.06
524.807	0.08
575.440	0.08
630.957	0.08
691.831	0.08
758.578	0.08
831.764	0.07
912.011	0.02
1000.000	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-35

Measured by:
Mel

Measured:
Friday, December 02, 2011 7:50:52 AM

Sample Name:
24 hour Cyanide Tail - Average

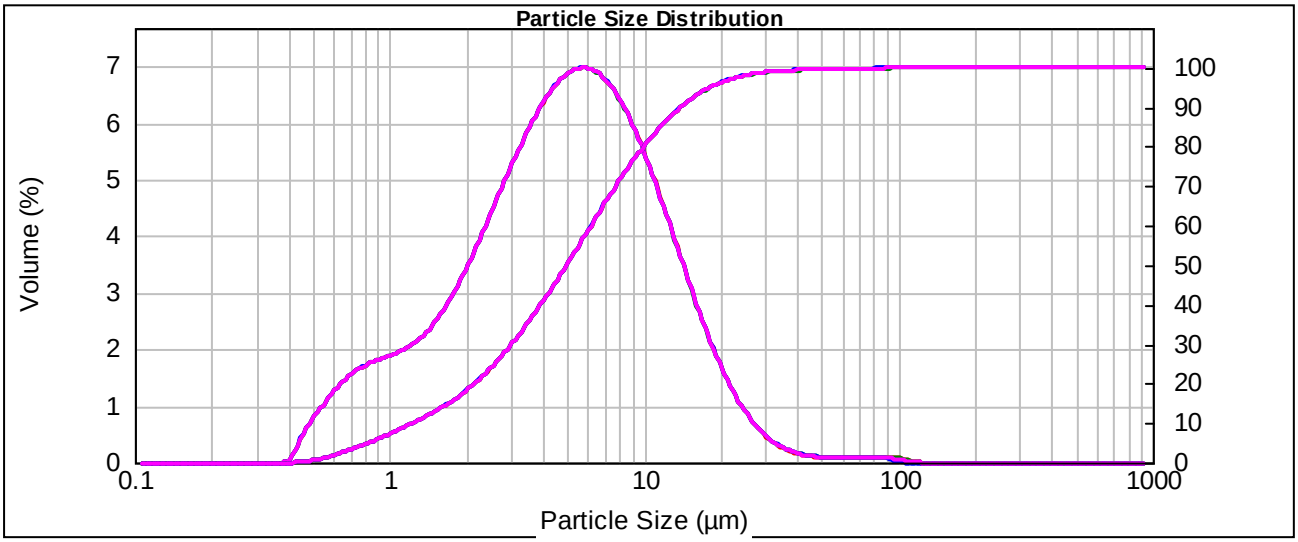
Edited by:
Mel

Analysed:
Friday, December 02, 2011 7:50:54 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: 19.90 %
Dispersant Name: Water
Dispersant RI: 1.330
Weighted Residual: 0.603 %
Result Emulation: Off

Concentration: 0.0093 %Vol
Span : 2.557
Uniformity: 0.849
Result units: Volume
Specific Surface Area: 0.766 m²/g
Surface Weighted Mean D[3,2]: 2.957 um
Vol. Weighted Mean D[4,3]: 6.824 um

d(0.1): 1.237 um d(0.5): 4.964 um **d(0.8): 9.978 um** d(0.9): 13.928 um d(0.98): 24.71 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	0.00
0.363	0.00
0.398	0.00
0.437	0.06
0.479	0.31

Size (µm)	Volume In %
0.479	0.47
0.525	0.61
0.575	0.76
0.631	0.87
0.692	0.96
0.759	1.03
0.832	1.08
0.912	1.12
1.000	1.16
1.096	1.20
1.202	1.27
1.318	1.36
1.445	1.49
1.585	1.65
1.738	1.84
1.905	2.05
2.089	2.29
2.291	

Size (µm)	Volume In %
2.291	2.53
2.512	2.78
2.754	3.04
3.020	3.28
3.311	3.51
3.631	3.72
3.981	3.89
4.365	4.04
4.786	4.14
5.248	4.19
5.754	4.19
6.310	4.14
6.918	4.04
7.586	3.88
8.318	3.68
9.120	3.44
10.000	3.16
10.965	

Size (µm)	Volume In %
10.965	2.86
12.023	2.54
13.183	2.21
14.454	1.89
15.849	1.59
17.378	1.30
19.055	1.04
20.893	0.81
22.909	0.62
25.119	0.46
27.542	0.33
30.200	0.23
33.113	0.17
36.308	0.12
39.811	0.09
43.652	0.07
47.863	0.06
52.481	

Size (µm)	Volume In %
52.481	0.05
57.544	0.05
63.096	0.05
69.183	0.05
75.858	0.05
83.176	0.05
91.201	0.04
100.000	0.03
109.648	0.00
120.226	0.00
131.826	0.00
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	

Size (µm)	Volume In %
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-36

Measured by:
Mel

Measured:
Friday, December 02, 2011 7:55:33 AM

Sample Name:
24 hour Cyanide Tail - Average

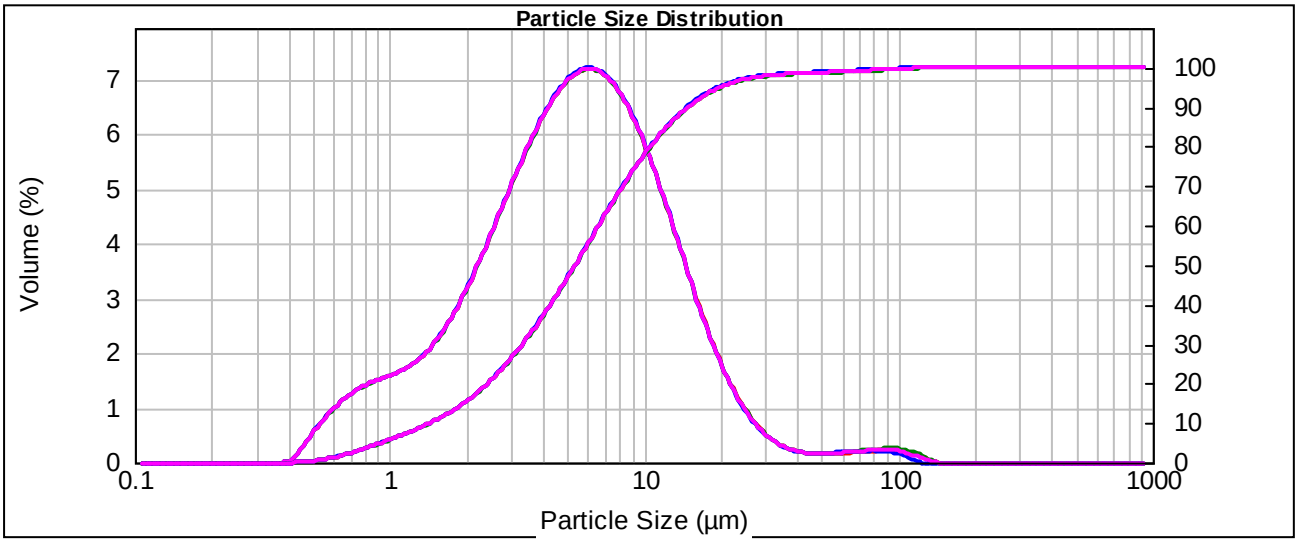
Edited by:
Mel

Analysed:
Friday, December 02, 2011 7:55:34 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: 11.00 %
Dispersant Name: Water
Dispersant RI: 1.330
Weighted Residual: 0.898 %
Result Emulation: Off

Concentration: 0.0053 %Vol
Span : 2.498
Uniformity: 0.915
Result units: Volume
Specific Surface Area: 0.692 m²/g
Surface Weighted Mean D[3,2]: 3.270 um
Vol. Weighted Mean D[4,3]: 7.774 um

d(0.1): 1.440 um d(0.5): 5.359 um **d(0.8): 10.587 um** d(0.9): 14.825 um d(0.98): 30.22 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	0.00
0.363	0.00
0.398	0.00
0.437	0.03
0.479	0.18

Size (µm)	Volume In %
0.479	0.33
0.525	0.47
0.575	0.59
0.631	0.70
0.692	0.78
0.759	0.84
0.832	0.89
0.912	0.94
1.000	0.98
1.096	1.03
1.202	1.10
1.318	1.20
1.445	1.32
1.585	1.48
1.738	1.67
1.905	1.89
2.089	2.13
2.291	

Size (µm)	Volume In %
2.291	2.39
2.512	2.65
2.754	2.92
3.020	3.19
3.311	3.45
3.631	3.69
3.981	3.90
4.365	4.08
4.786	4.21
5.248	4.30
5.754	4.34
6.310	4.31
6.918	4.24
7.586	4.10
8.318	3.90
9.120	3.66
10.000	3.37
10.965	

Size (µm)	Volume In %
10.965	3.06
12.023	2.73
13.183	2.37
14.454	2.03
15.849	1.70
17.378	1.39
19.055	1.11
20.893	0.86
22.909	0.66
25.119	0.49
27.542	0.36
30.200	0.26
33.113	0.19
36.308	0.14
39.811	0.11
43.652	0.10
47.863	0.10
52.481	

Size (µm)	Volume In %
52.481	0.10
57.544	0.11
63.096	0.12
69.183	0.13
75.858	0.14
83.176	0.14
91.201	0.14
100.000	0.12
109.648	0.07
120.226	0.05
131.826	0.00
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	

Size (µm)	Volume In %
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-37

Measured by:
Mel

Measured:
Friday, December 02, 2011 8:04:25 AM

Sample Name:
24 hour Cyanide Tail - Average

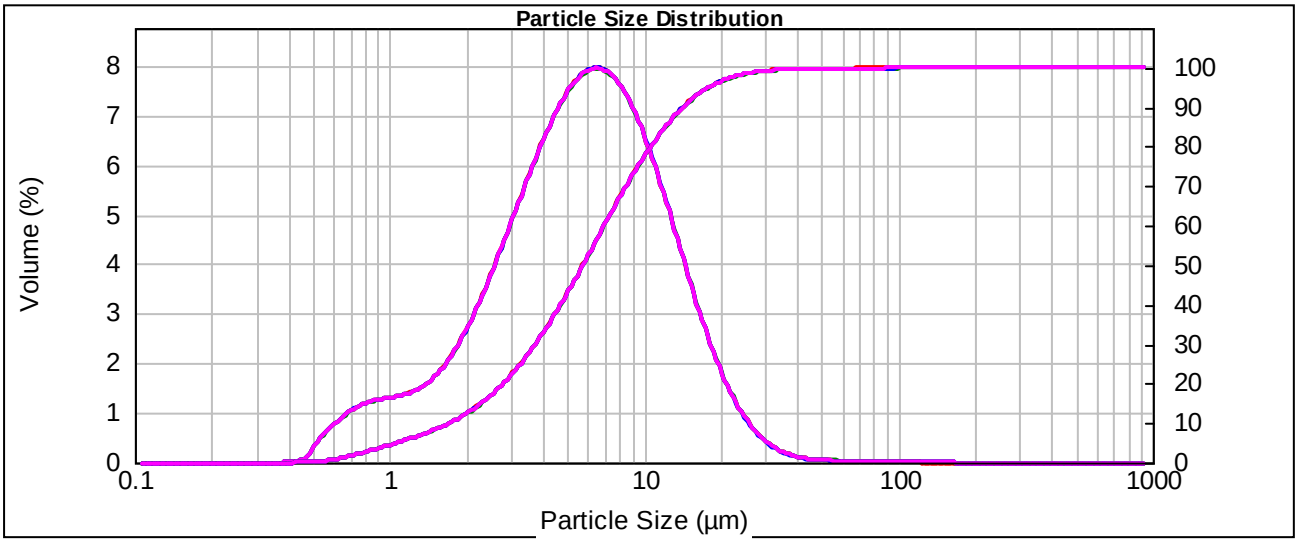
Edited by:
Mel

Analysed:
Friday, December 02, 2011 8:04:26 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: 10.20 %
Dispersant Name: Water
Dispersant RI: 1.330
Weighted Residual: 0.875 %
Result Emulation: Off

Concentration: 0.0054 %Vol
Span : 2.177
Uniformity: 0.71
Result units: Volume
Specific Surface Area: 0.622 m²/g
Surface Weighted Mean D[3,2]: 3.640 um
Vol. Weighted Mean D[4,3]: 7.300 um

d(0.1): 1.721 um d(0.5): 5.752 um **d(0.8): 10.618 um** d(0.9): 14.241 um d(0.98): 23.33 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	0.00
0.363	0.00
0.398	0.01
0.437	0.03
0.479	

Size (µm)	Volume In %
0.479	0.16
0.525	0.34
0.575	0.46
0.631	0.56
0.692	0.65
0.759	0.71
0.832	0.75
0.912	0.78
1.000	0.80
1.096	0.82
1.202	0.87
1.318	0.94
1.445	1.05
1.585	1.19
1.738	1.38
1.905	1.60
2.089	1.86
2.291	

Size (µm)	Volume In %
2.291	2.14
2.512	2.44
2.754	2.76
3.020	3.09
3.311	3.42
3.631	3.73
3.981	4.02
4.365	4.29
4.786	4.50
5.248	4.66
5.754	4.76
6.310	4.79
6.918	4.74
7.586	4.61
8.318	4.41
9.120	4.14
10.000	3.81
10.965	

Size (µm)	Volume In %
10.965	3.44
12.023	3.04
13.183	2.62
14.454	2.21
15.849	1.82
17.378	1.45
19.055	1.13
20.893	0.85
22.909	0.62
25.119	0.44
27.542	0.31
30.200	0.20
33.113	0.13
36.308	0.09
39.811	0.06
43.652	0.04
47.863	0.03
52.481	

Size (µm)	Volume In %
52.481	0.02
57.544	0.02
63.096	0.02
69.183	0.02
75.858	0.02
83.176	0.02
91.201	0.02
100.000	0.02
109.648	0.02
120.226	0.02
131.826	0.01
144.544	0.01
158.489	0.01
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	0.00

Size (µm)	Volume In %
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-38

Sample Name:
24 hour Cyanide Tail - Average

Measured by:
Mel

Edited by:
Mel

Measured:
Friday, December 02, 2011 8:08:09 AM

Analysed:
Friday, December 02, 2011 8:08:10 AM

Particle Name: Silica 0.1
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.1
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.545 %

Sensitivity: Normal
Obscuration: 12.82 %
Result Emulation: Off

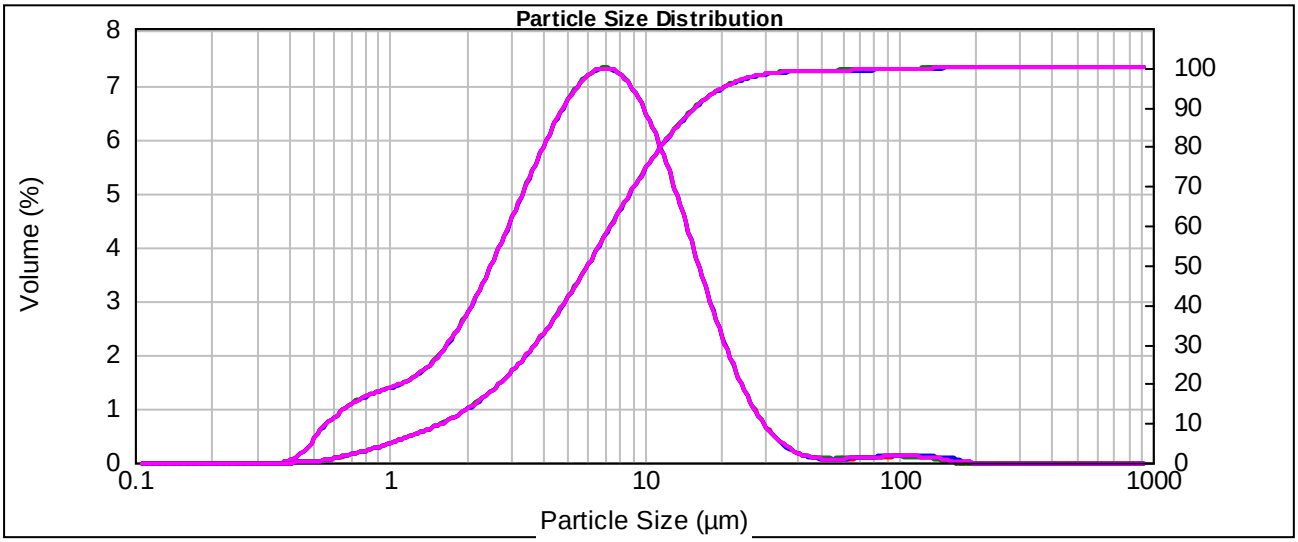
Concentration: 0.0068 %Vol
Specific Surface Area: 0.629 m²/g

Span : 2.390
Surface Weighted Mean D[3,2]: 3.601 um

Uniformity: 0.834
Vol. Weighted Mean D[4,3]: 8.232 um

Result units: Volume

d(0.1): 1.615 um d(0.5): 6.009 um **d(0.8): 11.663 um** d(0.9): 15.977 um d(0.98): 27.75 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	0.00
0.363	0.00
0.398	0.00
0.437	0.03
0.479	0.11

Size (µm)	Volume In %
0.479	0.23
0.525	0.41
0.575	0.50
0.631	0.59
0.692	0.67
0.759	0.73
0.832	0.78
0.912	0.81
1.000	0.85
1.096	0.90
1.202	0.96
1.318	1.04
1.445	1.14
1.585	1.28
1.738	1.45
1.905	1.64
2.089	1.85
2.291	

Size (µm)	Volume In %
2.291	2.08
2.512	2.32
2.754	2.58
3.020	2.84
3.311	3.11
3.631	3.37
3.981	3.62
4.365	3.85
4.786	4.04
5.248	4.21
5.754	4.32
6.310	4.39
6.918	4.40
7.586	4.35
8.318	4.24
9.120	4.07
10.000	3.83
10.965	

Size (µm)	Volume In %
10.965	3.56
12.023	3.24
13.183	2.89
14.454	2.53
15.849	2.16
17.378	1.80
19.055	1.47
20.893	1.16
22.909	0.89
25.119	0.66
27.542	0.47
30.200	0.33
33.113	0.22
36.308	0.14
39.811	0.09
43.652	0.06
47.863	0.04
52.481	

Size (µm)	Volume In %
52.481	0.04
57.544	0.04
63.096	0.05
69.183	0.05
75.858	0.06
83.176	0.07
91.201	0.07
100.000	0.07
109.648	0.07
120.226	0.06
131.826	0.06
144.544	0.04
158.489	0.01
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	

Size (µm)	Volume In %
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-39

Measured by:
Mel

Measured:
Friday, December 02, 2011 8:14:53 AM

Sample Name:
24 hour Cyanide Tail - Average

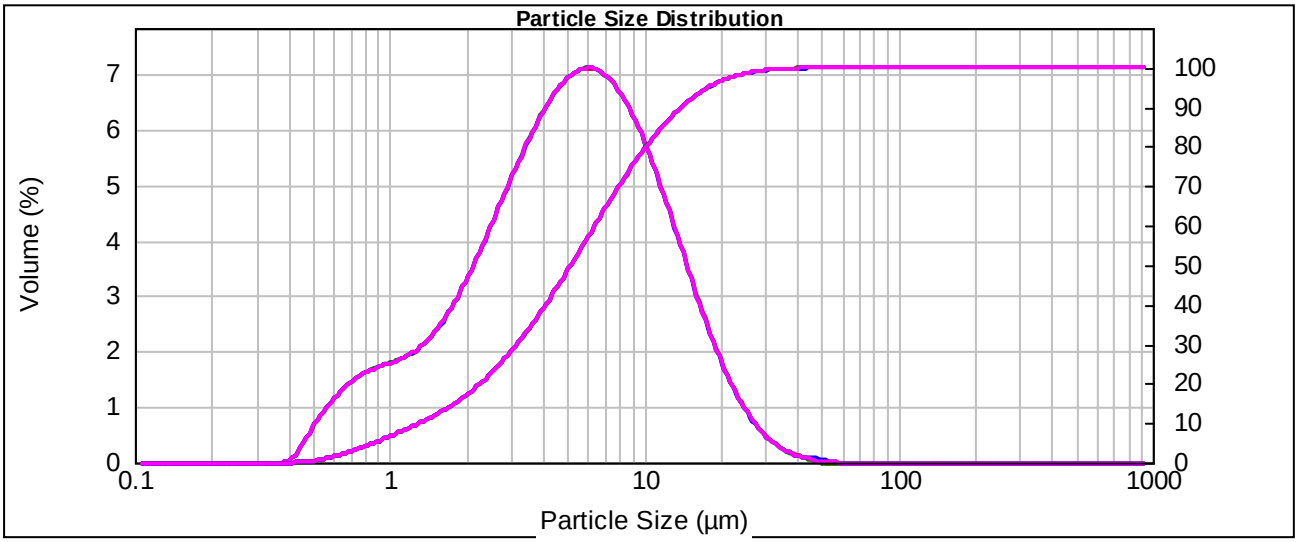
Edited by:
Mel

Analysed:
Friday, December 02, 2011 8:14:54 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: 18.44 %
Dispersant Name: Water
Dispersant RI: 1.330
Weighted Residual: 0.675 %
Result Emulation: Off

Concentration: 0.0088 %Vol
Span : 2.462
Uniformity: 0.773
Result units: Volume
Specific Surface Area: 0.733 m²/g
Surface Weighted Mean D[3,2]: 3.090 um
Vol. Weighted Mean D[4,3]: 6.717 um

d(0.1): 1.314 um d(0.5): 5.159 um **d(0.8): 10.198 um** d(0.9): 14.014 um d(0.98): 23.11 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	0.00
0.363	0.00
0.398	0.00
0.437	0.03
0.479	0.21

Size (µm)	Volume In %
0.479	0.38
0.525	0.55
0.575	0.69
0.631	0.80
0.692	0.90
0.759	0.97
0.832	1.02
0.912	1.06
1.000	1.09
1.096	1.14
1.202	1.20
1.318	1.29
1.445	1.41
1.585	1.57
1.738	1.75
1.905	1.97
2.089	2.20
2.291	

Size (µm)	Volume In %
2.291	2.44
2.512	2.70
2.754	2.96
3.020	3.21
3.311	3.46
3.631	3.68
3.981	3.88
4.365	4.04
4.786	4.17
5.248	4.25
5.754	4.28
6.310	4.25
6.918	4.18
7.586	4.04
8.318	3.86
9.120	3.63
10.000	3.35
10.965	

Size (µm)	Volume In %
10.965	3.05
12.023	2.72
13.183	2.38
14.454	2.05
15.849	1.72
17.378	1.41
19.055	1.13
20.893	0.87
22.909	0.66
25.119	0.48
27.542	0.34
30.200	0.23
33.113	0.16
36.308	0.09
39.811	0.07
43.652	0.04
47.863	0.01
52.481	

Size (µm)	Volume In %
52.481	0.00
57.544	0.00
63.096	0.00
69.183	0.00
75.858	0.00
83.176	0.00
91.201	0.00
100.000	0.00
109.648	0.00
120.226	0.00
131.826	0.00
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	

Size (µm)	Volume In %
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-40

Measured by:
Mel

Measured:
Friday, December 02, 2011 8:20:06 AM

Sample Name:
24 hour Cyanide Tail - Average

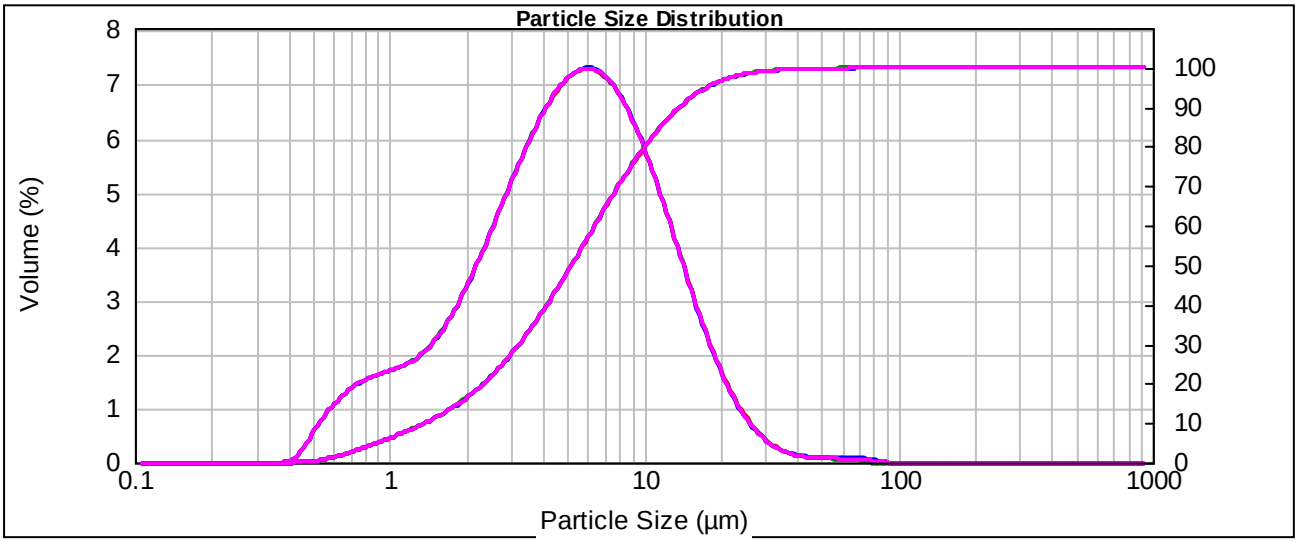
Edited by:
Mel

Analysed:
Friday, December 02, 2011 8:20:07 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: 10.63 %
Dispersant Name: Water
Dispersant RI: 1.330
Weighted Residual: 0.742 %
Result Emulation: Off

Concentration: 0.0050 %Vol
Span : 2.397
Uniformity: 0.773
Result units: Volume
Specific Surface Area: 0.715 m²/g
Surface Weighted Mean D[3,2]: 3.166 um
Vol. Weighted Mean D[4,3]: 6.792 um

d(0.1): 1.377 um d(0.5): 5.185 um **d(0.8): 10.081 um** d(0.9): 13.808 um d(0.98): 23.27 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	0.00
0.363	0.00
0.398	0.00
0.437	0.02
0.479	0.15

Size (µm)	Volume In %
0.479	0.33
0.525	0.50
0.575	0.64
0.631	0.76
0.692	0.85
0.759	0.92
0.832	0.97
0.912	1.01
1.000	1.04
1.096	1.08
1.202	1.15
1.318	1.24
1.445	1.36
1.585	1.53
1.738	1.72
1.905	1.94
2.089	2.19
2.291	

Size (µm)	Volume In %
2.291	2.45
2.512	2.72
2.754	3.00
3.020	3.27
3.311	3.53
3.631	3.77
3.981	3.98
4.365	4.16
4.786	4.29
5.248	4.37
5.754	4.40
6.310	4.37
6.918	4.28
7.586	4.12
8.318	3.92
9.120	3.67
10.000	3.36
10.965	

Size (µm)	Volume In %
10.965	3.04
12.023	2.69
13.183	2.33
14.454	1.98
15.849	1.64
17.378	1.32
19.055	1.04
20.893	0.80
22.909	0.59
25.119	0.42
27.542	0.30
30.200	0.20
33.113	0.14
36.308	0.10
39.811	0.07
43.652	0.06
47.863	0.05
52.481	

Size (µm)	Volume In %
52.481	0.05
57.544	0.04
63.096	0.04
69.183	0.04
75.858	0.04
83.176	0.02
91.201	0.00
100.000	0.00
109.648	0.00
120.226	0.00
131.826	0.00
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	

Size (µm)	Volume In %
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-41

Sample Name:
Bulk Regrind Discharge - Average

Measured by:
Mel

Edited by:
Mel

Measured:
Friday, December 02, 2011 8:25:11 AM

Analysed:
Friday, December 02, 2011 8:25:12 AM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.127 %

Sensitivity: Normal
Obscuration: 16.00 %
Result Emulation: Off

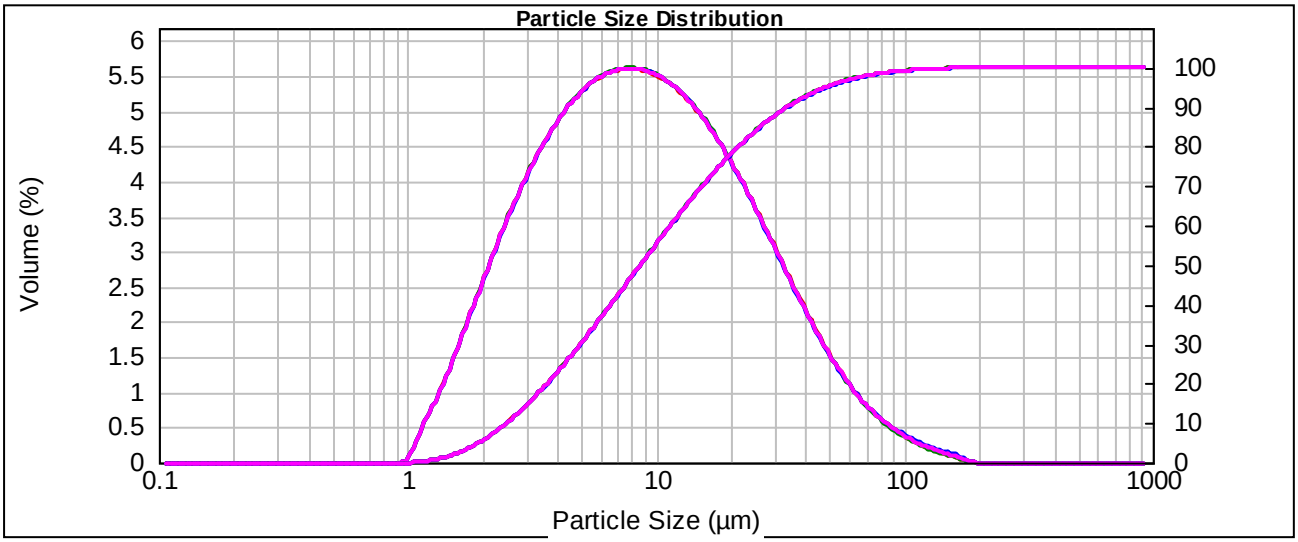
Concentration: 0.0116 %Vol
Specific Surface Area: 0.389 m²/g

Span : 3.603
Surface Weighted Mean D[3,2]: 5.822 um

Uniformity: 1.18
Vol. Weighted Mean D[4,3]: 14.728 um

Result units: Volume

d(0.1): 2.505 um d(0.5): 8.646 um **d(0.8): 21.481 um** d(0.9): 33.658 um d(0.98): 70.63 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.09
1.096	0.33
1.202	0.47
1.318	0.65
1.445	0.87
1.585	1.09
1.738	1.31
1.905	1.53
2.089	1.76
2.291	1.97

Size (µm)	Volume In %
2.291	1.97
2.512	2.17
2.754	2.36
3.020	2.54
3.311	2.70
3.631	2.85
3.981	2.97
4.365	3.09
4.786	3.18
5.248	3.25
5.754	3.31
6.310	3.35
6.918	3.37
7.586	3.38
8.318	3.37
9.120	3.34
10.000	3.30
10.965	3.24

Size (µm)	Volume In %
10.965	3.24
12.023	3.17
13.183	3.08
14.454	2.98
15.849	2.86
17.378	2.73
19.055	2.59
20.893	2.43
22.909	2.27
25.119	2.10
27.542	1.92
30.200	1.74
33.113	1.57
36.308	1.39
39.811	1.23
43.652	1.07
47.863	0.92
52.481	0.79

Size (µm)	Volume In %
52.481	0.79
57.544	0.66
63.096	0.55
69.183	0.46
75.858	0.38
83.176	0.31
91.201	0.25
100.000	0.20
109.648	0.16
120.226	0.13
131.826	0.10
144.544	0.06
158.489	0.05
173.780	0.01
190.546	0.00
208.930	0.00
229.087	0.00
251.189	0.00

Size (µm)	Volume In %
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:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-41

Measured by:
Mel

Measured:
Friday, December 02, 2011 8:29:35 AM

Sample Name:
Pyrite Rougher Concentrate - Average

Edited by:
Mel

Analysed:
Friday, December 02, 2011 8:29:36 AM

Particle Name:
Silica 0.01

Accessory Name:
Hydro 2000MU (A)

Analysis model:
General purpose

Sensitivity:
Normal

Particle RI:
1.544

Absorption:
0.01

Size range:
0.100 to 1000.000 um

Obscuration:
15.42 %

Dispersant Name:
Water

Dispersant RI:
1.330

Weighted Residual:
0.461 %

Result Emulation:
Off

Concentration:
0.0207 %Vol

Span :
2.546

Uniformity:
0.878

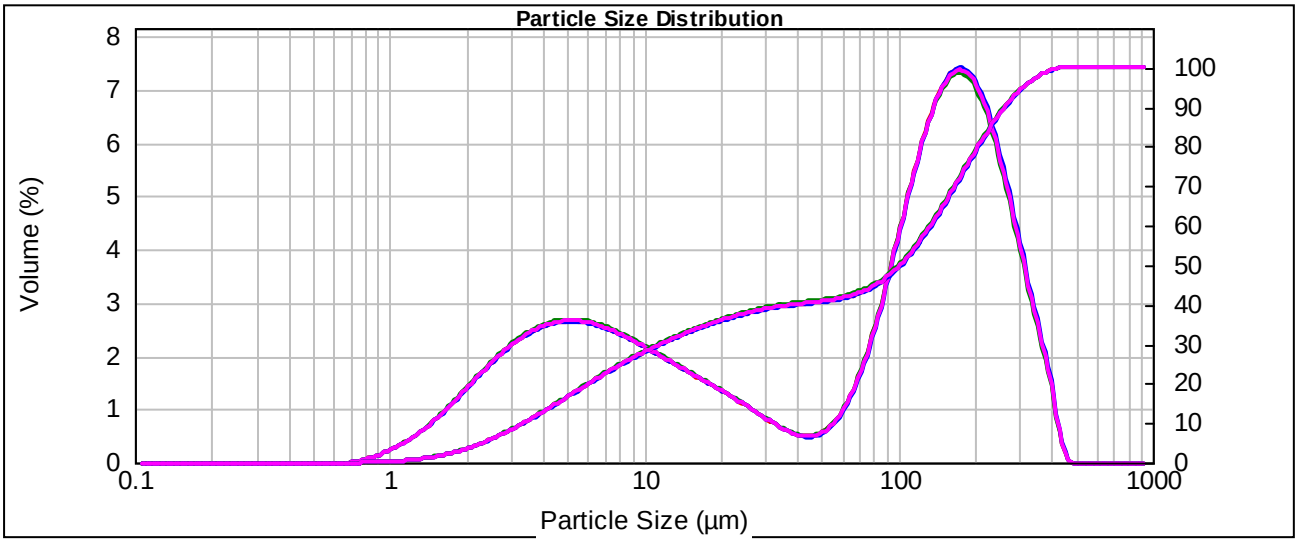
Result units:
Volume

Specific Surface Area:
0.211 m²/g

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

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

d(0.1): 3.359 um d(0.5): 101.424 um **d(0.8): 205.252 um** d(0.9): 261.613 um d(0.98): 357.81 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.04
0.832	0.06
0.912	0.12
1.000	0.17
1.096	0.23
1.202	0.30
1.318	0.39
1.445	0.48
1.585	0.59
1.738	0.71
1.905	0.83
2.089	0.95
2.291	1.07

Size (µm)	Volume In %
2.291	1.07
2.512	1.18
2.754	1.29
3.020	1.37
3.311	1.45
3.631	1.51
3.981	1.56
4.365	1.59
4.786	1.61
5.248	1.60
5.754	1.59
6.310	1.56
6.918	1.52
7.586	1.46
8.318	1.41
9.120	1.35
10.000	1.28
10.965	1.21

Size (µm)	Volume In %
10.965	1.21
12.023	1.15
13.183	1.08
14.454	1.02
15.849	0.95
17.378	0.89
19.055	0.82
20.893	0.76
22.909	0.68
25.119	0.61
27.542	0.54
30.200	0.46
33.113	0.39
36.308	0.34
39.811	0.30
43.652	0.30
47.863	0.33
52.481	0.42

Size (µm)	Volume In %
52.481	0.42
57.544	0.57
63.096	0.80
69.183	1.09
75.858	1.44
83.176	1.86
91.201	2.32
100.000	2.79
109.648	3.26
120.226	3.68
131.826	4.03
144.544	4.29
158.489	4.43
173.780	4.43
190.546	4.30
208.930	4.04
229.087	3.67
251.189	3.21

Size (µm)	Volume In %
251.189	3.21
275.423	2.70
301.995	2.16
331.131	1.63
363.078	1.19
398.107	0.57
436.516	0.02
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:

TABLE III-88

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-42

Measured by:
tristan

Measured:
Wednesday, December 21, 2011 2:28:45 PM

Sample Name:
Bulk Regrind Discharge - Average

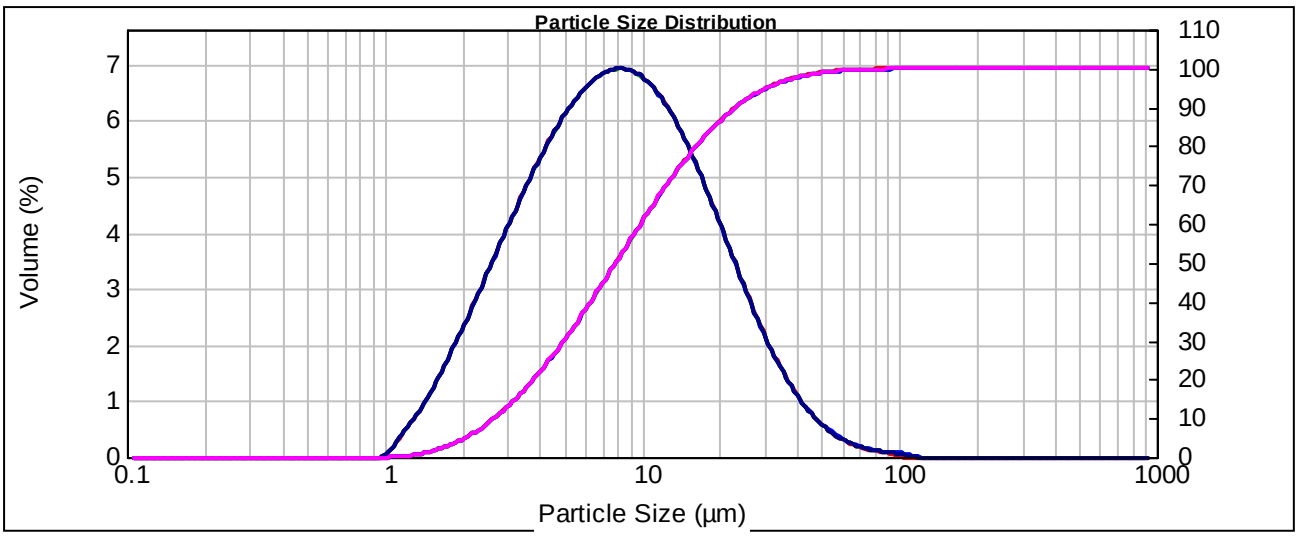
Edited by:
tristan

Analysed:
Wednesday, December 21, 2011 2:28:46 PM

Particle Name: Silica 0.01
Accessory Name: Hydro 2000MU (A)
Analysis model: General purpose
Sensitivity: Normal
Particle RI: 1.544
Absorption: 0.01
Size range: 0.100 to 1000.000 um
Obscuration: 18.57 %
Dispersant Name: Water
Dispersant RI: 1.330
Weighted Residual: 0.330 %
Result Emulation: Off

Concentration: 0.0138 %Vol
Span : 2.586
Uniformity: 0.833
Result units: Volume
Specific Surface Area: 0.395 m²/g
Surface Weighted Mean D[3,2]: 5.736 um
Vol. Weighted Mean D[4,3]: 11.071 um

d(0.1): 2.665 um d(0.5): 7.913 um **d(0.8): 16.252 um** d(0.9): 23.124 um d(0.98): 41.5 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.06
1.096	0.22
1.202	0.35
1.318	0.51
1.445	0.70
1.585	0.91
1.738	1.12
1.905	1.36
2.089	1.60
2.291	

Size (µm)	Volume In %
2.291	1.85
2.512	2.10
2.754	2.35
3.020	2.60
3.311	2.84
3.631	3.07
3.981	3.29
4.365	3.49
4.786	3.67
5.248	3.83
5.754	3.96
6.310	4.06
6.918	4.13
7.586	4.17
8.318	4.16
9.120	4.12
10.000	4.04
10.965	

Size (µm)	Volume In %
10.965	3.91
12.023	3.75
13.183	3.56
14.454	3.33
15.849	3.08
17.378	2.81
19.055	2.53
20.893	2.24
22.909	1.95
25.119	1.68
27.542	1.41
30.200	1.17
33.113	0.95
36.308	0.76
39.811	0.60
43.652	0.46
47.863	0.35
52.481	

Size (µm)	Volume In %
52.481	0.26
57.544	0.19
63.096	0.14
69.183	0.10
75.858	0.07
83.176	0.06
91.201	0.04
100.000	0.03
109.648	0.00
120.226	0.00
131.826	0.00
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	

Size (µm)	Volume In %
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	

Operator notes:

TABLE III-89

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-42

Measured by:
tristan

Measured:
Wednesday, December 21, 2011 2:39:15 PM

Sample Name:
Pyrite Rougher Concentrate

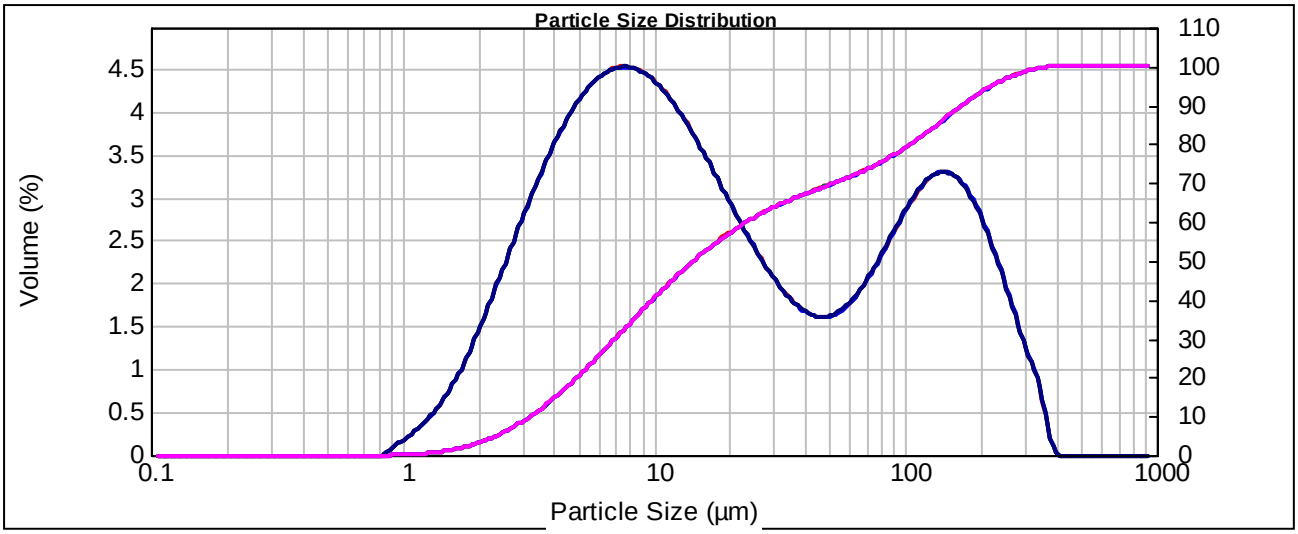
Edited by:

Analysed:
Wednesday, December 21, 2011 2:39:16 PM

Particle Name: Silica 0.01	**Accessory Name:** Hydro 2000MU (A)	**Analysis model:** General purpose	**Sensitivity:** Normal
Particle RI: 1.544	**Absorption:** 0.01	**Size range:** 0.100 to 1000.000 um	**Obscuration:** 18.02 %
Dispersant Name: Water	**Dispersant RI:** 1.330	**Weighted Residual:** 0.461 %	**Result Emulation:** Off

Concentration: 0.0194 %Vol	**Span :** 11.491	**Uniformity:** 3.24	**Result units:** Volume
Specific Surface Area: 0.274 m²/g	**Surface Weighted Mean D[3,2]:** 8.262 um	**Vol. Weighted Mean D[4,3]:** 52.979 um	

d(0.1): 3.222 um d(0.5): 14.361 um **d(0.8): 104.396 um** d(0.9): 168.246 um d(0.98): 275.74 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.02
0.912	0.09
1.000	0.12
1.096	0.19
1.202	0.25
1.318	0.33
1.445	0.43
1.585	0.56
1.738	0.70
1.905	0.86
2.089	1.04
2.291	

Size (µm)	Volume In %
2.291	1.21
2.512	1.40
2.754	1.58
3.020	1.76
3.311	1.93
3.631	2.10
3.981	2.24
4.365	2.37
4.786	2.49
5.248	2.58
5.754	2.65
6.310	2.69
6.918	2.72
7.586	2.72
8.318	2.69
9.120	2.65
10.000	2.59
10.965	

Size (µm)	Volume In %
10.965	2.50
12.023	2.41
13.183	2.29
14.454	2.17
15.849	2.04
17.378	1.91
19.055	1.78
20.893	1.64
22.909	1.51
25.119	1.39
27.542	1.28
30.200	1.18
33.113	1.10
36.308	1.03
39.811	0.99
43.652	0.97
47.863	0.97
52.481	

Size (µm)	Volume In %
52.481	1.01
57.544	1.07
63.096	1.16
69.183	1.27
75.858	1.39
83.176	1.53
91.201	1.66
100.000	1.78
109.648	1.88
120.226	1.95
131.826	1.98
144.544	1.97
158.489	1.92
173.780	1.81
190.546	1.67
208.930	1.49
229.087	1.29
251.189	

Size (µm)	Volume In %
251.189	1.07
275.423	0.84
301.995	0.65
331.131	0.45
363.078	0.07
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-43

Measured by:
tristan

Measured:
Wednesday, December 21, 2011 2:45:53 PM

Sample Name:
Bulk Regrind Discharge - Average

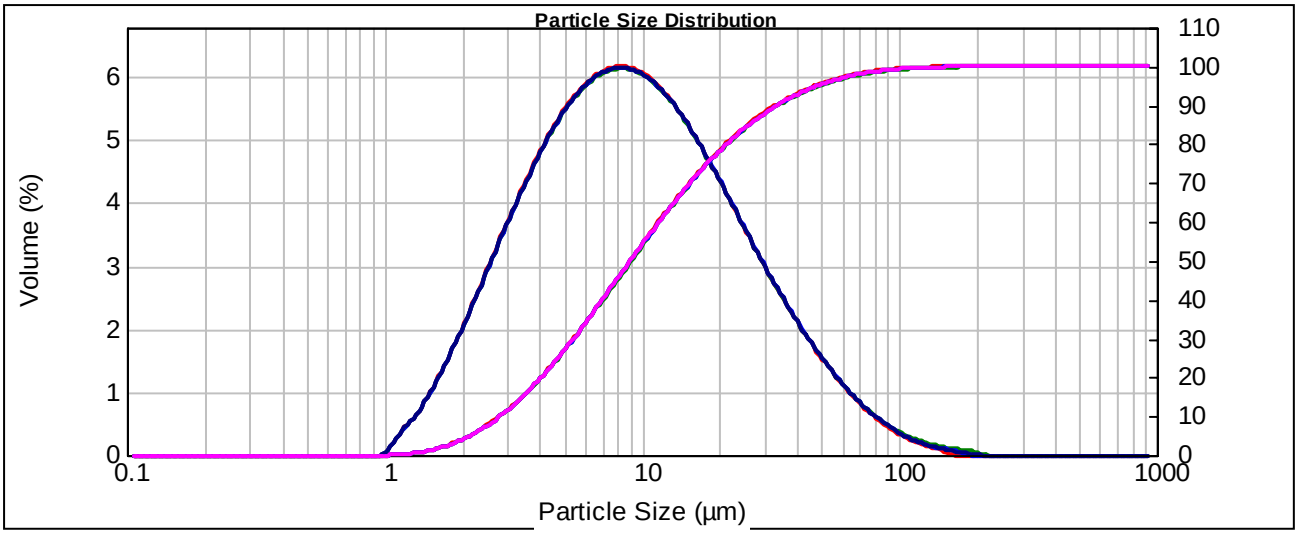
Edited by:
tristan

Analysed:
Wednesday, December 21, 2011 2:45:54 PM

Particle Name: Silica 0.01
Accessory Name: Hydro 2000MU (A)
Analysis model: General purpose
Sensitivity: Normal
Particle RI: 1.544
Absorption: 0.01
Size range: 0.100 to 1000.000 um
Obscuration: 18.02 %
Dispersant Name: Water
Dispersant RI: 1.330
Weighted Residual: 0.350 %
Result Emulation: Off

Concentration: 0.0147 %Vol
Span : 3.387
Uniformity: 1.1
Result units: Volume
Specific Surface Area: 0.359 m²/g
Surface Weighted Mean D[3,2]: 6.300 um
Vol. Weighted Mean D[4,3]: 14.859 um

d(0.1): 2.809 um d(0.5): 9.030 um **d(0.8): 21.279 um** d(0.9): 33.391 um d(0.98): 69.38 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.05
1.096	0.21
1.202	0.31
1.318	0.44
1.445	0.61
1.585	0.79
1.738	0.99
1.905	1.20
2.089	1.42
2.291	

Size (µm)	Volume In %
2.291	1.65
2.512	1.89
2.754	2.12
3.020	2.34
3.311	2.56
3.631	2.77
3.981	2.96
4.365	3.14
4.786	3.29
5.248	3.43
5.754	3.53
6.310	3.62
6.918	3.67
7.586	3.70
8.318	3.70
9.120	3.67
10.000	3.61
10.965	

Size (µm)	Volume In %
10.965	3.53
12.023	3.42
13.183	3.29
14.454	3.15
15.849	2.99
17.378	2.81
19.055	2.63
20.893	2.44
22.909	2.25
25.119	2.07
27.542	1.88
30.200	1.70
33.113	1.53
36.308	1.37
39.811	1.21
43.652	1.06
47.863	0.92
52.481	

Size (µm)	Volume In %
52.481	0.79
57.544	0.68
63.096	0.57
69.183	0.47
75.858	0.38
83.176	0.30
91.201	0.24
100.000	0.18
109.648	0.14
120.226	0.10
131.826	0.08
144.544	0.06
158.489	0.03
173.780	0.02
190.546	0.01
208.930	0.00
229.087	0.00
251.189	

Size (µm)	Volume In %
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3174-43

Measured by:
tristan

Measured:
Wednesday, December 21, 2011 2:58:30 PM

Sample Name:
Pyrite Rougher Concentrate - Average

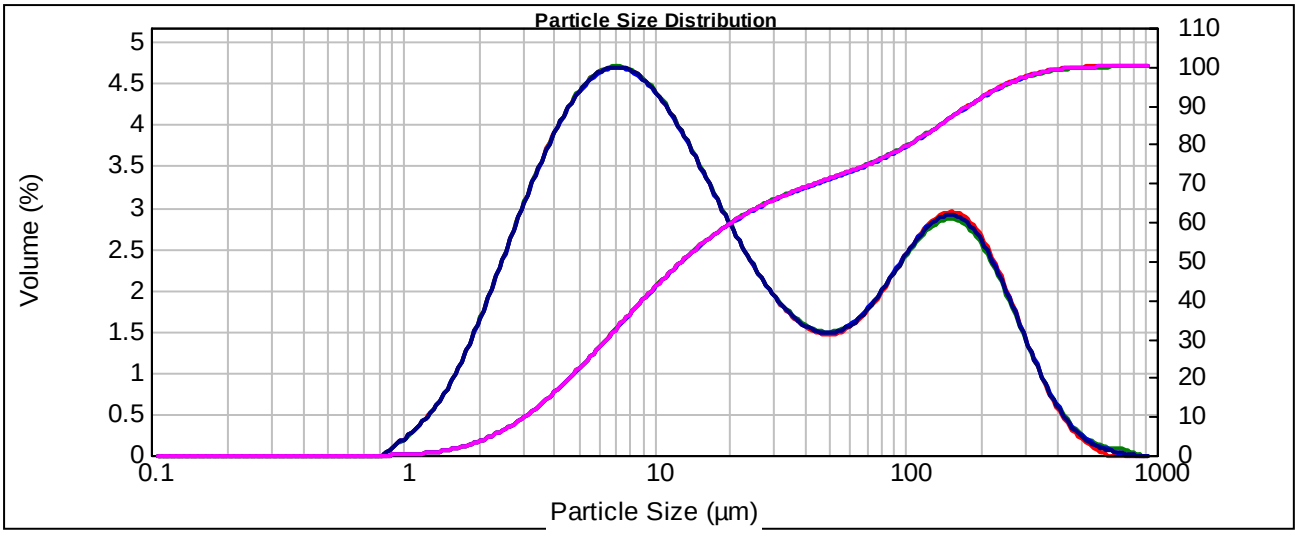
Edited by:
tristan

Analysed:
Wednesday, December 21, 2011 2:58:31 PM

Particle Name: Silica 0.01
Accessory Name: Hydro 2000MU (A)
Analysis model: General purpose
Sensitivity: Normal
Particle RI: 1.544
Absorption: 0.01
Size range: 0.100 to 1000.000 um
Obscuration: 18.42 %
Dispersant Name: Water
Dispersant RI: 1.330
Weighted Residual: 0.455 %
Result Emulation: Off

Concentration: 0.0187 %Vol
Span : 13.624
Uniformity: 3.84
Result units: Volume
Specific Surface Area: 0.29 m²/g
Surface Weighted Mean D[3,2]: 7.796 um
Vol. Weighted Mean D[4,3]: 55.834 um

d(0.1): 3.071 um d(0.5): 12.960 um **d(0.8): 103.846 um** d(0.9): 179.647 um d(0.98): 324.7 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.02
0.912	0.09
1.000	0.13
1.096	0.21
1.202	0.28
1.318	0.37
1.445	0.49
1.585	0.62
1.738	0.78
1.905	0.95
2.089	1.14
2.291	

Size (µm)	Volume In %
2.291	1.33
2.512	1.53
2.754	1.72
3.020	1.91
3.311	2.09
3.631	2.25
3.981	2.40
4.365	2.53
4.786	2.64
5.248	2.73
5.754	2.78
6.310	2.82
6.918	2.83
7.586	2.81
8.318	2.76
9.120	2.70
10.000	2.61
10.965	

Size (µm)	Volume In %
10.965	2.51
12.023	2.39
13.183	2.26
14.454	2.12
15.849	1.98
17.378	1.83
19.055	1.69
20.893	1.56
22.909	1.43
25.119	1.31
27.542	1.20
30.200	1.11
33.113	1.03
36.308	0.97
39.811	0.92
43.652	0.89
47.863	0.89
52.481	

Size (µm)	Volume In %
52.481	0.90
57.544	0.94
63.096	1.00
69.183	1.08
75.858	1.18
83.176	1.28
91.201	1.40
100.000	1.50
109.648	1.60
120.226	1.68
131.826	1.73
144.544	1.75
158.489	1.73
173.780	1.67
190.546	1.57
208.930	1.44
229.087	1.28
251.189	

Size (µm)	Volume In %
251.189	1.11
275.423	0.93
301.995	0.75
331.131	0.58
363.078	0.43
398.107	0.31
436.516	0.21
478.630	0.14
524.807	0.09
575.440	0.05
630.957	0.03
691.831	0.02
758.578	0.00
831.764	0.00
912.011	0.00
1000.000	

Operator notes:

APPENDIX IV – KM3174

COMMINUTION DATA

INDEX

TABLE IV-1A

BOND BALL GRINDABILITY TEST

KM3174 Composite 1

Weight of 700 ml Sample :	1395.1 g.	Aperture Test Sieve :	106µm
1/3.5 of Sample Weight :	398.6 g.	Percent Undersize :	13.6%

Cycle	Weight of New Feed	Number of Revolutions	Weight of Undersize			
			Product	Feed	Net Product	Net / Rev
1	1395.1	100	260.7	189.7	71.0	0.71
2	260.7	512	615.0	35.5	579.5	1.13
3	615.0	278	443.4	83.6	359.8	1.29
4	443.4	262	412.6	60.3	352.3	1.35
5	412.6	254	399.0	56.1	342.9	1.35
6	399.0	255	396.2	54.3	341.9	1.34

BOND'S WORK INDEX FORMULA

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

Pi = Sieve Size Tested	106 µm
Gbp = Net undersize produced per revolution of mill.	1.35 g.
P = 80% Passing size of test product.	78 µm
F = 80% Passing size of test feed.	2154 µm

WORK INDEX (Wi)

13.0 kw-hr/ton

14.3 kw-hr/tonne

NB: Gbp = Average of last 3 Net/Rev Cycles

TABLE IV-1B
BOND BALL SCREEN ANALYSIS
KM3174 Composite 1 - Cycle 6 Undersize

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
150 Mesh	106	2.29	97.7
170 Mesh	90	9.87	87.8
200 Mesh	75	9.67	78.2
270 Mesh	53	14.16	64.0
325 Mesh	45	7.68	56.3
400 Mesh	38	5.68	50.6
TOTAL		100.00	**

K80 =78µm

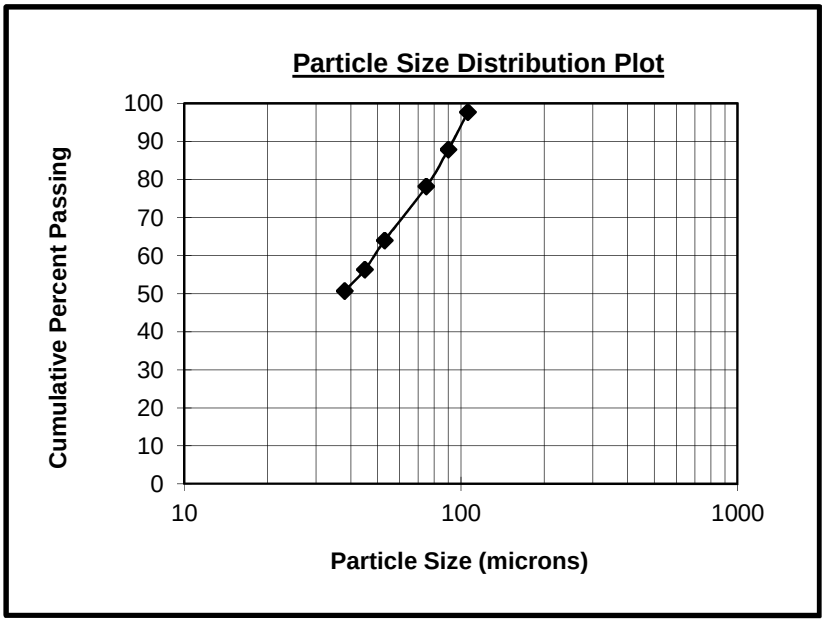


TABLE IV-1C
BOND BALL SCREEN ANALYSIS
KM3174 Composite 1 - Average Feed

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.22	99.8
7 Mesh	2800	2.71	97.1
8 Mesh	2360	11.02	86.0
9 Mesh	2000	10.66	75.4
10 Mesh	1700	8.19	67.2
12 Mesh	1400	9.18	58.0
14 Mesh	1180	5.40	52.6
20 Mesh	850	9.88	42.7
28 Mesh	600	8.09	34.6
35 Mesh	425	5.79	28.9
48 Mesh	300	5.28	23.6
65 Mesh	212	4.05	19.5
100 Mesh	150	3.22	16.3
150 Mesh	106	2.69	13.6
TOTAL		100.00	**

K80 =2154µm

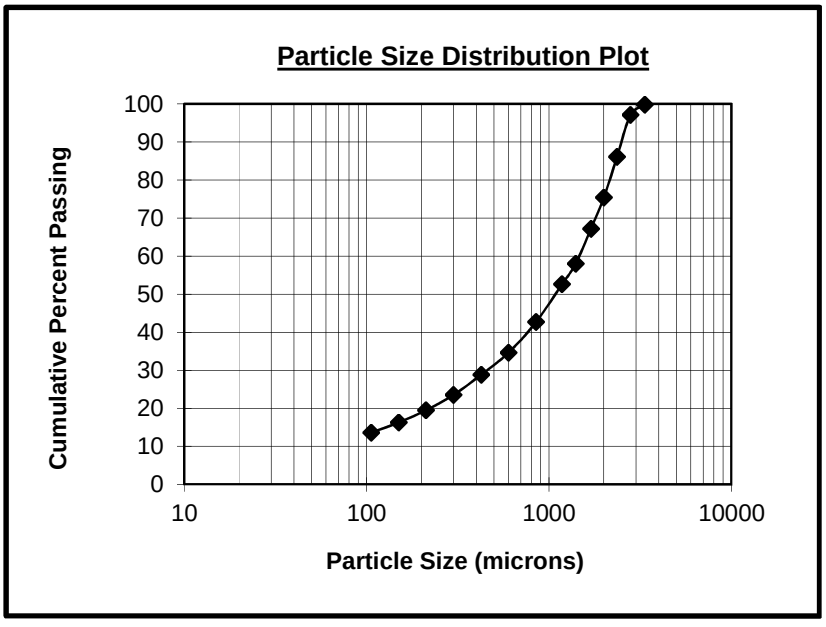


TABLE IV-1D
BOND BALL SCREEN ANALYSIS
KM3174 Composite 1 - Feed 1

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.18	99.8
7 Mesh	2800	2.91	96.9
8 Mesh	2360	10.55	86.4
9 Mesh	2000	10.41	75.9
10 Mesh	1700	8.00	67.9
12 Mesh	1400	9.14	58.8
14 Mesh	1180	5.37	53.4
20 Mesh	850	10.05	43.4
28 Mesh	600	8.28	35.1
35 Mesh	425	5.87	29.2
48 Mesh	300	5.37	23.9
65 Mesh	212	4.09	19.8
100 Mesh	150	3.32	16.5
150 Mesh	106	2.73	13.7
TOTAL		100.00	**

K80 =2139µm

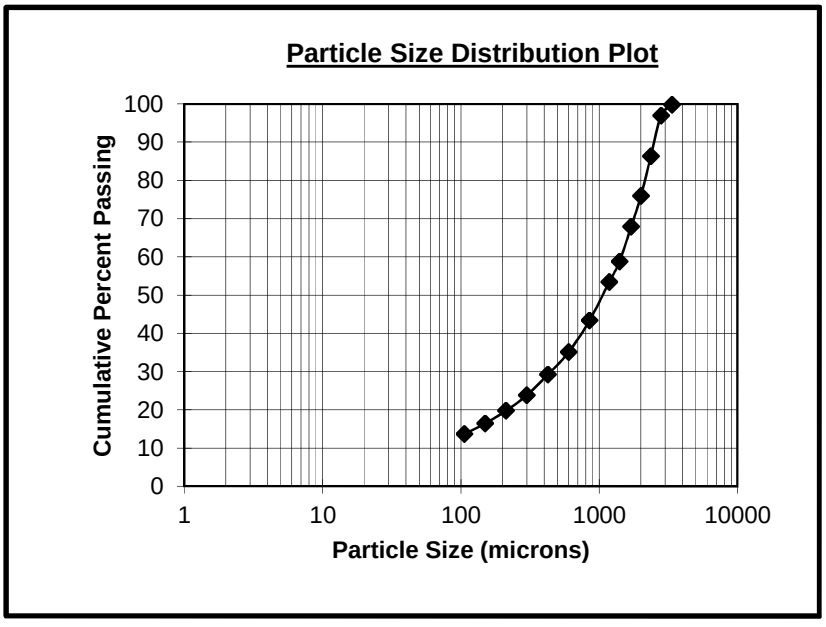


TABLE IV-1E
BOND BALL SCREEN ANALYSIS
KM3174 Composite 1 - Feed 2

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.26	99.7
7 Mesh	2800	2.49	97.3
8 Mesh	2360	11.56	85.7
9 Mesh	2000	10.94	74.8
10 Mesh	1700	8.40	66.4
12 Mesh	1400	9.23	57.1
14 Mesh	1180	5.44	51.7
20 Mesh	850	9.69	42.0
28 Mesh	600	7.88	34.1
35 Mesh	425	5.70	28.4
48 Mesh	300	5.18	23.2
65 Mesh	212	3.99	19.2
100 Mesh	150	3.11	16.1
150 Mesh	106	2.64	13.5
TOTAL		100.00	**

K80 =2171µm

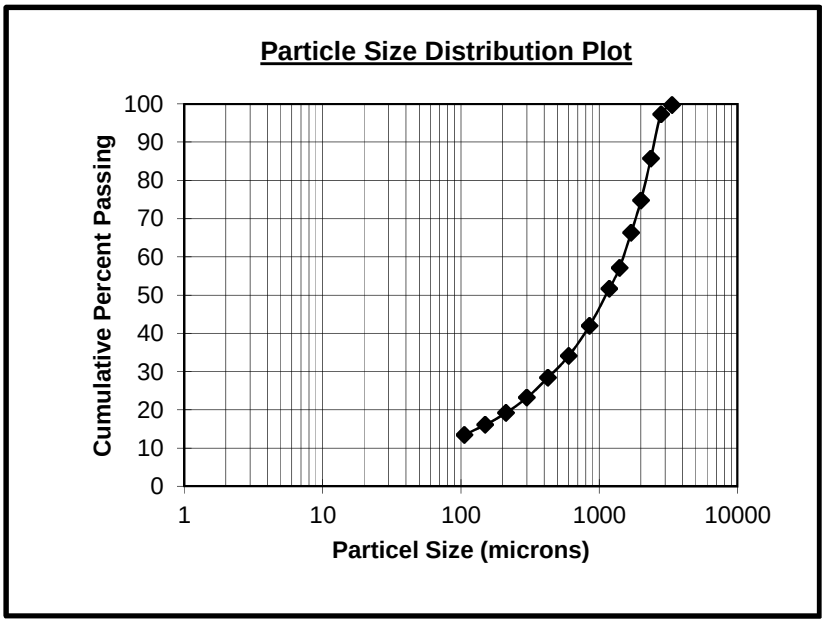


TABLE IV-2A

BOND BALL GRINDABILITY TEST

KM3174 Composite 2

Weight of 700 ml Sample :	1391.3 g.	Aperture Test Sieve :	106µm
1/3.5 of Sample Weight :	397.5 g.	Percent Undersize :	13.2%

Cycle	Weight of New Feed	Number of Revolutions	Weight of Undersize			
			Product	Feed	Net Product	Net / Rev
1	1391.3	200	360.7	183.7	177.0	0.89
2	360.7	395	508.2	47.6	460.6	1.17
3	508.2	284	431.6	67.1	364.5	1.29
4	431.6	265	407.1	57.0	350.1	1.32
5	407.1	260	402.5	53.7	348.8	1.34
6	402.5	257	409.7	53.1	356.6	1.39
7	409.7	247	396.7	54.1	342.6	1.38

BOND'S WORK INDEX FORMULA

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

Pi = Sieve Size Tested	106 µm
Gbp = Net undersize produced per revolution of mill.	1.37 g.
P = 80% Passing size of test product.	80 µm
F = 80% Passing size of test feed.	2204 µm

WORK INDEX (Wi)

13.0 kw-hr/ton

14.3 kw-hr/tonne

NB: Gbp = Average of last 3 Net/Rev Cycles

TABLE IV-2B
BOND BALL SCREEN ANALYSIS
KM3174 Composite 2 - Cycle 7 Undersize

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
150 Mesh	106	1.68	98.3
170 Mesh	90	9.89	88.4
200 Mesh	75	13.19	75.2
270 Mesh	53	15.76	59.5
325 Mesh	45	7.10	52.4
400 Mesh	38	4.70	47.7
TOTAL		100.00	**

K80 =80µm

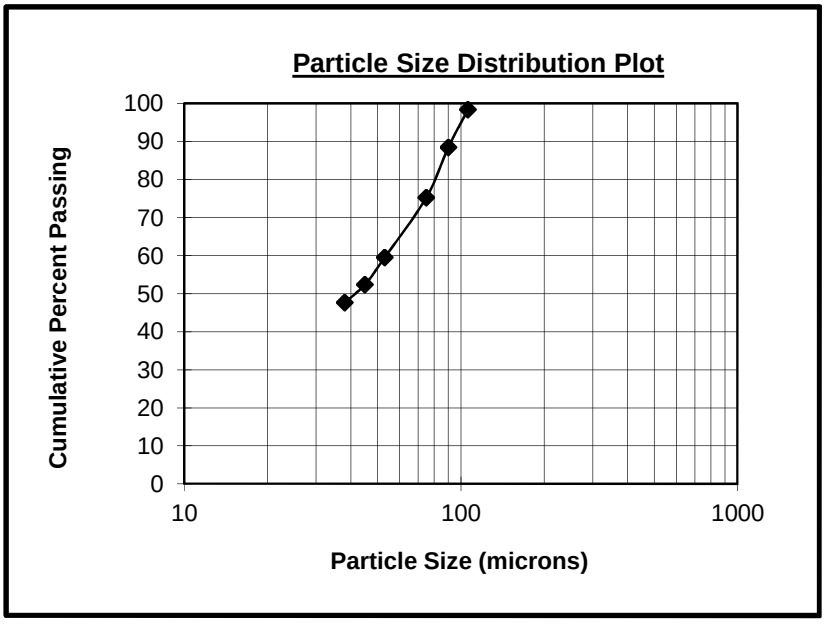


TABLE IV-2C
BOND BALL SCREEN ANALYSIS
KM3174 Composite 2 - Average Feed

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.34	99.7
7 Mesh	2800	3.12	96.5
8 Mesh	2360	11.74	84.8
9 Mesh	2000	11.17	73.6
10 Mesh	1700	8.00	65.6
12 Mesh	1400	9.34	56.3
14 Mesh	1180	5.52	50.8
20 Mesh	850	9.70	41.1
28 Mesh	600	7.78	33.3
35 Mesh	425	5.60	27.7
48 Mesh	300	4.97	22.7
65 Mesh	212	3.82	18.9
100 Mesh	150	3.07	15.8
150 Mesh	106	2.62	13.2
TOTAL		100.00	**

K80 =2204µm

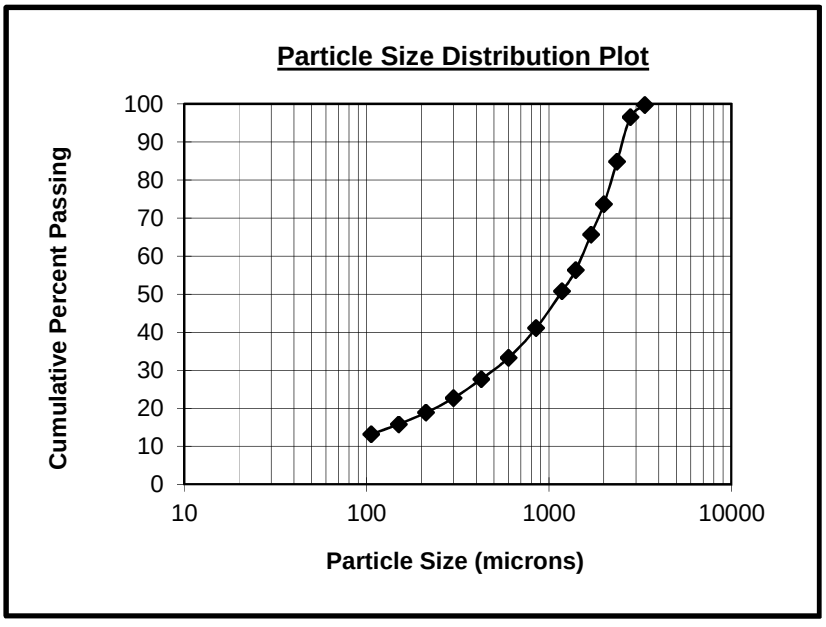


TABLE IV-2D
BOND BALL SCREEN ANALYSIS
KM3174 Composite 2 - Feed 1

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.23	99.8
7 Mesh	2800	3.47	96.3
8 Mesh	2360	11.60	84.7
9 Mesh	2000	11.41	73.3
10 Mesh	1700	7.81	65.5
12 Mesh	1400	9.52	56.0
14 Mesh	1180	5.50	50.5
20 Mesh	850	9.66	40.8
28 Mesh	600	7.49	33.3
35 Mesh	425	5.50	27.8
48 Mesh	300	4.90	22.9
65 Mesh	212	3.74	19.2
100 Mesh	150	3.05	16.1
150 Mesh	106	2.54	13.6
TOTAL		100.00	**

K80 =2211µm

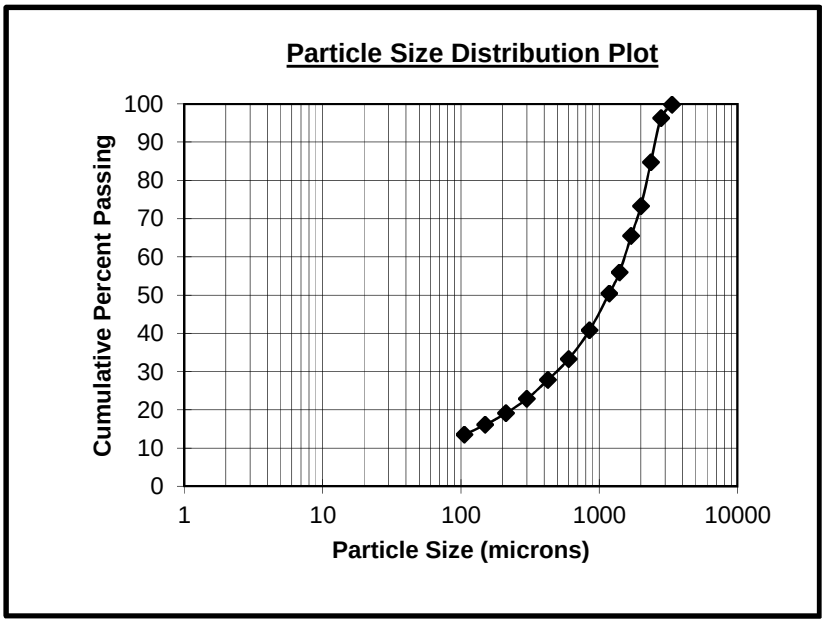


TABLE IV-2E
BOND BALL SCREEN ANALYSIS
KM3174 Composite 2 - Feed 2

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.45	99.6
7 Mesh	2800	2.75	96.8
8 Mesh	2360	11.90	84.9
9 Mesh	2000	10.90	74.0
10 Mesh	1700	8.20	65.8
12 Mesh	1400	9.15	56.7
14 Mesh	1180	5.55	51.1
20 Mesh	850	9.75	41.4
28 Mesh	600	8.10	33.3
35 Mesh	425	5.70	27.6
48 Mesh	300	5.05	22.5
65 Mesh	212	3.90	18.6
100 Mesh	150	3.10	15.5
150 Mesh	106	2.70	12.8
TOTAL		100.00	**

K80 =2197µm

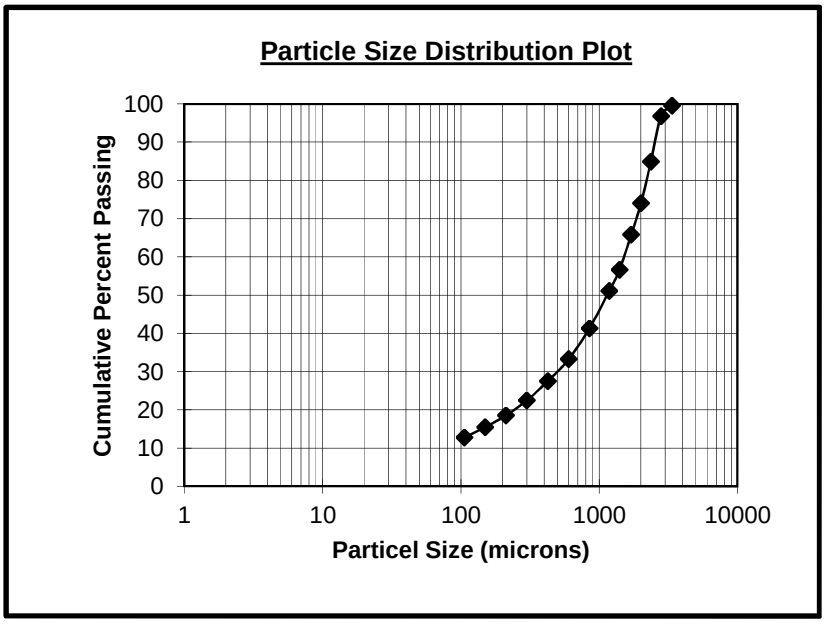


TABLE IV-3A

BOND BALL GRINDABILITY TEST

KM3174 Composite 3

Weight of 700 ml Sample :	1400.7 g.	Aperture Test Sieve :	106µm
1/3.5 of Sample Weight :	400.2 g.	Percent Undersize :	12.3%

Cycle	Weight of New Feed	Number of Revolutions	Weight of Undersize			
			Product	Feed	Net Product	Net / Rev
1	1400.7	100	276.8	172.3	104.5	1.05
2	276.8	350	452.7	34.0	418.7	1.19
3	452.7	288	436.8	55.7	381.1	1.32
4	436.8	262	411.5	53.7	357.8	1.37
5	411.5	256	396.2	50.6	345.6	1.35
6	396.2	260	397.1	48.7	348.4	1.34
7	397.1	263	398.7	48.8	349.9	1.33
8	398.7	264	402.7	49.0	353.7	1.34

BOND'S WORK INDEX FORMULA

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

Pi = Sieve Size Tested	106 µm
Gbp = Net undersize produced per revolution of mill.	1.34 g.
P = 80% Passing size of test product.	83 µm
F = 80% Passing size of test feed.	2248 µm

WORK INDEX (Wi)

13.5 kw-hr/ton

14.9 kw-hr/tonne

NB: Gbp = Average of last 3 Net/Rev Cycles

TABLE IV-3B
BOND BALL SCREEN ANALYSIS
KM3174 Composite 3 - Cycle 8 Undersize

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
150 Mesh	106	2.03	98.0
170 Mesh	90	12.15	85.8
200 Mesh	75	13.31	72.5
270 Mesh	53	15.72	56.8
325 Mesh	45	7.33	49.5
400 Mesh	38	4.73	44.7
TOTAL		100.00	**

K80 =83µm

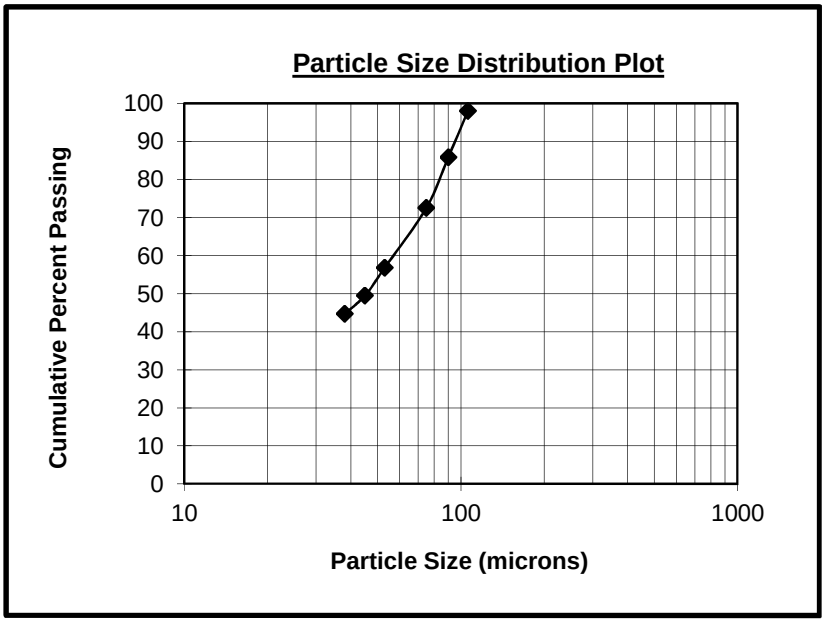


TABLE IV-3C
BOND BALL SCREEN ANALYSIS
KM3174 Composite 3 - Average Feed

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.31	99.7
7 Mesh	2800	2.92	96.8
8 Mesh	2360	12.97	83.8
9 Mesh	2000	12.22	71.6
10 Mesh	1700	8.57	63.0
12 Mesh	1400	9.18	53.8
14 Mesh	1180	5.42	48.4
20 Mesh	850	9.37	39.0
28 Mesh	600	7.52	31.5
35 Mesh	425	5.40	26.1
48 Mesh	300	4.76	21.4
65 Mesh	212	3.65	17.7
100 Mesh	150	2.94	14.8
150 Mesh	106	2.49	12.3
TOTAL		100.00	**

K80 =2248µm

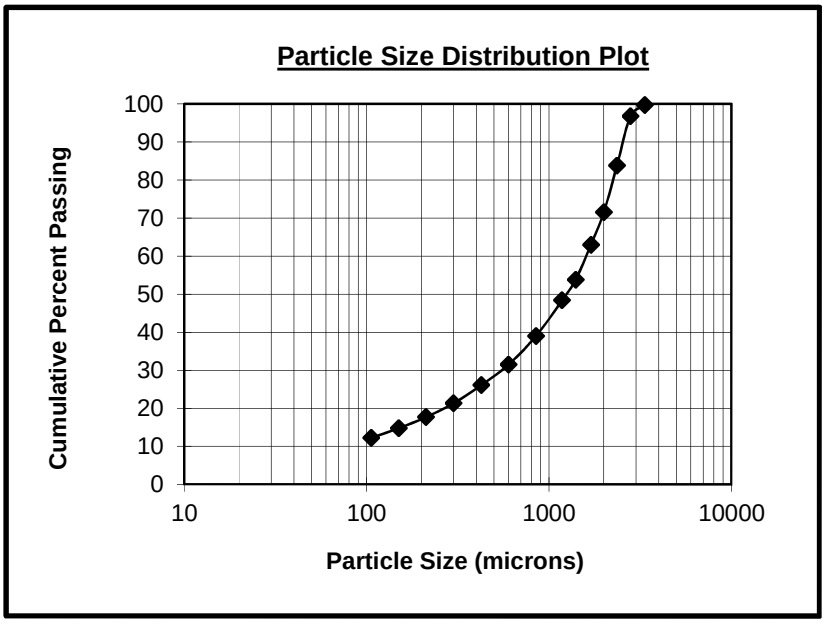


TABLE IV-3D
BOND BALL SCREEN ANALYSIS
KM3174 Composite 3 - Feed 1

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.29	99.7
7 Mesh	2800	2.63	97.1
8 Mesh	2360	11.99	85.1
9 Mesh	2000	11.60	73.5
10 Mesh	1700	8.29	65.2
12 Mesh	1400	8.87	56.3
14 Mesh	1180	5.31	51.0
20 Mesh	850	9.75	41.2
28 Mesh	600	7.95	33.3
35 Mesh	425	5.66	27.6
48 Mesh	300	5.07	22.6
65 Mesh	212	3.95	18.6
100 Mesh	150	3.22	15.4
150 Mesh	106	2.63	12.8
TOTAL		100.00	**

K80 =2202µm

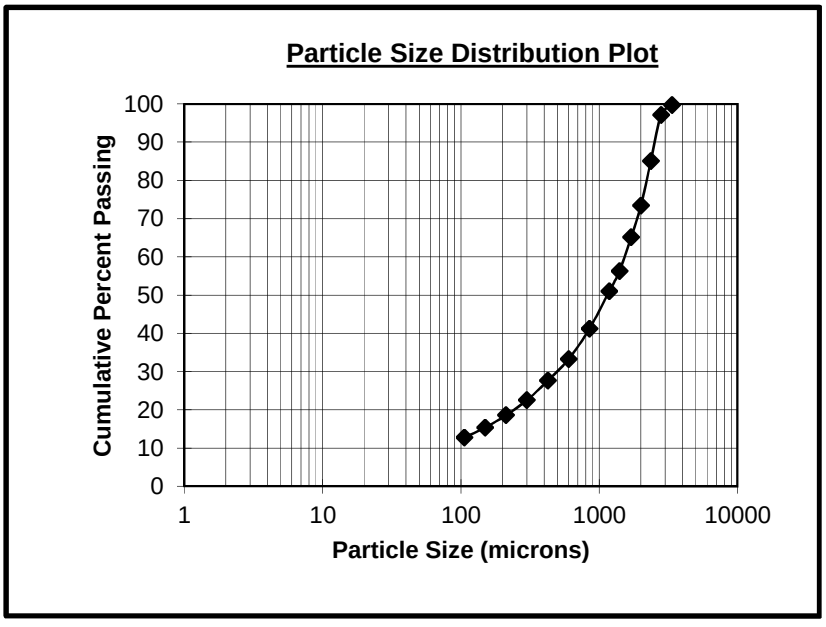


TABLE IV-3E
BOND BALL SCREEN ANALYSIS
KM3174 Composite 3 - Feed 2

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.20	99.8
7 Mesh	2800	2.17	97.6
8 Mesh	2360	10.93	86.7
9 Mesh	2000	11.13	75.6
10 Mesh	1700	8.17	67.4
12 Mesh	1400	9.26	58.1
14 Mesh	1180	5.81	52.3
20 Mesh	850	9.85	42.5
28 Mesh	600	8.07	34.4
35 Mesh	425	5.91	28.5
48 Mesh	300	5.22	23.3
65 Mesh	212	4.04	19.3
100 Mesh	150	3.25	16.0
150 Mesh	106	2.81	13.2
TOTAL		100.00	**

K80 =2142µm

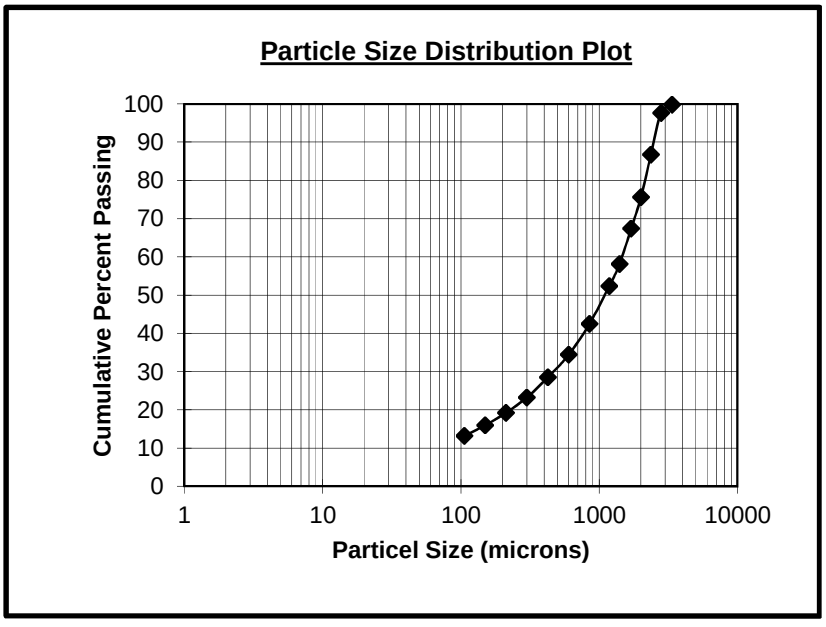


TABLE IV-3F
BOND BALL SCREEN ANALYSIS
KM3174 Composite 3 - Feed 3

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.46	99.5
7 Mesh	2800	4.01	95.5
8 Mesh	2360	16.08	79.5
9 Mesh	2000	14.00	65.5
10 Mesh	1700	9.28	56.2
12 Mesh	1400	9.43	46.8
14 Mesh	1180	5.12	41.6
20 Mesh	850	8.47	33.2
28 Mesh	600	6.49	26.7
35 Mesh	425	4.61	22.1
48 Mesh	300	3.96	18.1
65 Mesh	212	2.94	15.2
100 Mesh	150	2.33	12.8
150 Mesh	106	2.03	10.8
TOTAL		100.00	**

K80 =2375µm

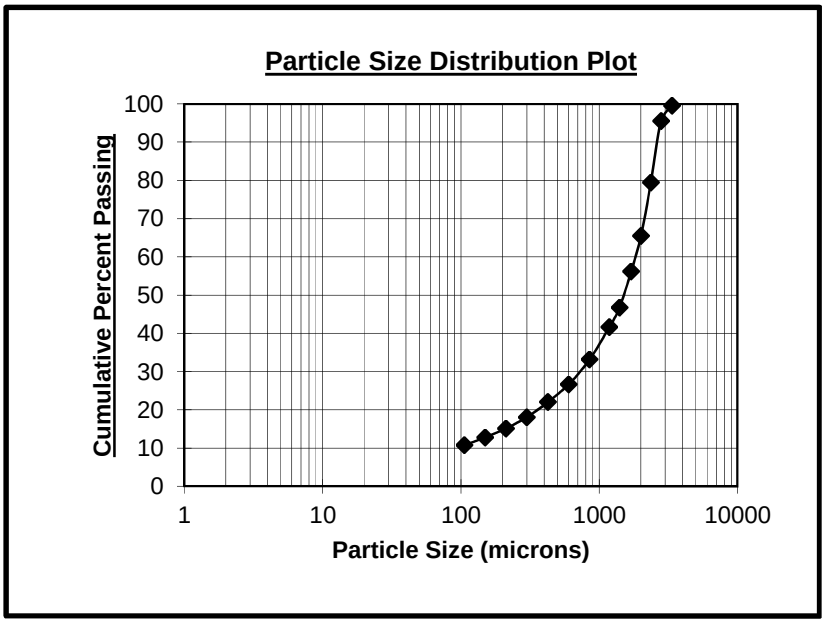


TABLE IV-4A

BOND BALL GRINDABILITY TEST

KM3174 Composite 4

Weight of 700 ml Sample :	1409.9 g.	Aperture Test Sieve :	106µm
1/3.5 of Sample Weight :	402.8 g.	Percent Undersize :	12.7%

Cycle	Weight of New Feed	Number of Revolutions	Weight of Undersize			
			Product	Feed	Net Product	Net / Rev
1	1409.9	100	291.0	179.1	111.9	1.12
2	291.0	327	449.0	37.0	412.0	1.26
3	449.0	274	411.1	57.0	354.1	1.29
4	411.1	272	426.9	52.2	374.7	1.38
5	426.9	253	405.8	54.2	351.6	1.39
6	405.8	253	405.1	51.5	353.6	1.40
7	405.1	251	400.1	51.4	348.7	1.39

BOND'S WORK INDEX FORMULA

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

Pi = Sieve Size Tested	106 µm
Gbp = Net undersize produced per revolution of mill.	1.39 g.
P = 80% Passing size of test product.	80 µm
F = 80% Passing size of test feed.	2226 µm

WORK INDEX (Wi)

12.8 kw-hr/ton

14.1 kw-hr/tonne

NB: Gbp = Average of last 3 Net/Rev Cycles

TABLE IV-4B
BOND BALL SCREEN ANALYSIS
KM3174 Composite 4 - Cycle 7 Undersize

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
150 Mesh	106	1.71	98.3
170 Mesh	90	10.29	88.0
200 Mesh	75	12.57	75.4
270 Mesh	53	14.76	60.7
325 Mesh	45	6.76	53.9
400 Mesh	38	4.38	49.5
TOTAL		100.00	**

K80 =80µm

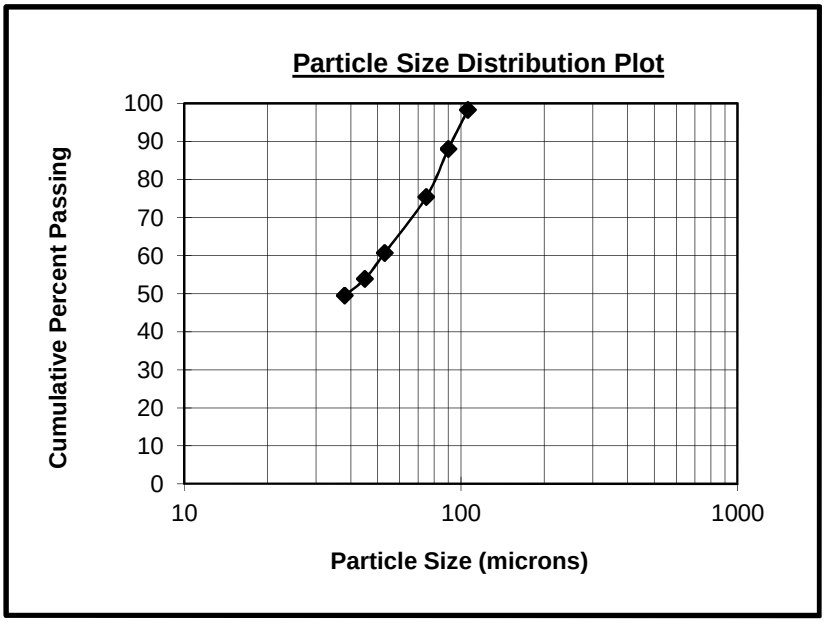


TABLE IV-4C
BOND BALL SCREEN ANALYSIS
KM3174 Composite 4 - Average Feed

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.30	99.7
7 Mesh	2800	3.38	96.3
8 Mesh	2360	12.11	84.2
9 Mesh	2000	11.33	72.9
10 Mesh	1700	8.40	64.5
12 Mesh	1400	8.88	55.6
14 Mesh	1180	5.63	50.0
20 Mesh	850	9.56	40.4
28 Mesh	600	7.70	32.7
35 Mesh	425	5.53	27.2
48 Mesh	300	5.02	22.2
65 Mesh	212	3.86	18.3
100 Mesh	150	3.10	15.2
150 Mesh	106	2.50	12.7
TOTAL		100.00	**

K80 =2226µm

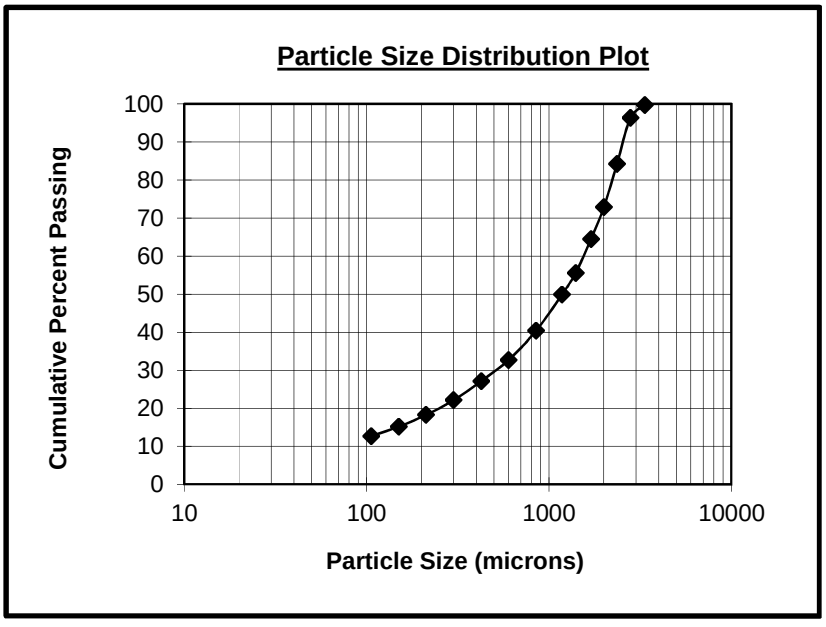


TABLE IV-4D
BOND BALL SCREEN ANALYSIS
KM3174 Composite 4 - Feed 1

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.30	99.7
7 Mesh	2800	3.24	96.5
8 Mesh	2360	12.71	83.7
9 Mesh	2000	11.86	71.9
10 Mesh	1700	8.62	63.3
12 Mesh	1400	8.92	54.3
14 Mesh	1180	5.33	49.0
20 Mesh	850	9.32	39.7
28 Mesh	600	7.53	32.2
35 Mesh	425	5.43	26.7
48 Mesh	300	4.94	21.8
65 Mesh	212	3.74	18.0
100 Mesh	150	3.09	15.0
150 Mesh	106	2.44	12.5
TOTAL		100.00	**

K80 =2246µm

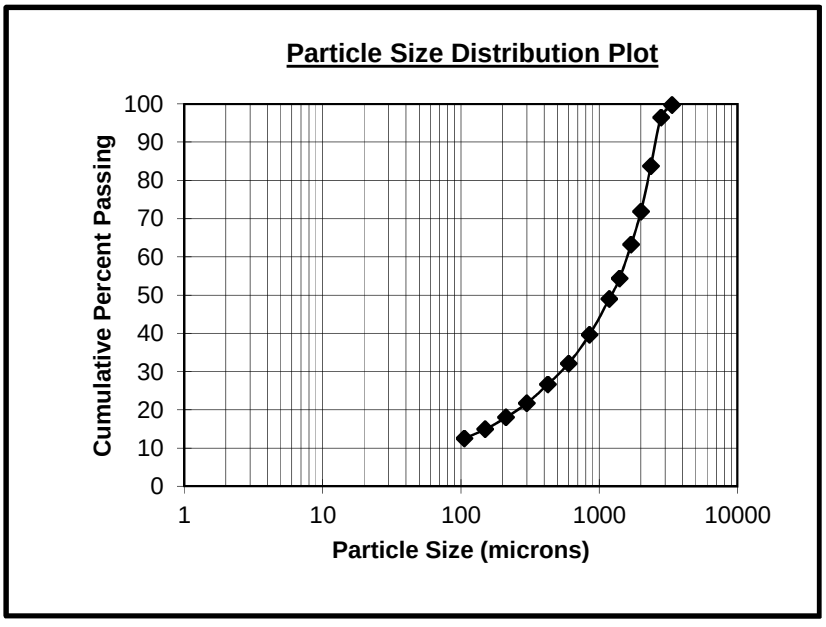


TABLE IV-4E
BOND BALL SCREEN ANALYSIS
KM3174 Composite 4 - Feed 2

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.31	99.7
7 Mesh	2800	3.53	96.2
8 Mesh	2360	11.50	84.7
9 Mesh	2000	10.78	73.9
10 Mesh	1700	8.18	65.7
12 Mesh	1400	8.84	56.9
14 Mesh	1180	5.93	50.9
20 Mesh	850	9.81	41.1
28 Mesh	600	7.87	33.3
35 Mesh	425	5.62	27.6
48 Mesh	300	5.11	22.5
65 Mesh	212	3.99	18.5
100 Mesh	150	3.12	15.4
150 Mesh	106	2.55	12.9
TOTAL		100.00	**

K80 =2203µm

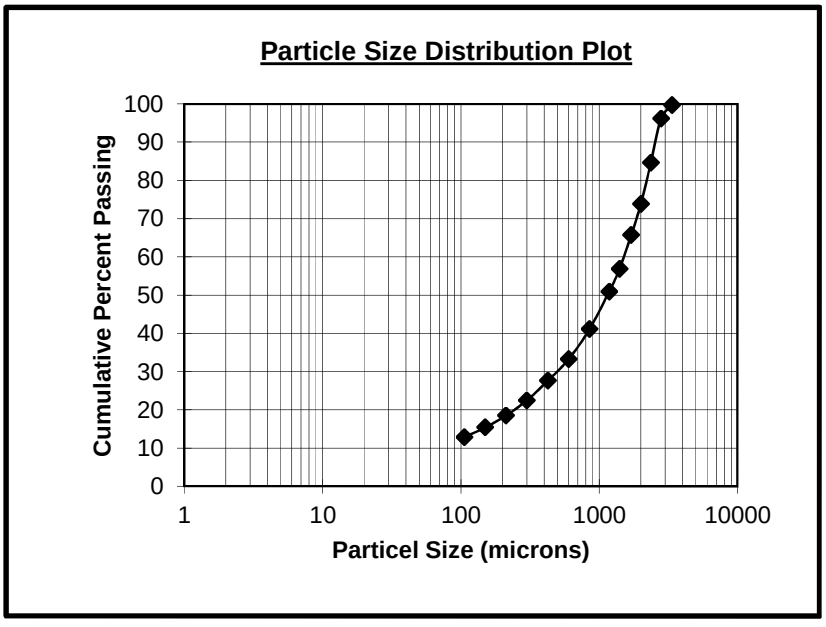


TABLE IV-5A

BOND BALL GRINDABILITY TEST

KM3174 Composite 5

Weight of 700 ml Sample :	1385 g.	Aperture Test Sieve :	106µm
1/3.5 of Sample Weight :	395.7 g.	Percent Undersize :	12.3%

Cycle	Weight of New Feed	Number of Revolutions	Weight of Undersize			
			Product	Feed	Net Product	Net / Rev
1	1385.0	100	266.7	170.4	96.3	0.96
2	266.7	377	479.9	32.8	447.1	1.19
3	479.9	284	433.5	59.0	374.5	1.32
4	433.5	259	408.8	53.3	355.5	1.37
5	408.8	252	397.8	50.3	347.5	1.38
6	397.8	251	393.6	48.9	344.7	1.37

BOND'S WORK INDEX FORMULA

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

Pi = Sieve Size Tested	106 µm
Gbp = Net undersize produced per revolution of mill.	1.37 g.
P = 80% Passing size of test product.	82 µm
F = 80% Passing size of test feed.	2182 µm

WORK INDEX (Wi)

13.2 kw-hr/ton

14.5 kw-hr/tonne

NB: Gbp = Average of last 3 Net/Rev Cycles

TABLE IV-5B
BOND BALL SCREEN ANALYSIS
KM3174 Composite 5 - Cycle 6 Undersize

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
150 Mesh	106	1.84	98.2
170 Mesh	90	10.96	87.2
200 Mesh	75	13.94	73.3
270 Mesh	53	16.79	56.5
325 Mesh	45	7.54	48.9
400 Mesh	38	4.88	44.0
TOTAL		100.00	**

K80 =82µm

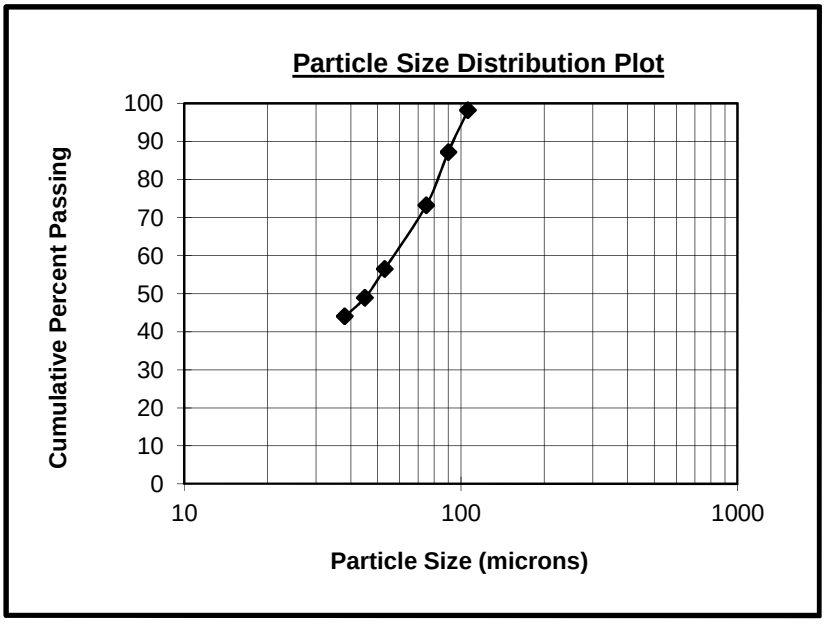


TABLE IV-5C
BOND BALL SCREEN ANALYSIS
KM3174 Composite 5 - Average Feed

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.46	99.5
7 Mesh	2800	2.93	96.6
8 Mesh	2360	11.32	85.3
9 Mesh	2000	10.78	74.5
10 Mesh	1700	8.52	66.0
12 Mesh	1400	9.01	57.0
14 Mesh	1180	5.54	51.4
20 Mesh	850	9.55	41.9
28 Mesh	600	7.83	34.1
35 Mesh	425	5.80	28.3
48 Mesh	300	5.42	22.8
65 Mesh	212	4.26	18.6
100 Mesh	150	3.47	15.1
150 Mesh	106	2.85	12.3
TOTAL		100.00	**

K80 =2182µm

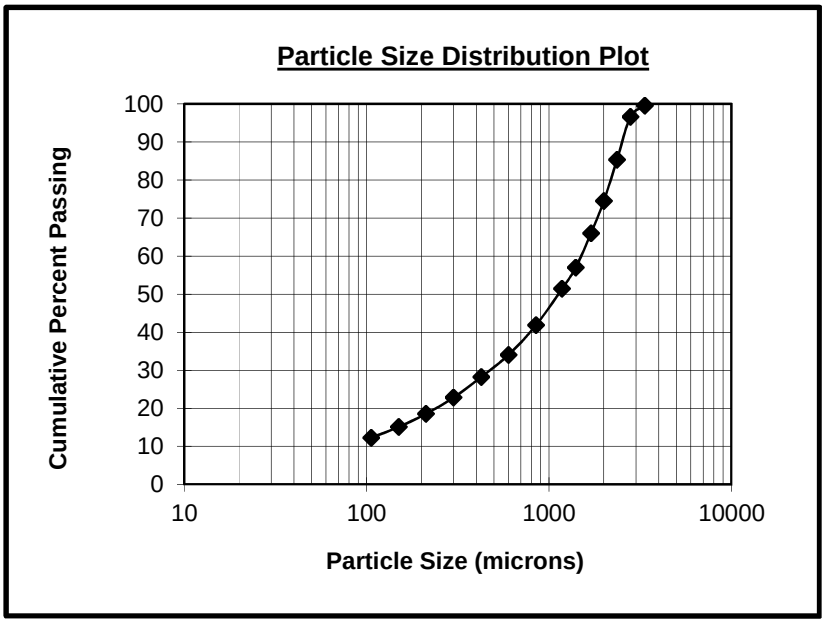


TABLE IV-5D
BOND BALL SCREEN ANALYSIS
KM3174 Composite 5 - Feed 1

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.46	99.5
7 Mesh	2800	3.20	96.3
8 Mesh	2360	11.02	85.3
9 Mesh	2000	10.71	74.6
10 Mesh	1700	8.12	66.5
12 Mesh	1400	8.73	57.8
14 Mesh	1180	5.63	52.1
20 Mesh	850	9.75	42.4
28 Mesh	600	7.87	34.5
35 Mesh	425	5.79	28.7
48 Mesh	300	5.43	23.3
65 Mesh	212	4.26	19.0
100 Mesh	150	3.50	15.5
150 Mesh	106	2.84	12.7
TOTAL		100.00	**

K80 =2179µm

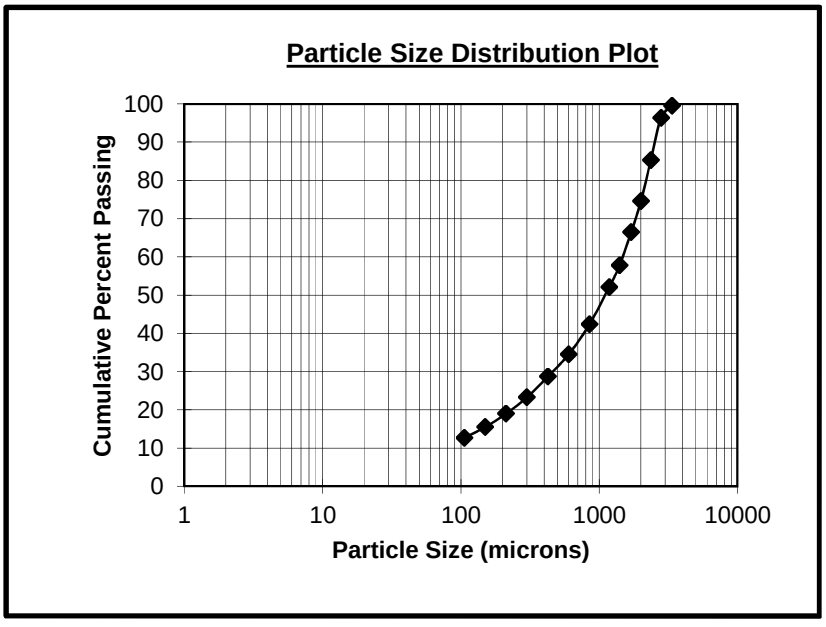


TABLE IV-5E
BOND BALL SCREEN ANALYSIS
KM3174 Composite 5 - Feed 2

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.47	99.5
7 Mesh	2800	2.65	96.9
8 Mesh	2360	11.63	85.3
9 Mesh	2000	10.85	74.4
10 Mesh	1700	8.93	65.5
12 Mesh	1400	9.29	56.2
14 Mesh	1180	5.45	50.7
20 Mesh	850	9.35	41.4
28 Mesh	600	7.79	33.6
35 Mesh	425	5.82	27.8
48 Mesh	300	5.40	22.4
65 Mesh	212	4.26	18.1
100 Mesh	150	3.43	14.7
150 Mesh	106	2.86	11.8
TOTAL		100.00	**

K80 =2184µm

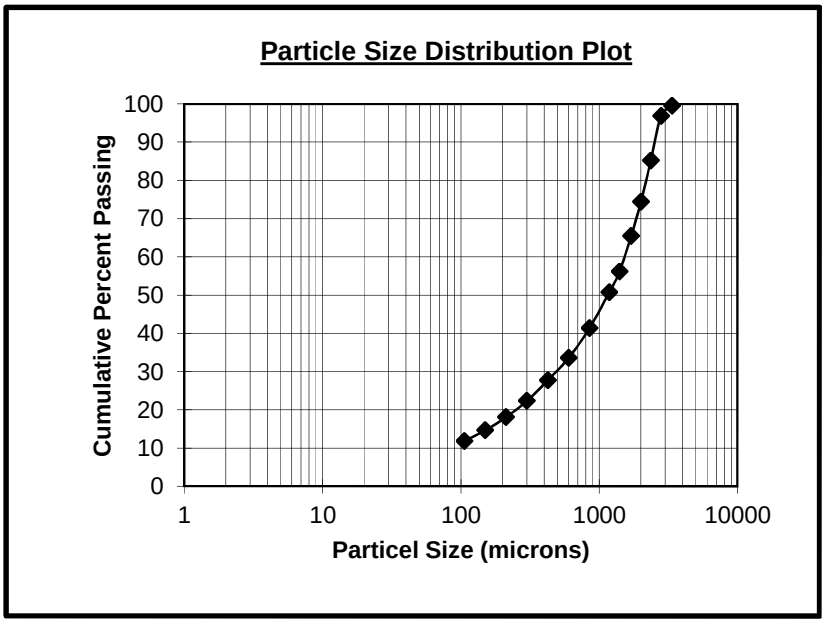


TABLE IV-6A

BOND BALL GRINDABILITY TEST

KM3174 Composite 6

Weight of 700 ml Sample :	1375.3 g.	Aperture Test Sieve :	106µm
1/3.5 of Sample Weight :	392.9 g.	Percent Undersize :	11.9%

Cycle	Weight of New Feed	Number of Revolutions	Weight of Undersize			
			Product	Feed	Net Product	Net / Rev
1	1375.3	100	282.6	163.7	118.9	1.19
2	282.6	302	396.7	33.6	363.1	1.20
3	396.7	288	416.0	47.2	368.8	1.28
4	416.0	268	406.6	49.5	357.1	1.33
5	406.6	258	390.7	48.4	342.3	1.32
6	390.7	262	399.9	46.5	353.4	1.35

BOND'S WORK INDEX FORMULA

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

Pi = Sieve Size Tested	106 µm
Gbp = Net undersize produced per revolution of mill.	1.34 g.
P = 80% Passing size of test product.	79 µm
F = 80% Passing size of test feed.	2289 µm

WORK INDEX (Wi)

13.1 kw-hr/ton

14.4 kw-hr/tonne

NB: Gbp = Average of last 3 Net/Rev Cycles

TABLE IV-6B
BOND BALL SCREEN ANALYSIS
KM3174 Composite 6 - Cycle 6 Undersize

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
150 Mesh	106	2.01	98.0
170 Mesh	90	8.90	89.1
200 Mesh	75	12.57	76.5
270 Mesh	53	15.45	61.1
325 Mesh	45	6.98	54.1
400 Mesh	38	4.71	49.4
TOTAL		100.00	**

K80 =79µm

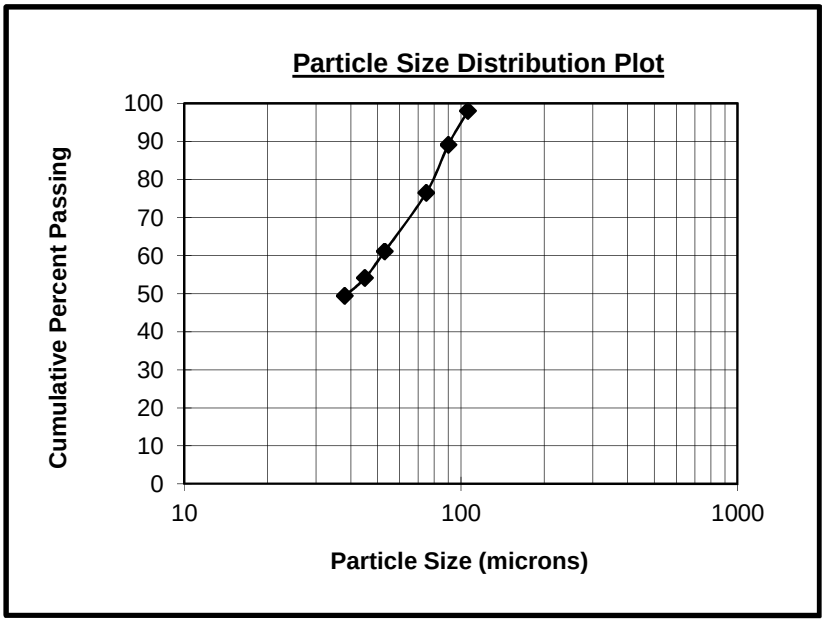


TABLE IV-6C
BOND BALL SCREEN ANALYSIS
KM3174 Composite 6 - Average Feed

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.36	99.6
7 Mesh	2800	3.36	96.3
8 Mesh	2360	13.76	82.5
9 Mesh	2000	12.75	69.8
10 Mesh	1700	8.97	60.8
12 Mesh	1400	8.97	51.8
14 Mesh	1180	5.33	46.5
20 Mesh	850	9.07	37.4
28 Mesh	600	7.21	30.2
35 Mesh	425	5.23	25.0
48 Mesh	300	4.56	20.4
65 Mesh	212	3.47	17.0
100 Mesh	150	2.75	14.2
150 Mesh	106	2.29	11.9
TOTAL		100.00	**

K80 =2289µm

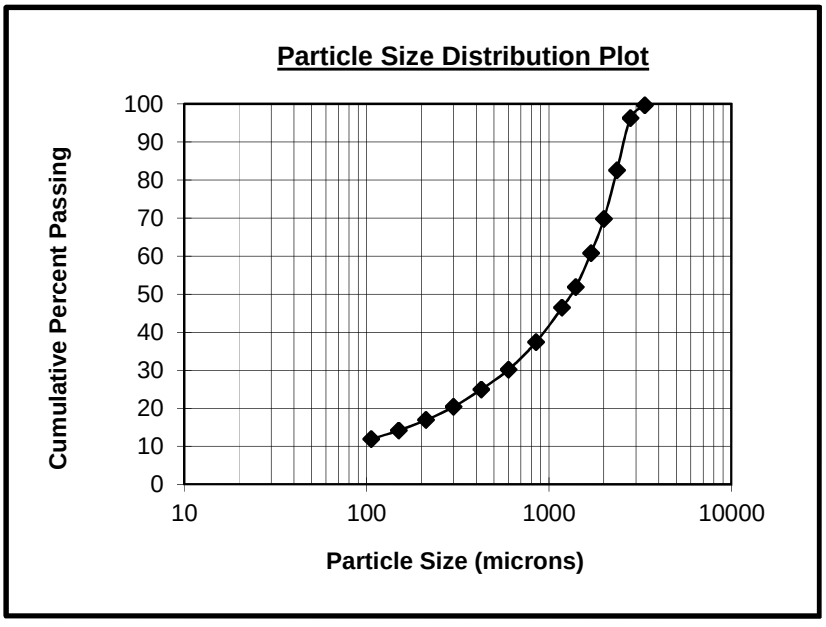


TABLE IV-6D
BOND BALL SCREEN ANALYSIS
KM3174 Composite 6 - Feed 1

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.41	99.6
7 Mesh	2800	3.30	96.3
8 Mesh	2360	13.87	82.4
9 Mesh	2000	12.14	70.3
10 Mesh	1700	8.74	61.5
12 Mesh	1400	8.69	52.8
14 Mesh	1180	5.23	47.6
20 Mesh	850	9.15	38.5
28 Mesh	600	7.37	31.1
35 Mesh	425	5.44	25.7
48 Mesh	300	4.83	20.8
65 Mesh	212	3.66	17.2
100 Mesh	150	2.90	14.3
150 Mesh	106	2.39	11.9
TOTAL		100.00	**

K80 =2288µm

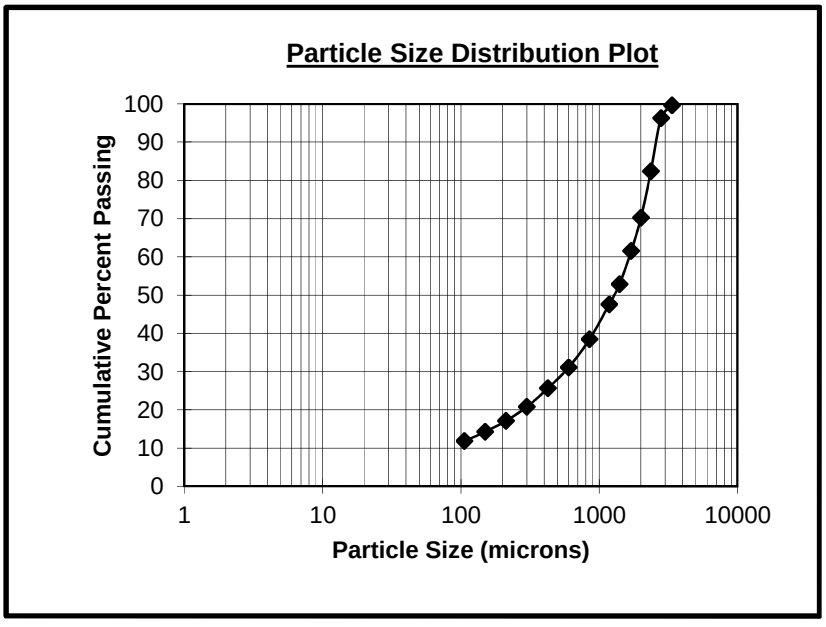


TABLE IV-6E
BOND BALL SCREEN ANALYSIS
KM3174 Composite 6 - Feed 2

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.31	99.7
7 Mesh	2800	3.43	96.3
8 Mesh	2360	13.66	82.6
9 Mesh	2000	13.35	69.3
10 Mesh	1700	9.21	60.1
12 Mesh	1400	9.26	50.8
14 Mesh	1180	5.42	45.4
20 Mesh	850	9.00	36.4
28 Mesh	600	7.06	29.3
35 Mesh	425	5.01	24.3
48 Mesh	300	4.30	20.0
65 Mesh	212	3.27	16.7
100 Mesh	150	2.61	14.1
150 Mesh	106	2.20	11.9
TOTAL		100.00	**

K80 =2290µm

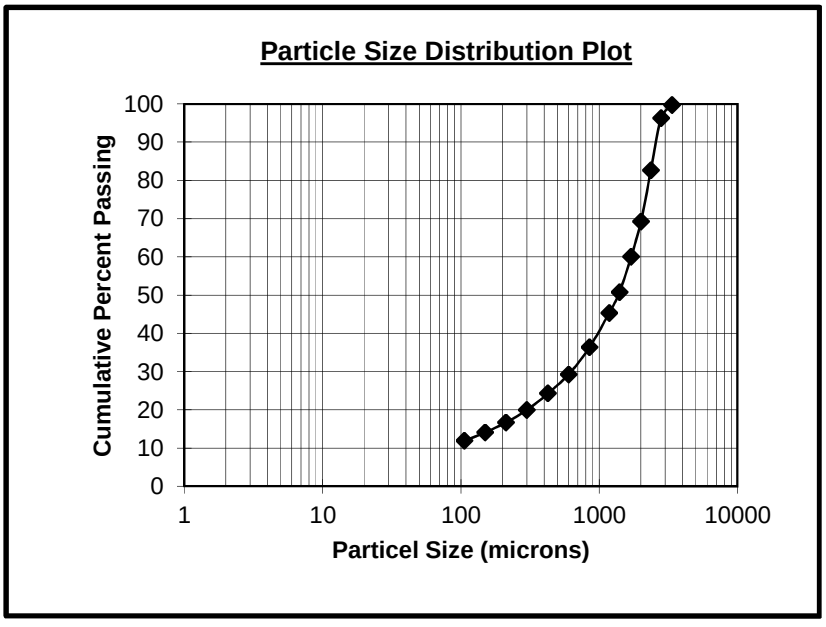


TABLE IV-7A

BOND BALL GRINDABILITY TEST

KM3174 Composite 7

Weight of 700 ml Sample :	1399.7 g.	Aperture Test Sieve :	106µm
1/3.5 of Sample Weight :	399.9 g.	Percent Undersize :	15.2%

Cycle	Weight of New Feed	Number of Revolutions	Weight of Undersize			
			Product	Feed	Net Product	Net / Rev
1	1399.7	100	286.6	212.8	73.8	0.74
2	286.6	483	589.9	43.6	546.3	1.13
3	589.9	274	442.6	89.7	352.9	1.29
4	442.6	258	403.0	67.3	335.7	1.30
5	403.0	261	407.0	61.3	345.7	1.33
6	407.0	255	388.4	61.9	326.5	1.28

BOND'S WORK INDEX FORMULA

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

Pi = Sieve Size Tested	106 µm
Gbp = Net undersize produced per revolution of mill.	1.30 g.
P = 80% Passing size of test product.	82 µm
F = 80% Passing size of test feed.	2015 µm

WORK INDEX (Wi)

13.9 kw-hr/ton

15.3 kw-hr/tonne

NB: Gbp = Average of last 3 Net/Rev Cycles

TABLE IV-7B
BOND BALL SCREEN ANALYSIS
KM3174 Composite 7 - Cycle 6 Undersize

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
150 Mesh	106	2.74	97.3
170 Mesh	90	10.75	86.5
200 Mesh	75	11.83	74.7
270 Mesh	53	14.47	60.2
325 Mesh	45	6.65	53.6
400 Mesh	38	3.91	49.7
TOTAL		100.00	**

K80 =82µm

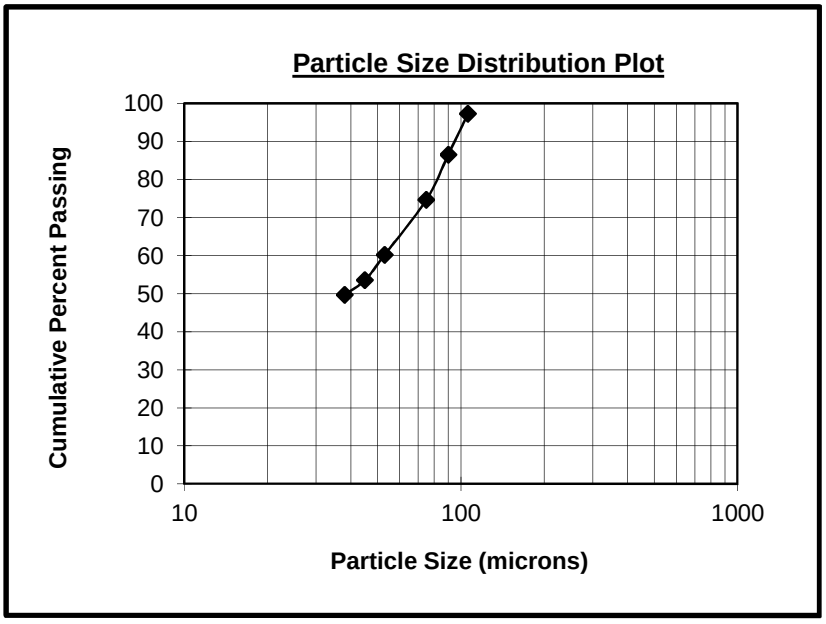


TABLE IV-7C
BOND BALL SCREEN ANALYSIS
KM3174 Composite 7 - Average Feed

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.28	99.7
7 Mesh	2800	1.98	97.7
8 Mesh	2360	8.90	88.8
9 Mesh	2000	9.23	79.6
10 Mesh	1700	7.16	72.5
12 Mesh	1400	8.64	63.8
14 Mesh	1180	5.41	58.4
20 Mesh	850	10.43	48.0
28 Mesh	600	8.73	39.2
35 Mesh	425	6.51	32.7
48 Mesh	300	6.11	26.6
65 Mesh	212	4.67	22.0
100 Mesh	150	3.69	18.3
150 Mesh	106	3.07	15.2
TOTAL		100.00	**

K80 =2015µm

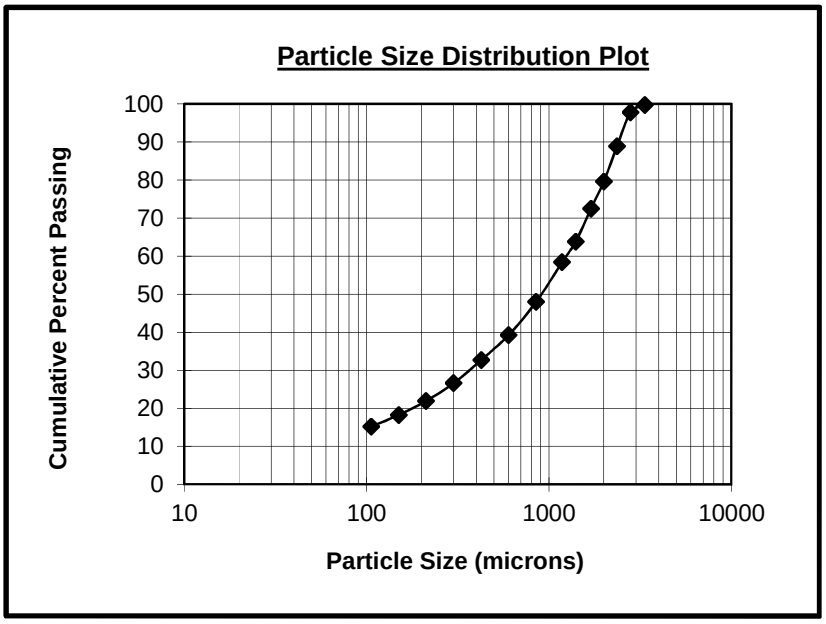


TABLE IV-7D
BOND BALL SCREEN ANALYSIS
KM3174 Composite 7 - Feed 1

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.20	99.8
7 Mesh	2800	1.16	98.6
8 Mesh	2360	7.69	91.0
9 Mesh	2000	8.29	82.7
10 Mesh	1700	6.78	75.9
12 Mesh	1400	8.44	67.4
14 Mesh	1180	5.23	62.2
20 Mesh	850	10.80	51.4
28 Mesh	600	9.25	42.2
35 Mesh	425	6.93	35.2
48 Mesh	300	6.58	28.6
65 Mesh	212	5.03	23.6
100 Mesh	150	4.02	19.6
150 Mesh	106	3.42	16.2
TOTAL		100.00	**

K80 =1879µm

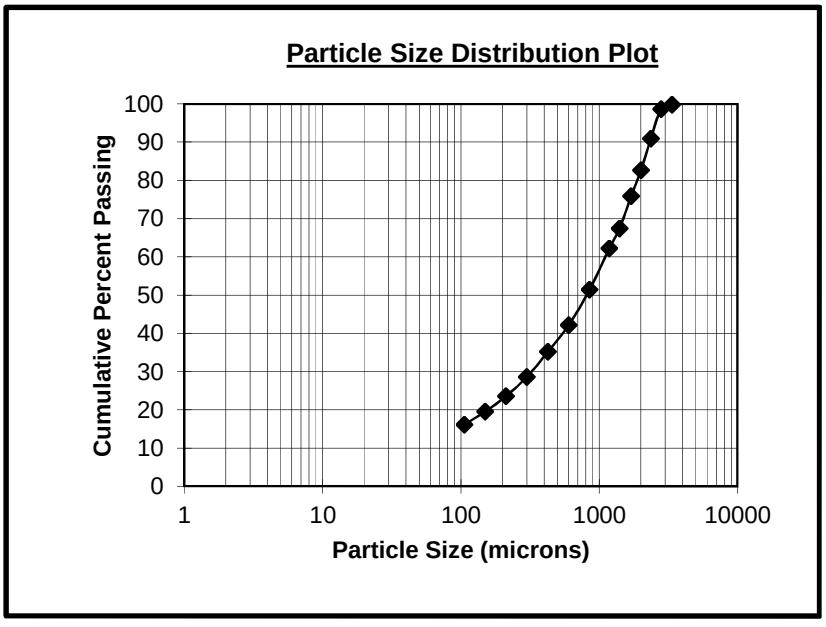


TABLE IV-7E
BOND BALL SCREEN ANALYSIS
KM3174 Composite 7 - Feed 2

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.20	99.8
7 Mesh	2800	2.40	97.4
8 Mesh	2360	9.35	88.1
9 Mesh	2000	9.50	78.6
10 Mesh	1700	7.25	71.3
12 Mesh	1400	8.77	62.5
14 Mesh	1180	5.39	57.1
20 Mesh	850	10.09	47.1
28 Mesh	600	8.57	38.5
35 Mesh	425	6.42	32.1
48 Mesh	300	5.93	26.2
65 Mesh	212	4.55	21.6
100 Mesh	150	3.57	18.0
150 Mesh	106	3.09	14.9
TOTAL		100.00	**

K80 =2054µm

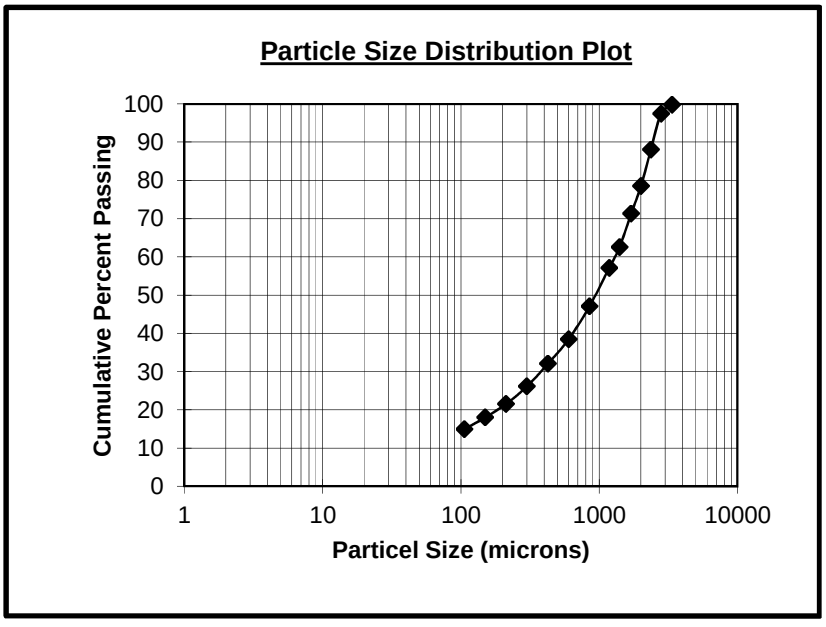


TABLE IV-7F
BOND BALL SCREEN ANALYSIS
KM3174 Composite 7 - Feed 3

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.45	99.5
7 Mesh	2800	2.36	97.2
8 Mesh	2360	9.65	87.5
9 Mesh	2000	9.90	77.6
10 Mesh	1700	7.44	70.2
12 Mesh	1400	8.69	61.5
14 Mesh	1180	5.63	55.9
20 Mesh	850	10.40	45.5
28 Mesh	600	8.39	37.1
35 Mesh	425	6.18	30.9
48 Mesh	300	5.83	25.1
65 Mesh	212	4.42	20.7
100 Mesh	150	3.47	17.2
150 Mesh	106	2.71	14.5
TOTAL		100.00	**

K80 =2084µm

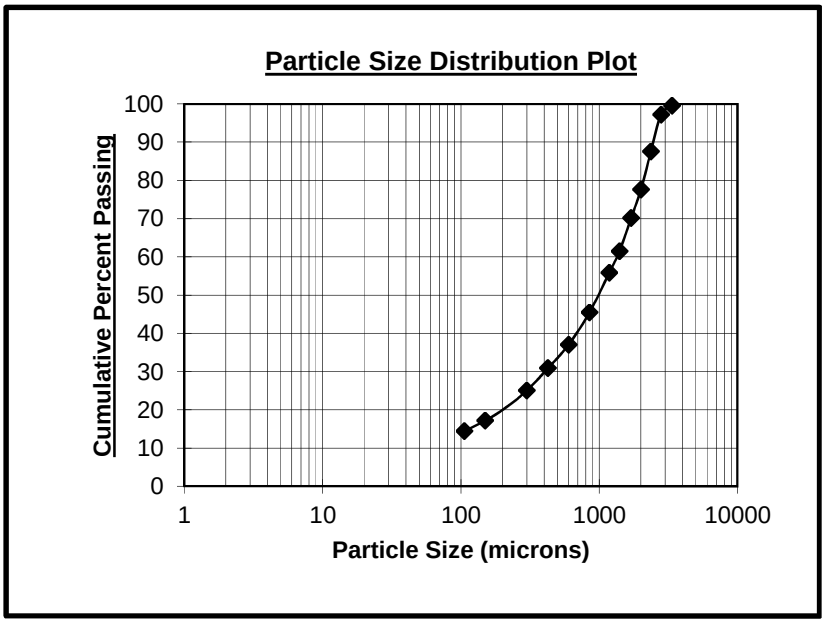


TABLE IV-8A

BOND BALL GRINDABILITY TEST

KM3174 Composite 8

Weight of 700 ml Sample :	1348.7 g.	Aperture Test Sieve :	106µm
1/3.5 of Sample Weight :	385.3 g.	Percent Undersize :	10.5%

Cycle	Weight of New Feed	Number of Revolutions	Weight of Undersize			
			Product	Feed	Net Product	Net / Rev
1	1348.7	100	197.7	141.6	56.1	0.56
2	197.7	650	541.9	20.8	521.1	0.80
3	541.9	410	428.1	56.9	371.2	0.91
4	428.1	376	405.1	45.0	360.1	0.96
5	405.1	358	388.1	42.5	345.6	0.97
6	388.1	357	384.3	40.8	343.5	0.96

BOND'S WORK INDEX FORMULA

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

Pi = Sieve Size Tested	106 µm
Gbp = Net undersize produced per revolution of mill.	0.96 g.
P = 80% Passing size of test product.	78 µm
F = 80% Passing size of test feed.	2312 µm

WORK INDEX (Wi)

17.0 kw-hr/ton

18.7 kw-hr/tonne

NB: Gbp = Average of last 3 Net/Rev Cycles

TABLE IV-8B
BOND BALL SCREEN ANALYSIS
KM3174 Composite 8 - Cycle 6 Undersize

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
150 Mesh	106	0.00	100.0
170 Mesh	90	9.69	90.3
200 Mesh	75	12.53	77.8
270 Mesh	53	15.85	61.9
325 Mesh	45	6.86	55.1
400 Mesh	38	4.36	50.7
TOTAL		100.00	**

K80 =78µm

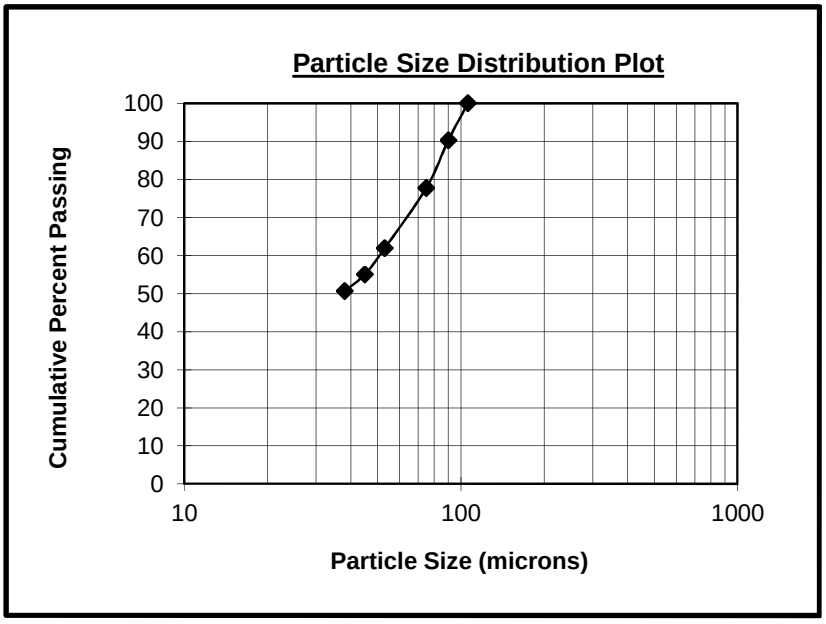


TABLE IV-8C
BOND BALL SCREEN ANALYSIS
KM3174 Composite 8 - Average Feed

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.33	99.7
7 Mesh	2800	3.92	95.7
8 Mesh	2360	14.11	81.6
9 Mesh	2000	12.27	69.4
10 Mesh	1700	8.96	60.4
12 Mesh	1400	9.22	51.2
14 Mesh	1180	5.51	45.7
20 Mesh	850	9.58	36.1
28 Mesh	600	7.45	28.6
35 Mesh	425	5.31	23.3
48 Mesh	300	4.67	18.7
65 Mesh	212	3.49	15.2
100 Mesh	150	2.69	12.5
150 Mesh	106	2.02	10.5
TOTAL		100.00	**

K80 =2312µm

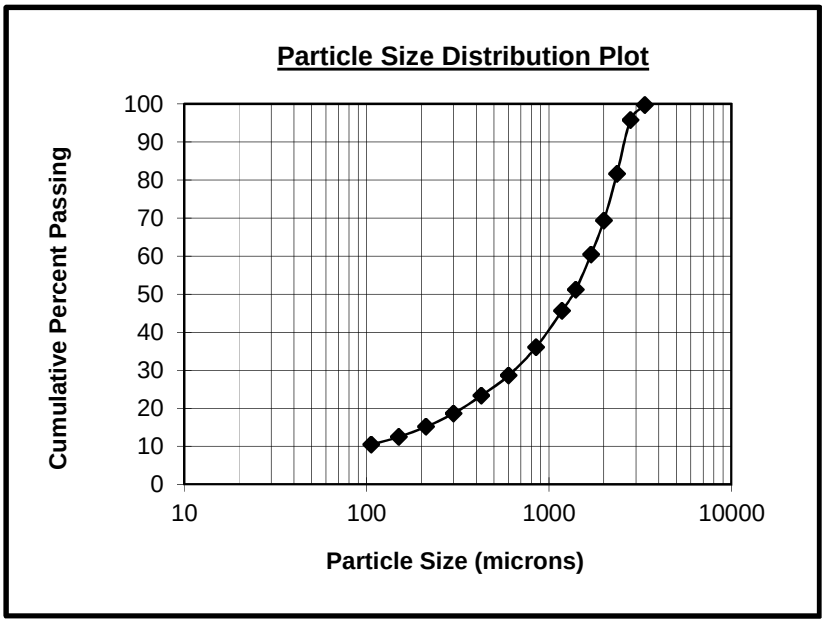


TABLE IV-8D
BOND BALL SCREEN ANALYSIS
KM3174 Composite 8 - Feed 1

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.52	99.5
7 Mesh	2800	4.47	95.0
8 Mesh	2360	14.92	80.1
9 Mesh	2000	12.58	67.5
10 Mesh	1700	9.00	58.5
12 Mesh	1400	9.62	48.9
14 Mesh	1180	5.56	43.3
20 Mesh	850	9.78	33.5
28 Mesh	600	7.12	26.4
35 Mesh	425	4.99	21.4
48 Mesh	300	4.26	17.2
65 Mesh	212	3.12	14.0
100 Mesh	150	2.39	11.6
150 Mesh	106	1.82	9.8
TOTAL		100.00	**

K80 =2358µm

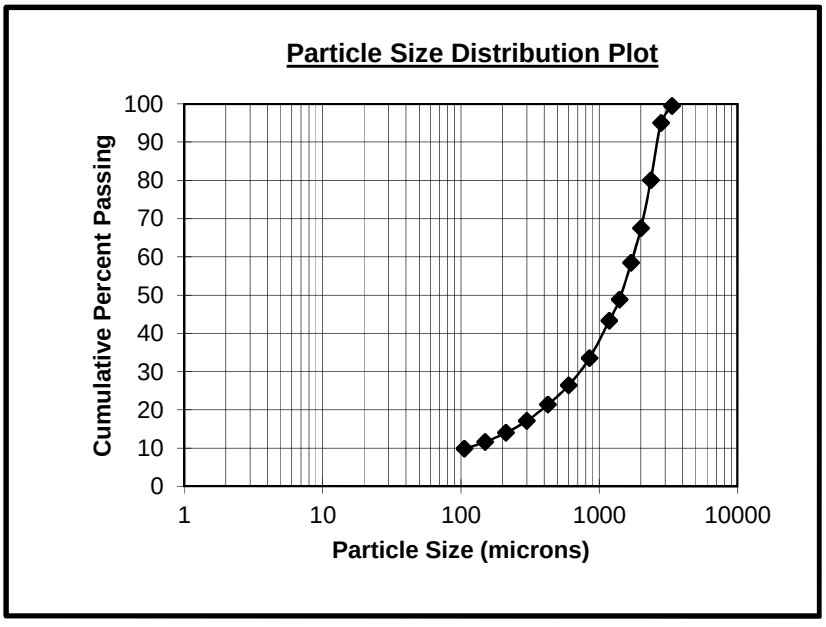


TABLE IV-8E
BOND BALL SCREEN ANALYSIS
KM3174 Composite 8 - Feed 2

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.25	99.8
7 Mesh	2800	3.53	96.2
8 Mesh	2360	13.23	83.0
9 Mesh	2000	11.89	71.1
10 Mesh	1700	8.86	62.2
12 Mesh	1400	9.20	53.0
14 Mesh	1180	5.62	47.4
20 Mesh	850	9.60	37.8
28 Mesh	600	7.71	30.1
35 Mesh	425	5.52	24.6
48 Mesh	300	4.93	19.7
65 Mesh	212	3.63	16.0
100 Mesh	150	2.79	13.2
150 Mesh	106	2.04	11.2
TOTAL		100.00	**

K80 =2269µm

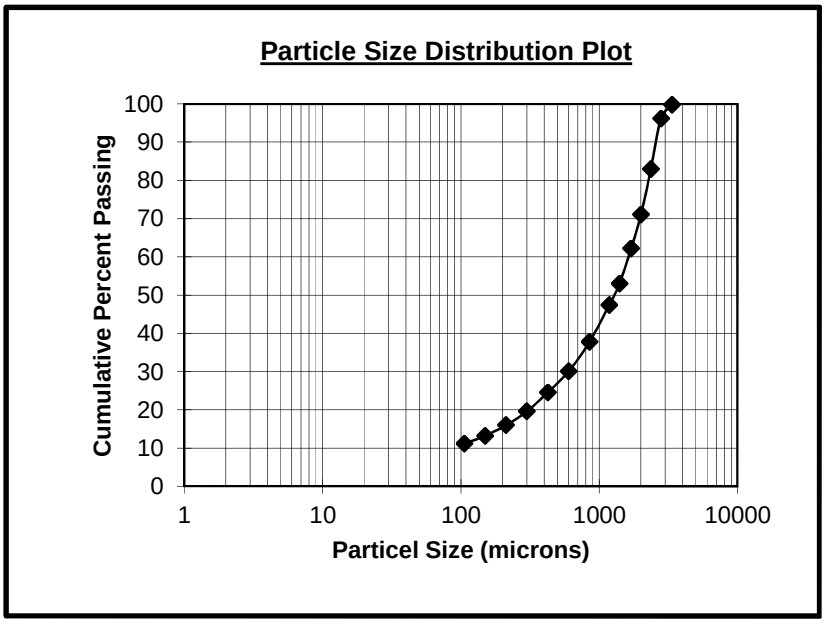


TABLE IV-8F
BOND BALL SCREEN ANALYSIS
KM3174 Composite 8 - Feed 3

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.24	99.8
7 Mesh	2800	3.79	96.0
8 Mesh	2360	14.20	81.8
9 Mesh	2000	12.35	69.4
10 Mesh	1700	9.04	60.4
12 Mesh	1400	8.85	51.5
14 Mesh	1180	5.35	46.2
20 Mesh	850	9.38	36.8
28 Mesh	600	7.49	29.3
35 Mesh	425	5.40	23.9
48 Mesh	300	4.81	19.1
65 Mesh	212	3.69	15.4
100 Mesh	150	2.87	12.5
150 Mesh	106	2.19	10.4
TOTAL		100.00	**

K80 =2308µm

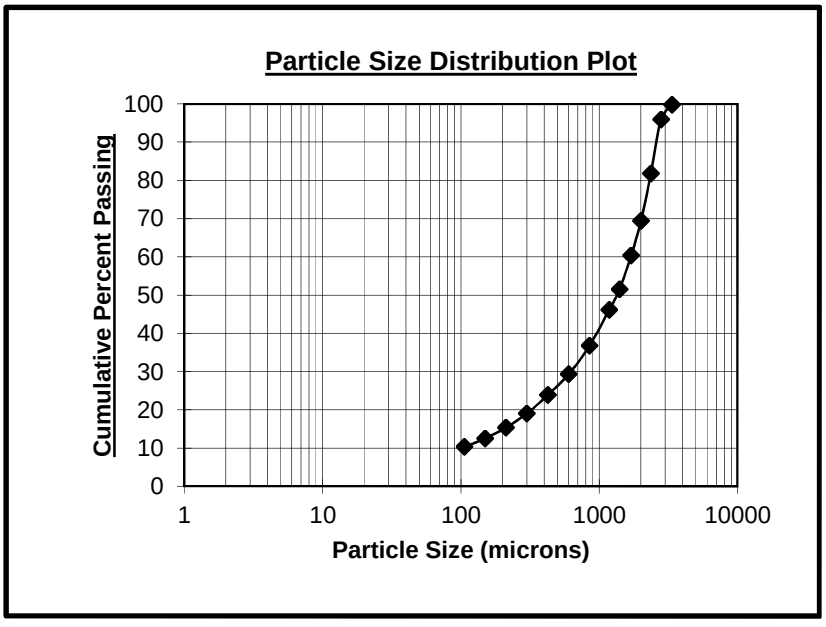


TABLE IV-9A

BOND BALL GRINDABILITY TEST

KM3174 Composite 9

Weight of 700 ml Sample :	1446.3 g.	Aperture Test Sieve :	106µm
1/3.5 of Sample Weight :	413.2 g.	Percent Undersize :	10.5%

Cycle	Weight of New Feed	Number of Revolutions	Weight of Undersize			
			Product	Feed	Net Product	Net / Rev
1	1446.3	200	341.9	151.9	190.0	0.95
2	341.9	397	426.2	35.9	390.3	0.98
3	426.2	375	438.1	44.8	393.3	1.05
4	438.1	350	421.2	46.0	375.2	1.07
5	421.2	344	424.8	44.2	380.6	1.11
6	424.8	333	412.7	44.6	368.1	1.10

BOND'S WORK INDEX FORMULA

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

Pi = Sieve Size Tested	106 µm
Gbp = Net undersize produced per revolution of mill.	1.09 g.
P = 80% Passing size of test product.	77 µm
F = 80% Passing size of test feed.	2369 µm

WORK INDEX (Wi)

15.1 kw-hr/ton

16.7 kw-hr/tonne

NB: Gbp = Average of last 3 Net/Rev Cycles

TABLE IV-9B
BOND BALL SCREEN ANALYSIS
KM3174 Composite 9 - Cycle 6 Undersize

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
150 Mesh	106	1.23	98.8
170 Mesh	90	8.90	89.9
200 Mesh	75	11.65	78.2
270 Mesh	53	16.00	62.2
325 Mesh	45	7.29	54.9
400 Mesh	38	4.64	50.3
TOTAL		100.00	**

K80 =77µm

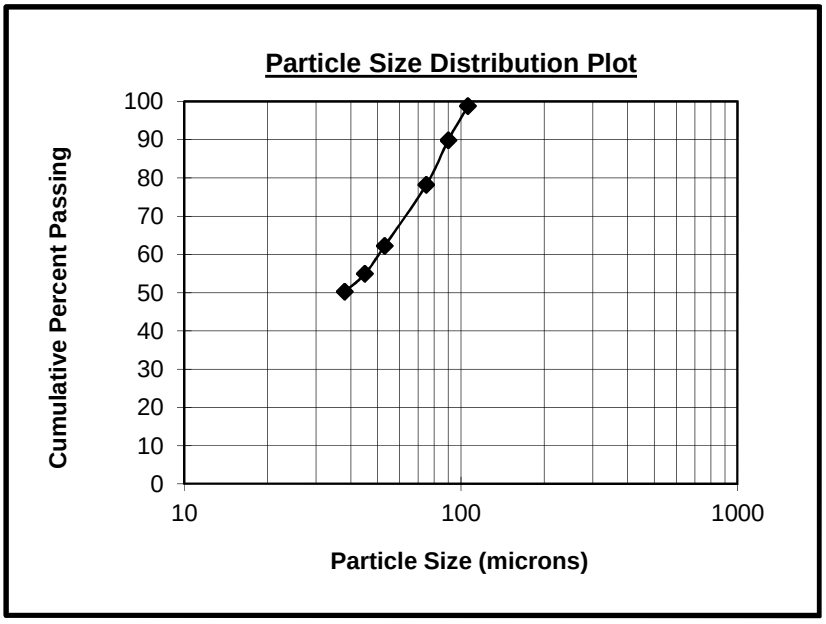


TABLE IV-9C
BOND BALL SCREEN ANALYSIS
KM3174 Composite 9 - Average Feed

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.48	99.5
7 Mesh	2800	4.61	94.9
8 Mesh	2360	15.23	79.7
9 Mesh	2000	12.70	67.0
10 Mesh	1700	9.12	57.9
12 Mesh	1400	9.33	48.5
14 Mesh	1180	5.55	43.0
20 Mesh	850	9.08	33.9
28 Mesh	600	7.02	26.9
35 Mesh	425	4.86	22.0
48 Mesh	300	4.20	17.8
65 Mesh	212	3.11	14.7
100 Mesh	150	2.41	12.3
150 Mesh	106	1.85	10.5
TOTAL		100.00	**

K80 =2369µm

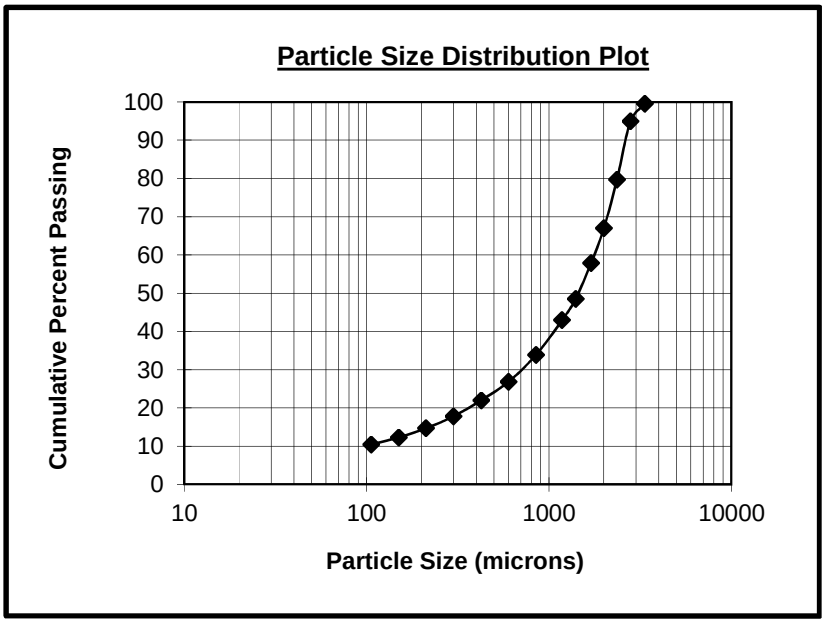


TABLE IV-9D
BOND BALL SCREEN ANALYSIS
KM3174 Composite 9 - Feed 1

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.40	99.6
7 Mesh	2800	4.21	95.4
8 Mesh	2360	14.45	81.0
9 Mesh	2000	12.32	68.6
10 Mesh	1700	9.35	59.3
12 Mesh	1400	9.75	49.5
14 Mesh	1180	5.54	44.0
20 Mesh	850	9.30	34.7
28 Mesh	600	7.17	27.5
35 Mesh	425	4.90	22.6
48 Mesh	300	4.26	18.4
65 Mesh	212	3.12	15.2
100 Mesh	150	2.42	12.8
150 Mesh	106	1.98	10.8
TOTAL		100.00	**

K80 =2332µm

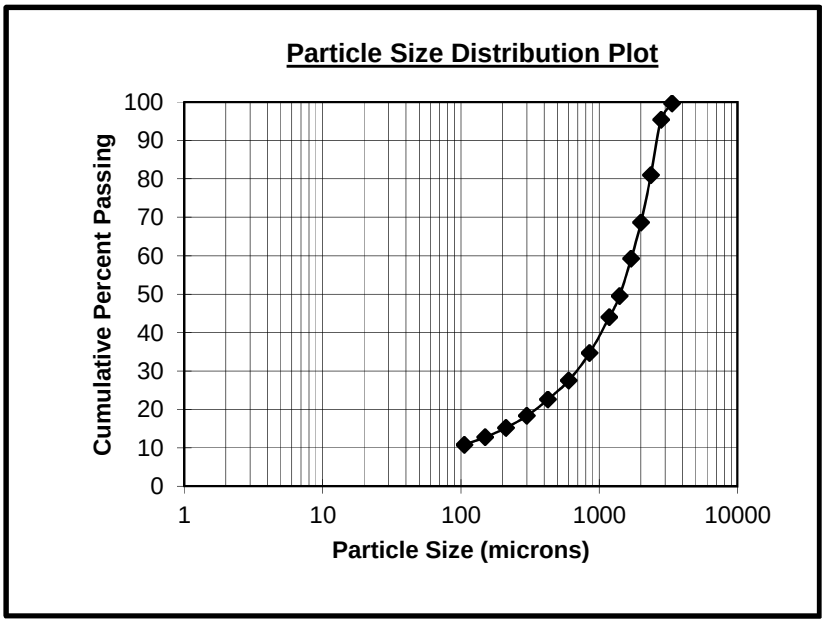


TABLE IV-9E
BOND BALL SCREEN ANALYSIS
KM3174 Composite 9 - Feed 2

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.43	99.6
7 Mesh	2800	5.54	94.0
8 Mesh	2360	16.25	77.8
9 Mesh	2000	13.65	64.1
10 Mesh	1700	9.21	54.9
12 Mesh	1400	8.82	46.1
14 Mesh	1180	5.45	40.6
20 Mesh	850	8.68	32.0
28 Mesh	600	6.61	25.4
35 Mesh	425	4.53	20.8
48 Mesh	300	3.91	16.9
65 Mesh	212	2.94	14.0
100 Mesh	150	2.31	11.7
150 Mesh	106	1.88	9.8
TOTAL		100.00	**

K80 =2421µm

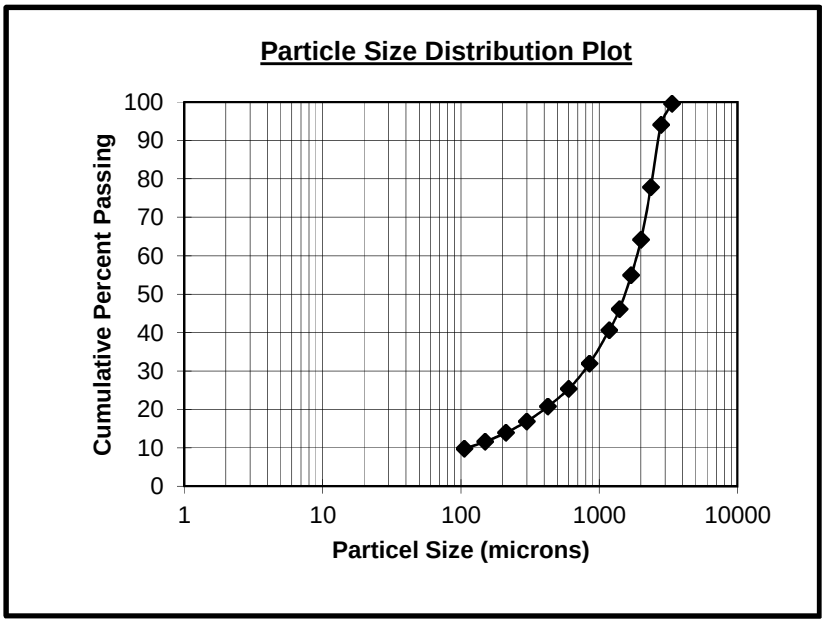


TABLE IV-9F
BOND BALL SCREEN ANALYSIS
KM3174 Composite 9 - Feed 3

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.61	99.4
7 Mesh	2800	4.03	95.4
8 Mesh	2360	14.96	80.4
9 Mesh	2000	12.10	68.3
10 Mesh	1700	8.78	59.5
12 Mesh	1400	9.44	50.1
14 Mesh	1180	5.67	44.4
20 Mesh	850	9.29	35.1
28 Mesh	600	7.30	27.8
35 Mesh	425	5.16	22.7
48 Mesh	300	4.44	18.2
65 Mesh	212	3.27	15.0
100 Mesh	150	2.50	12.5
150 Mesh	106	1.68	10.8
TOTAL		100.00	**

K80 =2348µm

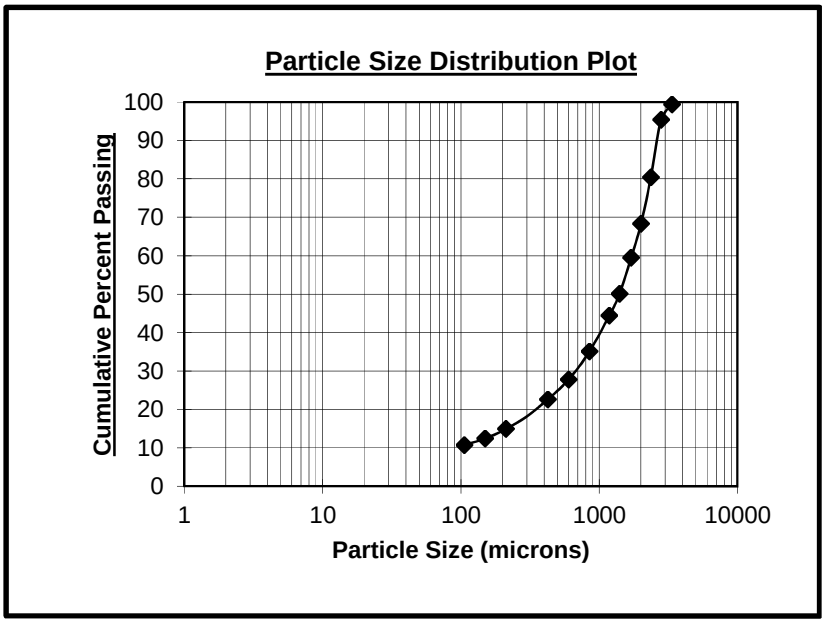


TABLE IV-10A

BOND BALL GRINDABILITY TEST

KM3174 Composite 10

Weight of 700 ml Sample :	1474 g.	Aperture Test Sieve :	106µm
1/3.5 of Sample Weight :	421.1 g.	Percent Undersize :	17.1%

Cycle	Weight of New Feed	Number of Revolutions	Weight of Undersize			
			Product	Feed	Net Product	Net / Rev
1	1474.0	100	308.3	252.1	56.2	0.56
2	308.3	655	765.1	52.7	712.4	1.09
3	765.1	267	463.4	130.8	332.6	1.25
4	463.4	274	426.1	79.2	346.9	1.26
5	426.1	276	422.6	72.9	349.7	1.27
6	422.6	275	419.8	72.3	347.5	1.26

BOND'S WORK INDEX FORMULA

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

Pi = Sieve Size Tested	106 µm
Gbp = Net undersize produced per revolution of mill.	1.27 g.
P = 80% Passing size of test product.	75 µm
F = 80% Passing size of test feed.	2024 µm

WORK INDEX (Wi)

13.5 kw-hr/ton

14.8 kw-hr/tonne

NB: Gbp = Average of last 3 Net/Rev Cycles

TABLE IV-10B
BOND BALL SCREEN ANALYSIS
KM3174 Composite 10 - Cycle 6 Undersize

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
150 Mesh	106	1.49	98.5
170 Mesh	90	7.44	91.1
200 Mesh	75	11.11	80.0
270 Mesh	53	15.18	64.8
325 Mesh	45	6.75	58.0
400 Mesh	38	4.27	53.8
TOTAL		100.00	**

K80 =75µm

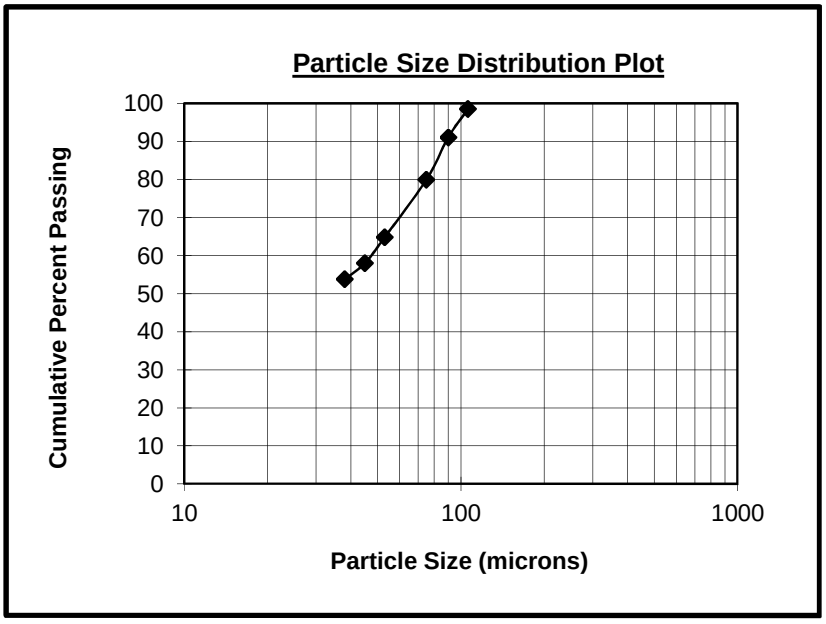


TABLE IV-10C
BOND BALL SCREEN ANALYSIS
KM3174 Composite 10 - Average Feed

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.19	99.8
7 Mesh	2800	2.05	97.8
8 Mesh	2360	9.19	88.6
9 Mesh	2000	9.19	79.4
10 Mesh	1700	6.96	72.4
12 Mesh	1400	7.99	64.4
14 Mesh	1180	5.03	59.4
20 Mesh	850	9.55	49.8
28 Mesh	600	8.40	41.4
35 Mesh	425	6.38	35.1
48 Mesh	300	6.06	29.0
65 Mesh	212	4.86	24.1
100 Mesh	150	3.95	20.2
150 Mesh	106	3.10	17.1
TOTAL		100.00	**

K80 =2024µm

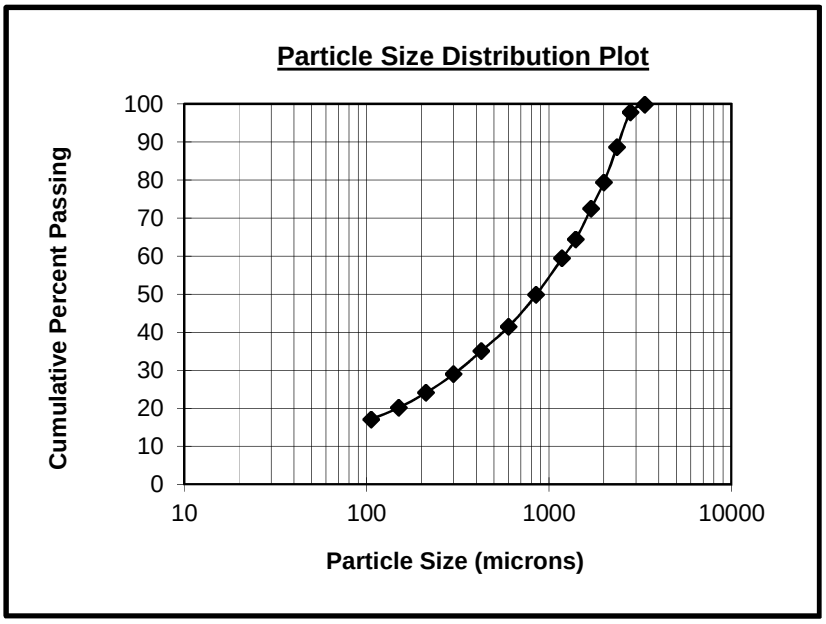


TABLE IV-10D
BOND BALL SCREEN ANALYSIS
KM3174 Composite 10 - Feed 1

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.29	99.7
7 Mesh	2800	2.03	97.7
8 Mesh	2360	8.99	88.7
9 Mesh	2000	9.43	79.3
10 Mesh	1700	6.96	72.3
12 Mesh	1400	8.08	64.2
14 Mesh	1180	5.08	59.1
20 Mesh	850	9.43	49.7
28 Mesh	600	8.22	41.5
35 Mesh	425	6.24	35.3
48 Mesh	300	6.00	29.3
65 Mesh	212	4.79	24.5
100 Mesh	150	3.87	20.6
150 Mesh	106	2.90	17.7
TOTAL		100.00	**

K80 =2028µm

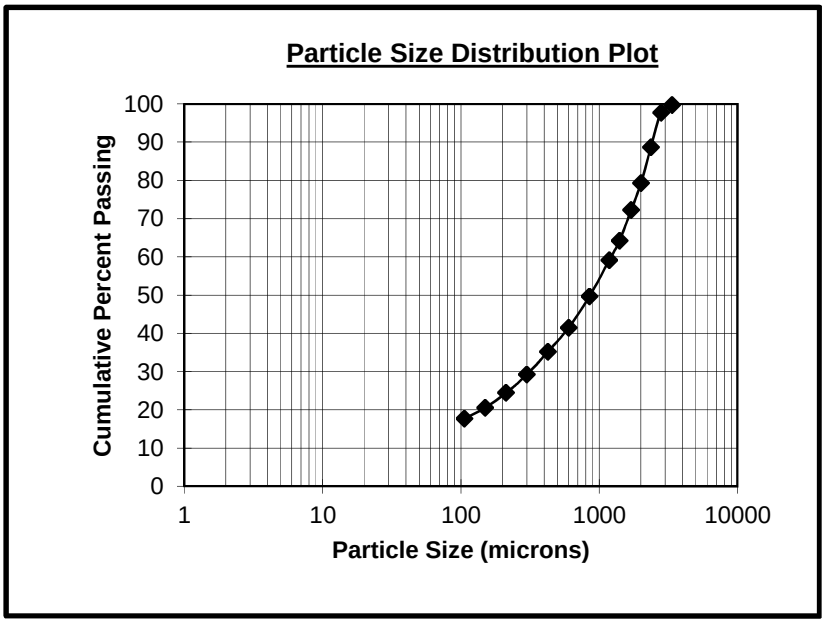


TABLE IV-10E
BOND BALL SCREEN ANALYSIS
KM3174 Composite 10 - Feed 2

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.10	99.9
7 Mesh	2800	2.06	97.8
8 Mesh	2360	9.39	88.5
9 Mesh	2000	8.96	79.5
10 Mesh	1700	6.95	72.5
12 Mesh	1400	7.91	64.6
14 Mesh	1180	4.98	59.7
20 Mesh	850	9.68	50.0
28 Mesh	600	8.58	41.4
35 Mesh	425	6.52	34.9
48 Mesh	300	6.13	28.7
65 Mesh	212	4.94	23.8
100 Mesh	150	4.02	19.8
150 Mesh	106	3.31	16.5
TOTAL		100.00	**

K80 =2020µm

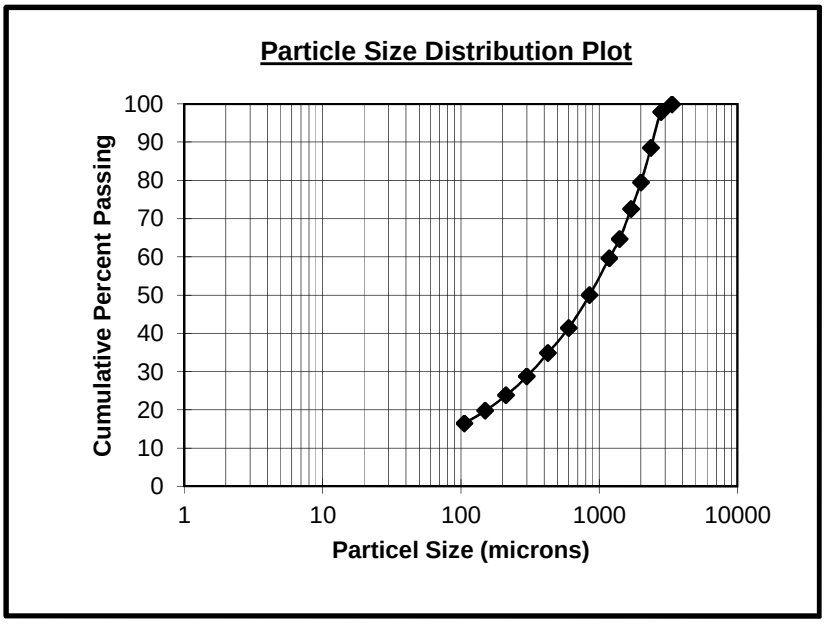


TABLE IV-11A

BOND BALL GRINDABILITY TEST

KM3174 Composite 11

Weight of 700 ml Sample :	1465.4 g.	Aperture Test Sieve :	106µm
1/3.5 of Sample Weight :	418.7 g.	Percent Undersize :	16.6%

Cycle	Weight of New Feed	Number of Revolutions	Weight of Undersize			
			Product	Feed	Net Product	Net / Rev
1	1465.4	100	296.6	243.3	53.3	0.53
2	296.6	693	821.3	49.2	772.1	1.11
3	821.3	253	467.9	136.3	331.6	1.31
4	467.9	261	423.2	77.7	345.5	1.33
5	423.2	263	420.7	70.3	350.4	1.33
6	420.7	261	417.7	69.8	347.9	1.33

BOND'S WORK INDEX FORMULA

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

Pi = Sieve Size Tested	106 µm
Gbp = Net undersize produced per revolution of mill.	1.33 g.
P = 80% Passing size of test product.	74 µm
F = 80% Passing size of test feed.	2018 µm

WORK INDEX (Wi)

12.8 kw-hr/ton

14.1 kw-hr/tonne

NB: Gbp = Average of last 3 Net/Rev Cycles

TABLE IV-11B
BOND BALL SCREEN ANALYSIS
KM3174 Composite 11 - Cycle 6 Undersize

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
150 Mesh	106	0.00	100.0
170 Mesh	90	7.79	92.2
200 Mesh	75	11.38	80.8
270 Mesh	53	16.29	64.5
325 Mesh	45	7.17	57.4
400 Mesh	38	4.60	52.8
TOTAL		100.00	**

K80 =74µm

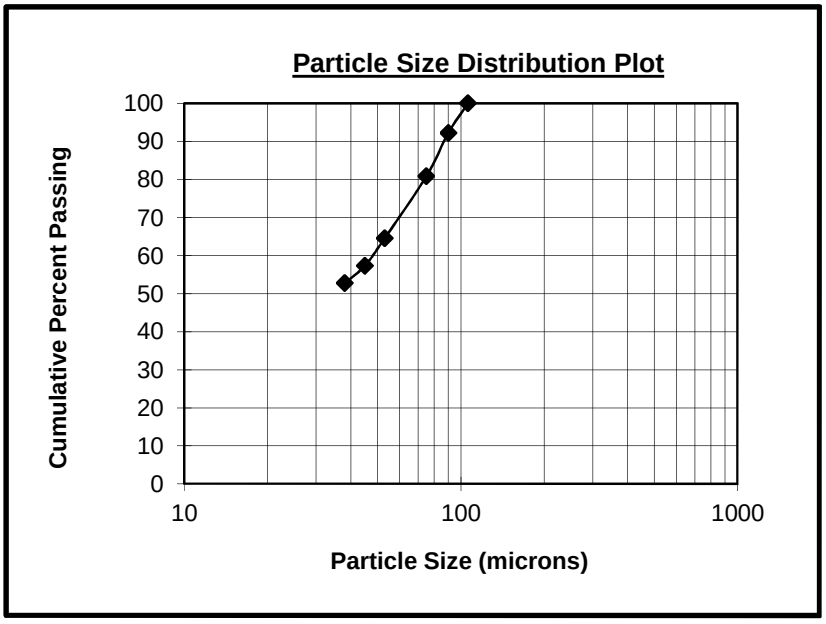


TABLE IV-11C
BOND BALL SCREEN ANALYSIS
KM3174 Composite 11 - Average Feed

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.59	99.4
7 Mesh	2800	2.78	96.6
8 Mesh	2360	8.50	88.1
9 Mesh	2000	8.57	79.6
10 Mesh	1700	6.70	72.9
12 Mesh	1400	7.88	65.0
14 Mesh	1180	5.20	59.8
20 Mesh	850	9.83	50.0
28 Mesh	600	8.57	41.4
35 Mesh	425	6.57	34.8
48 Mesh	300	6.18	28.6
65 Mesh	212	4.90	23.7
100 Mesh	150	3.99	19.7
150 Mesh	106	3.15	16.6
TOTAL		100.00	**

K80 =2018µm

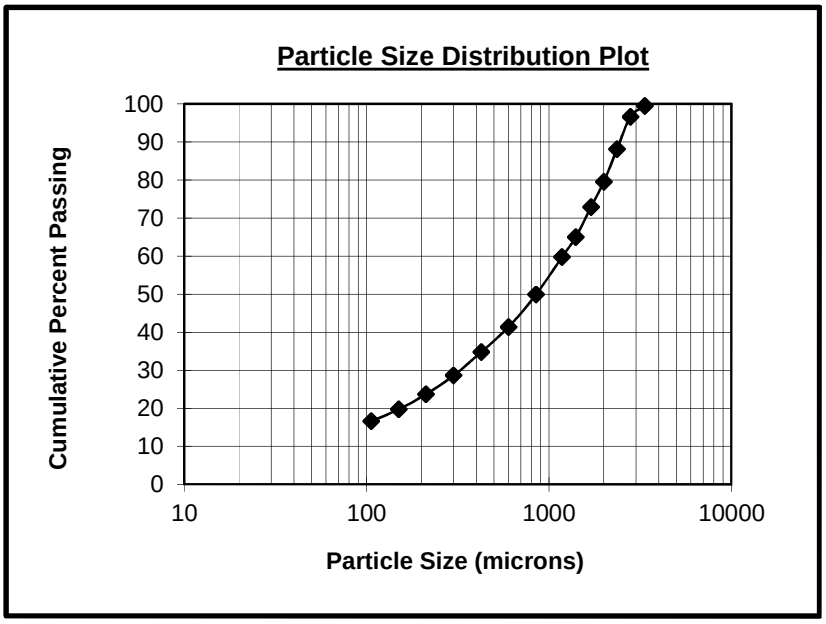


TABLE IV-11D
BOND BALL SCREEN ANALYSIS
KM3174 Composite 11 - Feed 1

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.60	99.4
7 Mesh	2800	2.35	97.1
8 Mesh	2360	8.33	88.7
9 Mesh	2000	8.78	79.9
10 Mesh	1700	6.39	73.6
12 Mesh	1400	7.78	65.8
14 Mesh	1180	4.94	60.8
20 Mesh	850	9.83	51.0
28 Mesh	600	8.58	42.4
35 Mesh	425	6.64	35.8
48 Mesh	300	6.29	29.5
65 Mesh	212	4.99	24.5
100 Mesh	150	4.09	20.4
150 Mesh	106	3.39	17.0
TOTAL		100.00	**

K80 =2002µm

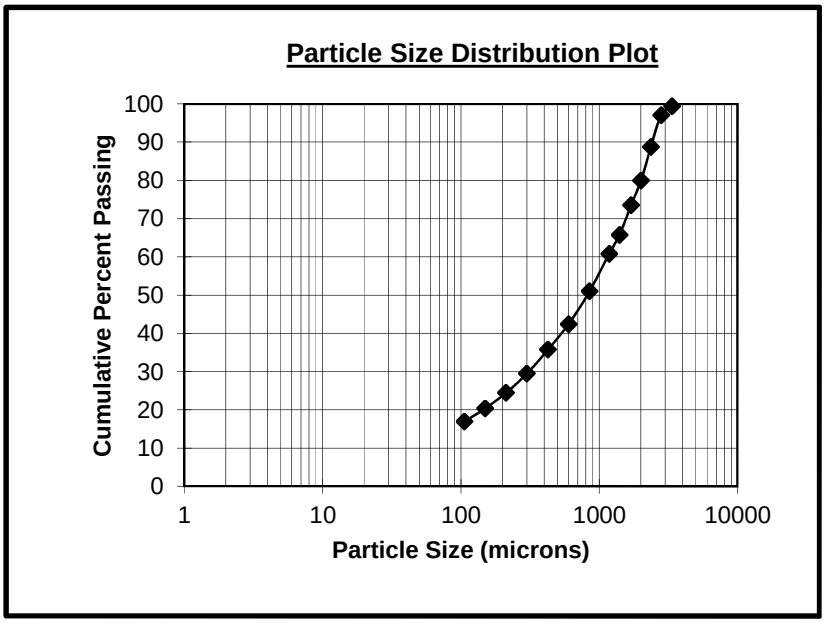
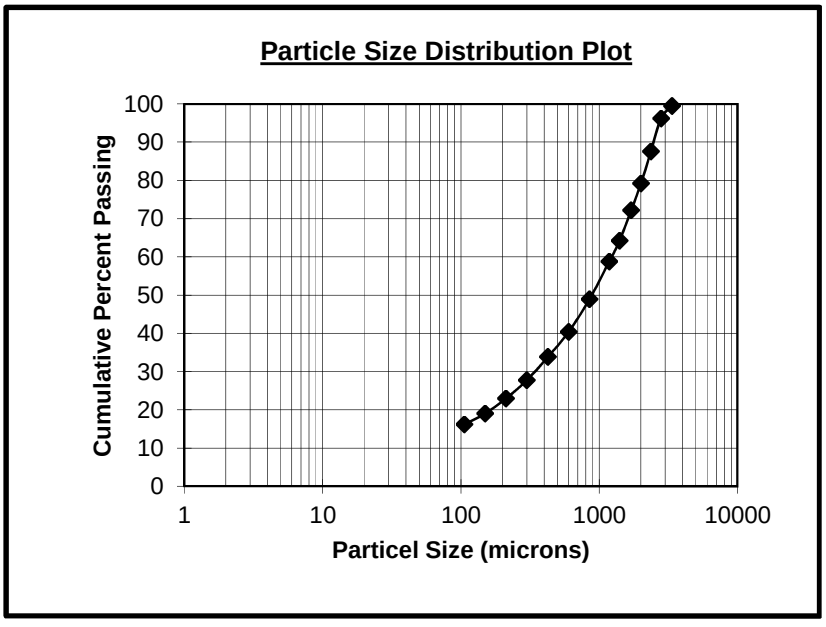


TABLE IV-11E
BOND BALL SCREEN ANALYSIS
KM3174 Composite 11 - Feed 2

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.58	99.4
7 Mesh	2800	3.21	96.2
8 Mesh	2360	8.65	87.6
9 Mesh	2000	8.36	79.2
10 Mesh	1700	7.00	72.2
12 Mesh	1400	7.97	64.2
14 Mesh	1180	5.44	58.8
20 Mesh	850	9.82	49.0
28 Mesh	600	8.56	40.4
35 Mesh	425	6.51	33.9
48 Mesh	300	6.08	27.8
65 Mesh	212	4.81	23.0
100 Mesh	150	3.89	19.1
150 Mesh	106	2.92	16.2
TOTAL		100.00	**

K80 =2034µm



JKTech Pty Ltd

SMC TEST REPORT

Kerr

Prepared by: Tim Dam

JKTech Job No: 11017/P24
Date: Oct, 2011

JKTech SMI Technology Transfer

1986 - 2011 25 Years

JKTech Pty Ltd

SMC Test Report

on

Eleven Samples

from

Kerr Project

JKTech Job No. 11017/P24 - Oct, 2011

Submitted to

Kerr

Tested at G & T, Kamloops, BC, Canada

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1 INTRODUCTION

SMC data for eleven samples from Kerr Project were received from G & T on Oct, 2011, by JKTech for SMC test analysis. The samples were identified as Composite 1, Composite 2, Composite 3, Composite 4, Composite 5, Composite 6, Composite 7, Composite 8, Composite 9, Composite 10 & Composite 11. The data were analysed to determine the JKSimMet comminution parameters. SMC test results were forwarded to SMC Testing Pty Ltd for the analysis. Analysis and reporting were completed on October 28, 2011.

2 THE SMC TEST®

2.1 INTRODUCTION

The standard JKTech drop-weight test provides ore specific parameters for use in the JKSimMet Mineral Processing Simulator software. In JKSimMet, these parameters are combined with equipment details and operating conditions to analyse and/or predict SAG/autogenous mill performance. The same test procedure also provides ore type characterisation for the JKSimMet crusher model.

The SMC (SAG Mill Comminution) test was developed by Steve Morrell of SMC Testing Pty Ltd (SMCT) to provide a cost effective means of obtaining these parameters from drill core or in situations where limited quantities of material are available. The ore specific parameters have been calculated from the test results and are supplied to Kerr in this report as part of the standard procedure.

2.2 GENERAL DESCRIPTION AND TEST BACKGROUND

The SMC Test® was originally designed for the breakage characterisation of drill core and it generates a relationship between input energy (kWh/t) and the percent of broken product passing a specified sieve size. The results are used to determine the so-called drop-weight index (DWi), which is a measure of the strength of the rock when broken under impact conditions and has the units kWh/m^3. The DWi is directly related to the JK rock breakage parameters A and b and hence can be used to estimate the values of these parameters as well as being correlated with the JK abrasion parameter - t_a. For crusher modelling the t_{10}-E_{cs} matrix can also be derived. This is done by using the size-by-size A*b values that are used in the SMC Test® data analysis (see below) to estimate the t_{10}-E_{cs} values for each of the relevant size fractions in the crusher model matrix.

For power-based calculations, (see APPENDIX B), the SMC Test® provides the comminution parameters M_{ia}, M_{ih} and M_{ic}. M_{ia} is the work index for the grinding of coarser particles (> 750 µm) in tumbling mills such as autogenous (AG), semi-autogenous (SAG), rod and ball mills. M_{ih} is the work index for the grinding in High Pressure Grinding Rolls (HPGR) and M_{ic} for size reduction in conventional crushers.

The SMC Test® is a precision test, which uses particles that are either cut from drill core using a diamond saw to achieve close size replication or else selected from crushed material so that particle mass variation is controlled within a prescribed range. The particles are then broken at a number of prescribed impact energies. The high degree of control imposed on both the size of particles and the breakage energies used, means that the test is largely free of the repeatability problems associated with tumbling-mill based tests. Such tests usually suffer from variations in feed size (which is not closely controlled) and energy input, often assumed to be constant when in reality it can be highly variable (Levin, 1989).

The relationship between the DWi and the JK rock breakage parameters makes use of the size-by-size nature of rock strength that is often apparent from the results of full JK Drop-Weight tests. The effect is illustrated in Figure 1, which plots the normalized values of A*b against particle size. This figure also shows how the gradient of these plots varies across the full range of rock types tested. In the case of a conventional Drop-Weight test, these values are effectively averaged and a

mean value of A and b is reported. The SMC Test® uses a single size and makes use of relationships such as that shown in Figure 1 to predict the A and b of the particle size that has the same value as the mean for a full drop-weight test.

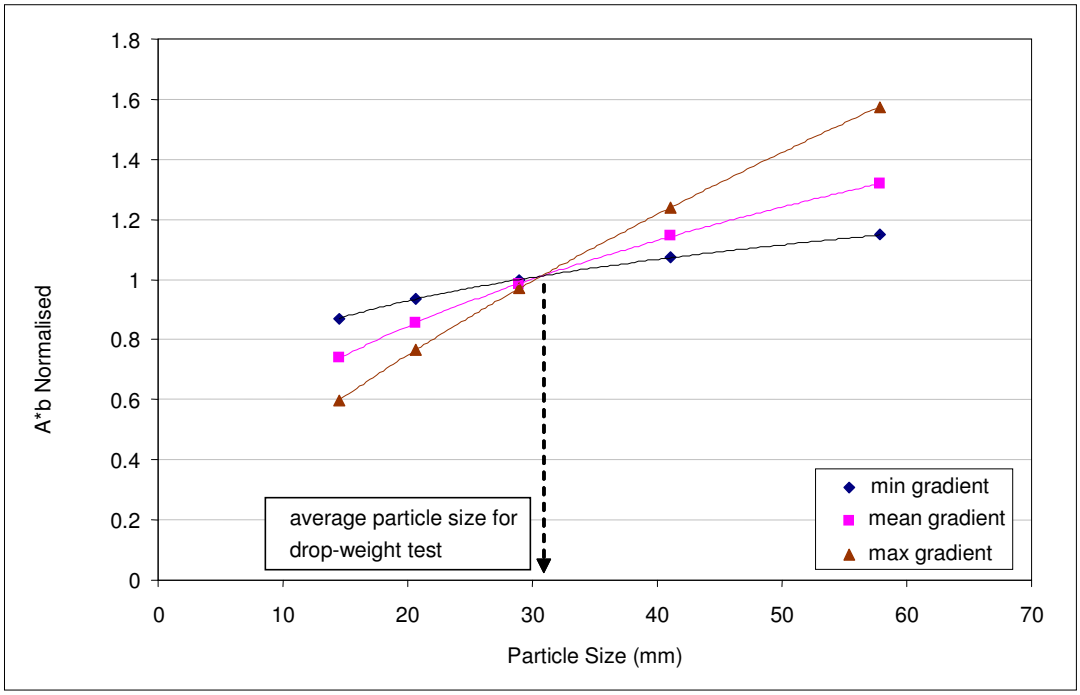

Figure 1 – Relationship between Particle Size and A*b

2.3 THE TEST PROCEDURE

In the SMC Test®, five sets of 20 particles are broken, each set at a different specific energy level, using a JK Drop-Weight tester. The breakage products are screened at a sieve size selected to provide a direct measurement of the t_{10} value.

The test calls for a prescribed target average volume for the particles, with the target being chosen to be equivalent to the mean volume of particles in one of the standard drop-weight test size fractions.

The rest height of the drop-head (gap) is recorded after breakage of each particle to allow for a correction to the drop energy. After breaking all 20 particles in a set, the broken product is sieved at an aperture size, one tenth of the original particle size. Thus, the percent passing mass gives a direct reading of the t_{10} value for breakage at that energy level.

There are two alternative methods of preparing the particle sets for breakage testing: the particle selection method and the cut core method. The particle selection method is the most commonly used as it is generally less time consuming. The cut core method requires less material, so tends to be used as a fallback method, only when necessary to cope with restricted sample availability.

2.3.1 Particle Selection Method

For the particle selection method, the test is carried out on material in one of three alternative size fractions: -31.5+26.5, -22.4+19 or -16+12.4 mm. The largest size fraction is preferred but requires more material. The middle size fraction tends to be

most commonly used, whilst the finest size fraction tends only to be used if there is an issue with starting material size distribution or quantity.

In the particle selection method, particles are chosen so that their individual masses lie within ±30% of the target mass and the mean mass for each set of 20 lies within ±10% of the target mass. A typical set of particles is shown in Figure 2.

Figure 2 – A Typical Set of Particles for Breakage (Particle Selection Method)

Before commencing breakage tests on the particles, the ore density is determined by first weighing a representative sample of particles in air and then in water.

2.3.2 Cut Core Method

The cut core method uses cut pieces of quartered (slivered) drill core. Whole core or half core can be used, but when received in this form it needs to be first quartered as a preliminary step in the procedure. Once quartered, any broken or tapered ends of the quartered lengths are cut, to square them off. Before the lengths of quartered core are cut to produce the pieces for the drop-weight testing, each one is weighed in air and then in water, to obtain a density measurement and a measure of its mass per unit length.

The size fraction targeted when the cut core method is used depends on the original core diameter. The target size fraction is selected to ensure that pieces of the correct volume will have “chunky” rather than “slabby” proportions.

Having measured the density of the core, the target volume can be translated into a target mass and with the average mass per unit length also known, an average cutting interval can be determined for the core.

Sufficient pieces of the quartered core are cut to generate 100 particles. These are then divided into the five sets of 20 and broken in the drop-weight tester at the five different energy levels. Within each set, the three possible orientations of the particles are equally represented (as far as possible, given that there are 20 particles). The orientations prescribed for testing are shown in Figure 3.

Figure 3 – Orientations of Pieces for Breakage (Cut Core Method)

The cut core method cannot be used for cores with diameters exceeding 70 mm, where the particle masses would be too large to achieve the highest prescribed energy level.

2.4 SMC TEST® RESULTS

The SMC Test® results for samples Composite 1, Composite 2, Composite 3, Composite 4, Composite 5, Composite 6, Composite 7, Composite 8, Composite 9, Composite 10 & Composite 11 from Kerr Project are given in Table 1. This table includes the average rock density and the drop-weight index that is the direct result of the test procedure, plus the derived estimates of parameters A, b and t_a that are required for JKSimMet comminution modelling. The values determined for the M_{ia}, M_{ih} and M_{ic} parameters developed by SMCT are also presented in this table. The M_{ia} parameter represents the coarse particle component (down to 750 µm), of the overall comminution energy and can be used together with the M_{ib} (fine particle component) to estimate the total energy requirements of a conventional comminution circuit. The use of these parameters is explained further in APPENDIX B.

In the case of the Composite 1, Composite 2, Composite 3, Composite 4, Composite 5, Composite 6, Composite 7, Composite 8, Composite 9, Composite 10 &

Composite 11 samples from Kerr Project, the A and b estimates are based on a correlation using the database of all results so far accumulated by SMCT.

Table 1 - SMC Test® Results

Sample Designation	DWi kWh/m^3	DWi %	Mia kWh/t	Mih kWh/t	Mic kWh/t	A	b	SG	t_a
Composite 1	5.12	42	15.2	10.6	5.5	59.8	0.91	2.79	0.51
Composite 2	4.83	38	14.4	10.0	5.2	57.3	1.01	2.81	0.54
Composite 3	6.21	57	17.8	12.9	6.7	68.8	0.65	2.79	0.42
Composite 4	5.96	54	16.9	12.2	6.3	60.0	0.79	2.83	0.43
Composite 5	4.61	35	14.2	9.7	5.0	66.2	0.90	2.75	0.56
Composite 6	5.86	52	16.9	12.2	6.3	55.3	0.86	2.79	0.44
Composite 7	5.23	43	15.4	10.9	5.6	53.2	1.00	2.79	0.50
Composite 8	6.58	62	19.0	14.0	7.2	63.2	0.66	2.73	0.39
Composite 9	7.17	69	19.9	14.9	7.7	57.7	0.67	2.79	0.36
Composite 10	6.25	58	17.3	12.6	6.5	56.9	0.81	2.87	0.41
Composite 11	6.11	56	17.0	12.4	6.4	65.3	0.72	2.86	0.42

Note: For more details on how the M_{ia}, M_{ih} and M_{ic} parameters are derived and used, see APPENDIX B or go to the JKTech website at http://www.jktech.com.au/index1.php?p=cms&CMSID=128&SectionID=46&MenuID=126 and click on the link to download Steve Morrell's paper on this subject.

The influence of particle size on the specific comminution energy needed to achieve a particular t_{10} value can also be inferred from the SMC Test® results. The energy requirements for three particle sizes, each crushed to three different t_{10} values, are presented in Table 2.

Table 2 – Energy Requirements Related to Particle Size

Sample Designation	Particle Size (mm)								
	14.5			28.9			57.8		
	t_{10} Values for Given Specific Energies (%)								
	10 kWh/t	20 kWh/t	30 kWh/t	10 kWh/t	20 kWh/t	30 kWh/t	10 kWh/t	20 kWh/t	30 kWh/t
Composite 1	0.26	0.57	0.95	0.20	0.42	0.67	0.15	0.31	0.48
Composite 2	0.25	0.54	0.89	0.19	0.39	0.63	0.14	0.29	0.46
Composite 3	0.32	0.70	1.15	0.24	0.51	0.82	0.18	0.38	0.59
Composite 4	0.30	0.66	1.09	0.23	0.48	0.77	0.17	0.35	0.56
Composite 5	0.24	0.53	0.87	0.18	0.38	0.61	0.14	0.28	0.44
Composite 6	0.30	0.66	1.09	0.23	0.48	0.77	0.17	0.35	0.56
Composite 7	0.27	0.59	0.97	0.20	0.43	0.69	0.15	0.32	0.49
Composite 8	0.35	0.76	1.25	0.26	0.55	0.88	0.19	0.41	0.64
Composite 9	0.37	0.81	1.33	0.28	0.59	0.94	0.21	0.43	0.68
Composite 10	0.31	0.68	1.13	0.23	0.50	0.80	0.18	0.37	0.58
Composite 11	0.31	0.67	1.10	0.23	0.49	0.78	0.17	0.36	0.56

The SMC Test® database now contains over 11,000 test results on samples representing more than 600 different deposits worldwide.

Around 99% of the DWi values lie in the range 0.5 to14.0 kWh/m^3, with soft ores being at the low end of this range and hard ores at the high end.

A cumulative graph of DWi values from the SMC Test® Database is shown in Figure 4 below. This graph can be used to compare the DWi of the material from Kerr Project, with the entire population of ores in the SMCT database. The figures on the y-axis of the graph represent the percentages of all ores tested that are softer than the x-axis (DWi) value selected.

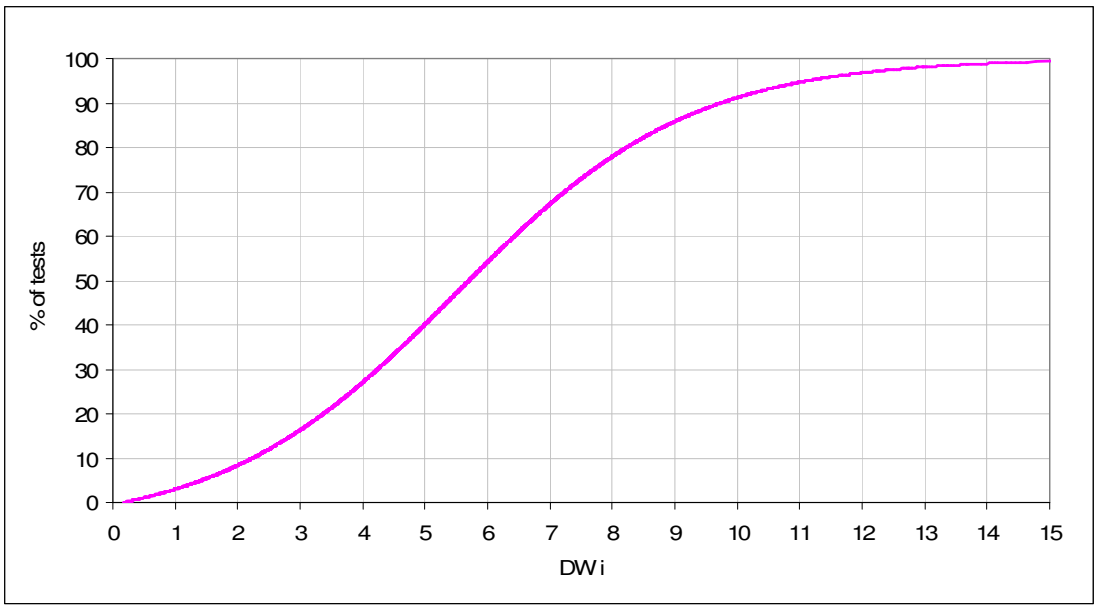

Figure 4 – Cumulative Distribution of DWi Values in SMC Test® Database

A further cumulative distribution graph is provided in Figure 5 to allow a comparison of the M_{ia}, M_{ih} and M_{ic} values obtained for the Kerr Project material, with the entire population of values for these parameters contained in the SMCT database.

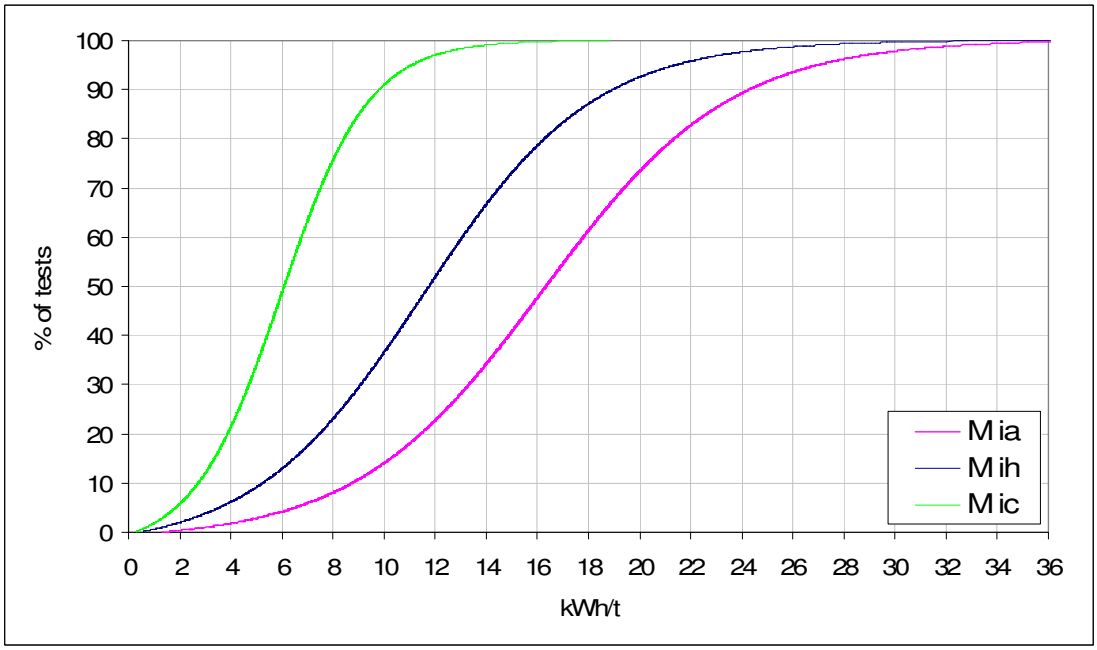

Figure 5 - Cumulative Distribution of M_{ia}, M_{ih} and M_{ic} Values in the SMCT Database

The value of A*b, which is also a measure of resistance to impact breakage, is calculated and presented in Table 3 along with indicators of how each A*b value compares with the accumulated values in the JKTech DW database (from full drop-weight testing). These indicators are the Category (eg “soft” etc), the Rank (how many out of 3,480 recordings in database are harder) and the percent of database values that are harder. Note that in contrast to the DWi, a high value of A*b means that an ore is soft whilst a low value means that it is hard.

Table 3 – Derived Values for A*b and t10 at 1 kWh/t

Sample Designation	A*b				t10 @ 1 kWh/t			
	Value	Category	Rank	%	Value	Category	Rank	%
Composite 1	54.4	moderately soft	2082	60.2%	35.7	moderately soft	2132	61.7%
Composite 2	57.9	moderately soft	2219	64.2%	36.4	moderately soft	2220	64.2%
Composite 3	44.7	medium	1588	45.9%	32.9	medium	1800	52.1%
Composite 4	47.4	medium	1751	50.6%	32.8	medium	1789	51.7%
Composite 5	59.6	moderately soft	2280	65.9%	39.3	soft	2487	71.9%
Composite 6	47.6	medium	1758	50.8%	31.9	medium	1663	48.1%
Composite 7	53.2	medium	2021	58.4%	33.6	medium	1886	54.5%
Composite 8	41.7	medium	1397	40.4%	30.5	medium	1488	43.0%
Composite 9	38.7	moderately hard	1164	33.7%	28.2	moderately hard	1128	32.6%
Composite 10	46.1	medium	1679	48.6%	31.6	medium	1619	46.8%
Composite 11	47.0	medium	1725	49.9%	33.5	medium	1871	54.1%

The calculated value of t_{10} at an E_{cs} of 1 kWh/t is also shown in Table 3. This is again accompanied by Category, Rank and the % of values in the database that are harder, so each can be seen against the yard-stick of all other samples in the JKTech database.

The derived A*b values range from 38.7 to 59.6 giving an average of 48.9, while the t_{10} at 1 kWh/t values ranged from 28.2 to 39.3 giving an average of 33.3.

In Figure 6 and Figure 7 below, histogram style frequency distributions for the A*b values and for the t_{10} at 1 kWh/t values in the JKTech DW database are shown respectively.

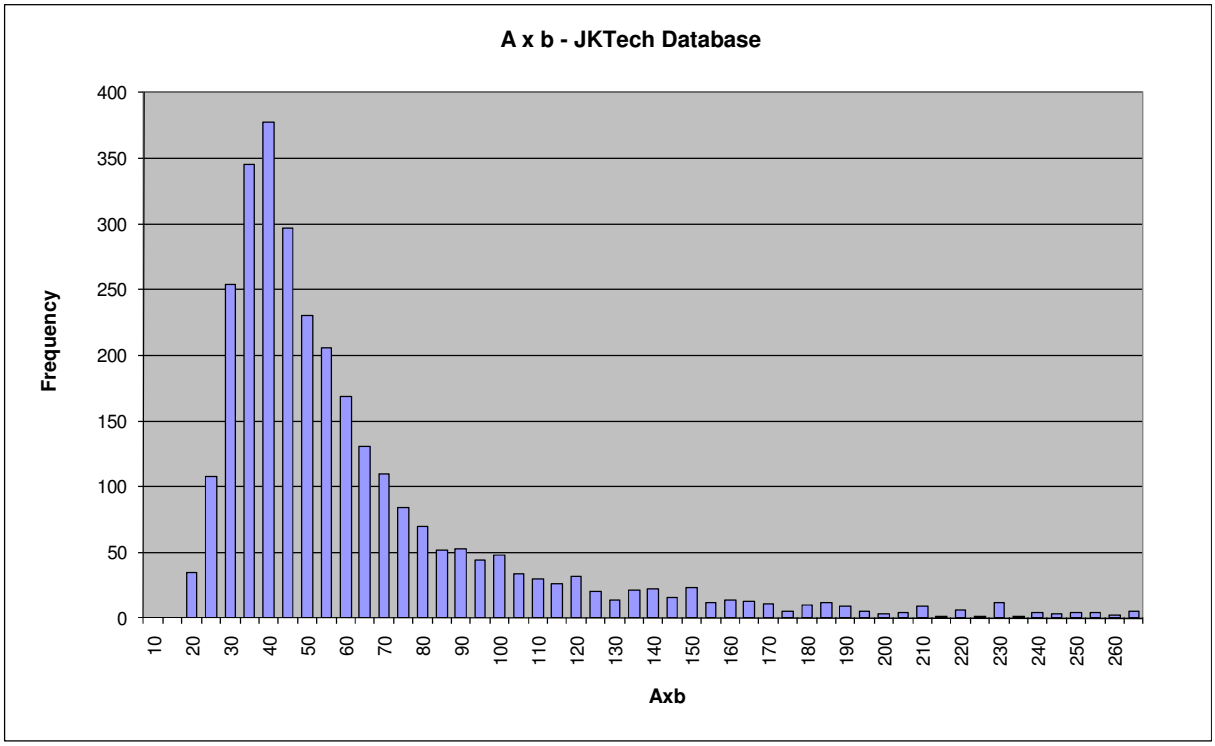

Figure 6 - Frequency Distribution of A*b in the JKTech Database

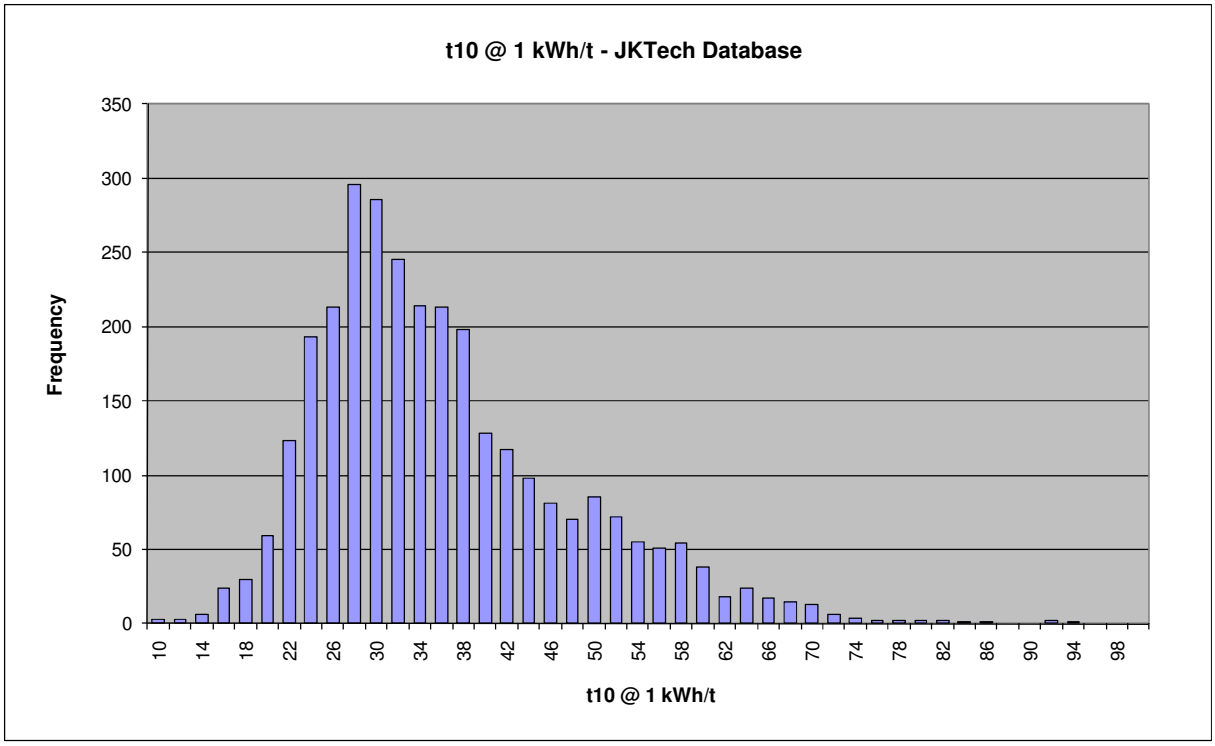

Figure 7 - Frequency Distribution of t_{10}@1kWh/t in the JKTech Database

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APPENDICES

APPENDIX A. BACKGROUND TO THE SMC TEST®

A 1 HOW THE SMC TEST® RESULTS ARE USED

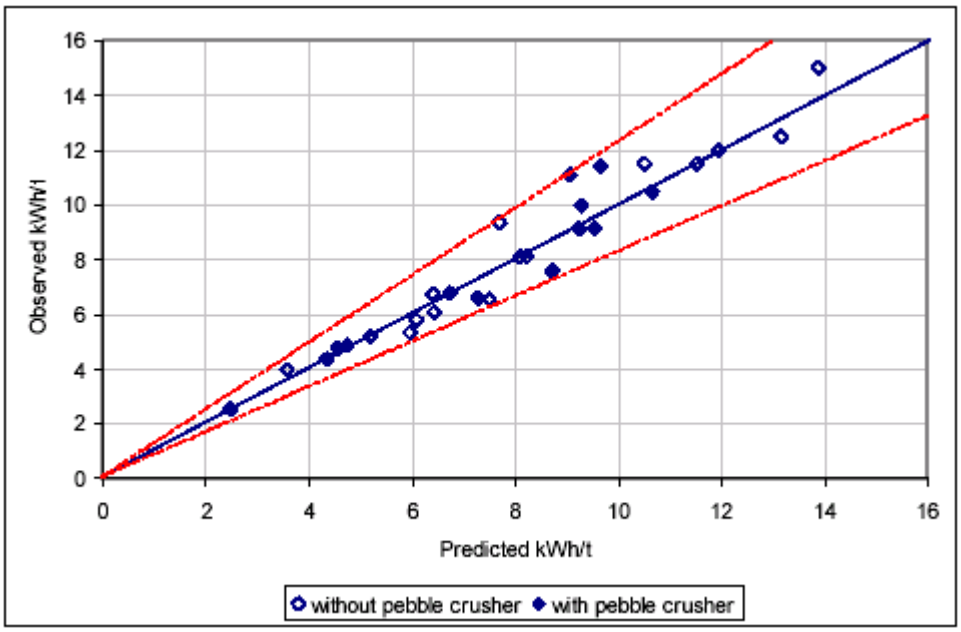
The SMC Test® generates a relationship between specific input energy (kWh/t) and the percent of broken product passing a specified sieve size. The results are used to determine the drop-weight index (DWi), which is a measure of the strength of the rock when broken under impact conditions. The DWi is directly related to the JK rock breakage parameters A and b and hence can be used to estimate the values of these parameters.

Provision of a relatively low cost method of estimating the A and b parameters opens the possibility of incorporating these data into mine and mill planning operations. However a number of full drop-weight tests is still recommended for any particular orebody, to ensure that an accurate correlation between the DWi and the A and b parameters is available. The number of full drop-weight tests required for a given orebody will depend on its variability and should at least cover the major recognised ore types.

The A and b parameters are used in AG/SAG mill models, such as those in JKSimMet, for predicting how the rock will break inside the mill. From this description the models can predict what the throughput, power draw and product size distribution will be (Napier-Munn et al (1996)). Modelling also enables a detailed flowsheet to be built up of the comminution circuit response to changes in ore type. It also allows optimisation strategies to be developed to overcome any deleterious changes in circuit performance predicted from differences in ore type when such changes are indicated by the SMC Test®. These strategies can include both changes to how mills are operated (eg ball load, speed etc) and changes to feed size distribution through modification of blasting practices and primary crusher operation (mine-to-mill).

The mine to mill models require information on rock mass competence such as provided by the point load index. The DWi is correlated with the point load index and hence can also be used in blast fragmentation modelling where direct measurements of point load index are not available.

The DWi is related to the resistance of a rock to breakage under impact. SMCT has developed a series of equations that relate the DWi to the specific energy (kWh/t) requirements of complete AG and SAG mill circuits. These equations take into consideration factors such as ball charge, feed size, aspect ratio, whether the mill is operated with or without a pebble crusher and whether it is closed with a fine classifier such as a cyclone. The ability of these equations to predict AG/SAG mill circuit specific energy is illustrated in App Figure 1. The data shown cover 19 different operations and include Cu, Au, Ni and Pb/Zn ores.



App Figure 1 - Mill Power Prediction Based on DWi

It should be noted that the parameter ta, which is the parameter representing the low energy abrasion component of breakage, is not yielded by the SMC Test®. This parameter is derived from a tumbling test that is carried out as part of the full drop-weight test. The fact that it is also required as an input to the JKSimMet SAG/AG models provides a further reason for ensuring that some full drop-weight tests are also performed to represent at least the main rock types of an orebody.

A 2 IMPACT COMMINUTION THEORY

When a rock fragment is broken, the degree of breakage can be characterised by the "t10" parameter. The t10 value is the percentage of the original rock mass that passes a screen aperture one tenth of the original rock fragment size. This parameter allows the degree of breakage to be compared across different starting sizes.

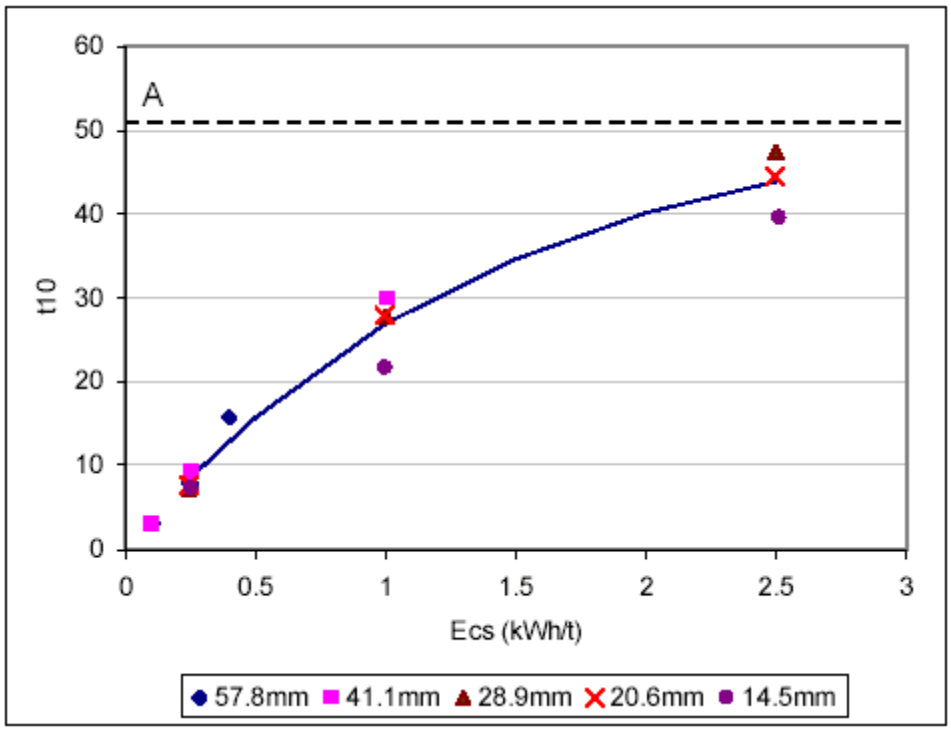
The specific comminution energy (Ecs) has the units kWh/t and is the energy applied during impact breakage. As the impact energy is varied, so does the t10 value vary in response. Higher impact energies produce higher values of t10, which of course means products with finer size distributions.

The equation describing the relationship between the t10 and Ecs is given below.

$t_{10} = A (1 - e^{-b.Ecs})$

As can be seen from this equation, there are two rock breakage parameters A and b that relate the t10 (size distribution index) to the applied specific energy (Ecs). These parameters are ore specific and are normally determined from a full drop-weight test.

A typical plot of t10 vs Ecs from a drop-weight test is shown in App Figure 2. The relationship is characterised by the two-parameter equation above, where t10 is the dependent variable.

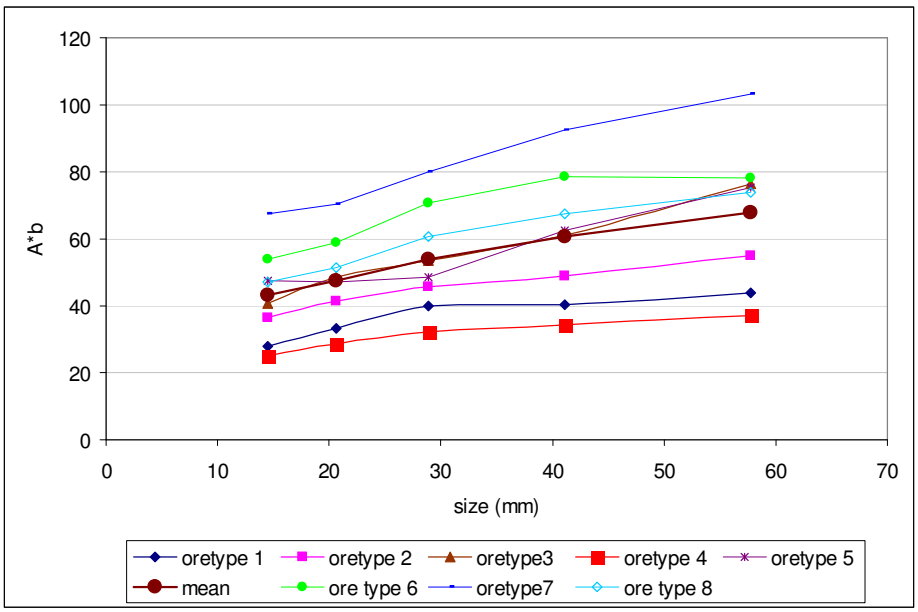


App Figure 2 - Typical t_{10} v Ecs Plot

The t10 can be thought of as a “fineness index” with larger values of t10 indicating a finer product size distribution. The value of parameter A is the limiting value of t10. This limit indicates that at higher energies, little additional size reduction occurs as the Ecs is increased beyond a certain value. A*b is the slope of the curve at ‘zero’ input energy and is generally regarded as an indication of the strength of the rock, lower values indicating a higher strength.

The A and b parameters can also be used with equation 1 to generate a table of Ecs values, given a range of t10 values. Such a table is used in crusher modelling to predict the power requirement of the crusher given a feed and a product size specification.

The DWi can be used to estimate the JK rock breakage parameters A and b by utilizing the fact that there is usually a pronounced (and ore specific) trend to decreasing rock strength with increasing particle size. This trend is illustrated in App Figure 3 which shows a plot of A*b versus particle size for a number of different rock types.

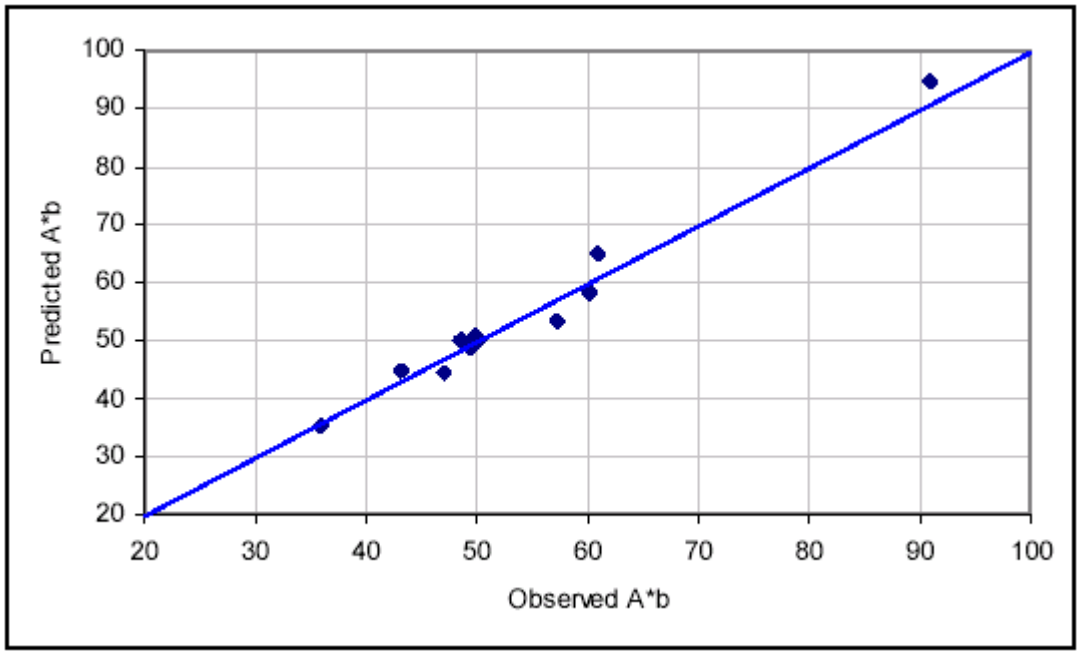


App Figure 3 - Size Dependence of A*b for a Range of Ore Types

In the case of a conventional drop-weight test these values are effectively averaged and a mean value of A and b is reported. The SMC Test® uses a single size and makes use of relationships such as that shown in App Figure 3 to predict the A and b of the particle size that has the same value as the mean for a full drop-weight test.

An example of this is illustrated in App Figure 4 - Predicted v Observed A*b

where the observed values of the product A*b are plotted against those predicted using the DWi. Each of the data points in App Figure 4 is a result from a different ore type within an orebody.



App Figure 4 - Predicted v Observed A*b

APPENDIX B. USE OF THE Mia, Mib, Mih, Mic IN PREDICTING COMMINUTION CIRCUIT SPECIFIC ENERGY

B 1 INTRODUCTION

The following technical note describes the recently extended use of the SMC Test® to include crushers and HPGRs in determining the overall specific energy demand of comminution circuits. It builds on previous work which included tumbling mills only and should be read in conjunction with an earlier technical note dated September 2007 entitled "*Use of the SMC Test® in Predicting Total Comminution Circuit Specific Energy"* as well as published papers: Morrell, 2008a, 2008b. This enhancement now enables the SMC Test® to be used in conjunction with the Bond ball work index test to predict the specific energy of comminution circuits where such circuits include combinations of any of the following equipment:

- AG and SAG mills
- Ball mills
- Rod mills
- Crushers
- High pressure Grinding Rolls (HPGR)

B 2 EQUATIONS

B 2.1 General

The approach divides comminution equipment into three categories:

- Tumbling mills, eg AG, SAG, rod and ball mills
- Conventional reciprocating crushers, eg jaw, gyratory and cone
- HPGRs

Tumbling mills are described using 2 indices: M_{ia} and M_{ib}

Crushers have one index: M_{ic}

HPGRs have one index: M_{ih}

For tumbling mills the 2 indices relate to "coarse" and "fine" ore properties plus an efficiency factor which represents the influence of a pebble crusher in AG/SAG mill circuits. "Coarse" in this case is defined as spanning the size range from a P_{80} of 750 µm up to the P_{80} of the product of the last stage of crushing or HPGR size reduction prior to grinding. "Fine" covers the size range from a P_{80} of 750 µm down to P_{80} sizes typically reached by conventional ball milling, ie about 45 µm. The choice of 750 µm as the division between "coarse" and "fine" particle sizes was determined during the development of the technique and was found to give the best overall results across the range of plants in SMCT's database. Implicit in the approach is that distributions are parallel and linear in log-log space.

The work index covering grinding in tumbling mills of coarse sizes is labelled M_{ia}. The work index covering grinding of fine particles is labelled M_{ib}. M_{ia} values are provided as a standard output from a SMC Test® (Morrell, 2004[a]) whilst M_{ib} values can be determined using the data generated by a conventional Bond ball mill work index test (M_{ib} is NOT the Bond ball work index). M_{ic} and M_{ih} values are also provided as a standard output from a SMC Test®.

The general size reduction equation is as follows (Morrell, 2004[b]):

$$W_i = M_i 4\left(x_2^{\,f(x_2)} - x_1^{\,f(x_1)}\right) \qquad (1)$$

Where:

M_i = Work index related to the breakage property of an ore (kWh/tonne). For grinding from the product of the final stage of crushing to a P_{80} of 750 µm (coarse particles) the index is labelled M_{ia} and for size reduction from 750 µm to the final product P_{80} normally reached by conventional ball mills (fine particles) it is labelled M_{ib}. For conventional crushing M_{ic} is used and for HPGRs M_{ih} is used.

W_i = Specific comminution (kWh/tonne)

x_2 = 80% passing size for the product (µm)

x_1 = 80% passing size for the feed (µm)

$f(x_j)$ = $-(0.295 + x_j/1000000)$ (Morrell, 2006) (2)

For tumbling mills the specific comminution energy (Wi) relates to the power at the pinion or for gearless drives - the motor output. For HPGRs it is the energy inputted to the rolls, whilst for conventional crushers Wi relates to the specific energy as determined using the motor input power less the no-load power.

B 2.2 Specific Energy Determination for Comminution Circuits

The total specific energy (W_T) to reduce in size primary crusher product to final product is given by:

$W_T = W_a+W_b+W_c+W_h+W_s$ (3)

Where:

W_a = specific energy to grind coarser particles in tumbling mills

W_b = specific energy to grind finer particles in tumbling mills

W_c = specific energy for conventional crushing

W_h = specific energy for HPGRs

W_s = specific energy correction for size distribution

Clearly only the *W* values associated with the relevant equipment in the circuit being studied are included in equation 3.

B 2.2.1 Tumbling mills

For coarse particle grinding in tumbling mills equation 1 is written as:

$$W_a = K_1 M_{ia} 4\left(x_2^{\,f(x_2)} - x_1^{\,f(x_1)}\right) \quad (4)$$

Where:

K_1 = 1.0 for all circuits that do not contain a recycle pebble crusher and 0.95 where circuits do have a pebble crusher

x_1 = P_{80} (µm) of the product of the last stage of crushing before grinding

x_2 = 750 µm

M_{ia} = Coarse ore work index and is provided directly by SMC Test®

For fine particle grinding equation 1 is written as:

$$W_b = M_{ib} 4\left(x_3^{\,f(x_3)} - x_2^{\,f(x_2)}\right) \quad (5)$$

Where:

x_2 = 750 µm

x_3 = P_{80} (µm) of final grind

M_{ib} = Provided by data from the standard Bond ball work index test using the following equation (Morrell, 2006):

$$M_{ib} = \frac{18.18}{P_1^{0.295}(Gbp)\left(p_{80}^{\,f(p_{80})} - f_{80}^{\,f(f_{80})}\right)} \quad (6)$$

Where:

M_{ib} = fine ore work index (kWh/tonne)

P_1 = closing screen size (µm)

Gbp = net grams of screen undersize per mill revolution

p_{80} = 80% passing size of the product (µm)

f_{80} = 80% passing size of the feed (µm)

Note that the Bond ball work index test should be carried out with a closing screen size chosen to give a final product P_{80} similar to that intended for the full-scale circuit.

B 2.2.2 Conventional Crushers

Equation 1 for conventional crushers is written as:

$$W_c = K_2 M_{ic} 4\left(x_2^{\,f(x_2)} - x_1^{\,f(x_1)}\right) \quad (7)$$

K_2 = 1.0 for all crushers operating in closed circuit with a classifying screen. If the crusher is in open circuit, eg pebble crusher in a AG/SAG circuit, K2 takes the value of 1.19.

x_1 = P_{80} (µm) of the circuit feed

x_2 = P_{80} (µm) of the circuit product

M_{ic} = Crushing ore work index and is provided directly by SMC Test®

B 2.2.3 HPGR

Equation 1 for conventional crushers is written as:

$$W_h = K_3 M_{ih} 4\left(x_2^{\,f(x_2)} - x_1^{\,f(x_1)}\right) \quad (8)$$

K_3 = 1.0 for all HPGRs operating in closed circuit with a classifying screen. If the HPGR is in open circuit, K3 takes the value of 1.19.

x_1 = P_{80} (µm) of the circuit feed

x_2 = P_{80} (µm) of the circuit product

M_{ih} = HPGR ore work index and is provided directly by SMC Test®

B 2.2.4 Specific Energy Correction for Size Distribution (Ws)

Implicit in the approach described in this paper is that the feed and product size distributions are parallel and linear in log-log space. Where they are not, allowances (corrections) need to be made. By and large, such corrections are most likely to be necessary (or are large enough to be warranted) when evaluating circuits in which closed circuit secondary/tertiary crushing is followed by ball milling. This is because such crushing circuits tend to produce a product size distribution which is relatively steep when compared to the ball mill circuit cyclone overflow. This is illustrated in App Figure 5, which shows measured distributions from an open and closed crusher circuit as well as a ball mill cyclone overflow. The closed circuit crusher distribution can be seen to be relatively steep compared with the open circuit crusher distribution and ball mill cyclone overflow. Also the open circuit distribution more closely follows the gradient of the cyclone overflow. If a ball mill circuit were to be fed 2 distributions, each with same P_{80} but with the open and closed circuit gradients in App Figure 5, the closed circuit distribution would require more energy to grind to the final P_{80}. How much more energy is required is difficult to determine. However, for the purposes of this approach it has been assumed that the additional specific energy for ball milling is the same as the difference in specific energy between open and closed crushing to reach the nominated ball mill feed size. This assumes that a crusher would provide this energy. However, in this situation the ball mill has to supply this energy and it has a different (higher) work index than the crusher (ie the ball mill is less energy efficient than a crusher and has to input more energy to do the same amount of size reduction). Hence from equation 7, to crush to the ball mill circuit feed size (x_2) in open circuit requires specific energy equivalent to:

$$W_c = 1.19 * M_{ic} 4\left(x_2^{\,f(x_2)} - x_1^{\,f(x_1)}\right) \quad (9)$$

For closed circuit crushing the specific energy is:

$$W_c = 1 * M_{ic} 4\left(x_2^{\,f(x_2)} - x_1^{\,f(x_1)}\right) \quad (10)$$

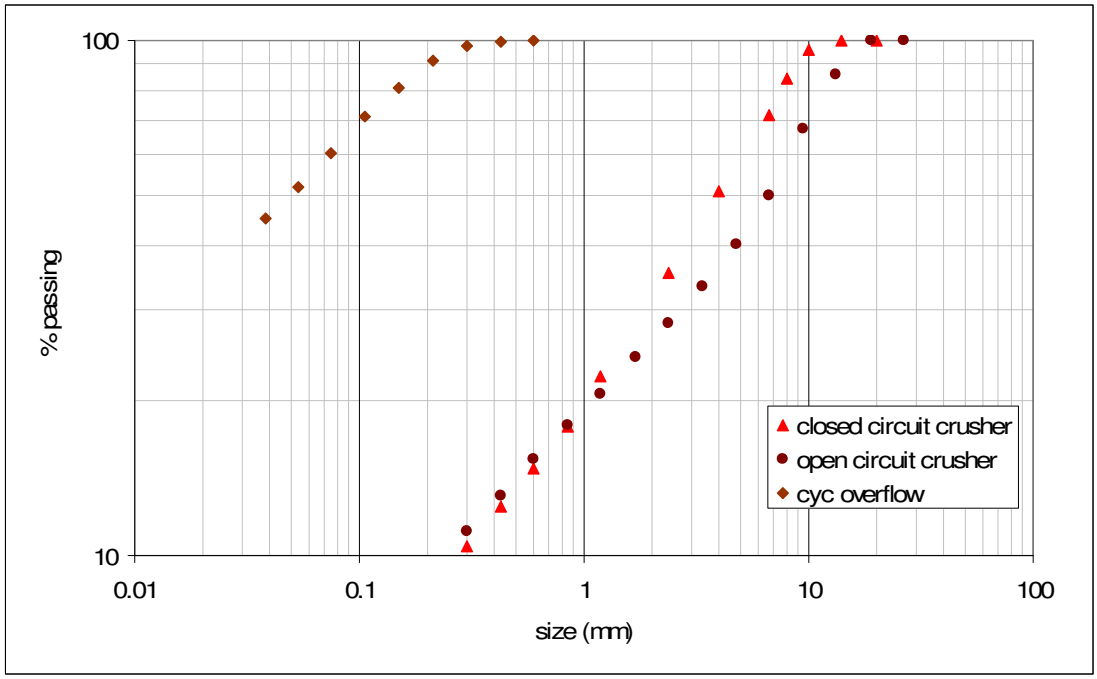
The difference between the two (eq 9 – eq 10) has to be provided by the milling circuit with an allowance for the fact that the ball mill, with its lower energy efficiency, has to provide it and not the crusher. This is what is referred to in equation 3 as W_s and for the above example is therefore represented by:

$$W_s = 0.19 * M_{ia} 4\left(x_2^{\,f(x_2)} - x_1^{\,f(x_1)}\right) \quad (11)$$

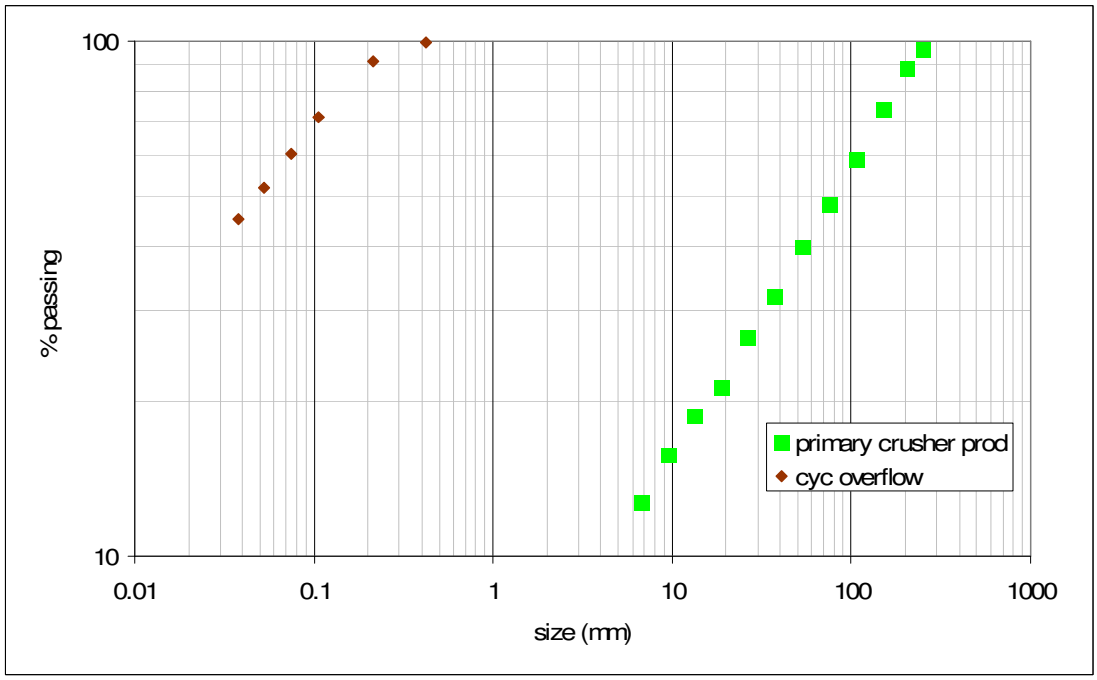
Note that in equation 11 M_{ic} has been replaced with M_{ia}, the coarse particle tumbling mill grinding work index.

In AG/SAG based circuits the need for W_s appears to be unnecessary as App Figure 6 illustrates. Primary crusher feeds often have the shape shown in App Figure 6 and this has a very similar gradient to typical ball mill cyclone overflows. A similar situation appears to apply with HPGR product size distributions, as illustrated in App Figure 7. Interestingly SMCT's data show that for HPGRs, closed circuit operation appears to require a lower specific energy to reach the same P_{80} as in open circuit, even though the distributions for open and closed circuit look to have almost identical gradients. Closer examination of the distributions in fact shows that in closed circuit the final product tends to have slightly less very fine material, which may account for the different energy requirements between the two modes of operation. It is also possible that recycled material in closed circuit is inherently weaker than new feed, as it has already passed through the HPGR previously and may have sustained micro-cracking. A reduction in the Bond ball mill work index as measured by testing HPGR products compared it to the Bond ball mill work index of HPGR feed has been noticed in many cases in the laboratory (see next section) and hence there is no reason to expect the same phenomenon would not affect the recycled HPGR screen oversize.

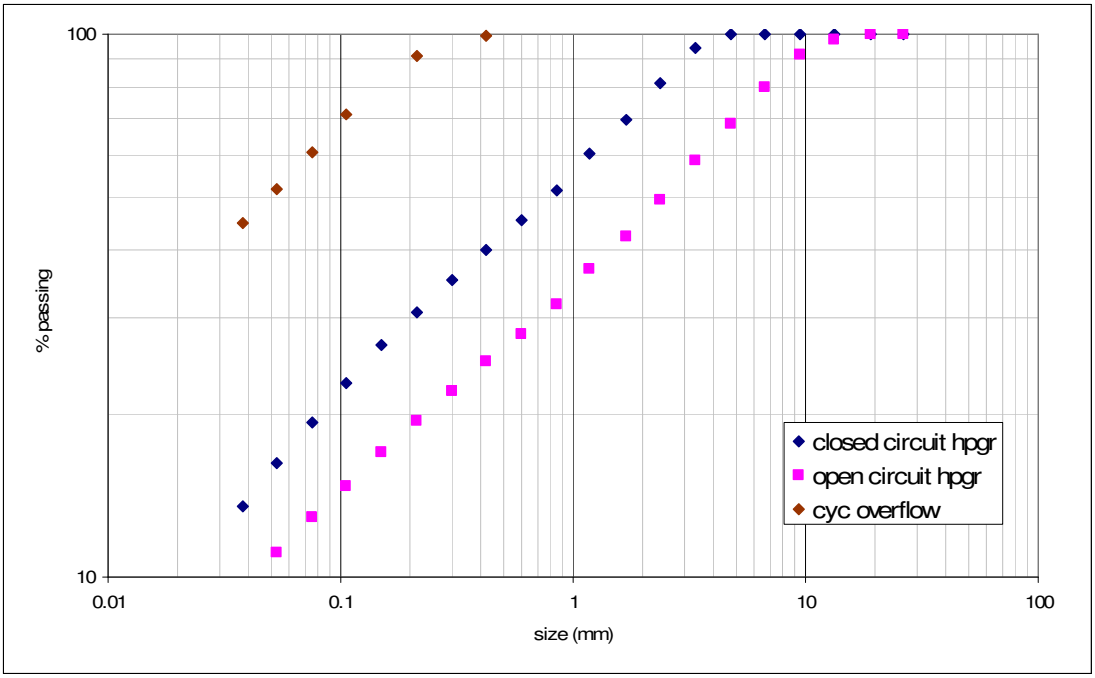
It follows from the above arguments that in HPGR circuits, which are typically fed with material from closed circuit secondary crushers, a similar feed size distribution correction should also be applied. However, as the secondary crushing circuit uses such a relatively small amount of energy compared to the rest of the circuit (as it crushes to a relatively coarse size) the magnitude of size distribution correction is very small indeed – much smaller than the error associated with the technique - and hence may be omitted in calculations.



App Figure 5 – Examples of Open and Closed Circuit Crushing Distributions Compared with a Typical Ball Mill Cyclone Overflow Distribution



App Figure 6 – Example of a Typical Primary Crusher (Open and Circuit) Product Distribution Compared with a Typical Ball Mill Cyclone Overflow Distribution



App Figure 7 – Examples of Open and Closed Circuit HPGR Distributions Compared with a Typical Ball Mill Cyclone Overflow Distribution

B 2.2.5 Weakening of HPGR Products

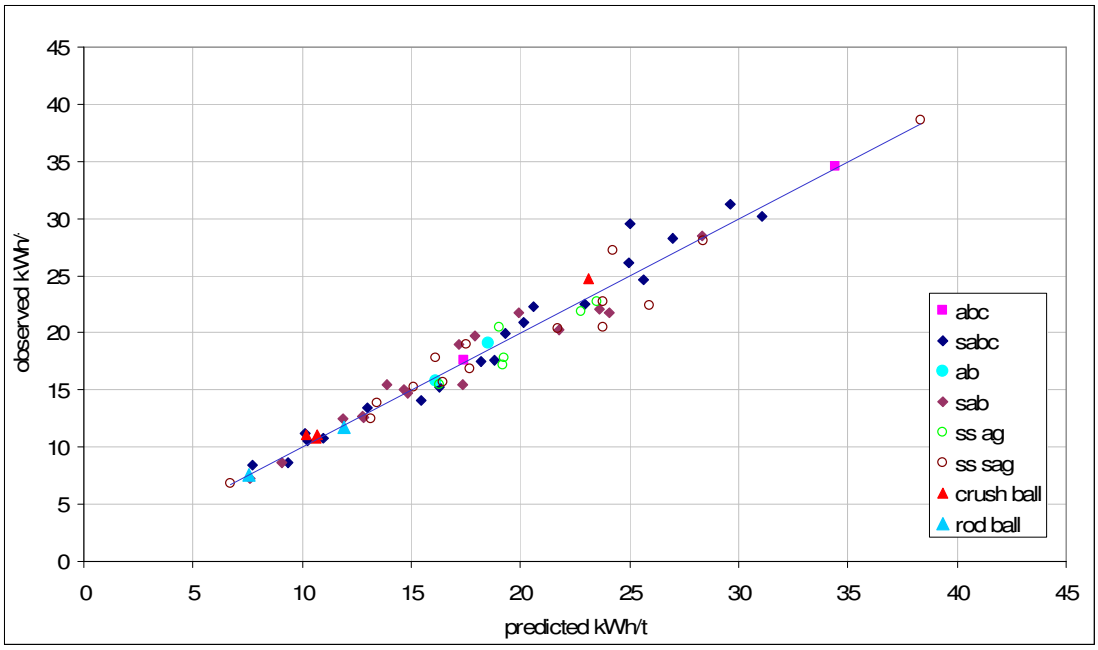
As mentioned in the previous section, laboratory experiments have been reported by various researchers in which the Bond ball work index of HPGR products is less than that of the feed. The amount of this reduction appears to vary with both material type and the pressing force used. Observed reductions in the Bond ball work index have typically been in the range 0-10%. In the approach described in this paper no allowance has been made for such weakening. However, if HPGR products are available which can be used to conduct Bond ball work index tests on then M_{ib} values obtained from such tests can be used in equation 5. Alternatively the M_{ib} values from Bond ball mill work index tests on HPGR feed material can be reduced by an amount that the user thinks is appropriate. Until more data become available from full scale HPGR/ball mill circuits it is suggested that, in the absence of Bond ball mill work index data on HPGR products, the M_{ib} results from HPGR feed material are reduced by no more than 5% to allow for the effects of micro-cracking.

B 3 VALIDATION

B 3.1 Tumbling Mill Circuits

The approach described in the previous section was applied to 65 industrial data sets. The results are shown in App Figure 8. In all cases, the specific energy relates to the tumbling mills contributing to size reduction from the product of the final stage of crushing to the final grind. Data are presented in terms of equivalent specific energy at the pinion. In determining what these values were on each of the plants in the data base it was assumed that power at the pinion was 93.5% of the measured

gross (motor input) power, this figure being typical of what is normally accepted as being reasonable to represent losses across the motor and gearbox. For gearless drives (so-called wrap-around motors) a figure of 97% was used.



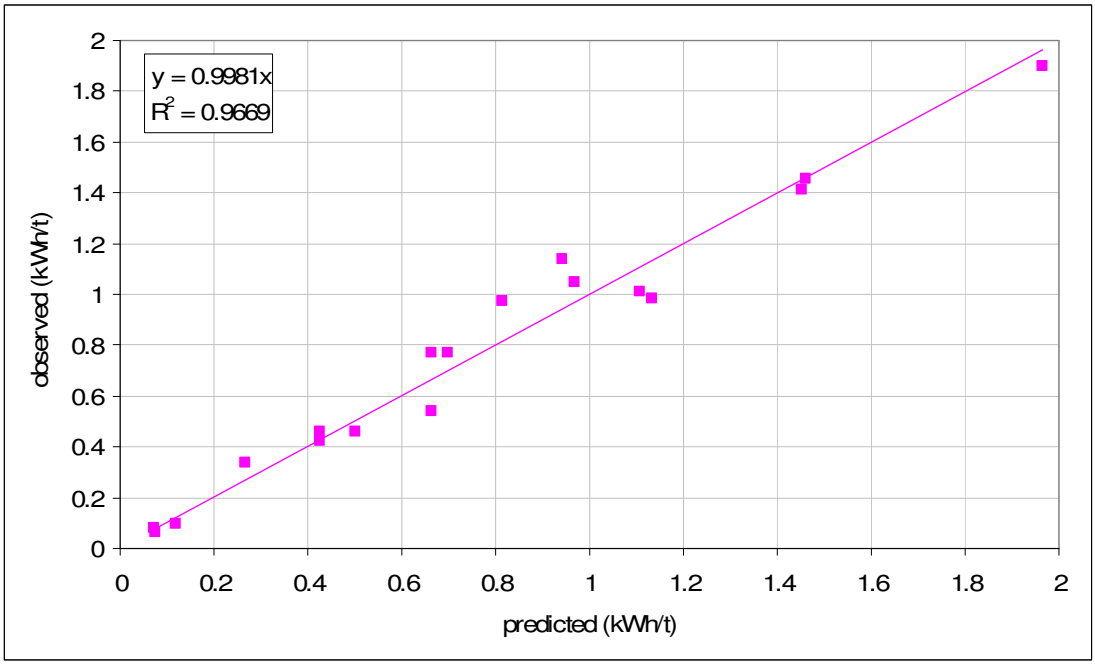
App Figure 8 – Observed vs Predicted Tumbling Mill Specific Energy

B 3.2 Conventional Crushers

Validation of equation 1 used 10 different crushing circuits (18 data sets), including secondary, tertiary and pebble crushers in AG/SAG circuits. Observed vs predicted specific energies are given in App Figure 9. The observed specific energies were calculated from the crusher throughput and the net power draw of the crusher as defined by:

Net Power = Motor Input Power – No Load Power (12)

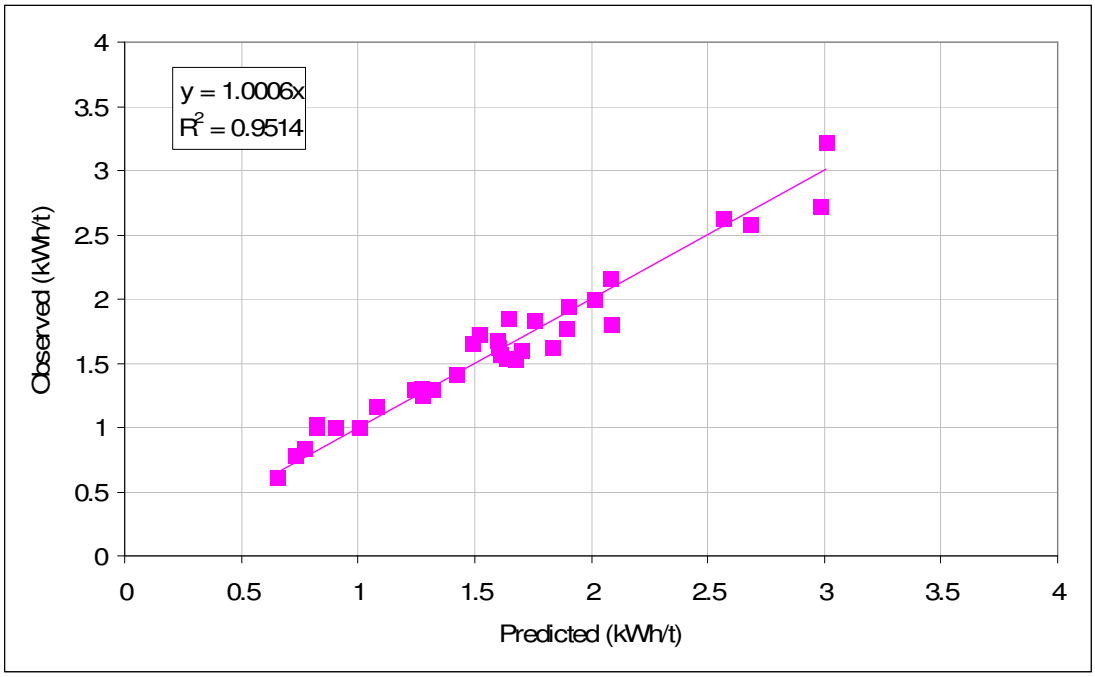
No-load power tends to be relatively high in conventional crushers and hence net power is significantly lower than the motor input power. From examination of the 18 crusher data sets the motor input power was found to be on average 35% higher than the net power.



App Figure 9 – Observed vs Predicted Conventional Crusher Specific Energy

B 3.3 HPGRs

Validation of equation 1 for HPGRs used data from 18 different circuits (35 data sets) including laboratory, pilot and industrial scale equipment. Observed vs predicted specific energies are given in App Figure 10. The data relate to HPGRs operating with specific grinding forces typically in the range 2.5-3.5 N/mm^2. The observed specific energies relate to power delivered by the roll drive shafts. Motor input power for full scale machines is expected to be 8-10% higher.



App Figure 10 – Observed vs Predicted HPGR Specific Energy

B 4 WORKED EXAMPLES

A SMC Test® and Bond ball work index test were carried out on a representative ore sample. The following results were obtained:

SMC Test:

M_{ia} = 19.4 kWh/t

M_{ic} = 7.2 kWh/t

M_{ih} = 13.9 kWh/t

Bond test carried out with a 150 micron closing screen:

M_{ib} = 18.8 kWh/t

Three circuits are to be evaluated:

SABC

HPGR/ball mill

Conventional crushing/ball mill

The overall specific grinding energy to reduce a primary crusher product with a P_{80} of 100 mm to a final product P_{80} of 106 µm needs to be estimated.

B 4.1 SABC Circuit

Coarse particle tumbling mill specific energy

Combining eq 2 and 4:

$$W_a = 0.95 * 19.4 * 4 * \left(750^{\ -(0.295+750/1000000)} - 100000^{\ -(0.295+100000/1000000}\right)$$

= 9.6 kWh/t

Fine particle tumbling mill specific energy

Combining eq 2 and 5:

$$W_b = 18.8 * 4 * \left(106^{\ -(0.295+106/1000000)} - 750^{\ -(0.295+750/1000000}\right)$$

= 8.4 kWh/t

Pebble crusher specific energy

In this circuit, it is assumed that the pebble crusher feed P_{80} is 52.5mm. As a rule of thumb this value can be estimated by assuming that it is 0.75 of the nominal pebble port aperture (in this case the pebble port aperture is 70mm). The pebble crusher is set to give a product P_{80} of 12mm. The pebble crusher feed rate is expected to be 25% of new feed tph.

Combining eq 2 and 7:

$$W_c = 1.19 * 7.2 * 4 * \left(12000^{\ -(0.295+12000/1000000)} - 52500^{\ -(0.295+52500/1000000}\right)$$

= 1.12 kWh/t when expressed in terms of the crusher feed rate

= 1.12 * 0.25 kWh/t when expressed in terms of the SABC circuit new feed rate

= 0.3 kWh/t of SAG mill circuit new feed

Total net comminution specific energy:

From eq 3:

W_T = 9.6 + 8.4 + 0.3 kWh/t

= 18.3 kWh/t

B 4.2 HPGR/Ball Milling Circuit

In this circuit primary crusher product is reduced to a HPGR circuit feed P_{80} of 35 mm by closed circuit secondary crushing. The HPGR is also in closed circuit and reduces the 35 mm feed to a circuit product P_{80} of 4 mm. This is then fed to a closed circuit ball mill which takes the grind down to a P_{80} of 106 µm.

Secondary crushing specific energy

Combining eq 2 and 7:

$$W_c = 1 * 7.2 * 4 * \left(35000^{\ -(0.295+35000/1000000)} - 100000^{\ -(0.295+100000/1000000}\right)$$

= 0.6 kWh/t

HPGR specific energy

Combining eq 2 and 8:

$$W_c = 1*13.9*4*\left(4000^{\,-(0.295+4000/1000000)} - 35000^{\,-(0.295+35000/1000000)}\right)$$

= 2.9 kWh/t

Coarse particle tumbling mill specific energy

Combining eq 2 and 4:

$$W_a = 1*19.4*4*\left(750^{\,-(0.295+750/1000000)} - 4000^{\,-(0.295+4000/1000000}\right)$$

= 4.5 kWh/t

Fine particle tumbling mill specific energy

Combining eq 2 and 5:

$$W_b = 18.8*4*\left(106^{\,-(0.295+106/1000000)} - 750^{\,-(0.295+750/1000000}\right)$$

= 8.4 kWh/t

Total net comminution specific energy:

From eq 3:

W_T = 4.5 + 8.4 + 0.6 + 2.9 kWh/t

= 16.4 kWh/t

B 4.3 Conventional Crushing/Ball Milling Circuit

In this circuit primary crusher product is reduced in size to P_{80} of 6.5 mm via a secondary/tertiary crushing circuit (closed). This is then fed to a closed circuit ball mill which grinds to a P80 of 106 µm.

Secondary/tertiary crushing specific energy

Combining eq 2 and 7:

$$W_c = 1*7.2*4*\left(6500^{\,-(0.295+6500/1000000)} - 100000^{\,-(0.295+100000/1000000}\right)$$

= 1.7 kWh/t

Coarse particle tumbling mill specific energy

Combining eq 2 and 4:

$$W_a = 1*19.4*4*\left(750^{-(0.295+750/1000000)} - 6500^{-(0.295+6500/1000000)}\right)$$

= 5.5 kWh/t

Fine particle tumbling mill specific energy

Combining eq 2 and 5:

$$W_b = 18.8*4*\left(106^{-(0.295+106/1000000)} - 750^{-(0.295+750/1000000)}\right)$$

= 8.4 kWh/t

Size distribution correction

$$W_s = 0.19*19.4*4*\left(6500^{-(0.295+6500/1000000)} - 100000^{-(0.295+100000/1000000)}\right)$$

= 0.9 kWh/t

Total net comminution specific energy:

From eq 3:

W_T = 5.5 + 8.4 + 1.7 + 0.9kWh/t

= 16.5 kWh/t

B 5 REFERENCES

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APPENDIX V – KM3174

SPECIAL DATA

INDEX

TABLE V-1
REPLICATE HEAD ASSAY DATA

Composite	Elements for Assay - percent or g/tonne											
	Cu	Mo	Pb	Zn	Fe	S	C	Ag	Au	As	Sb	Cd
Composite 1 Head 1	0.19	0.006	0.01	0.01	3.9	3.08	0.32	4	0.75	0.004	<0.001	1
Composite 1 Head 2	0.20	0.005	0.01	0.01	3.9	3.26	0.33	4	0.78	0.004	<0.001	1
Average	**0.20**	**0.005**	**0.01**	**0.01**	**3.9**	**3.17**	**0.32**	**4**	**0.77**	**0.004**	**<0.001**	**1**
Composite 2 Head 1	0.20	0.003	0.01	0.01	3.8	3.65	0.41	3	0.72	0.002	<0.001	1
Composite 2 Head 2	0.20	0.003	0.01	0.01	3.8	3.59	0.40	3	0.65	0.002	<0.001	<1
Average	**0.20**	**0.003**	**0.01**	**0.01**	**3.8**	**3.62**	**0.41**	**3**	**0.69**	**0.002**	**<0.001**	**1**
Composite 3 Head 1	0.20	0.004	0.01	0.01	4.4	4.52	0.34	3	0.75	0.001	<0.001	<1
Composite 3 Head 2	0.20	0.004	0.01	0.01	4.3	4.51	0.34	3	0.66	0.002	<0.001	2
Average	**0.20**	**0.004**	**0.01**	**0.01**	**4.3**	**4.52**	**0.34**	**3**	**0.71**	**0.001**	**<0.001**	**2**
Composite 4 Head 1	0.20	0.006	0.02	0.01	4.1	4.21	0.34	4	1.19	0.003	<0.001	1
Composite 4 Head 2	0.19	0.006	0.01	<0.01	4.3	4.12	0.33	4	1.01	0.003	<0.001	2
Average	**0.20**	**0.006**	**0.02**	**0.01**	**4.2**	**4.17**	**0.34**	**4**	**1.10**	**0.003**	**<0.001**	**2**
Composite 5 Head 1	0.22	0.005	0.02	0.01	3.9	4.76	0.09	2	0.62	<0.001	<0.001	2
Composite 5 Head 2	0.24	0.005	0.02	0.01	4.2	5.01	0.08	3	0.50	0.001	<0.001	<1
Average	**0.23**	**0.005**	**0.02**	**0.01**	**4.1**	**4.89**	**0.09**	**3**	**0.56**	**0.001**	**<0.001**	**2**
Composite 6 Head 1	0.19	0.003	0.01	0.01	4.3	2.89	0.38	2	0.60	0.001	<0.001	<1
Composite 6 Head 2	0.19	0.003	0.02	0.01	4.1	2.90	0.37	2	0.63	0.002	<0.001	1
Average	**0.19**	**0.003**	**0.02**	**0.01**	**4.2**	**2.90**	**0.38**	**2**	**0.62**	**0.001**	**<0.001**	**1**
Composite 7 Head 1	0.12	0.009	0.05	0.02	4.2	3.71	0.48	3	0.65	0.002	<0.001	1
Composite 7 Head 2	0.13	0.009	0.04	0.01	4.2	3.79	0.45	2	0.65	0.001	<0.001	1
Average	**0.13**	**0.009**	**0.05**	**0.02**	**4.2**	**3.75**	**0.46**	**3**	**0.65**	**0.001**	**<0.001**	**1**
Composite 8 Head 1	0.46	0.009	0.02	0.02	2.7	2.00	0.41	1	0.68	0.008	<0.001	2
Composite 8 Head 2	0.46	0.008	0.02	0.02	2.8	2.15	0.42	1	0.71	0.008	<0.001	2
Average	**0.46**	**0.008**	**0.02**	**0.02**	**2.7**	**2.08**	**0.41**	**1**	**0.70**	**0.008**	**<0.001**	**2**
Composite 9 Head 1	0.16	0.004	0.04	0.04	5.6	3.50	0.81	2	0.58	0.006	<0.001	<1
Composite 9 Head 2	0.17	0.003	0.05	0.03	5.4	3.52	0.78	2	0.67	0.006	<0.001	<1
Average	**0.17**	**0.004**	**0.05**	**0.04**	**5.5**	**3.51**	**0.79**	**2**	**0.63**	**0.006**	**<0.001**	**<1**
Composite 10 Head 1	0.59	0.001	0.02	0.01	5.6	5.9	0.38	1	0.27	0.010	<0.001	<1
Composite 10 Head 2	0.59	0.001	0.02	0.02	5.7	5.58	0.39	1	0.25	0.009	<0.001	1
Average	**0.59**	**0.001**	**0.02**	**0.02**	**5.6**	**5.74**	**0.39**	**1**	**0.26**	**0.009**	**<0.001**	**1**
Composite 11 Head 1	0.68	0.001	0.01	0.04	5.7	6.07	0.23	2	0.27	0.010	<0.001	1
Composite 11 Head 2	0.68	0.001	0.01	0.04	5.8	6.57	0.24	2	0.30	0.010	<0.001	1
Average	**0.68**	**0.001**	**0.01**	**0.04**	**5.8**	**6.32**	**0.23**	**2**	**0.29**	**0.010**	**<0.001**	**1**

TABLE V-2A
STATISTICAL ANALYSIS OF HEAD ASSAYS
Composite 1

Test	Assay - percent or grams/tonne						
	Cu	Mo	Fe	S	Ag	Au	C
1	0.18	0.006	3.9	2.95	5	0.95	0.38
20	0.18	0.003	4.1	2.93	3	0.80	0.37
42	0.20	0.006	3.7	2.98	4	0.94	0.38
Calculated	**0.19**	**0.005**	**3.9**	**2.95**	**4**	**0.89**	**0.38**
Measured	0.20	0.005	3.9	3.17	4	0.77	0.32

Composite 2

Test	Assay - percent or grams/tonne						
	Cu	Mo	Fe	S	Ag	Au	C
2	0.21	0.004	4.07	3.15	3	0.77	0.46
21	0.20	0.002	4.05	3.18	2	0.77	0.48
Calculated	**0.20**	**0.003**	**4.1**	**3.17**	**3**	**0.77**	**0.47**
Measured	0.20	0.003	3.8	3.62	3	0.69	0.41

Composite 3

Test	Assay - percent or grams/tonne						
	Cu	Mo	Fe	S	Ag	Au	C
3	0.21	0.005	4.5	4.23	4	0.80	0.34
22	0.20	0.003	4.7	4.17	4	0.79	0.34
Calculated	**0.21**	**0.004**	**4.6**	**4.20**	**4**	**0.80**	**0.34**
Measured	0.20	0.004	4.3	4.52	3	0.71	0.34

TABLE V-2B
STATISTICAL ANALYSIS OF HEAD ASSAYS
Composite 4

Test	Assay - percent or grams/tonne						
	Cu	Mo	Fe	S	Ag	Au	C
4	0.19	0.006	4.1	3.90	4	1.12	0.39
23	0.18	0.003	4.4	3.90	4	1.28	0.38
Calculated	**0.19**	**0.004**	**4.2**	**3.90**	**4**	**1.20**	**0.38**
Measured	0.20	0.006	4.2	4.17	4	1.10	0.34

Composite 5

Test	Assay - percent or grams/tonne						
	Cu	Mo	Fe	S	Ag	Au	C
5	0.22	0.005	4.2	4.68	3	0.58	0.15
24	0.22	0.003	4.3	4.55	3	0.63	0.13
Calculated	**0.22**	**0.004**	**4.2**	**4.62**	**3**	**0.60**	**0.14**
Measured	0.23	0.005	4.1	4.89	3	0.56	0.09

Composite 6

Test	Assay - percent or grams/tonne						
	Cu	Mo	Fe	S	Ag	Au	C
6	0.19	0.004	4.0	2.90	3	0.65	0.42
25	0.19	0.002	4.2	2.73	3	0.63	0.45
Calculated	**0.19**	**0.003**	**4.1**	**2.81**	**3**	**0.64**	**0.43**
Measured	0.19	0.003	4.2	2.90	2	0.62	0.38

TABLE V-2C
STATISTICAL ANALYSIS OF HEAD ASSAYS
Composite 7

Test	Assay - percent or grams/tonne						
	Cu	Mo	Fe	S	Ag	Au	C
7	0.12	0.010	4.2	3.50	2	0.51	0.50
26	0.13	0.006	4.5	3.47	3	0.53	0.53
43	0.12	0.008	4.0	3.45	3	0.62	-
Calculated	**0.12**	**0.008**	**4.2**	**3.47**	**2**	**0.55**	**0.52**
Measured	0.13	0.009	4.2	3.75	3	0.65	0.46

Composite 8

Test	Assay - percent or grams/tonne						
	Cu	Mo	Fe	S	Ag	Au	C
8	0.46	0.009	3.0	2.04	1	0.70	0.45
Calculated	**0.46**	**0.009**	**3.0**	**2.04**	**1**	**0.70**	**0.45**
Measured	0.46	0.008	2.7	2.08	1	0.70	0.41

Composite 9

Test	Assay - percent or grams/tonne						
	Cu	Mo	Fe	S	Ag	Au	C
9	0.17	0.004	5.6	3.32	2	0.57	0.83
41	0.16	0.004	5.3	3.21	2	0.66	0.81
Calculated	**0.16**	**0.004**	**5.3**	**3.21**	**2**	**0.66**	**0.81**
Measured	0.17	0.004	5.5	3.51	2	0.63	0.79

TABLE V-2D
STATISTICAL ANALYSIS OF HEAD ASSAYS
Composite 10

Test	Assay - percent or grams/tonne						
	Cu	Mo	Fe	S	Ag	Au	C
10	0.58	0.002	5.9	5.48	1	0.25	0.45
Calculated	**0.58**	**0.002**	**5.9**	**5.48**	**1**	**0.25**	**0.45**
Measured	0.59	0.001	5.6	5.74	1	0.26	0.39

Composite 11

Test	Assay - percent or grams/tonne						
	Cu	Mo	Fe	S	Ag	Au	C
11	0.68	0.002	5.8	5.95	2	0.25	0.27
Calculated	**0.68**	**0.002**	**5.8**	**5.95**	**2**	**0.25**	**0.27**
Measured	0.68	0.001	5.8	6.32	2	0.29	0.23

TABLE V-3
COMPARATIVE COPPER CONCENTRATE ASSAYS

Test		Copper - percent	
		AAS	Titre
1		29.1	29.9
2		28.5	29.1
3		27.4	28.4
4		25.6	27.3
5		25.9	25.9
6		23.4	24.9
7		24.7	25.5
8	Bulk Con I	29.9	31.1
	Bulk Con II	29.5	30.5
	Bulk Con III	29.9	30.8
	Bulk Con IV	30.2	29.4
	Bulk Con V	28.1	29.2
9	Bulk Con I	28.4	28.2
	Bulk Con II	26.3	26.4
	Bulk Con III	24.0	24.1
	Bulk Con IV	26.0	26.2
	Bulk Con V	26.0	26.0
10	Bulk Con I	30.8	32.2
	Bulk Con II	31.1	31.8
	Bulk Con III	30.8	31.6
	Bulk Con IV	30.9	31.8
	Bulk Con V	30.5	31.5
11	Bulk Con I	30.4	31.2
	Bulk Con II	27.5	28.4
	Bulk Con III	29.0	29.5
	Bulk Con IV	29.1	29.7
	Bulk Con V	27.7	28.4
20		27.0	28.3
21		29.2	29.4
22		28.2	28.1
23		27.0	29.0
24		27.6	28.5
25		30.4	30.9
26		20.0	20.7
41		22.7	22.1
42		27.5	28.5
43		20.6	21.8

TABLE V-4
MINOR ELEMENT ASSAYS
Bulk Concentrate IV & V

Element	Symbol	Units	Technique	Test 8	Test 9	Test 10	Test 11
Antimony	Sb	%	2 Acid ICP-OES	0.212	0.037	0.062	0.018
Arsenic	As	g/t	2 Acid ICP-OES	1768.0	204.7	1021.0	2793.0
Cadmium	Cd	g/t	AR FAAS	68	26	6	32
Lead	Pb	%	AR FAAS	0.19	0.72	0.04	0.05
Zinc	Zn	%	AR FAAS	0.29	0.18	0.08	0.75

Analytical Methods

FAAS	Flame atomic absorption spectrometry
ICP-OES	Inductively coupled plasma - optical emission spectroscopy

Digestion Methods

2 Acid	Hydrochloric acid and nitric acid
AR	Aqua regia - 3:1 hydrochloric acid:nitric acid

TABLE V-5
KSM PROJECTS BY G&T METALLURGICAL SERVICES LTD.

KM	Project Title	Date
1909	Preliminary Assessment of Mitchell Zone Samples	June 2007
2153	Pre-Feasibility Metallurgical Testing – Mitchell Zone-Kerr Sulphurets	December 2008
2344	Metallurgical and Pilot Plant Testing on Samples from the KSM Project	December 2009
2535	Miscellaneous Metallurgical Testing on Samples from the KSM Project	March 2010
2654	Sample Homogenization and Shipping – Kerr Project	July 2010
2670	Bench Scale and Pilot Plant Testing – KSM Project	August 2010
2755	Ancillary Testing – Kerr-Sulphurets-Mitchell-KSM Project	December 2010
2748	Preliminary Metallurgical Testing on Samples from the Iron Cap Zone - KSM Project	January 2010
2897	Supplemental Flotation and Cyanidation Testing - KSM Project	March 2011
3005	ICP Scan Data - KSM Feed Samples	June 2011

FLOTATION AND CIL CYANIDATION TESTING
KERR-SULPHURETS-MITCHELL PROJECT

SEABRIDGE GOLD INC.

KM3080

January 10, 2012

G&T METALLURGICAL SERVICES LTD.

2957 Bowers Place, Kamloops, B.C. Canada V1S 1W5

E-mail: info@gtmet.com , Website: www.gtmet.com

ISO 9001:2008
Certificate No. FS 63170

January 10, 2012

Mr. T.J. Smolik
Technical Services Manager
Seabridge Gold Inc.
Suite 400-106 Front Street
Toronto, ON M5A 1E1

Dear Mr. Smolik;

Re: Flotation and CIL Cyanidation Testing – Kerr-Sulphuets-Mitchell (KSM) Project KM3080

We are pleased to report that we have completed the metallurgical testing under our program KM3080. The testing was completed on three Mitchell Zone feed samples; Year 0 to 5, Year 0 to 10, and Year 0 to 20 Composites and flotation products from the KM2670 pilot plant testing. The pyrite concentrate (P3) and cleaner tailing (P5) from the pilot plant runs were further processed using CIL cyanidation tests.

The three feed samples tested had copper, molybdenum, and gold feed grades of about 0.2 and 0.006 percent, and 0.65 g/tonne, respectively. The feed concentrations of these metals are typical of Mitchell Zone samples tested in past programs.

Duplicate open circuit cleaner tests, run on each sample, produced copper recoveries between 80 to 85 percent at copper grades, in the final copper concentrate, ranging between 25 to 30 percent.

The final concentrates were analyzed for lead, zinc, arsenic, cadmium, and antimony. In general, concentrations of these elements were below typical smelter penalty limits. The data should be reviewed by a concentrate marketing specialist to confirm this observation.

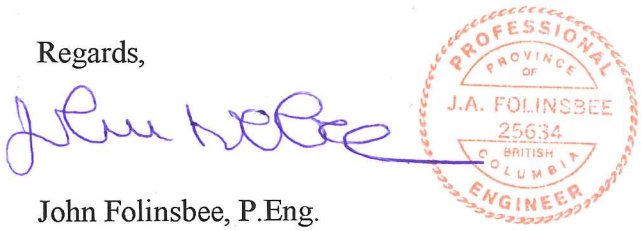
Bottle roll cyanidation tests were conducted on the pyrite concentrate and cleaner scavenger tailing streams from the open circuit cleaner flotation tests. The average combined flotation plus cyanidation gold recovery for the three samples was 71 percent.

Cyanidation bottle roll tests, KM2670 pilot plant flotation products (pyrite concentrate and cleaner scavenger tailing-blended) produced 24 hour gold extractions of between 60 to 76 percent. Agitated cyanidation tests (Tests 30 and 31) on P5 cleaner scavenger tailing and P3 pyrite concentrate produced low 24 hour gold extractions of about 30 percent. The reason for the lower gold extractions was undetermined and this result was not consistent with gold extraction results from bottle roll tests.

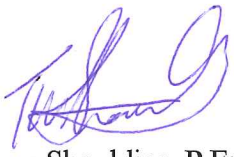
The cyanidation residues (pulps) from Tests 30 and 31 were washed using a wash procedure provided by the client. A volume of 20 litres of final wash solution was sent to a third party laboratory for environmental testing.

Thank you for choosing G&T Metallurgical Services Ltd. for your testing needs. If you have any questions regarding this report or the test program please contact us directly.

Regards,



John Folinsbee, P.Eng.
VP-Operations



Tom Shouldice, P.Eng
VP Americas - Metallurgy

January 10, 2012
KM3080

Report Distribution:
T.J. Smolik, Seabridge Gold Inc., Arizona, USA – 1 Copy
Gloria Trujillo, Seabridge Gold Inc., Toronto, ON – 2 Copies
Jay Layman, Seabridge Gold Inc., Colorado, USA – 1 Copy

FLOTATION AND CIL CYANIDATION TESTING
KERR-SULPHURETS-MITCHELL (KSM) PROJECT

KM3080

January 10, 2012

Work Performed on Behalf of Seabridge Gold Inc.

INDEX PAGE

1.0 Introduction

Seabridge Gold Inc. is 100 percent owner of the multimillion ounce Kerr-Sulphurets-Mitchell (KSM) copper-gold deposit. The KSM Project is located in the Iskut-Stikine region, about 65 kilometres Northwest of Stewart, British Columbia.

G&T Metallurgical Services Ltd. has previously conducted multiple metallurgical testing programs on samples from the KSM Project*. Mr. Dean Lindsay, Metallurgical Consultant to Seabridge Gold Inc., sent G&T Metallurgical Services Ltd. a Request for Proposal (RFP) to complete additional metallurgical testing on samples from the KSM Project. The original RFP was titled "Seabridge RFP 21-07-2011 Rev 1". The scope of work was further defined by another RFP document, titled, "Seabridge RFP Additional Leach Tests Mitchell", received via e-mail on August 15, 2011.

The main objectives of the work completed under this program can be summarized as follows:

– Using batch open circuit cleaning testing protocols, establish metallurgical performance for three Mitchell Zone composites; Mitchell Year 0 to 5, Mitchell Year 0 to 10, and Mitchell Year 0 to 20. The flowsheet and test conditions to be used will be those developed in a previous test program (KM2670).

– Determine specific minor element concentrations in the third cleaner (final) copper concentrates. The data is to be compared with data from tests run on blends of Mitchell Zone and Snowfields material, completed in a parallel test program (KM3081).

* A complete list of the previous metallurgical test programs can be found in Appendix IV-Special Data.

– Determine gold and silver extractions from the cleaner scavenger tailing and pyrite concentrates produced in the open circuit flotation testing. The CIL flowsheet and test conditions used were developed under program KM2670.

The samples used in this test program were received at G&T Metallurgical Services Ltd. on July 27, 2011. The sample shipment consisted of half core and had an estimated weight of 2,365 kilograms. The sample was prepared for flotation by stage crushing and screening the material to -6 mesh. Duplicate head samples were removed from each composite and assayed for Cu, Pb, Zn, Fe, S, Ag, Au, Mo, Sb, and Cd. The bulk -6 mesh material was rotary split into 2 kilogram charges which were then purged with nitrogen and stored at -10^{o} Celsius.

The main findings from the test program are summarized in the body of the report and can be found the following appendices:

Appendix I – Sample Origin
Appendix II – Metallurgical Test Data
Appendix III – Particle Sizing Data
Appendix IV – Special Data

2.0 Chemical Content Data

The chemical contents of the three Mitchell Zone composites were measured using standard analytical techniques. The chemical content data is presented in Table 1.

TABLE 1
CHEMICAL CONTENT DATA

Sample Name	Element for Assay – percent or g/tonne										
	Cu	Mo	Pb	Zn	Fe	S	Ag	Au	Sb	As	Cd
Mitchell Year 0 to 5	0.21	0.008	0.01	0.02	4.0	3.6	4	0.60	0.002	<10	2
Mitchell Year 0 to 10	0.20	0.005	0.02	0.01	3.7	3.4	4	0.67	0.002	<10	2
Mitchell Year 0 to 20	0.22	0.006	0.01	0.02	4.4	3.6	3	0.64	<0.001	<10	2

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

The copper content, in the feed, across all three samples tested was very consistent at about 0.2 percent copper. The gold feed grade varied between 0.6 to 0.67 g/tonne. The lowest gold feed grade was recorded for the Year 0 to 5 Composite.

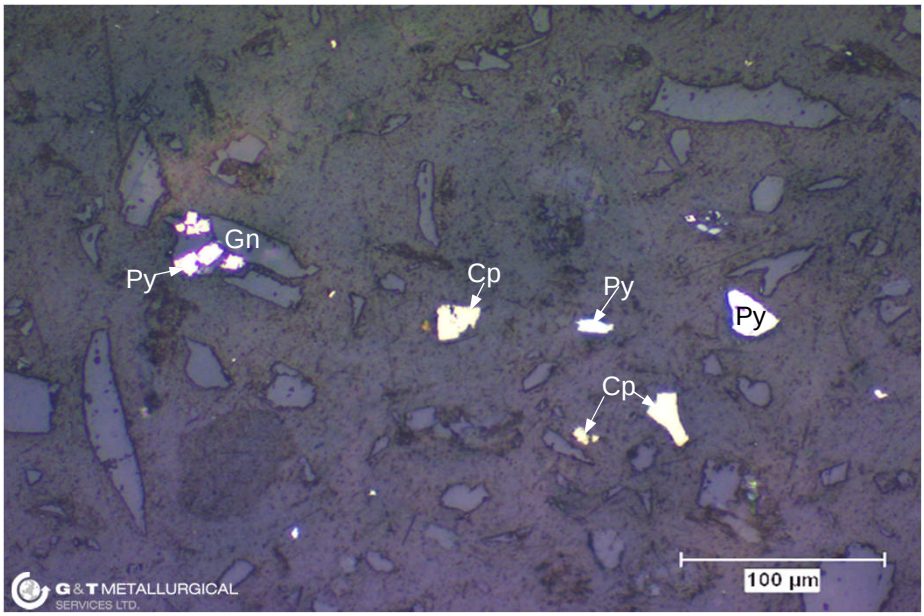
Molybdenum feed grades ranged from 0.005 to 0.008 percent and averaged about 0.006 percent. Lead and zinc feed grades were uniformly low, ranging between 0.01 to 0.02 percent in all three composites.

Iron and sulphur feed grades were also consistent from sample to sample with average iron and sulphur concentrations in the feed of about 4.0 and 3.5 percent, respectively. Based on this assay data, pyrite content is likely uniform across the sample set.

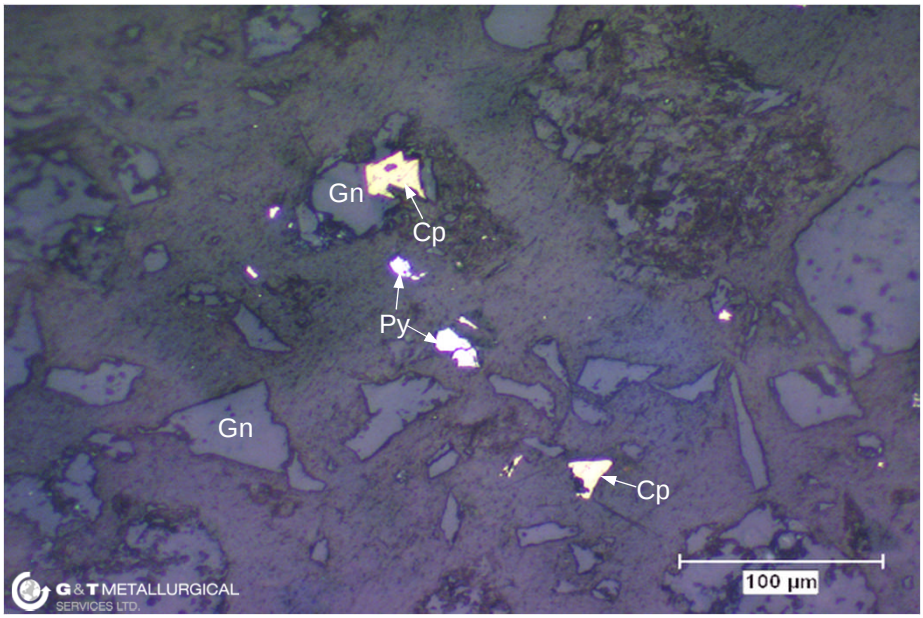
Cadmium concentrations were about 2 g/tonne in the feed. These may be high enough to generate elevated cadmium levels in the final concentrate.

PHOTOMICROGRAPH 1
KERR SULPHURETS
KM3080

Mitchell Year 0 to 5, Unsized



Mitchell Year 0 to 10, Unsized



*Cp-Chalcopyrite, Py-Pyrite, Gn-Gangue

3.0 Metallurgical Test Results

The three Mitchell Zone composite samples were tested using both open circuit cleaner testing protocols and cyanidation bottle roll tests on select flotation products. The flowsheet and test conditions utilized were developed in a previous test program on KSM samples, KM2670.

3.1 Flotation Test Results

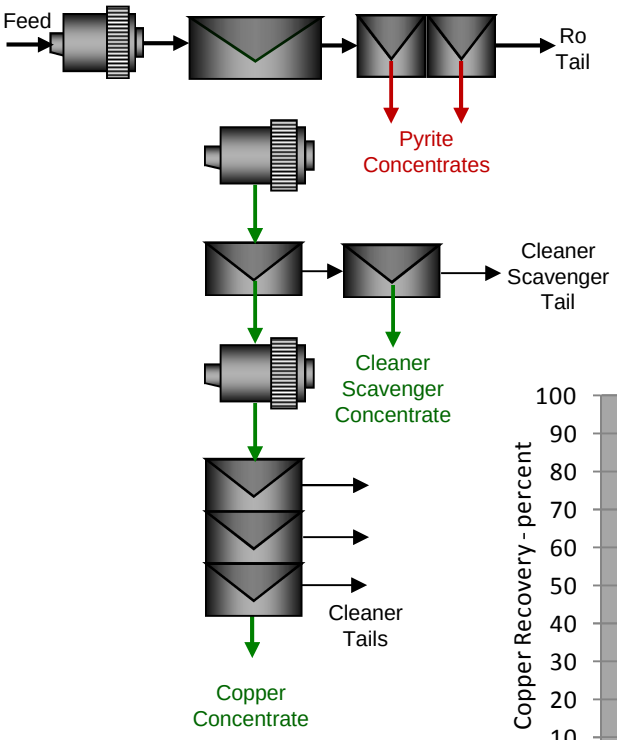
The flowsheet, test conditions, and test results for the open circuit flotation tests are shown in Figure 1. The following comments provide a synopsis of the key findings:

- At a final copper concentrate grade of about 25 percent, between 80 to 85 percent of the feed copper was also recovered to the copper concentrate. Copper metallurgical performance was similar across all three composites with variation in performance mainly due to test error.

- Recovery of feed molybdenum to the final concentrate was more variable with molybdenum recoveries ranging from about 50 to 70 percent. This variation is, in part, due to errors associated with assaying of the low grade rougher tailing. The average molybdenum grade in the final copper concentrate was about 0.5 percent, but ranged from about 0.4 to 0.7 percent.

- At a copper concentrate grade of 25 percent, the feed gold was between 45 to 60 percent recovered into the final concentrate. The gold grade in the final concentrate ranged from about 50 to 65 g/tonne and averaged 58 g/tonne.

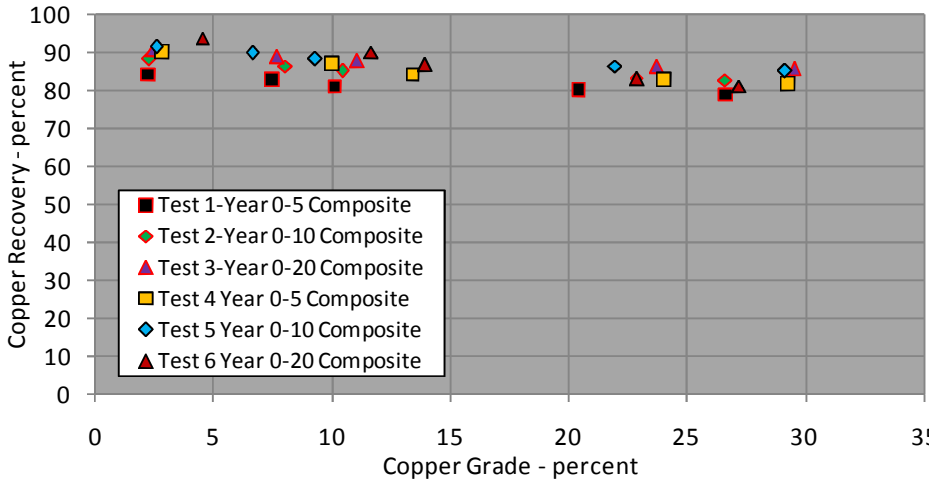
FIGURE 1
BATCH CLEANER FLOTATION RESULTS



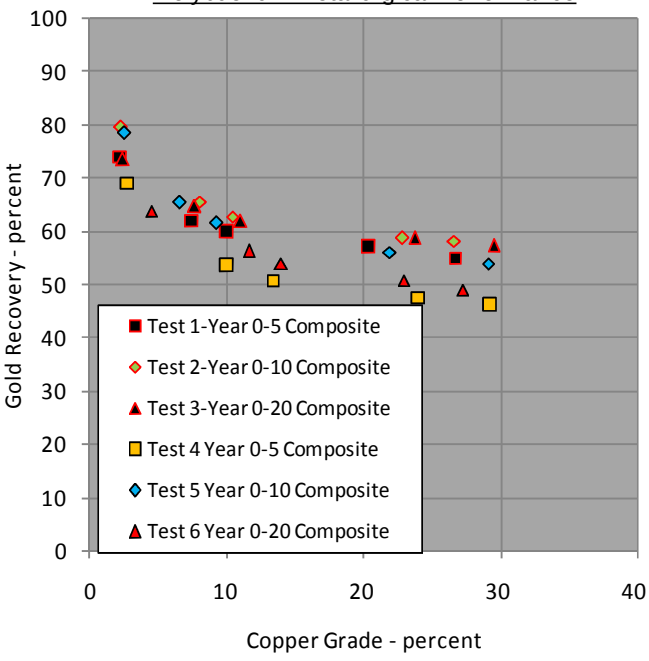
Cleaner Test Conditions

Stage	Sizing µm K_{80}	pH	Reagents - g/t						
			Lime	PE26[a]	Fuel Oil	208	3418A	PAX	MIBC
Grind	123-137	10.50	500	-	10	-	-	-	-
Cu Ro	-	10-11	-	-	-	6	6	-	15
Regrind	14-20	11.5	400	-	50	-	-	-	-
Clnrs	-	11.5	-	20	40	9	9	-	32
Py Ro	-	10.0	-	-	-	60	-	60	16

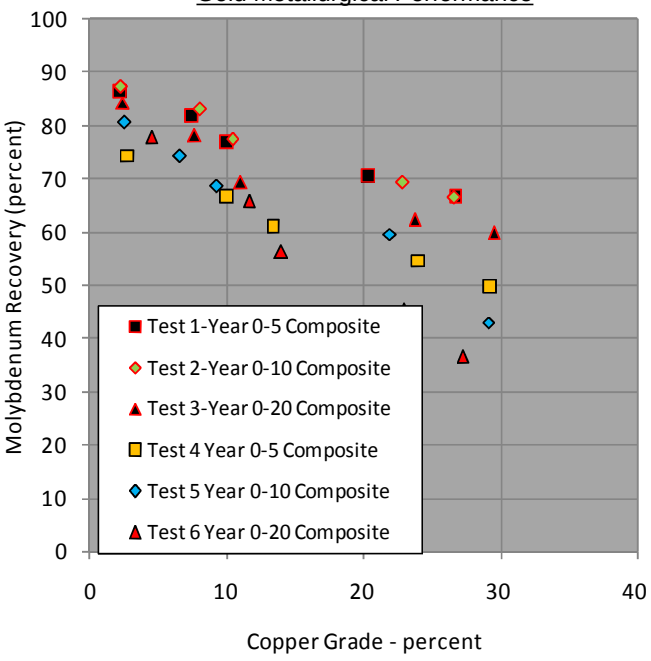
Copper Metallurgical Performance



Molybdenum Metallurgical Performance



Gold Metallurgical Performance



Note: Detailed test conditions are located in Appendix II.

3.2 Quality of the Flotation Concentrates

The flotation concentrates from all six open circuit cleaner tests were analyzed for a limited suite of deleterious minor elements. The results of these analyses are displayed in Table 2.

TABLE 2
MINOR ELEMENT DATA

Mineral	Symbol	Unit	Test 1	Test 2	Test 3	Test 4	Test 5	Test 6
Lead	Pb	%	0.32	0.20	0.25	0.28	0.11	0.21
Zinc	Zn	%	0.33	0.17	0.35	0.35	0.15	0.70
Arsenic	As	%	0.16	0.15	0.10	0.13	0.26	0.04
Cadmium	Cd	g/t	80	52	94	66	40	14
Antimony	Sb	%	0.11	0.08	0.03	0.08	0.12	0.01

Note: Tests 1 and 4 – Mitchell Year 0 to 5, Tests 2 and 5 – Mitchell Year 0 to 10, Tests 3 and 6 – Mitchell Year 0 to 20.

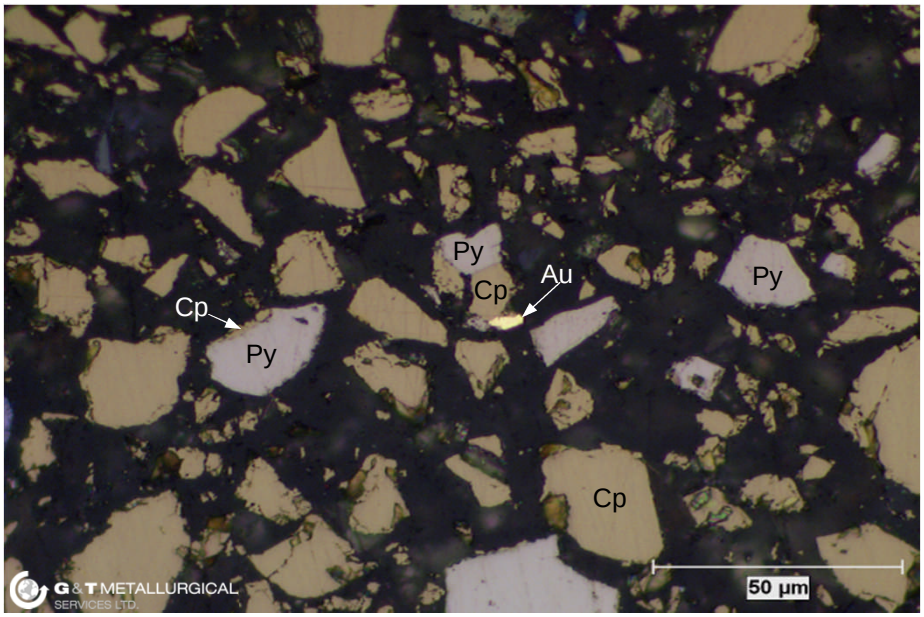
On average, the concentration of arsenic in the final copper concentrates was below the typical smelter limit of 2,000 g/tonne (0.2 percent). Test 5 on the Mitchell Year 0 to 10 Composite produced a 0.26 percent arsenic assay in the copper concentrate. This result appears anomalous as does the 0.04 percent assay in the concentrate from Test 6.

Cadmium levels are above typical background levels in all concentrates. They are likely below smelter penalty limits but may cause issues at some smelters.

The minor element data should be reviewed by a concentrate marketing specialist to identify any concentrate marketing issues.

PHOTOMICROGRAPH 2
KERR SULPHURETS – BULK CONCENTRATE
Test 4 KM3080

Unsized



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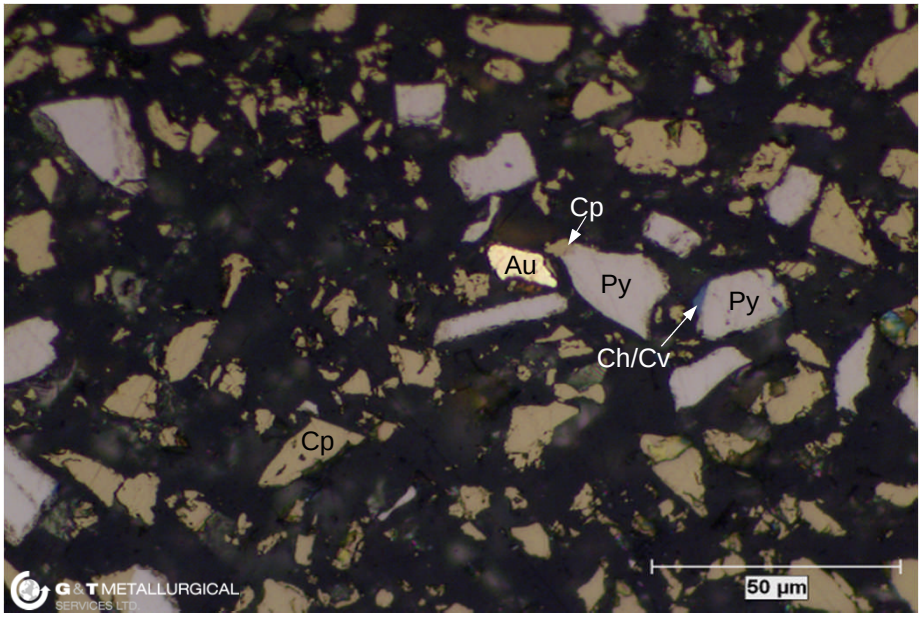


*Au-Gold, Cp-Chalcopyrite, Ch-Chalcocite, Cv-Covellite, Py-Pyrite

3.3 Cyanidation Test Results

Cyanidation bottle roll tests were completed on the cleaner scavenger tailing and pyrite rougher concentrate streams produced in open circuit flotation testing. The flowsheet, test conditions and results of these tests are presented in Figure 2 and are summarized as follows:

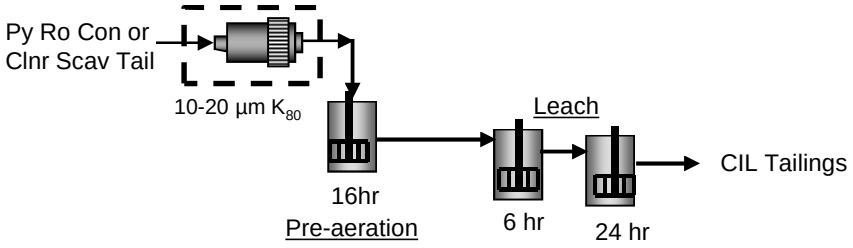
- The 24 hour CIL gold extractions from the cleaner scavenger tailing stream ranged between 36 and 49 percent. The average 24 hour gold extraction from that stream was 48 percent. Sodium cyanide consumption ranged from 2.2 to 3.8 kg/tonne and averaged 2.7 kg/tonne.

- By comparison, the 24 hour gold extraction from the pyrite rougher concentrate stream ranged from 39 to 85 percent and averaged 77 percent. Sodium cyanide consumption ranged from 2.9 to 3.7 kg/tonne and averaged 3.4 kg/tonne.

- Overall gold recoveries, from the copper concentrate, CIL cyanidation leach extractions ranged from 68 to 73 percent and averaged 71 percent for the three composite tested.

- These results may tend to underestimate total gold recoveries because the intermediate cleaner tailings and scavenger concentrates are not recycled in open circuit tests. The actual recoveries could be slightly higher when these product streams are recycled in a continuous process.

FIGURE 2
CARBON IN LEACH FLOWSHEET AND PERFORMANCE DATA



Carbon in Leach Results

Composite	Test	Composite	Feed µm K_{80}	Gold Content - g/tonne		Gold Extraction percent	Sodium Cyanide	
				Feed	Residue		Solution ppm	Consumption kg/t
Cleaner Scav Tail	7	Year 0-5	21	1.47	0.94	37	1,000	2.6
Pyrite Ro Con	13	Year 0-5	12	1.68	0.39	77	1,000	3.0
Cleaner Scav Tail	8	Year 0-10	23	1.64	1.06	36	1,000	2.2
Pyrite Ro Con	14	Year 0-10	10	1.48	0.36	76	1,000	3.4
Cleaner Scav Tail	9	Year 0-20	19	1.08	0.62	42	1,000	2.4
Pyrite Ro Con	15	Year 0-20	12	1.46	0.46	69	1,000	2.9
Cleaner Scav Tail	10	Year 0-5	22	2.19	1.11	49	1,000	3.0
Pyrite Ro Con	16	Year 0-5	9	1.87	0.35	81	1,000	3.7
Cleaner Scav Tail	11	Year 0-10	19	1.72	0.92	47	1,000	2.4
Pyrite Ro Con	17	Year 0-10	10	1.56	0.39	75	1,000	3.5
Cleaner Scav Tail	12	Year 0-20	19	1.62	0.84	48	1,000	3.8
Pyrite Ro Con	18	Year 0-20	9	2.05	0.29	86	1,000	3.7

Overall Gold Recovery

Composite	Tests	Copper Concentrate		Pyrite Concentrate		Inc. Au Rec % *		Overall Au
		Au Dist %	Au Grade g/t	Au Dist %	Au Grade g/t	Cleaner Tail	Pyrite Con	Recovery %
Year 0-5	1,7,13	55	60	13	1.5	4	10	69
Year 0-10	2,8,14	58	51	13	1.3	5	10	73
Year 0-20	3,9,15	57	50	18	1.4	4	12	73
Year 0-5	4,10,16	46	64	17	2.3	8	14	68
Year 0-10	5,11,17	54	66	14	1.8	6	11	71
Year 0-20	6,12,18	49	56	26	2.8	3	21	73
Average								
Year 0-5		50	62	15	1.9	6	12	68
Year 0-10		56	59	14	1.5	6	10	72
Year 0-20		53	53	22	2.1	4	17	73
Overall		**53**	**58**	**17**	**1.8**	**5**	**13**	**71**

* Incremental gold recovery in cyanidation tests of flotation products.

Note: Additional test data is located in Appendix II.

4.0 Cyanidation Test – Pilot Plant Composites

CIL cyanidation bottle roll tests were completed on samples of cleaner tailing and pyrite concentrate produced in program KM2670*. Variable cyanide addition rates were tested on both the individual streams and a 50:50 blended sample. Finally, two individual 5 kilogram CIL cyanidation tests were completed, the tailings blended and washed to produce solutions for downstream environmental testing**. The results of these tests are displayed in Figure 3 and are commented on as follows:

– The average 24 hour gold extraction from the blended sample was 68 percent. The average 24 hour gold extractions for the cleaner tailing and pyrite concentrates were about 65 and 75 percent, respectively.

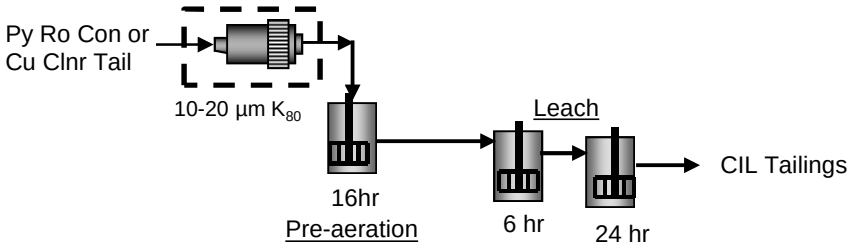
– Variable cyanide addition strategies did not appear to have much impact on the 24 hour gold extractions for these samples. The 24 hour cyanidation extractions were more variable for the cleaner tailing sample, but the variance does not correlate well with the change in cyanide addition strategy.

– Gold extractions for the two 5 kilogram leach tests, used for the residue wash, were below that achieved in the bottle roll tests at about 30 percent. These larger scale tests were completed in an agitated leach vessel and, for reasons not identified, the gold extractions were lower.

* KM2670 "Bench Scale and Pilot Plant Testing Kerr-Sulphurets-Mitchell Project" August 2010.

** The instructions for the cyanidation residue wash are provided in Appendix IV – Special Data.

FIGURE 3
CARBON IN LEACH FLOWSHEET AND PERFORMANCE DATA



Carbon in Leach Results

Test	Feed	Au Ext %	C. Head Au g/t	Reagent Consumption		Comments
				NaCN Kg/t	Lime Kg/t	
19	Blend	61.2	1.32	2.9	3.5	Baseline
20	Blend	65.7	1.51	3.0	3.6	Baseline
21	Blend	64.9	1.67	3.0	3.6	Baseline
22	P5 CT	52.4	1.37	3.3	4.3	1,000 ppm 6 hr then 500 ppm
23	P3 PC	77.6	1.79	2.8	13.2	1,000 ppm 6 hr then 500 ppm
24	Blend	68.9	1.54	2.9	4.8	1,000 ppm 6 hr then 500 ppm
25	P5 CT	75.2	1.01	3.0	4.3	1,000 ppm 6 hr, 500 ppm 16 h, decrease
26	P3 PC	77.2	1.58	3.1	7.6	1,000 ppm 6 hr, 500 ppm 16 h, decrease
27	Blend	76.1	1.46	2.8	5.2	1,000 ppm 6 hr, 500 ppm 16 h, decrease
28	P3 PC	76.6	1.80	3.3	8.6	Preliminary
29	P5 CT	66.2	1.24	3.3	2.2	Preliminary
30	P5 CT	32.2	1.40	4.1	3.5	5 kg Test
31	P3 PC	29.0	1.79	4.0	6.2	5 kg Test
32	Blend	70.2	1.21	3.9	3.3	For Solution Assays
Avg Blend		67.8	1.45	3.1	4.0	
Avg P5 CT		64.6	1.21	3.2	3.6	
Avg P3 PC		74.8	1.66	3.1	8.4	

Note: Additional test data is located in Appendix II. CT - Copper Cleaner Tail, PC - Pyrite Concentrate

5.0 Wash Solution Procedure and Analytical Data

The leach residues from Tests 30 and 31 (larger scale cyanidation tests on pilot plant cleaner tailing and pyrite concentrates) were subjected to a wash procedure*. A schematic of the wash procedure is provided in Figure 4 and the assays on the final and intermediate wash solutions and residues are presented in Table 2.

TABLE 2
ASSAY DATA – WASH PROCEDURE

Stream	Element for Assay – g/tonne										
	Cu	As	Sb	Cd	Pb	Zn	Se	CN_{TOT}	CN_{WAD}	CNS	SO_4
Final Wash Solution	155	<3	<1	<0.09	<2	<2	<3	172	164	290	1800
Intermediate Wash Solution	89	<3	<1	<0.09	<2	<2	<3	139	121	180	1600
Washed Residue	1100	110	2	4	20	30	39	-	-	-	-

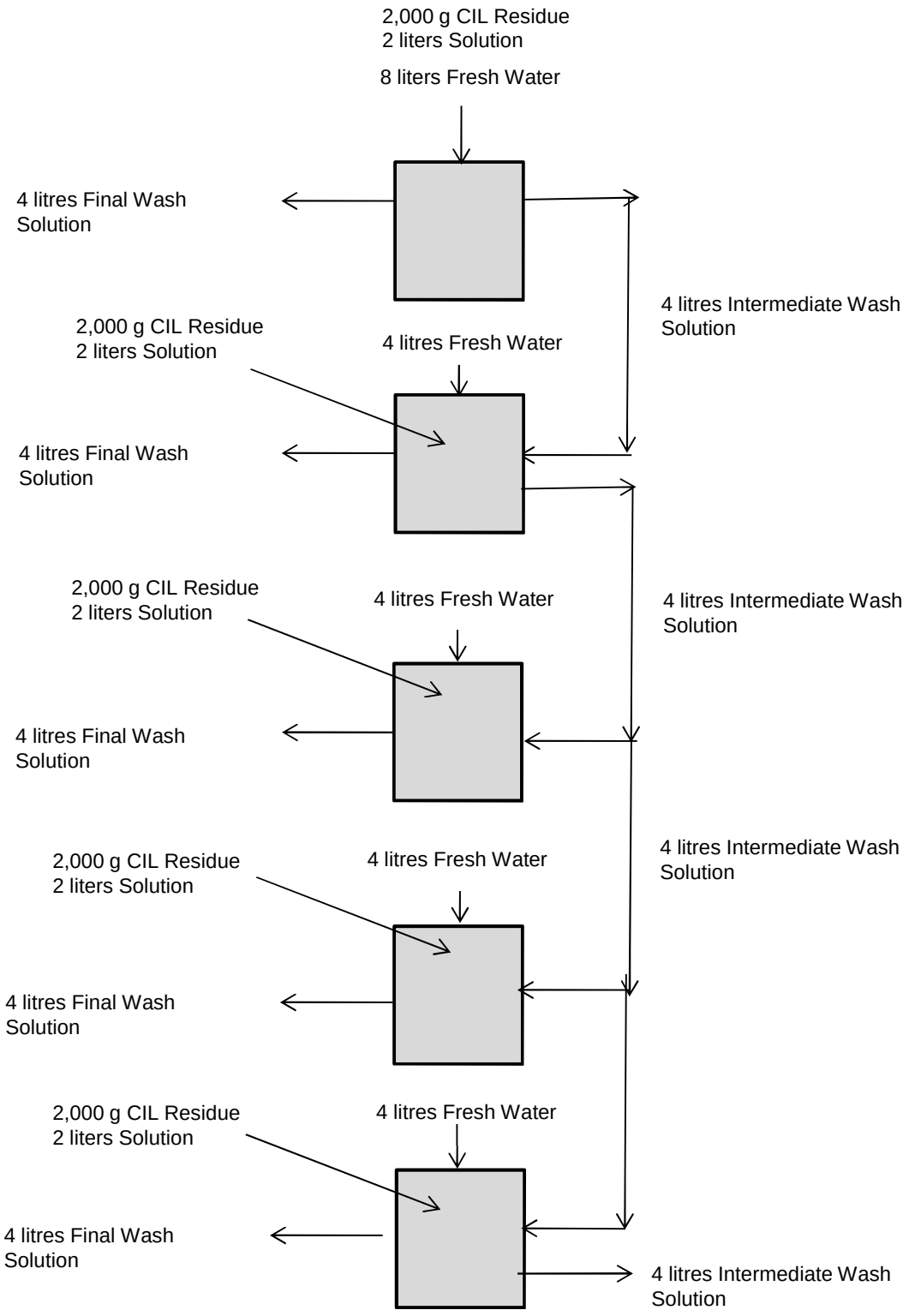
Note: All results are shown in g/tonne.

Copper and zinc assays were completed on the 24 hour leach liquor from Test 32 and they were reported at 177 and 3.6 g/tonne. The concentration of copper and zinc were comparable to that measured in the final wash solution from the wash procedure.

Total cyanide concentrations in the in the final wash solution were measured at about 170 g/tonne.

* The instructions for the wash procedure can be found in Appendix IV – Special Data.

FIGURE 4
LEACH RESIDUE WASH PROCEDURE FLOWSHEET



Note: The final wash solution from each stage was combined to produce 20 litres of final wash solution.

6.0 Conclusions and Recommendations

Flotation and cyanidation bottle roll tests have been completed on three ore feed composites from the Mitchell Zone at the KSM Project. In addition, cyanidation bottle roll tests and a larger scale (5 kg) agitated cyanidation test have been completed on pilot plant products*. The three main feed samples tested were Mitchell Year 0 to 5, Mitchell Year 0 to 10, and Mitchell Year 0 to 20.

The copper, molybdenum, and gold feed grades, in the three feed samples, were all similar across the three samples. Average copper and molybdenum grades were about 0.2 and 0.006 percent. The average gold feed grade was about 0.65 g/tonne.

Duplicate open circuit cleaner flotation tests, on each of the three feed samples, produced fairly typical results for Mitchell Zone ores. Between 80 to 85 percent of the feed copper was recovered into a final concentrate grading between 25 to 30 percent copper.

The concentrations of lead, zinc, arsenic, antimony, and cadmium were measured in each of the final copper concentrates. The assay results show that concentrations of these elements are below typical smelter penalty limits. The data should be reviewed by a concentrate marketing specialist to confirm any concentrate marketing issues.

The cleaner scavenger tailing and pyrite concentrates, produced in the open circuit flotation tests, were further treated using cyanidation bottle roll testing protocols.

On average, an additional 5 and 13 percent of the flotation feed gold was recovered from the cleaner scavenger tail and pyrite concentrate streams, respectively. This, in addition to the 58 percent recovered to the final copper concentrate, resulted in an average overall gold recovery of 71 percent.

* The pilot plant products were generated in pilot runs P3 and P5 under program KM2670.

A series of cyanidation bottle roll tests were completed on flotation products from a pilot plant campaign under program KM2670. In preparation for running larger scale agitated leach tests, bottle roll tests were completed under conditions of variable cyanide addition.

No direct correlation was noted between the variable cyanide addition and 24 hour gold extraction for the blended sample (P3 pyrite concentrate plus P5 cleaner tailing). Between 65 to 75 percent of the cyanidation feed gold was extracted form the CIL feed in these preparatory bottle roll tests.

An agitated cyanidation test (5 kg) was completed on each of the pyrite concentrate and cleaner scavenger tailing samples. For reasons not understood, the 24 hour gold extractions were only about 30 percent in these tests.

The 24 hour residues and leach liquors were combined and subjected to a wash procedure supplied by the client. About 20 litres of the final wash solution was generated for downstream environmental testing. The final wash solution had a copper and total cyanide assay of 155 and 172 g/tonne, respectively.

APPENDIX I – KM3080

SAMPLE ORIGIN

1.0 Sample Origin

The samples used to construct the three main ore feed composites tested in the current program were received at G&T Metallurgical Services Ltd. on July 27, 2011. The samples were received in the form of half diamond drill core and the total estimated weight of the shipment was 2,119 kg.

Also tested were pilot plant pyrite concentrates and cleaner tailing generated in pilot plant testing under KM2670. The pyrite concentrate was produced in pilot run P3 and the cleaner tailing was produced in pilot run P5.

The three feed samples were analyzed for the elements of interest and the results are tabulated in Table I-1.

TABLE I-1
CHEMICAL CONTENT DATA

Sample Name	Element for Assay – percent or g/tonne										
	Cu	Mo	Pb	Zn	Fe	S	Ag	Au	Sb	As	Cd
Mitchell Year 0 to 5	0.21	0.008	0.01	0.02	4.0	3.6	4	0.60	0.002	<10	2
Mitchell Year 0 to 10	0.20	0.005	0.02	0.01	3.7	3.4	4	0.67	0.002	<10	2
Mitchell Year 0 to 20	0.22	0.006	0.01	0.02	4.4	3.6	3	0.64	<0.001	<10	2

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

A listing of samples received and their respective weights is provided in Table I-2, the details of composite construction are provided in Table I-3.

TABLE I-2
SAMPLES RECEIVED
July 27, 2011

Sample Group/ID	Weight (kg)	Sample Form
Mitchell Year 0 to 5 (3/3)	257.75	Half Core
Mitchell Year 0 to 5 (2/3)	298.5	Half Core
Mitchell Year 0 to 5 (1/3)	298.5	Half Core
Mitchell Year 0 to 10 (1/3)	245.5	Half Core
Mitchell Year 0 to 10 (2/3)	245.7	Half Core
Mitchell Year 0 to 10 (3/3)	257.75	Half Core
Mitchell Year 0 to 20 (1/2)	257.75	Half Core
Mitchell Year 0 to 20 (2/2)	257.75	Half Core
Total	2119.2	

TABLE I-3
COMPOSITE CONSTRUCTION
Mitchell Year 0 to 5

Sample Group/ID	Weight (kg)	Sample Form
Mitchell Year 0 to 5 (3/3)	257.75	Half Core
Mitchell Year 0 to 5 (2/3)	298.5	Half Core
Mitchell Year 0 to 5 (1/3)	298.5	Half Core
Total	854.75	

Mitchell Year 0 to 10

Sample Group/ID	Weight (kg)	Sample Form
Mitchell Year 0 to 10 (1/3)	245.5	Half Core
Mitchell Year 0 to 10 (2/3)	245.7	Half Core
Mitchell Year 0 to 10 (3/3)	257.75	Half Core
Total	748.95	

Mitchell Year 0 to 20

Sample Group/ID	Weight (kg)	Sample Form
Mitchell Year 0 to 20 (1/2)	257.75	Half Core
Mitchell Year 0 to 20 (2/2)	257.75	Half Core
Total	515.5	

APPENDIX II – KM3080

METALLURGICAL TEST DATA

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32 Cyanide Test – P5 Cleaner Tail & P3 Pyrite Concentrate Composite 1 Blend 69

DATE: August 23, 2011

PROJECT NO: KM3080-01

PURPOSE: Preliminary Cleaner Test.

PROCEDURE: Perform a standard two product cleaner test.

FEED: 4 kg of Mitchell Year 0 to 5 Composite ore ground to a nominal 124μm K_{80}.
Bulk Regrind Discharge - 20μm K_{80}.
Pyrite Rougher Concentrate - 101μm K_{80}.

FLOWSHEET: 2

Stage	Reagents Added g/tonne						Time (minutes)			pH
	Lime	PE26	Fuel Oil	208	3418A	MIBC	Grind	Cond.	Float	
Primary Grind	500		10				15			10.8
BULK CIRCUIT:										
Rougher 1	-			3	3	15		1	3	10.0
Rougher 2	-			3	3	0		1	4	10.0
Regrind	400		50				12			11.5
Cleaner 1	0	20	0	4	4	8		1	4	11.5
Cleaner 2	√		10	3	3	8		1	3	11.5
Cleaner 3	√		10	2	2	8		1	2	11.5
Cleaner Scavenger	0		20	-	-	4		1	4	11.5
PYRITE CIRCUIT:					PAX					
Rougher 1	-			30	30	0		1	4	10.3
Rougher 2	-			30	30	8		1	4	10.0

Flotation Data	Rougher	Cleaner
Flotation Machine:	D2A	D1B
Cell Size in liters:	8.0	2.2
Aspiration:	Air	
Impeller Speed in rpm:	1100	1200

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M6-Mild	Stirred Mill
Charge/Material:	20kg-Mild	1.2kg-Beads
Water:	1500 ml	estimated

KM3080-01 Mitchell Year 0 to5 Composite

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t				
	grams	%	Pb	Zn	As	Cd	Sb
Bulk Con	25.8	0.6	0.3	0.3	0.2	80	0.1

Note: Pb, Zn and Sb values are in percent, As and Cd values are in g/t.

KM3080-01 Mitchell Year 0 to 5 Composite

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Bulk Con	25.8	0.6	26.7	0.51	31.1	33.7	394	60.3	78.9	66.3	4.7	6.1	55.1	55.0
Bulk 3rd Clnr Tail	8.3	0.2	0.79	0.10	25.0	26.4	46	6.02	0.8	4.0	1.2	1.5	2.1	1.8
Bulk 2nd Clnr Tail	36.0	0.9	0.33	0.04	22.0	24.2	24	2.35	1.4	6.4	4.6	6.2	4.7	3.0
Bulk Clnr Scav Con	25.8	0.6	0.42	0.04	21.3	23.7	30	2.43	1.2	4.9	3.2	4.3	4.2	2.2
Bulk Clnr Scav Tail	231.4	5.8	0.07	0.004	23.8	27.0	7.0	1.46	1.9	4.6	32.1	44.2	8.8	12.0
Pyrite Ro Con	245.2	6.1	0.16	0.004	17.7	19.4	5.0	1.47	4.5	5.3	25.3	33.6	6.6	12.8
Pyrite Ro Tail	3424.8	85.7	0.03	0.001	1.5	0.17	1.0	0.11	11.4	8.6	28.9	4.1	18.6	13.3
Feed	3997.3	100	0.22	0.005	4.3	3.54	4.6	0.71	100	100	100	100	100	100

KM3080-01 Mitchell Year 0 to 5 Composite

Cumulative Metallurgical Balance

Cumulative	Cum. Weight		Assay - percent or g/t						Distribution - percent					
Product	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Product 1	25.8	0.6	26.7	0.51	31.1	33.7	394	60.3	78.9	66.3	4.7	6.1	55.1	55.0
Product 1 to 2	34.1	0.9	20.4	0.41	29.6	31.9	309	47.1	79.6	70.3	5.9	7.7	57.1	56.8
Product 1 to 3	70.1	1.8	10.1	0.22	25.7	28.0	163	24.1	81.0	76.6	10.5	13.8	61.8	59.8
Product 1 to 4	95.9	2.4	7.49	0.17	24.5	26.8	127	18.3	82.2	81.5	13.7	18.2	66.0	62.0
Product 1 to 5	327.3	8.2	2.25	0.05	24.0	26.9	42	6.38	84.1	86.1	45.8	62.3	74.8	73.9
Product 6	245.2	6.1	0.16	0.004	17.7	19.4	5.0	1.47	4.5	5.3	25.3	33.6	6.6	12.8
Product 7	3424.8	85.7	0.03	0.001	1.5	0.17	1.0	0.11	11.4	8.6	28.9	4.1	18.6	13.3
Feed	3997.3	100	0.22	0.005	4.3	3.54	4.6	0.71	100	100	100	100	100	100

DATE: August 23, 2011

PROJECT NO: KM3080-02

PURPOSE: Preliminary Cleaner Test.

PROCEDURE: Perform a standard two product cleaner test.

FEED: 4 kg of Mitchell Year 0 to 10 Composite ore ground to a nominal 137μm K_{80}.
Bulk Regrind Discharge - 20μm K_{80}.
Pyrite Rougher Concentrate - 39μm K_{80}.

FLOWSHEET: 2

Stage	Reagents Added g/tonne						Time (minutes)			pH
	Lime	PE26	Fuel Oil	208	3418A	MIBC	Grind	Cond.	Float	
Primary Grind	500		10				17			10.9
BULK CIRCUIT:										
Rougher 1	-			3	3	15		1	3	10.0
Rougher 2	-			3	3	0		1	4	10.0
Regrind	400		50				12			11.6
Cleaner 1	0	20		4	4	8		1	4	11.5
Cleaner 2	√		10	3	3	8		1	3	11.5
Cleaner 3	√		10	2	2	8		1	2	11.5
Cleaner Scavenger	0		20			8		1	4	11.4
PYRITE CIRCUIT:					PAX					
Rougher 1	-			30	30	8		1	4	10.5
Rougher 2	-			30	30	8		1	4	10.3

Flotation Data	Rougher	Cleaner
Flotation Machine:	D2A	D1B
Cell Size in liters:	8.0	2.2
Aspiration:	Air	
Impeller Speed in rpm:	1100	1200

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M6-Mild	Stirred Mill
Charge/Material:	20kg-Mild	1.2kg-Beads
Water:	1500 ml	estimated

KM3080-02 Mitchell Year 0 to 10 Composite

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t				
	grams	%	Pb	Zn	As	Cd	Sb
Bulk Con	25.8	0.6	0.2	0.2	0.2	52	0.08

Note: Pb, Zn and Sb values are in percent, As and Cd values are in g/t.

KM3080-02 Mitchell Year 0 to 10 Composite

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Bulk Con	25.8	0.6	26.6	0.41	30.5	33.4	382	51.4	82.5	66.4	4.9	6.6	53.3	58.2
Bulk 3rd Clnr Tail*	4.5	0.1	1.19	0.09	23.3	26.0	64	2.50	0.6	2.7	0.7	0.9	1.6	0.5
Bulk 2nd Clnr Tail	37.6	0.9	0.40	0.03	19.9	21.8	26	2.47	1.8	8.1	4.6	6.3	5.3	4.1
Bulk Clnr Scav Con	21.4	0.5	0.51	0.04	19.4	22.4	42	2.98	1.3	5.8	2.6	3.7	4.9	2.8
Bulk Clnr Scav Tail	232.8	5.8	0.07	0.00	22.9	25.7	8.0	1.37	1.9	4.1	33.1	45.9	10.1	14.0
Pyrite Ro Con	231.9	5.8	0.11	0.00	15.7	18.2	5.0	1.27	3.1	2.0	22.6	32.4	6.3	12.9
Pyrite Ro Tail	3454.1	86.2	0.02	0.001	1.5	0.16	1.0	0.05	8.7	10.8	31.5	4.3	18.7	7.6
Feed	4008.1	100	0.21	0.00	4.0	3.25	4.6	0.57	100	100	100	100	100	100

*Not enough sample for assay, Au value estimated.

KM3080-02 Mitchell Year 0 to 10 Composite

Cumulative Metallurgical Balance

Cumulative	Cum. Weight		Assay - percent or g/t						Distribution - percent					
Product	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Product 1	25.8	0.6	26.6	0.41	30.5	33.4	382	51.4	82.5	66.4	4.9	6.6	53.3	58.2
Product 1 to 2	30.3	0.8	22.8	0.36	29.4	32.3	335	44.1	83.2	69.1	5.5	7.5	54.8	58.7
Product 1 to 3	67.9	1.7	10.4	0.18	24.2	26.5	164	21.1	85.0	77.2	10.2	13.8	60.1	62.7
Product 1 to 4	89.3	2.2	8.04	0.15	23.0	25.5	135	16.7	86.3	83.1	12.8	17.5	65.0	65.5
Product 1 to 5	322.1	8.0	2.28	0.04	22.9	25.6	43	5.63	88.2	87.2	45.9	63.3	75.1	79.5
Product 6	231.9	5.8	0.11	0.00	15.7	18.2	5.0	1.27	3.1	2.0	22.6	32.4	6.3	12.9
Product 7	3454.1	86.2	0.02	0.00	1.5	0.16	1.0	0.05	8.7	10.8	31.5	4.3	18.7	7.6
Feed	4008.1	100	0.21	0.00	4.0	3.25	4.6	0.57	100	100	100	100	100	100

DATE: August 23, 2011

PROJECT NO: KM3080-03

PURPOSE: Preliminary Cleaner Test.

PROCEDURE: Perform a standard two product cleaner test.

FEED: 4 kg of Mitchell Year 0 to 20 Composite ore ground to a nominal 123μm K_{80}.
Bulk Regrind Discharge - 17μm K_{80}.
Pyrite Rougher Concentrate - 48μm K_{80}.

FLOWSHEET: 2

Stage	Reagents Added g/tonne						Time (minutes)			pH
	Lime	PE26	Fuel Oil	208	3418A	MIBC	Grind	Cond.	Float	
Primary Grind	500		10				18			10.0
BULK CIRCUIT:										
Rougher 1	-			3	3	15		1	3	10.0
Rougher 2	-			3	3	0		1	4	10.0
Regrind	400		50				12			11.6
Cleaner 1	0	20		4	4	8		1	4	11.5
Cleaner 2	√		10	3	3	8		1	3	11.5
Cleaner 3	√		10	2	2	8		1	2	11.5
Cleaner Scavenger	0		20			4		1	4	11.5
PYRITE CIRCUIT:					PAX					
Rougher 1	-			30	30	8		1	4	10.5
Rougher 2	-			30	30	8		1	4	10.2

Flotation Data	Rougher	Cleaner
Flotation Machine:	D2A	D1B
Cell Size in liters:	8.0	2.2
Aspiration:	Air	
Impeller Speed in rpm:	1100	1200

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M6-Mild	Stirred Mill
Charge/Material:	20kg-Mild	1.2kg-Beads
Water:	1500 ml	estimated

KM3080-03 Mitchell Year 0 to 20 Composite

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t				
	grams	%	Pb	Zn	As	Cd	Sb
Bulk Con	22.5	0.6	0.25	0.35	0.10	94	0.0

Note: Pb, Zn and Sb values are in percent, As and Cd values are in g/t.

KM3080-03 Mitchell Year 0 to 20 Composite

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Bulk Con	22.5	0.6	29.5	0.73	29.3	33.4	282	49.9	85.4	59.6	3.4	5.5	46.4	57.2
Bulk 3rd Clnr Tail	5.7	0.1	0.92	0.12	21.3	23.8	36	5.15	0.7	2.4	0.6	1.0	1.5	1.5
Bulk 2nd Clnr Tail	33.3	0.8	0.35	0.06	19.8	21.6	18	1.82	1.5	7.1	3.4	5.3	4.4	3.1
Bulk Clnr Scav Con	28.3	0.7	0.35	0.09	29.3	21.5	22	1.85	1.3	8.8	4.3	4.5	4.6	2.7
Bulk Clnr Scav Tail	198.6	5.0	0.06	0.01	21.4	24.2	6.0	0.87	1.6	6.2	22.2	35.3	8.7	8.8
Pyrite Ro Con	258.5	6.5	0.09	0.00	21.2	23.4	5.0	1.36	3.0	3.4	28.7	44.5	9.4	17.9
Pyrite Ro Tail	3423.1	86.2	0.02	0.001	2.1	0.16	1.0	0.05	6.6	12.4	37.2	3.9	25.0	8.7
Feed	3970.0	100	0.20	0.01	4.8	3.43	3.4	0.49	100	100	100	100	100	100

KM3080-03 Mitchell Year 0 to 20 Composite

Cumulative Metallurgical Balance

Cumulative	Cum. Weight		Assay - percent or g/t						Distribution - percent					
Product	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Product 1	22.5	0.6	29.5	0.73	29.3	33.4	282	49.9	85.4	59.6	3.4	5.5	46.4	57.2
Product 1 to 2	28.2	0.7	23.7	0.61	27.7	31.5	232	40.8	86.1	62.0	4.1	6.5	47.9	58.7
Product 1 to 3	61.5	1.5	11.1	0.31	23.4	26.1	116	19.7	87.6	69.1	7.5	11.8	52.3	61.8
Product 1 to 4	89.8	2.3	7.69	0.24	25.3	24.7	87	14.1	88.8	77.9	11.9	16.3	56.8	64.5
Product 1 to 5	288.4	7.3	2.44	0.08	22.6	24.3	31	4.98	90.4	84.2	34.1	51.6	65.5	73.3
Product 6	258.5	6.5	0.09	0.00	21.2	23.4	5.0	1.36	3.0	3.4	28.7	44.5	9.4	17.9
Product 7	3423.1	86.2	0.02	0.00	2.1	0.16	1.0	0.05	6.6	12.4	37.2	3.9	25.0	8.7
Feed	3970.0	100	0.20	0.01	4.8	3.43	3.4	0.49	100	100	100	100	100	100

DATE: August 30, 2011

PROJECT NO: KM3080-04

PURPOSE: To Repeat Test 1.

PROCEDURE: Perform a standard two product cleaner test.

FEED: 4 kg of Mitchell Year 0 to 5 Composite ore ground to a nominal 124μm K_{80}.
Bulk Regrind Discharge - 17μm K_{80}.
Pyrite Rougher Concentrate - 68μm K_{80}.

FLOWSHEET: 2

Stage	Reagents Added g/tonne						Time (minutes)			pH
	Lime	PE26	Fuel Oil	208	3418A	MIBC	Grind	Cond.	Float	
Primary Grind	500		10				15			10.5
BULK CIRCUIT:										
Rougher 1	-			3	3	8		1	3	10.5
Rougher 2	-			3	3	8		1	4	10.0
Regrind	400		50				12			11.5
Cleaner 1	0	20	0	4	4	8		1	4	11.5
Cleaner 2	√		10	3	3	8		1	3	11.5
Cleaner 3	√		10	2	2	8		1	2	11.5
Cleaner Scavenger			20	-	-	8		1	4	11.2
PYRITE CIRCUIT:					PAX					
Rougher 1				30	30	8		1	4	10.0
Rougher 2				30	30	8		1	4	9.8

Flotation Data	Rougher	Cleaner
Flotation Machine:	D2A	D1B
Cell Size in liters:	8.0	2.2
Aspiration:	Air	
Impeller Speed in rpm:	1100	1200

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M6-Mild	Stirred Mill
Charge/Material:	20kg-Mild	1.2kg-Beads
Water:	1500 ml	estimated

KM3080-04 Mitchell Year 0 to 5 Composite

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t				
	grams	%	Pb	Zn	As	Cd	Sb
Bulk Con	22.2	0.6	0.28	0.35	0.13	66	0.08

Note: Pb, Zn and Sb values are in percent, As and Cd values are in g/t.

KM3080-04 Mitchell Year 0 to 5 Composite

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Bulk Con	22.2	0.6	29.3	0.530	30.5	33.7	398	63.8	81.1	49.6	4.1	5.4	37.1	45.9
Bulk 3rd Clnr Tail	5.2	0.1	1.77	0.230	26.0	29.7	88	9.92	1.1	5.0	0.8	1.1	1.9	1.7
Bulk 2nd Clnr Tail	23.1	0.6	0.69	0.062	25.3	28.0	44	4.16	2.0	6.1	3.5	4.7	4.3	3.1
Bulk Clnr Scav Con	18.6	0.5	1.01	0.074	26.6	28.9	86	4.39	2.3	5.8	3.0	3.9	6.7	2.6
Bulk Clnr Scav Tail	183.5	4.6	0.13	0.010	28.5	31.5	16	2.64	3.0	7.8	31.5	41.6	12.3	15.7
Pyrite Ro Con	234.1	5.8	0.16	0.011	19.1	23.3	8.0	2.27	4.7	10.9	26.9	39.2	7.9	17.2
Pyrite Ro Tail	3532.9	87.9	0.01	0.001	1.4	0.17	2.0	0.12	5.7	14.9	30.2	4.2	29.7	13.7
Feed	4019.6	100	0.20	0.006	4.1	3.46	5.9	0.77	100	100	100	100	100	100

KM3080-04 Mitchell Year 0 to 5 Composite

Cumulative Metallurgical Balance

Cumulative	Cum. Weight		Assay - percent or g/t						Distribution - percent					
Product	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Product 1	22.2	0.6	29.3	0.530	30.5	33.7	398	63.8	81.1	49.6	4.1	5.4	37.1	45.9
Product 1 to 2	27.4	0.7	24.1	0.473	29.6	32.9	339	53.6	82.3	54.6	4.9	6.5	39.1	47.5
Product 1 to 3	50.5	1.3	13.4	0.285	27.7	30.7	204	31.0	84.3	60.7	8.4	11.1	43.3	50.7
Product 1 to 4	69.1	1.7	10.0	0.228	27.4	30.2	172	23.8	86.6	66.5	11.4	15.0	50.1	53.3
Product 1 to 5	252.6	6.3	2.84	0.070	28.2	31.1	59	8.43	89.6	74.3	42.9	56.6	62.4	69.0
Product 6	234.1	5.8	0.16	0.011	19.1	23.3	8.0	2.27	4.7	10.9	26.9	39.2	7.9	17.2
Product 7	3532.9	87.9	0.01	0.001	1.4	0.17	2.0	0.12	5.7	14.9	30.2	4.2	29.7	13.7
Feed	4019.6	100	0.20	0.006	4.1	3.46	5.9	0.77	100	100	100	100	100	100

DATE: August 30, 2011

PROJECT NO: KM3080-05

PURPOSE: To Repeat Test 2.

PROCEDURE: Perform a standard two product cleaner test.

FEED: 4 kg of Mitchell Year 0 to 10 Composite ore ground to a nominal 137μm K_{80}.
Bulk Regrind Discharge - 16μm K_{80}.
Pyrite Rougher Concentrate - 55μm K_{80}.

FLOWSHEET: 2

Stage	Reagents Added g/tonne						Time (minutes)			pH
	Lime	PE26	Fuel Oil	208	3418A	MIBC	Grind	Cond.	Float	
Primary Grind	500		10				17			10.5
BULK CIRCUIT:										
Rougher 1				3	3	0		1	3	10.5
Rougher 2				3	3	8		1	4	10.6
Regrind	400		50				12			11.5
Cleaner 1	-	20	0	4	4	8		1	4	11.5
Cleaner 2	√		10	3	3	8		1	3	11.5
Cleaner 3	√		10	2	2	0		1	2	11.5
Cleaner Scavenger			20	-	-	4		1	4	10.2
PYRITE CIRCUIT:					PAX					
Rougher 1				30	30	0		1	4	10.3
Rougher 2				30	30	8		1	4	10.6

Flotation Data	Rougher	Cleaner
Flotation Machine:	D2A	D1B
Cell Size in liters:	8.0	2.2
Aspiration:	Air	
Impeller Speed in rpm:	1100	1200

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M6-Mild	Stirred Mill
Charge/Material:	20kg-Mild	1.2kg-Beads
Water:	1500 ml	estimated

KM3080-05 Mitchell Year 0 to 10 Composite

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t				
	grams	%	Pb	Zn	As	Cd	Sb
Bulk Con	23.2	0.6	0.11	0.15	0.26	40	0.12

Note: Pb, Zn and Sb values are in percent, As and Cd values are in g/t.

KM3080-05 Mitchell Year 0 to 10 Composite

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Bulk Con	23.2	0.6	29.1	0.439	30.1	33.7	520	65.7	85.1	43.0	4.0	5.9	55.1	53.9
Bulk 3rd Clnr Tail	8.0	0.2	1.14	0.490	28.6	31.8	66	7.69	1.1	16.5	1.3	1.9	2.4	2.2
Bulk 2nd Clnr Tail	44.1	1.1	0.35	0.048	27.1	29.7	28	3.40	1.9	8.9	6.9	9.8	5.6	5.3
Bulk Clnr Scav Con	32.2	0.8	0.34	0.043	27.3	30.6	26	3.43	1.4	5.8	5.1	7.4	3.8	3.9
Bulk Clnr Scav Tail	174.2	4.3	0.07	0.008	28.7	32.0	11	2.11	1.6	6.2	28.9	41.7	8.8	13.0
Pyrite Ro Con	224.1	5.6	0.14	0.005	15.5	17.7	8.0	1.80	4.0	4.7	20.1	29.7	8.2	14.3
Pyrite Ro Tail	3502.9	87.4	0.01	0.001	1.7	0.14	1.0	0.06	4.9	14.8	33.8	3.6	16.0	7.5
Feed	4008.7	100	0.20	0.006	4.3	3.33	5.5	0.71	100	100	100	100	100	100

KM3080-05 Mitchell Year 0 to 10 Composite

Cumulative Metallurgical Balance

Cumulative	Cum. Weight		Assay - percent or g/t						Distribution - percent					
Product	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Product 1	23.2	0.6	29.1	0.439	30.1	33.7	520	65.7	85.1	43.0	4.0	5.9	55.1	53.9
Product 1 to 2	31.2	0.8	21.9	0.452	29.7	33.2	404	50.8	86.2	59.5	5.4	7.8	57.6	56.0
Product 1 to 3	75.3	1.9	9.29	0.215	28.2	31.2	184	23.0	88.2	68.4	12.3	17.6	63.2	61.3
Product 1 to 4	107.5	2.7	6.61	0.164	27.9	31.0	136	17.2	89.6	74.3	17.3	24.9	67.0	65.2
Product 1 to 5	281.7	7.0	2.57	0.068	28.4	31.6	59	7.86	91.2	80.5	46.2	66.7	75.8	78.2
Product 6	224.1	5.6	0.14	0.005	15.5	17.7	8.0	1.80	4.0	4.7	20.1	29.7	8.2	14.3
Product 7	3502.9	87.4	0.01	0.001	1.7	0.14	1.0	0.06	4.9	14.8	33.8	3.6	16.0	7.5
Feed	4008.7	100	0.20	0.006	4.3	3.33	5.5	0.71	100	100	100	100	100	100

DATE: August 30, 2011

PROJECT NO: KM3080-06

PURPOSE: To Repeat Test 3.

PROCEDURE: Perform a standard two product cleaner test.

FEED: 4 kg of Mitchell Year 0 to 20 Composite ore ground to a nominal 123μm K_{80}.
Bulk Regrind Discharge - 14μm K_{80}.
Pyrite Rougher Concentrate - 104μm K_{80}.

FLOWSHEET: 2

Stage	Reagents Added g/tonne						Time (minutes)			pH
	Lime	PE26	Fuel Oil	208	3418A	MIBC	Grind	Cond.	Float	
Primary Grind	500		10				18			10.9
BULK CIRCUIT:										
Rougher 1				3	3	8		1	3	10.9
Rougher 2				3	3	-		1	4	10.6
Regrind	400		50				12			11.8
Cleaner 1	-	20	0	4	4	8		1	4	11.8
Cleaner 2	√		10	3	3	8		1	3	11.5
Cleaner 3	√		10	2	2	8		1	2	11.5
Cleaner Scavenger			20					1	4	11.5
PYRITE CIRCUIT:					PAX					
Rougher 1				30	30	-		1	4	10.3
Rougher 2				30	30	-		1	4	9.9

Flotation Data	Rougher	Cleaner
Flotation Machine:	D2A	D1B
Cell Size in liters:	8.0	2.2
Aspiration:	Air	
Impeller Speed in rpm:	1100	1200

Grinding Data	Primary Grind	Bulk Regrind
Mill:	M6-Mild	Stirred Mill
Charge/Material:	20kg-Mild	1.2kg-Beads
Water:	1500 ml	estimated

KM3080-06 Mitchell Year 0 to 20 Composite

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t				
	grams	%	Pb	Zn	As	Cd	Sb
Bulk Con	25.5	0.6	0.21	0.70	0.04	14	0.01

Note: Pb, Zn and Sb values are in percent, As and Cd values are in g/t.

KM3080-06 Mitchell Year 0 to 20 Composite

Overall Metallurgical Balance

Product	Weight		Assay - percent or g/t						Distribution - percent					
	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Bulk Con	25.5	0.6	27.2	0.358	28.8	32.7	240	55.9	81.0	36.4	3.8	6.1	38.6	48.9
Bulk 3rd Clnr Tail	5.5	0.1	2.97	0.400	23.6	24.9	78	9.26	1.9	8.8	0.7	1.0	2.7	1.7
Bulk 2nd Clnr Tail	22.1	0.6	1.39	0.125	22.3	24.4	46	4.27	3.6	11.0	2.6	4.0	6.4	3.2
Bulk Clnr Scav Con	13.2	0.3	2.26	0.180	24.2	26.0	68	5.12	3.5	9.5	1.7	2.5	5.7	2.3
Bulk Clnr Scav Tail	112.1	2.8	0.29	0.027	26.2	27.6	16	1.95	3.8	12.1	15.2	22.7	11.3	7.5
Pyrite Ro Con	262.8	6.6	0.11	0.008	29.1	31.4	8.0	2.84	3.4	8.3	39.6	60.5	13.2	25.6
Pyrite Ro Tail	3515.1	88.8	0.01	0.001	2.0	0.13	1.0	0.09	2.9	14.0	36.4	3.2	22.1	10.7
Feed	3956.3	100	0.22	0.006	4.9	3.45	4.0	0.74	100	100	100	100	100	100

KM3080-06 Mitchell Year 0 to 20 Composite

Cumulative Metallurgical Balance

Cumulative	Cum. Weight		Assay - percent or g/t						Distribution - percent					
Product	grams	%	Cu	Mo	Fe	S	Ag	Au	Cu	Mo	Fe	S	Ag	Au
Product 1	25.5	0.6	27.2	0.358	28.8	32.7	240	55.9	81.0	36.4	3.8	6.1	38.6	48.9
Product 1 to 2	31.0	0.8	22.9	0.366	27.9	31.3	211	47.6	82.9	45.2	4.5	7.1	41.3	50.7
Product 1 to 3	53.1	1.3	13.9	0.266	25.6	28.4	142	29.6	86.5	56.2	7.0	11.1	47.7	53.9
Product 1 to 4	66.3	1.7	11.6	0.249	25.3	28.0	128	24.7	90.0	65.7	8.7	13.6	53.3	56.2
Product 1 to 5	178.4	4.5	4.50	0.109	25.9	27.7	57	10.4	93.8	77.7	23.9	36.3	64.6	63.7
Product 6	262.8	6.6	0.11	0.008	29.1	31.4	8.0	2.84	3.4	8.3	39.6	60.5	13.2	25.6
Product 7	3515.1	88.8	0.01	0.001	2.0	0.13	1.0	0.09	2.9	14.0	36.4	3.2	22.1	10.7
Feed	3956.3	100	0.22	0.006	4.9	3.45	4.0	0.74	100	100	100	100	100	100

DATE: September 6, 2011

PROJECT NO: KM3080-07

PURPOSE: Preliminary Leach on Test 1 Bulk Cleaner Scavenger Tail.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hrs
1,000 ppm NaCN
28 g/L Carbon
Carbon soaked for 16 hrs in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 210 g Test 1 Bulk Cleaner Scavenger Tail.

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.4	-	6.10
Aeration	16									0.69
Leach 1	6	0.42	0.40	0.16	0.00	0.26	0.40	11.0	12.00	4.10
Leach 2	24	0.26	0.08	0.14	0.00	0.28	0.08	11.0	-	1.14
Total	24	0.68	0.48	0.14	0.00	0.54	0.48	-	-	-

Mass of Sample	210
Volume of Water	420
Pulp Density	33

NaCN Addition	3.2 kg/tonne
Lime Addition	2.3 kg/tonne

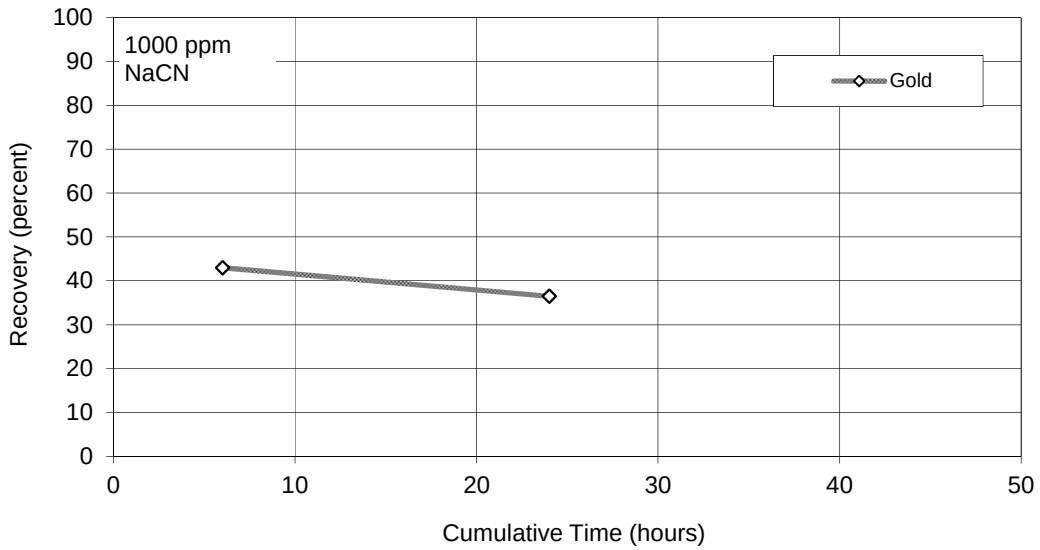
NaCN Consumption	2.6 kg/tonne
Lime Consumption	2.3 kg/tonne

KM3080-07 Test 1 Bulk Cleaner Scavenger Tail
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Distribution - percent
				Gold	Gold
Carbon (24 hour)	24	13.2	g	8.3	35.4
Cyanide Liquor (24 hr)	24	420.0	ml	0.02	2.7
Cyanide Tails (6 hr)	6	18.0	g	0.84	4.9
Cyanidation Tails (24hr)	24	188.6	g	0.94	57.0
Calculated Feed		210	g	1.47	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Recovery - percent
				Gold	Gold
Cyanide Tails (6 hr)	6	210.0	g	0.84	43.0
Cyanidation Tails (24hr)	24	210.0	g	0.94	36.5
Calculated Feed		210	g	1.47	



DATE: September 6, 2011

PROJECT NO: KM3080-08

PURPOSE: Preliminary Leach on Test 2 Bulk Cleaner Scavenger Tail.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hrs
1,000 ppm NaCN
28 g/L Carbon
Carbon soaked for 16 hrs in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 210 g Test 2 Bulk Cleaner Scavenger Tail.

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.5	-	5.66
Aeration	16									0.44
Leach 1	6	0.42	0.39	0.17	0.00	0.25	0.39	11.0	12.00	3.21
Leach 2	24	0.25	0.11	0.20	0.01	0.22	0.10	11.0	-	2.52
Total	24	0.67	0.50	0.20	0.01	0.47	0.49	-	-	-

Mass of Sample	210
Volume of Water	420
Pulp Density	33

NaCN Addition	3.2 kg/tonne
Lime Addition	2.4 kg/tonne

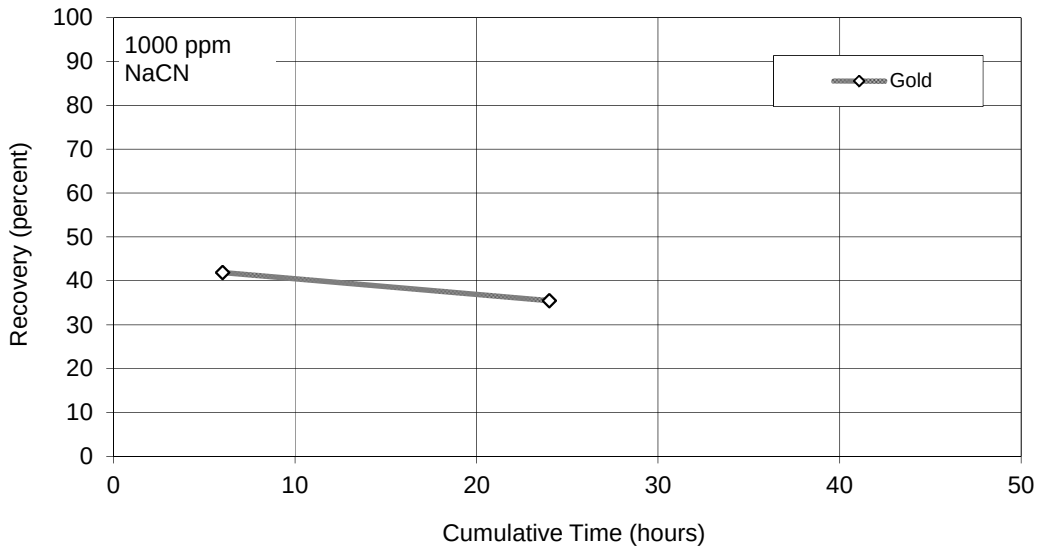
NaCN Consumption	2.2 kg/tonne
Lime Consumption	2.3 kg/tonne

KM3080-08 Test 2 Bulk Cleaner Scavenger Tail
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Distribution - percent
				Gold	Gold
Carbon (24 hour)	24	12.7	g	9.4	34.9
Cyanide Liquor (24 hr)	24	420.0	ml	0.02	2.4
Cyanide Tails (6 hr)	6	28.2	g	0.95	7.8
Cyanidation Tails (24hr)	24	178.7	g	1.06	54.9
Calculated Feed		210	g	1.64	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Recovery - percent
				Gold	Gold
Cyanide Tails (6 hr)	6	210.0	g	0.95	41.9
Cyanidation Tails (24hr)	24	210.0	g	1.06	35.5
Calculated Feed		210	g	1.64	



DATE: September 6, 2011

PROJECT NO: KM3080-09

PURPOSE: Preliminary Leach on Test 3 Bulk Cleaner Scavenger Tail.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hrs
1,000 ppm NaCN
28 g/L Carbon
Carbon soaked for 16 hrs in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 170 g Test 3 Bulk Cleaner Scavenger Tail.

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.4	-	4.78
Aeration	16									0.40
Leach 1	6	0.34	0.45	0.14	0.01	0.20	0.44	11.0	9.50	3.33
Leach 2	24	0.20	0.03	0.14	0.00	0.20	0.04	11.0	-	1.64
Total	24	0.54	0.48	0.14	0.00	0.40	0.48	-	-	-

Mass of Sample	170
Volume of Water	340
Pulp Density	33

NaCN Addition	3.2 kg/tonne
Lime Addition	2.8 kg/tonne

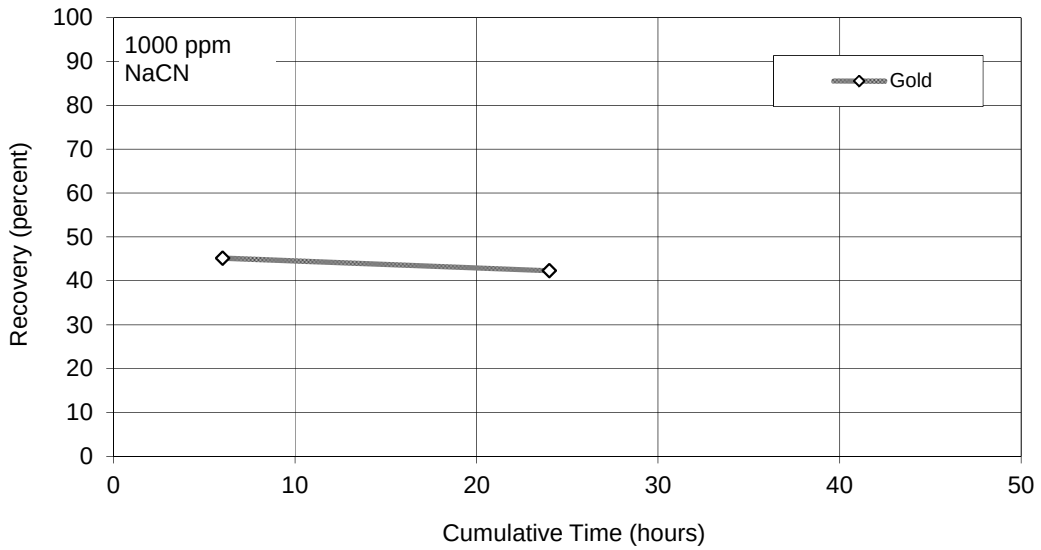
NaCN Consumption	2.4 kg/tonne
Lime Consumption	2.8 kg/tonne

KM3080-09 Test 3 Bulk Cleaner Scavenger Tail
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Distribution - percent
				Gold	Gold
Carbon (24 hour)	24	9.6	g	7.6	39.7
Cyanide Liquor (24 hr)	24	340.0	ml	0.02	3.7
Cyanide Tails (6 hr)	6	19.1	g	0.59	6.2
Cyanidation Tails (24hr)	24	148.7	g	0.62	50.4
Calculated Feed		170	g	1.08	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Recovery - percent
				Gold	Gold
Cyanide Tails (6 hr)	6	170.0	g	0.59	45.2
Cyanidation Tails (24hr)	24	170.0	g	0.62	42.3
Calculated Feed		170	g	1.08	



DATE: September 6, 2011

PROJECT NO: KM3080-10

PURPOSE: Preliminary Leach on Test 4 Bulk Cleaner Scavenger Tail.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hrs
1,000 ppm NaCN
28 g/L Carbon
Carbon soaked for 16 hrs in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 160 g Test 4 Bulk Cleaner Scavenger Tail.

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.3	-	2.81
Aeration	16									0.41
Leach 1	6	0.32	0.45	0.08	0.01	0.24	0.44	11.0	9.00	2.81
Leach 2	24	0.24	0.00	0.08	0.00	0.24	0.01	11.0	-	5.73
Total	24	0.56	0.45	0.08	0.00	0.48	0.45	-	-	-

Mass of Sample	160
Volume of Water	320
Pulp Density	33

NaCN Addition	3.5 kg/tonne
Lime Addition	2.8 kg/tonne

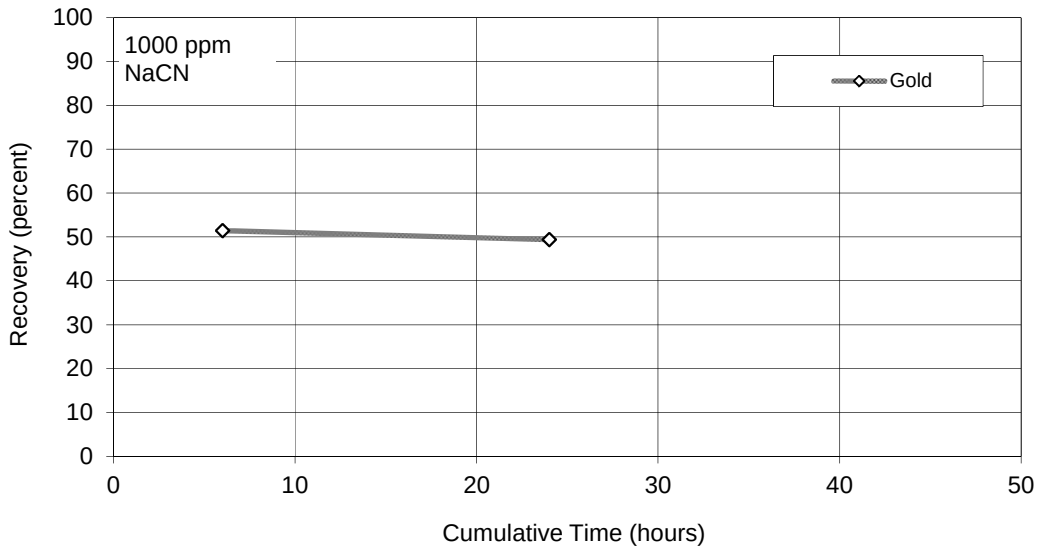
NaCN Consumption	3.0 kg/tonne
Lime Consumption	2.8 kg/tonne

KM3080-10 Test 4 Bulk Cleaner Scavenger Tail
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Distribution - percent
				Gold	Gold
Carbon (24 hour)	24	9.6	g	18.1	49.6
Cyanide Liquor (24 hr)	24	320.0	ml	0.01	0.9
Cyanide Tails (6 hr)	6	16.2	g	1.06	4.9
Cyanidation Tails (24hr)	24	140.8	g	1.11	44.5
Calculated Feed		160	g	2.19	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Recovery - percent
				Gold	Gold
Cyanide Tails (6 hr)	6	160.0	g	1.06	51.5
Cyanidation Tails (24hr)	24	160.0	g	1.11	49.4
Calculated Feed		160	g	2.19	



DATE: September 6, 2011

PROJECT NO: KM3080-11

PURPOSE: Preliminary Leach on Test 5 Bulk Cleaner Scavenger Tail.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hrs
1,000 ppm NaCN
28 g/L Carbon
Carbon soaked for 16 hrs in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 150 g Test 5 Bulk Cleaner Scavenger Tail.

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	5.9	-	0.86
Aeration	16									0.48
Leach 1	6	0.30	0.47	0.11	0.01	0.19	0.46	11.0	8.00	2.59
Leach 2	24	0.19	0.00	0.13	0.00	0.17	0.01	11.0	-	1.66
Total	24	0.49	0.47	0.13	0.00	0.36	0.47	-	-	-

Mass of Sample	150
Volume of Water	300
Pulp Density	33

NaCN Addition	3.3 kg/tonne
Lime Addition	3.1 kg/tonne

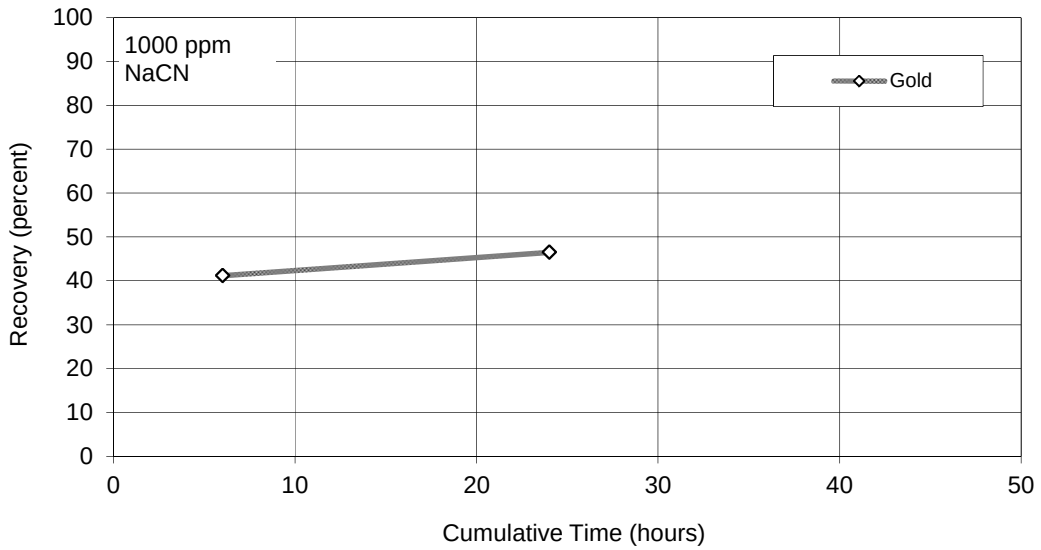
NaCN Consumption	2.4 kg/tonne
Lime Consumption	3.1 kg/tonne

KM3080-11 Test 5 Bulk Cleaner Scavenger Tail
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Distribution - percent
				Gold	Gold
Carbon (24 hour)	24	8.1	g	14.4	45.4
Cyanide Liquor (24 hr)	24	300.0	ml	0.01	1.2
Cyanide Tails (6 hr)	6	21.7	g	1.01	8.5
Cyanidation Tails (24hr)	24	126.0	g	0.92	44.9
Calculated Feed		150	g	1.72	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Recovery - percent
				Gold	Gold
Cyanide Tails (6 hr)	6	150.0	g	1.01	41.2
Cyanidation Tails (24hr)	24	150.0	g	0.92	46.6
Calculated Feed		150	g	1.72	



DATE: September 6, 2011

PROJECT NO: KM3080-12

PURPOSE: Preliminary Leach on Test 6 Bulk Cleaner Scavenger Tail.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hrs
1,000 ppm NaCN
28 g/L Carbon
Carbon soaked for 16 hrs in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 90 g Test 6 Bulk Cleaner Scavenger Tail.

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.5	-	3.60
Aeration	16									0.36
Leach 1	6	0.20	0.46	0.03	0.02	0.17	0.44	11.0	6.00	2.21
Leach 2	24	0.17	0.00	0.03	0.01	0.17	0.01	11.0	-	5.75
Total	24	0.37	0.46	0.03	0.01	0.34	0.45	-	-	-

Mass of Sample	90
Volume of Water	200
Pulp Density	31

NaCN Addition	4.1 kg/tonne
Lime Addition	5.1 kg/tonne

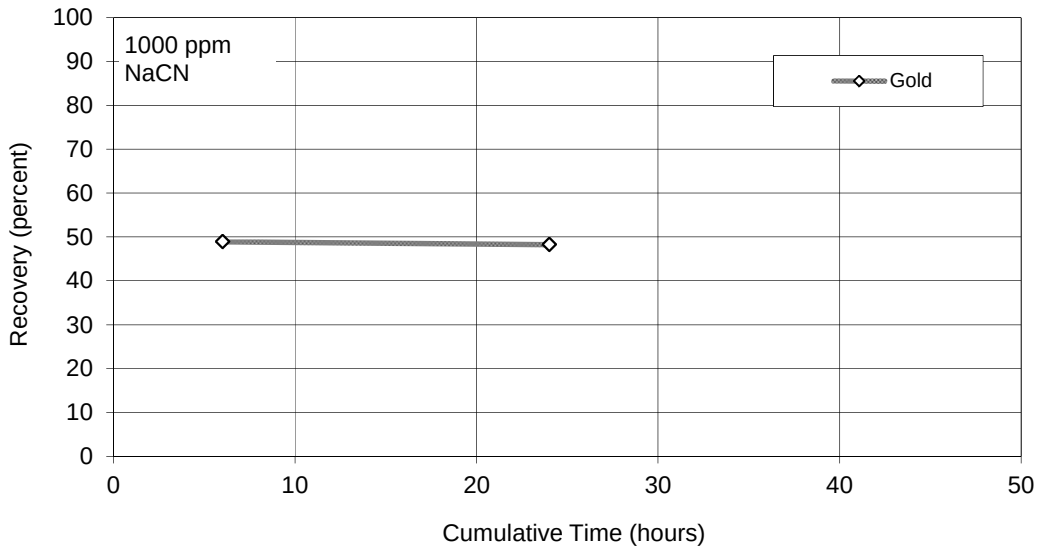
NaCN Consumption	3.8 kg/tonne
Lime Consumption	5.0 kg/tonne

KM3080-12 Test 6 Bulk Cleaner Scavenger Tail
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Distribution - percent
				Gold	Gold
Carbon (24 hour)	24	6.4	g	10.8	47.3
Cyanide Liquor (24 hr)	24	200.0	ml	0.01	1.4
Cyanide Tails (6 hr)	6	13.4	g	0.83	7.6
Cyanidation Tails (24hr)	24	76.1	g	0.84	43.7
Calculated Feed		90	g	1.62	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Recovery - percent
				Gold	Gold
Cyanide Tails (6 hr)	6	90.0	g	0.83	48.9
Cyanidation Tails (24hr)	24	90.0	g	0.84	48.3
Calculated Feed		90	g	1.62	



DATE: September 7, 2011

PROJECT NO: KM3080-13

PURPOSE: Preliminary Leach on Test 1 Pyrite Rougher Concentrate.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hrs
1,000 ppm NaCN
28 g/L Carbon
Carbon soaked for 16 hrs in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 225 g Test 1 Pyrite Rougher Concentrate ground to a nominal 12µm $K_{80.}$

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.5	-	3.31
Aeration	16									0.57
Leach 1	6	0.45	0.61	0.09	0.00	0.36	0.61	11.0	13.00	1.30
Leach 2	24	0.36	0.14	0.14	0.00	0.31	0.14	11.0	-	2.95
Total	24	0.81	0.75	0.14	0.00	0.67	0.75	-	-	-

Mass of Sample	225
Volume of Water	450
Pulp Density	33

NaCN Addition	3.6 kg/tonne
Lime Addition	3.3 kg/tonne

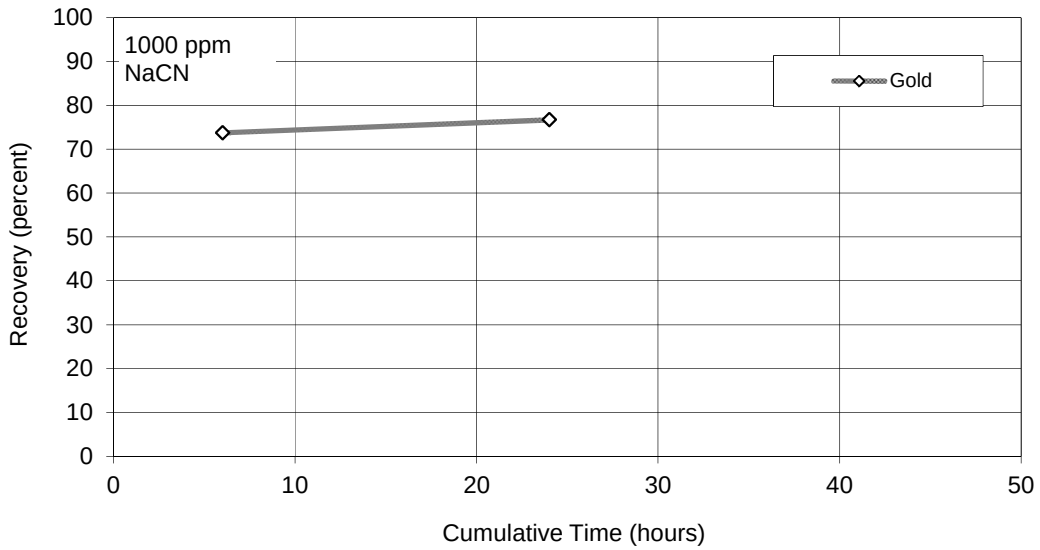
NaCN Consumption	3.0 kg/tonne
Lime Consumption	3.3 kg/tonne

KM3080-13 Test 1 Pyrite Rougher Concentrate
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Distribution - percent Gold
Carbon (24 hour)	24	13.4	g	20.7	73.4
Cyanide Liquor (24 hr)	24	450.0	ml	0.02	2.4
Cyanide Tails (6 hr)	6	37.7	g	0.44	4.4
Cyanidation Tails (24hr)	24	192.0	g	0.39	19.8
Calculated Feed		225	g	1.68	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Recovery - percent Gold
Cyanide Tails (6 hr)	6	225.0	g	0.44	73.8
Cyanidation Tails (24hr)	24	225.0	g	0.39	76.7
Calculated Feed		225	g	1.68	



DATE: September 7, 2011

PROJECT NO: KM3080-14

PURPOSE: Preliminary Leach on Test 2 Pyrite Rougher Concentrate.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hrs
1,000 ppm NaCN
28 g/L Carbon
Carbon soaked for 16 hrs in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 205g Test 2 Pyrite Rougher Concentrate ground to a nominal 10μm $K_{80.}$

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	8.0	-	3.04
Aeration	16									0.41
Leach 1	6	0.48	0.72	0.12	0.00	0.36	0.72	11.0	13.50	1.16
Leach 2	24	0.36	0.12	0.14	0.00	0.34	0.12	11.0	-	2.49
Total	24	0.84	0.84	0.14	0.00	0.70	0.84	-	-	-

Mass of Sample	205
Volume of Water	480
Pulp Density	30

NaCN Addition	4.1 kg/tonne
Lime Addition	4.1 kg/tonne

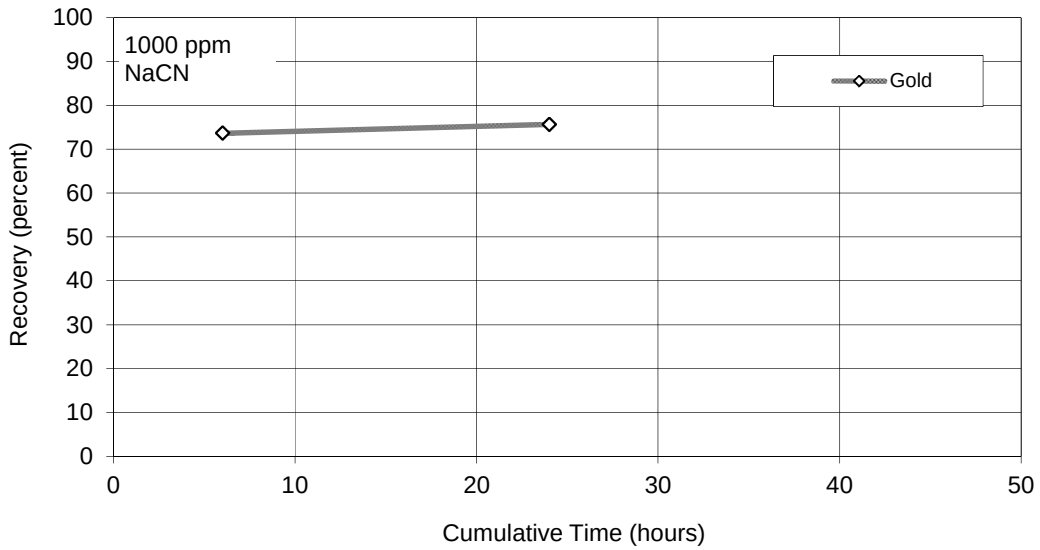
NaCN Consumption	3.4 kg/tonne
Lime Consumption	4.1 kg/tonne

KM3080-14 Test 2 Pyrite Rougher Concentrate
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Distribution - percent Gold
Carbon (24 hour)	24	14.9	g	14.5	71.1
Cyanide Liquor (24 hr)	24	480.0	ml	0.02	3.2
Cyanide Tails (6 hr)	6	34.2	g	0.39	4.4
Cyanidation Tails (24hr)	24	179.9	g	0.36	21.3
Calculated Feed		205	g	1.48	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Recovery - percent Gold
Cyanide Tails (6 hr)	6	205.0	g	0.39	73.7
Cyanidation Tails (24hr)	24	205.0	g	0.36	75.7
Calculated Feed		205	g	1.48	



DATE: September 7, 2011

PROJECT NO: KM3080-15

PURPOSE: Preliminary Leach on Test 3 Pyrite Rougher Concentrate.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hrs
1,000 ppm NaCN
28 g/L Carbon
Carbon soaked for 16 hrs in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 235 g Test 3 Pyrite Rougher Concentrate ground to a nominal 12µm $K_{80.}$

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.6	-	1.60
Aeration	16									0.37
Leach 1	6	0.47	0.99	0.13	0.02	0.34	0.97	11.0	13.00	1.21
Leach 2	24	0.34	0.00	0.14	0.00	0.33	0.02	11.0	-	2.47
Total	24	0.81	0.99	0.14	0.00	0.67	0.99	-	-	-

Mass of Sample	235
Volume of Water	470
Pulp Density	33

NaCN Addition	3.4 kg/tonne
Lime Addition	4.2 kg/tonne

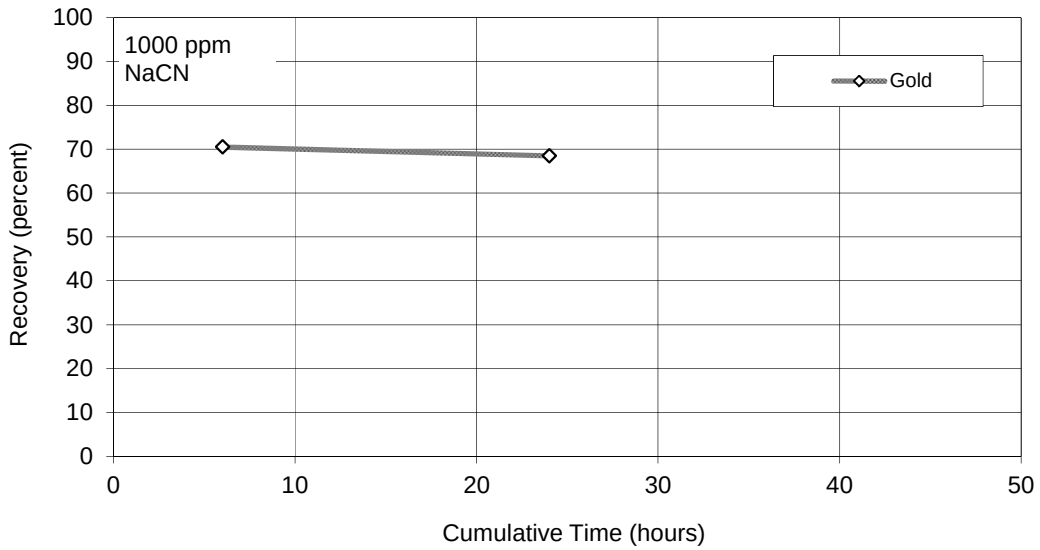
NaCN Consumption	2.9 kg/tonne
Lime Consumption	4.2 kg/tonne

KM3080-15 Test 3 Pyrite Rougher Concentrate
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Distribution - percent
				Gold	Gold
Carbon (24 hour)	24	15.0	g	15.2	66.6
Cyanide Liquor (24 hr)	24	470.0	ml	0.01	1.4
Cyanide Tails (6 hr)	6	34.4	g	0.43	4.3
Cyanidation Tails (24hr)	24	206.9	g	0.46	27.7
Calculated Feed		235	g	1.46	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Recovery - percent
				Gold	Gold
Cyanide Tails (6 hr)	6	235.0	g	0.43	70.6
Cyanidation Tails (24hr)	24	235.0	g	0.46	68.5
Calculated Feed		235	g	1.46	



DATE: September 7, 2011

PROJECT NO: KM3080-16

PURPOSE: Preliminary Leach on Test 4 Pyrite Rougher Concentrate.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hrs
1,000 ppm NaCN
28 g/L Carbon
Carbon soaked for 16 hrs in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 215 g Test 4 Pyrite Rougher Concentrate ground to a nominal 9µm $K_{80.}$

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.7	-	1.04
Aeration	16									0.35
Leach 1	6	0.45	0.98	0.05	0.01	0.40	0.97	11.0	13.00	1.31
Leach 2	24	0.40	0.00	0.06	0.00	0.39	0.01	11.0	-	1.43
Total	24	0.85	0.98	0.06	0.00	0.79	0.98	-	-	-

Mass of Sample	215
Volume of Water	450
Pulp Density	32

NaCN Addition	4.0 kg/tonne
Lime Addition	4.6 kg/tonne

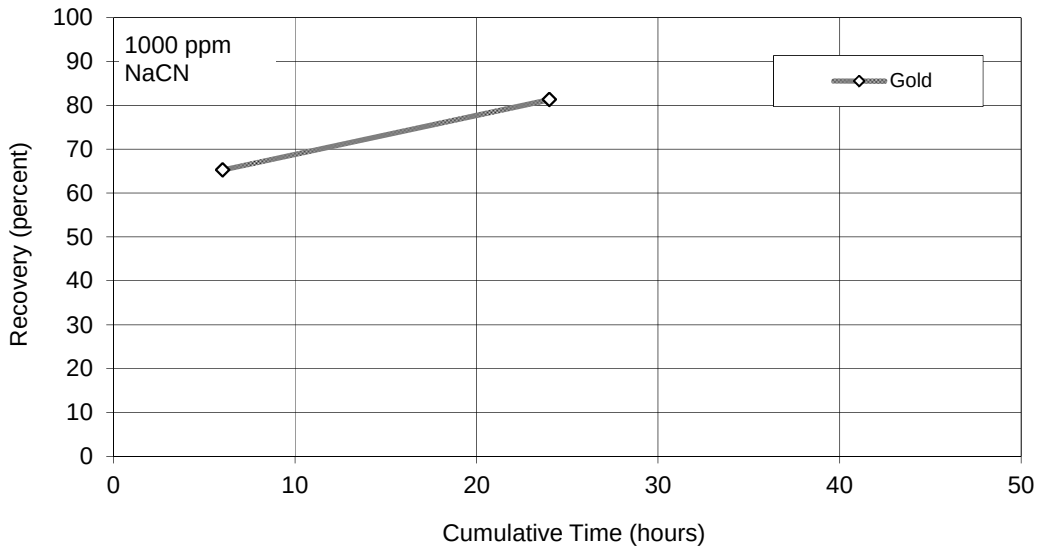
NaCN Consumption	3.7 kg/tonne
Lime Consumption	4.6 kg/tonne

KM3080-16 Test 4 Pyrite Rougher Concentrate
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Distribution - percent Gold
Carbon (24 hour)	24	13.3	g	23.4	77.1
Cyanide Liquor (24 hr)	24	450.0	ml	0.01	1.1
Cyanide Tails (6 hr)	6	32.9	g	0.65	5.3
Cyanidation Tails (24hr)	24	189.9	g	0.35	16.5
Calculated Feed		215	g	1.87	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Recovery - percent Gold
Cyanide Tails (6 hr)	6	215.0	g	0.65	65.3
Cyanidation Tails (24hr)	24	215.0	g	0.35	81.3
Calculated Feed		215	g	1.87	



DATE: September 7, 2011

PROJECT NO: KM3080-17

PURPOSE: Preliminary Leach on Test 5 Pyrite Rougher Concentrate.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hrs
1,000 ppm NaCN
28 g/L Carbon
Carbon soaked for 16 hrs in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 205 g Test 5 Pyrite Rougher Concentrate ground to a nominal 10µm $K_{80.}$

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.8	-	0.91
Aeration	16									0.34
Leach 1	6	0.47	0.69	0.12	0.01	0.35	0.68	11.0	13.00	1.74
Leach 2	24	0.35	0.03	0.11	0.00	0.36	0.04	11.0	-	2.95
Total	24	0.82	0.72	0.11	0.00	0.71	0.72	-	-	-

Mass of Sample	205
Volume of Water	470
Pulp Density	30

NaCN Addition	4.0 kg/tonne
Lime Addition	3.5 kg/tonne

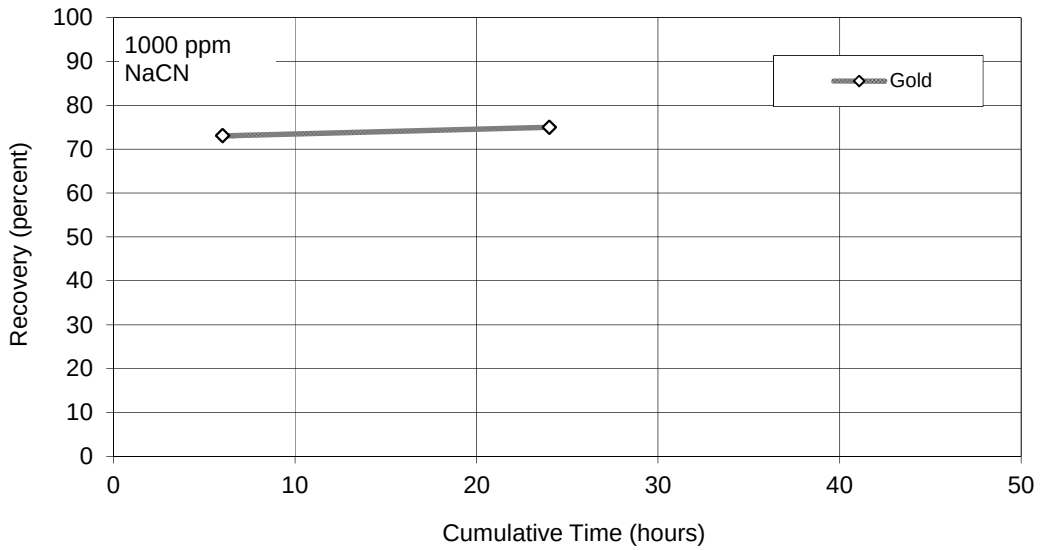
NaCN Consumption	3.5 kg/tonne
Lime Consumption	3.5 kg/tonne

KM3080-17 Test 5 Pyrite Rougher Concentrate
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Distribution - percent
				Gold	Gold
Carbon (24 hour)	24	12.8	g	18.2	72.8
Cyanide Liquor (24 hr)	24	470.0	ml	0.01	1.5
Cyanide Tails (6 hr)	6	26.1	g	0.42	3.4
Cyanidation Tails (24hr)	24	183.4	g	0.39	22.4
Calculated Feed		205	g	1.56	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Recovery - percent
				Gold	Gold
Cyanide Tails (6 hr)	6	205.0	g	0.42	73.1
Cyanidation Tails (24hr)	24	205.0	g	0.39	75.0
Calculated Feed		205	g	1.56	



DATE: September 7, 2011

PROJECT NO: KM3080-18

PURPOSE: Preliminary Leach on Test 6 Pyrite Rougher Concentrate.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hrs
1,000 ppm NaCN
28 g/L Carbon
Carbon soaked for 16 hrs in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 230 g Test 6 Pyrite Rougher Concentrate ground to a nominal 9µm $K_{80.}$

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.5	-	0.76
Aeration	16									0.33
Leach 1	6	0.46	0.89	0.03	0.01	0.43	0.88	11.0	13.00	0.53
Leach 2	24	0.43	0.16	0.03	0.01	0.43	0.16	11.0	-	0.53
Total	24	0.89	1.05	0.03	0.01	0.86	1.04	-	-	-

Mass of Sample	230
Volume of Water	460
Pulp Density	33

NaCN Addition	3.9 kg/tonne
Lime Addition	4.6 kg/tonne

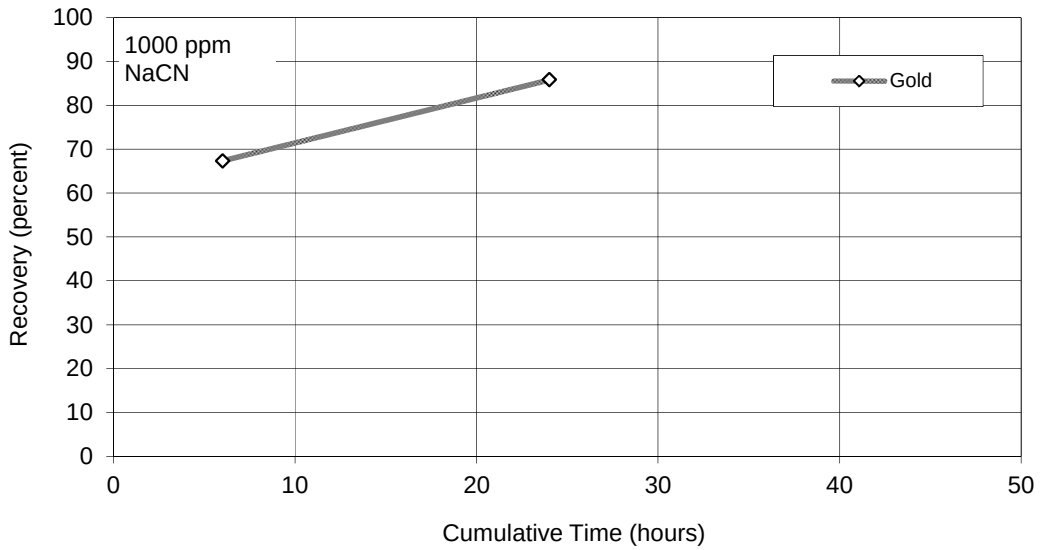
NaCN Consumption	3.7 kg/tonne
Lime Consumption	4.5 kg/tonne

KM3080-18 Test 6 Pyrite Rougher Concentrate
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Distribution - percent Gold
Carbon (24 hour)	24	14.2	g	27.3	82.0
Cyanide Liquor (24 hr)	24	460.0	ml	0.01	1.0
Cyanide Tails (6 hr)	6	30.0	g	0.67	4.3
Cyanidation Tails (24hr)	24	208.2	g	0.29	12.8
Calculated Feed		230	g	2.05	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Recovery - percent Gold
Cyanide Tails (6 hr)	6	230.0	g	0.67	67.4
Cyanidation Tails (24hr)	24	230.0	g	0.29	85.9
Calculated Feed		230	g	2.05	



DATE: September 20, 2011

PROJECT NO: KM3080-19

PURPOSE: Preliminary Leach on P5 Cleaner Tail & P3 Pyrite Concentrate Composite 1 Blend.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hrs
1,000 ppm NaCN
28 g/L Carbon
Carbon soaked for 16 hrs in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 500 g 50:50 P5 Cleaner Tail & P3 Pyrite Concentrate Composite 1 Blend.

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.6	-	3.37
Aeration	16									1.21
Leach 1	6	1.00	1.33	0.22	0.00	0.78	1.33	11.0	28.00	2.62
Leach 2	24	0.78	0.43	0.33	0.01	0.67	0.42	11.0	-	5.08
Total	24	1.78	1.76	0.33	0.01	1.45	1.75	-	-	-

Mass of Sample	500
Volume of Water	1000
Pulp Density	33

NaCN Addition	3.6 kg/tonne
Lime Addition	3.5 kg/tonne

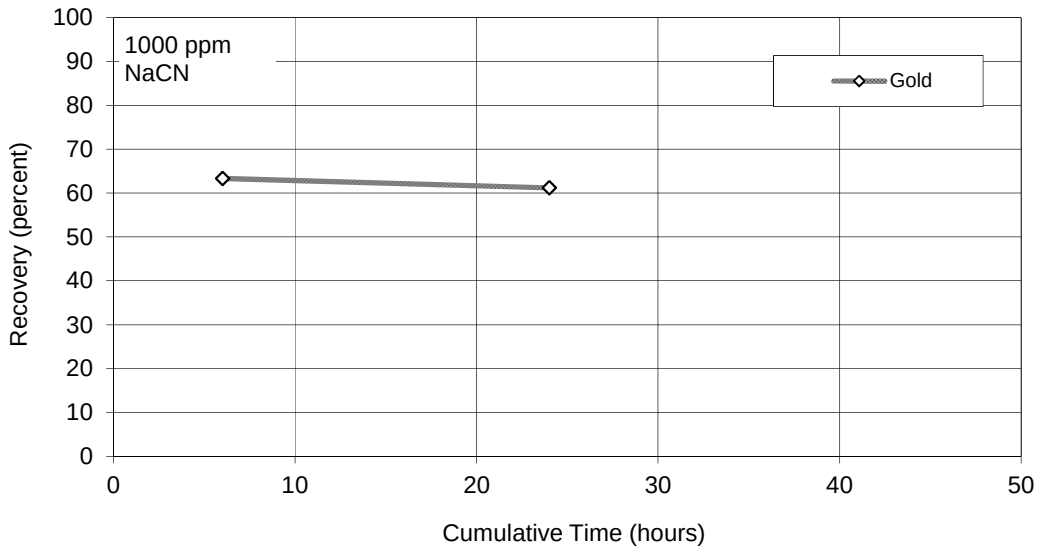
NaCN Consumption	2.9 kg/tonne
Lime Consumption	3.5 kg/tonne

KM3080-19 50:50 P5 Cleaner Tail & P3 Pyrite Concentrate Composite 1 Blend
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Distribution - percent
				Gold	Gold
Carbon (24 hour)	24	28.7	g	14.8	64.7
Cyanide Liquor (24 hr)	24	1000.0	ml	0.01	1.5
Cyanide Tails (6 hr)	6	27.0	g	0.48	2.0
Cyanidation Tails (24hr)	24	410.1	g	0.51	31.8
Calculated Feed		500	g	1.32	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Recovery - percent
				Gold	Gold
Cyanide Tails (6 hr)	6	500.0	g	0.48	63.4
Cyanidation Tails (24hr)	24	500.0	g	0.51	61.2
Calculated Feed		500	g	1.32	



DATE: September 20, 2011

PROJECT NO: KM3080-20

PURPOSE: Repeat Test 19

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hrs
1,000 ppm NaCN
28 g/L Carbon
Carbon soaked for 16 hrs in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 500 g 50:50 P5 Cleaner Tail & P3 Pyrite Concentrate Composite 1 Blend.

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.6	-	2.31
Aeration	16									0.50
Leach 1	6	1.00	1.35	0.19	0.00	0.81	1.35	11.0	28.00	2.82
Leach 2	24	0.81	0.45	0.31	0.01	0.69	0.44	11.0	-	3.58
Total	24	1.81	1.80	0.31	0.01	1.50	1.79	-	-	-

Mass of Sample	500
Volume of Water	1000
Pulp Density	33

NaCN Addition	3.6 kg/tonne
Lime Addition	3.6 kg/tonne

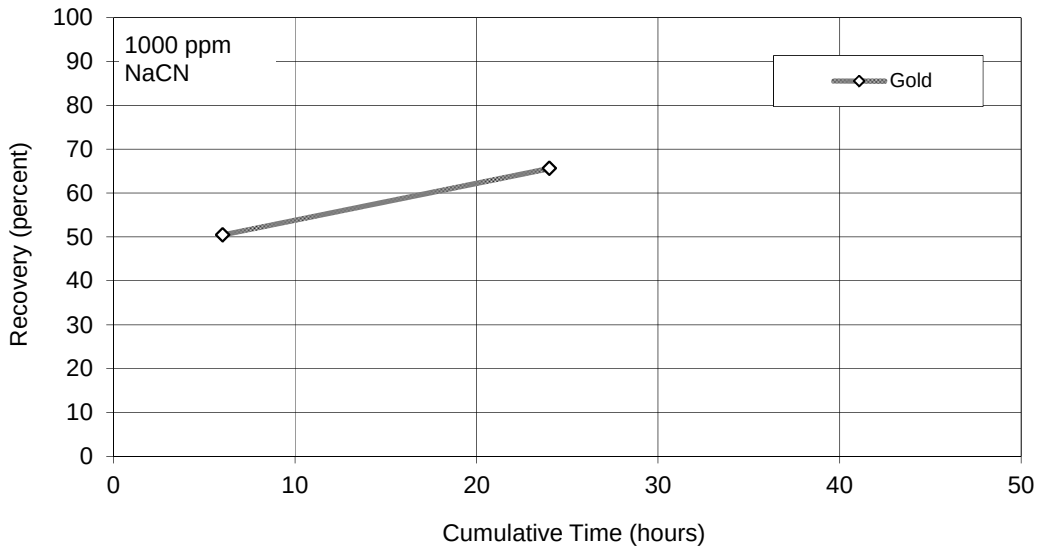
NaCN Consumption	3.0 kg/tonne
Lime Consumption	3.6 kg/tonne

KM3080-20 50:50 P5 Cleaner Tail & P3 Pyrite Concentrate Composite 1 Blend
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Distribution - percent
				Gold	Gold
Carbon (24 hour)	24	29.0	g	16.7	64.1
Cyanide Liquor (24 hr)	24	1000.0	ml	0.01	1.3
Cyanide Tails (6 hr)	6	40.0	g	0.75	4.0
Cyanidation Tails (24hr)	24	446.5	g	0.52	30.7
Calculated Feed		500	g	1.51	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Recovery - percent
				Gold	Gold
Cyanide Tails (6 hr)	6	500.0	g	0.75	50.5
Cyanidation Tails (24hr)	24	500.0	g	0.52	65.7
Calculated Feed		500	g	1.51	



DATE: September 20, 2011

PROJECT NO: KM3080-21

PURPOSE: Repeat Test 20.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hrs
1,000 ppm NaCN
28 g/L Carbon
Carbon soaked for 16 hrs in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 500 g 50:50 P5 Cleaner Tail & P3 Pyrite Concentrate Composite 1 Blend.

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.6	-	2.11
Aeration	16									0.52
Leach 1	6	1.00	1.42	0.19	0.00	0.81	1.42	11.0	28.00	2.77
Leach 2	24	0.81	0.40	0.32	0.01	0.68	0.39	11.0	-	3.70
Total	24	1.81	1.82	0.32	0.01	1.49	1.81	-	-	-

Mass of Sample	500
Volume of Water	1000
Pulp Density	33

NaCN Addition	3.6 kg/tonne
Lime Addition	3.6 kg/tonne

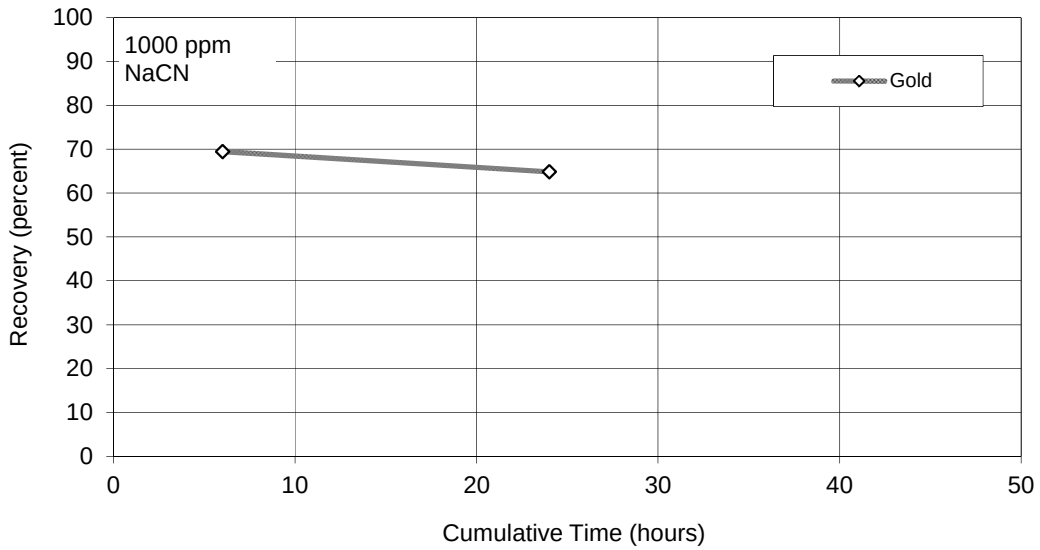
NaCN Consumption	3.0 kg/tonne
Lime Consumption	3.6 kg/tonne

KM3080-21 50:50 P5 Cleaner Tail & P3 Pyrite Concentrate Composite 1 Blend
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Distribution - percent
				Gold	Gold
Carbon (24 hour)	24	29.0	g	18.6	64.6
Cyanide Liquor (24 hr)	24	1000.0	ml	0.01	1.2
Cyanide Tails (6 hr)	6	47.6	g	0.51	2.9
Cyanidation Tails (24hr)	24	445.0	g	0.59	31.3
Calculated Feed		500	g	1.67	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Recovery - percent
				Gold	Gold
Cyanide Tails (6 hr)	6	500.0	g	0.51	69.5
Cyanidation Tails (24hr)	24	500.0	g	0.59	64.9
Calculated Feed		500	g	1.67	



DATE: October 11, 2011

PROJECT NO: KM3080-22

PURPOSE: Perform a Cyanide Leach on P5 Cleaner Tail Composite 1, maintaining CN level at 1,000 ppm until 6 hours, then decrease to 500 ppm for duration of test.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hrs
1,000 ppm NaCN
28 g/L Carbon
Carbon soaked for 16 hrs in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 1,000 g P5 Cleaner Tail Composite 1.

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.9	-	7.57
Aeration	16									0.4
Leach 1	2	2.00	3.19	0.54	0.02	1.46	3.17	11.0	56.00	2.59
Leach 2	6	1.46	0.69	1.22	0.04	0.78	0.67	11.0	-	1.66
Leach 3	12	0.00	0.36	0.78	0.04	0.44	0.36	11.0	-	1.51
Leach 4	16	0.22	0.10	0.88	0.04	0.12	0.10	11.0	-	1.67
Leach 5	24	0.12	0.00	0.50	0.04	0.50	0.00	11.0	-	3.29
Total	24	3.80	4.34	0.50	0.04	3.30	4.30	-	-	-

Mass of Sample	1000
Volume of Water	2000
Pulp Density	33

NaCN Addition	3.8 kg/tonne
Lime Addition	4.3 kg/tonne

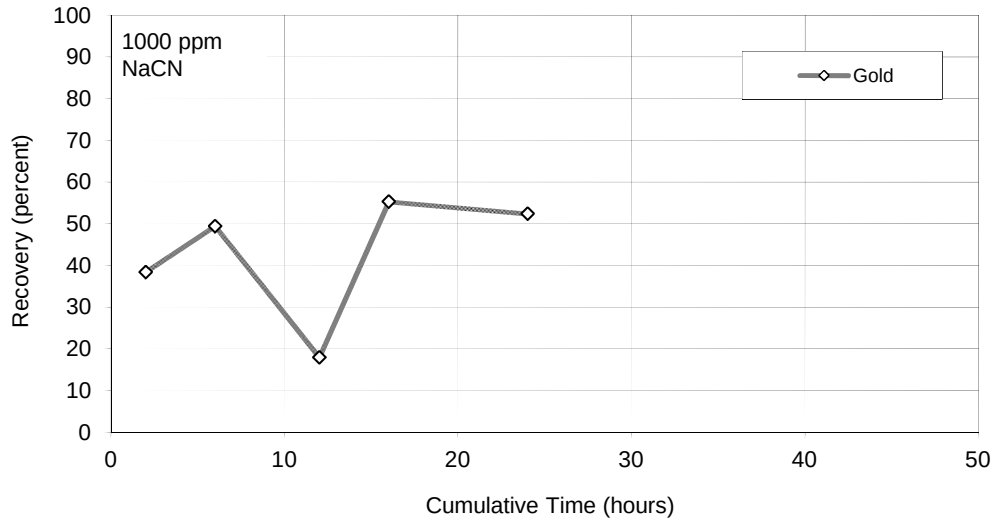
NaCN Consumption	3.3 kg/tonne
Lime Consumption	4.3 kg/tonne

KM3080-22 P5 Cleaner Tail Composite 1
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Distribution - percent
				Gold	Gold
Carbon (24 hour)	24	55.8	g	12.2	49.7
Cyanide Liquor (24 hr)	24	2000.0	ml	0.01	1.5
Cyanide Tails (2 hr)	2	17.4	g	0.84	1.1
Cyanide Tails (6 hr)	6	34.2	g	0.69	1.7
Cyanide Tails (12 hr)	12	52.3	g	1.12	4.3
Cyanide Tails (16 hr)	16	33.4	g	0.61	1.5
Cyanidation Tails (24hr)	24	845.8	g	0.65	40.2
Calculated Feed		1000	g	1.37	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Recovery - percent
				Gold	Gold
Cyanide Tails (2 hr)	2	1000.0	g	0.84	38.5
Cyanide Tails (6 hr)	6	1000.0	g	0.69	49.5
Cyanide Tails (12 hr)	12	1000.0	g	1.12	18.0
Cyanide Tails (16 hr)	16	1000.0	g	0.61	55.3
Cyanidation Tails (24hr)	24	1000.0	g	0.65	52.4
Calculated Feed		1000	g	1.37	



DATE: October 11, 2011

PROJECT NO: KM3080-23

PURPOSE: Perform a Cyanide Leach on P3 Pyrite Concentrate Composite 1, maintaining CN level at 1,000 ppm until 6 hours, then decrease to 500 ppm for duration of test.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hrs
1,000 ppm NaCN
28 g/L Carbon
Carbon soaked for 16 hrs in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 1000 g P3 Pyrite Concentrate Composite 1.

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	3.7	-	8.14
Aeration	16									0.38
Leach 1	2	2.00	13.28	0.42	1.16	1.58	12.12	11.0	56.00	0.71
Leach 2	6	1.58	0.00	1.38	1.16	0.62	0.00	11.5	-	1.13
Leach 3	12	0.00	0.00	1.06	1.16	0.32	0.00	11.5	-	0.43
Leach 4	16	0.00	0.00	0.90	1.16	0.16	0.00	11.6	-	0.97
Leach 5	24	0.10	0.00	0.86	0.09	0.14	1.07	11.8	-	1.18
Total	24	3.68	13.28	0.86	0.09	2.82	13.19	-	-	-

Mass of Sample	1000
Volume of Water	2000
Pulp Density	33

NaCN Addition	3.7	kg/tonne
Lime Addition	13.3	kg/tonne

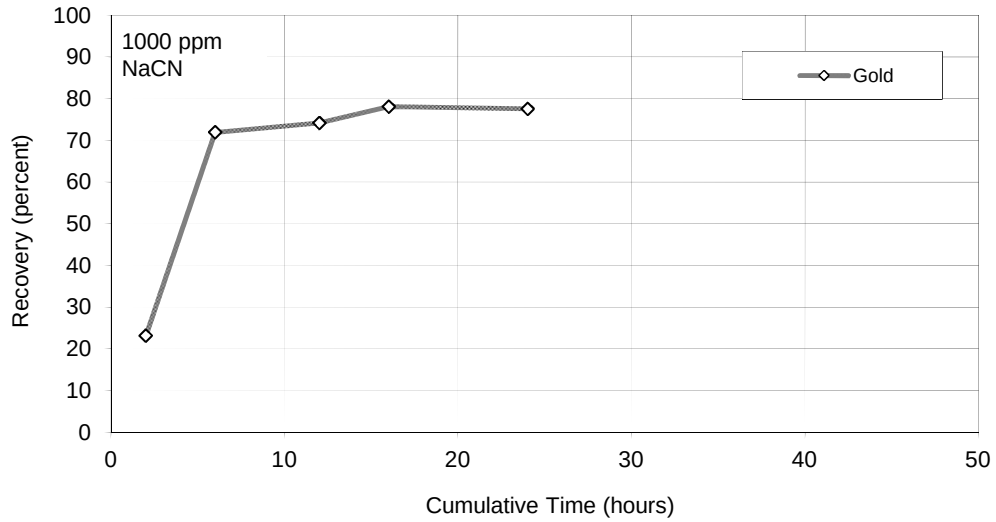
NaCN Consumption	2.8	kg/tonne
Lime Consumption	13.2	kg/tonne

KM3080-23 P3 Pyrite Concentrate Composite 1
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Distribution - percent
				Gold	Gold
Carbon (24 hour)	24	56.3	g	23.7	74.6
Cyanide Liquor (24 hr)	24	2000.0	ml	0.01	1.1
Cyanide Tails (2 hr)	2	27.5	g	1.37	2.1
Cyanide Tails (6 hr)	6	33.7	g	0.50	0.9
Cyanide Tails (12 hr)	12	55.8	g	0.46	1.4
Cyanide Tails (16 hr)	16	19.3	g	0.39	0.4
Cyanidation Tails (24hr)	24	864.1	g	0.40	19.4
Calculated Feed		1000	g	1.79	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Recovery - percent
				Gold	Gold
Cyanide Tails (2 hr)	2	1000.0	g	1.37	23.3
Cyanide Tails (6 hr)	6	1000.0	g	0.50	72.0
Cyanide Tails (12 hr)	12	1000.0	g	0.46	74.2
Cyanide Tails (16 hr)	16	1000.0	g	0.39	78.2
Cyanidation Tails (24hr)	24	1000.0	g	0.40	77.6
Calculated Feed		1000	g	1.79	



DATE: October 11, 2011

PROJECT NO: KM3080-24

PURPOSE: Perform a Cyanide Leach on 50:50 P5 Cleaner Tail & P3 Pyrite Concentrate Composite 1 Blend, maintaining CN level at 1,000 ppm until 6 hours, then decrease to 500ppm for duration of test.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hrs
1,000 ppm NaCN
28 g/L Carbon
Carbon soaked for 16 hrs in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 1000 g 50:50 P5 Cleaner Tail & P3 Pyrite Concentrate Composite 1 Blend.

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.2	-	1.07
Aeration	16									0.38
Leach 1	2	2.00	4.33	0.70	0.04	1.30	4.29	11.0	56.00	1.08
Leach 2	6	1.30	0.35	1.40	0.06	0.60	0.33	11.0	-	1.85
Leach 3	12	0.00	0.00	1.04	0.04	0.36	0.02	11.0	-	0.44
Leach 4	16	0.00	0.20	0.76	0.10	0.28	0.14	11.0	-	0.85
Leach 5	24	0.24	0.00	0.66	0.06	0.34	0.04	11.0	-	2.57
Total	24	3.54	4.88	0.66	0.06	2.88	4.82	-	-	-

Mass of Sample	1000
Volume of Water	2000
Pulp Density	33

NaCN Addition	3.5	kg/tonne
Lime Addition	4.9	kg/tonne

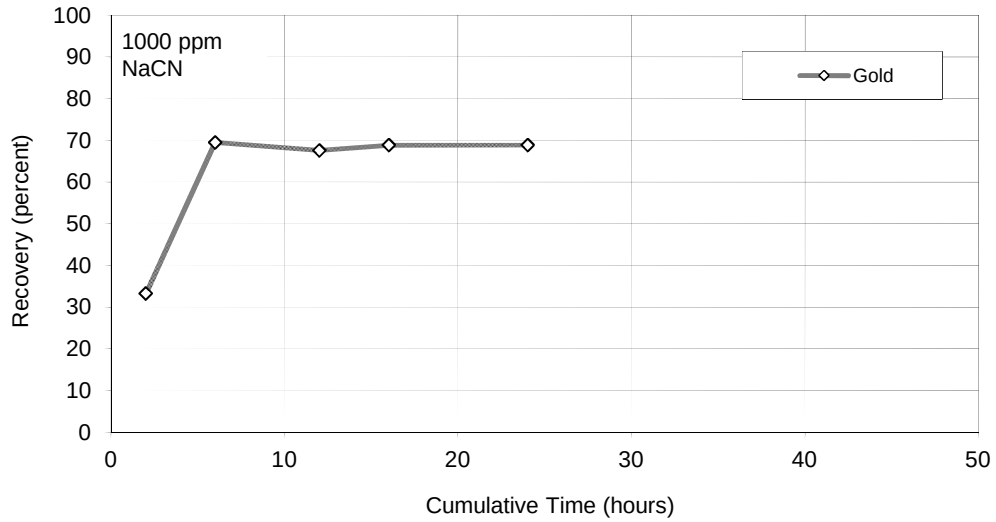
NaCN Consumption	2.9	kg/tonne
Lime Consumption	4.8	kg/tonne

KM3080-24 50:50 P5 Cleaner Tail & P3 Pyrite Concentrate Composite 1 Blend
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Distribution - percent
				Gold	Gold
Carbon (24 hour)	24	56.2	g	18.4	67.1
Cyanide Liquor (24 hr)	24	2000.0	ml	0.01	1.3
Cyanide Tails (2 hr)	2	29.4	g	1.03	2.0
Cyanide Tails (6 hr)	6	34.0	g	0.47	1.0
Cyanide Tails (12 hr)	12	31.3	g	0.50	1.0
Cyanide Tails (16 hr)	16	19.5	g	0.48	0.6
Cyanidation Tails (24hr)	24	868.7	g	0.48	27.0
Calculated Feed		1000	g	1.54	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Recovery - percent
				Gold	Gold
Cyanide Tails (2 hr)	2	1000.0	g	1.03	33.3
Cyanide Tails (6 hr)	6	1000.0	g	0.47	69.6
Cyanide Tails (12 hr)	12	1000.0	g	0.50	67.6
Cyanide Tails (16 hr)	16	1000.0	g	0.48	68.9
Cyanidation Tails (24hr)	24	1000.0	g	0.48	68.9
Calculated Feed		1000	g	1.54	



DATE: October 11, 2011

PROJECT NO: KM3080-25

PURPOSE: Perform a Cyanide Leach on P5 Cleaner Tail Composite 1, maintaining CN level at 1,000 ppm until 6 hours, then decrease to 500 ppm until 16 hours, then decrease for remainder of test.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hrs
1,000 ppm NaCN
28 g/L Carbon
Carbon soaked for 16 hrs in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 1,000 g P5 Cleaner Tail Composite 1.

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	8.0	-	5.52
Aeration	16									0.41
Leach 1	2	2.00	3.88	0.66	0.06	1.34	3.82	11.0	56.00	1.14
Leach 2	6	1.34	0.00	1.20	0.04	0.80	0.02	11.0	-	1.71
Leach 3	12	0.00	0.42	0.82	0.06	0.38	0.40	11.0	-	0.45
Leach 4	16	0.18	0.06	0.80	0.06	0.20	0.06	11.0	-	0.43
Leach 5	24	0.00	0.00	0.50	0.04	0.30	0.02	11.0	-	1.70
Total	24	3.52	4.36	0.50	0.04	3.02	4.32	-	-	-

Mass of Sample	1000
Volume of Water	2000
Pulp Density	33

NaCN Addition	3.5 kg/tonne
Lime Addition	4.4 kg/tonne

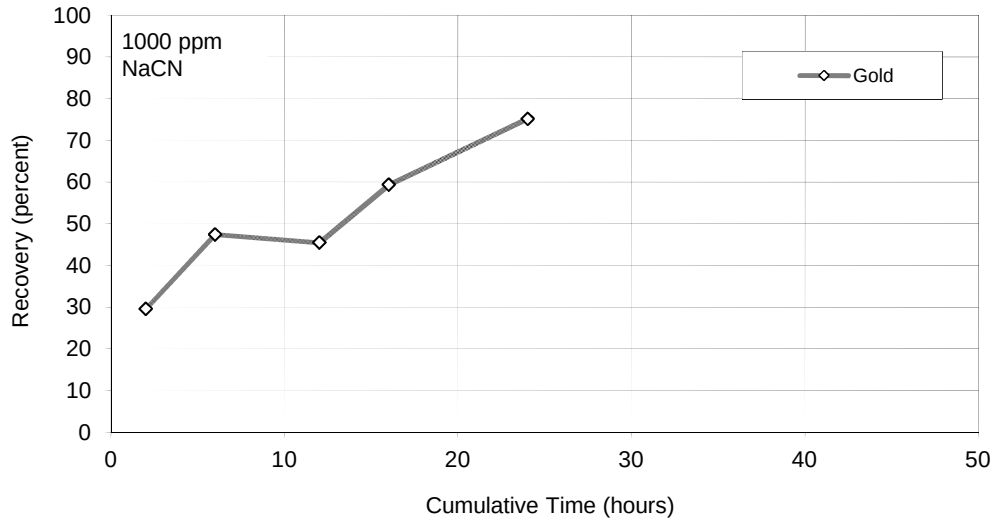
NaCN Consumption	3.0 kg/tonne
Lime Consumption	4.3 kg/tonne

KM3080-25 P5 Cleaner Tail Composite 1
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Distribution - percent
				Gold	Gold
Carbon (24 hour)	24	56.1	g	12.7	70.4
Cyanide Liquor (24 hr)	24	2000.0	ml	0.01	2.0
Cyanide Tails (2 hr)	2	29.1	g	0.71	2.0
Cyanide Tails (6 hr)	6	38.2	g	0.53	2.0
Cyanide Tails (12 hr)	12	22.3	g	0.55	1.2
Cyanide Tails (16 hr)	16	16.1	g	0.41	0.7
Cyanidation Tails (24hr)	24	876.7	g	0.25	21.7
Calculated Feed		1000	g	1.01	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Recovery - percent
				Gold	Gold
Cyanide Tails (2 hr)	2	1000.0	g	0.71	29.7
Cyanide Tails (6 hr)	6	1000.0	g	0.53	47.5
Cyanide Tails (12 hr)	12	1000.0	g	0.55	45.5
Cyanide Tails (16 hr)	16	1000.0	g	0.41	59.4
Cyanidation Tails (24hr)	24	1000.0	g	0.25	75.2
Calculated Feed		1000	g	1.01	



DATE: October 11, 2011

PROJECT NO: KM3080-26

PURPOSE: Perform a Cyanide Leach on P3 Pyrite Concentrate Composite 1, maintaining CN level at 1,000 ppm until 6 hours, then decrease to 500 ppm until 16 hours, then decrease for remainder of test.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hrs
1,000 ppm NaCN
28 g/L Carbon
Carbon soaked for 16 hrs in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 1000 g P3 Pyrite Concentrate Composite 1.

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	3.8	-	6.99
Aeration	16									0.36
Leach 1	2	2.00	7.73	0.50	0.28	1.50	7.45	11.0	56.00	0.57
Leach 2	6	1.50	0.00	1.38	0.26	0.62	0.02	11.0	-	0.96
Leach 3	12	0.00	0.00	0.94	0.20	0.44	0.06	11.0	-	0.47
Leach 4	16	0.06	0.00	0.84	0.16	0.16	0.04	11.1	-	0.71
Leach 5	24	0.00	0.00	0.50	0.10	0.34	0.06	11.0	-	0.68
Total	24	3.56	7.73	0.50	0.10	3.06	7.63	-	-	-

Mass of Sample	1000
Volume of Water	2000
Pulp Density	33

NaCN Addition	3.6 kg/tonne
Lime Addition	7.7 kg/tonne

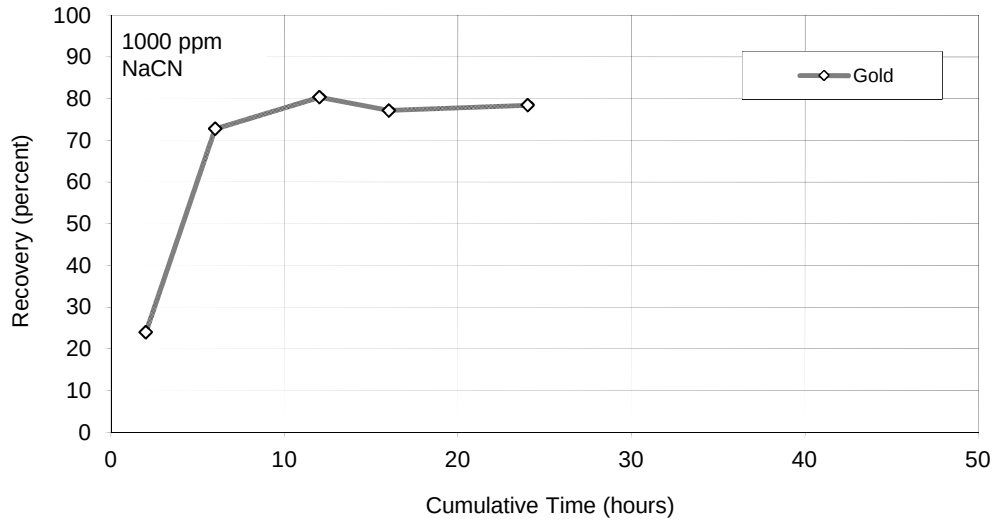
NaCN Consumption	3.1 kg/tonne
Lime Consumption	7.6 kg/tonne

KM3080-26 P3 Pyrite Concentrate Composite 1
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Distribution - percent
				Gold	Gold
Carbon (24 hour)	24	56.1	g	21.5	76.3
Cyanide Liquor (24 hr)	24	2000.0	ml	0.01	1.3
Cyanide Tails (2 hr)	2	19.5	g	1.20	1.5
Cyanide Tails (6 hr)	6	25.7	g	0.43	0.7
Cyanide Tails (12 hr)	12	11.9	g	0.31	0.2
Cyanide Tails (16 hr)	16	12.0	g	0.36	0.3
Cyanidation Tails (24hr)	24	917.3	g	0.34	19.7
Calculated Feed		1000	g	1.58	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Recovery - percent
				Gold	Gold
Cyanide Tails (2 hr)	2	1000.0	g	1.20	24.1
Cyanide Tails (6 hr)	6	1000.0	g	0.43	72.8
Cyanide Tails (12 hr)	12	1000.0	g	0.31	80.4
Cyanide Tails (16 hr)	16	1000.0	g	0.36	77.2
Cyanidation Tails (24hr)	24	1000.0	g	0.34	78.5
Calculated Feed		1000	g	1.58	



DATE: October 11, 2011

PROJECT NO: KM3080-27

PURPOSE: Perform a Cyanide Leach on 50:50 P5 Cleaner Tail & P3 Pyrite Concentrate Composite 1 Blend, maintaining CN level at 1,000 ppm until 6 hours, then decrease to 500 ppm until 16 hours, then decrease for remainder of test.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hrs
1,000 ppm NaCN
28 g/L Carbon
Carbon soaked for 16 hrs in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 1000 g 50:50 P5 Cleaner Tail & P3 Pyrite Concentrate Composite 1 Blend.

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.2	-	1.06
Aeration	16									0.36
Leach 1	2	2.00	5.08	0.76	0.08	1.24	5.00	11.0	56.00	0.66
Leach 2	6	1.24	0.00	1.38	0.08	0.62	0.00	11.0	-	1.51
Leach 3	12	0.00	0.00	0.92	0.04	0.46	0.04	11.0	-	0.45
Leach 4	16	0.08	0.19	0.80	0.10	0.20	0.13	11.0	-	0.69
Leach 5	24	0.00	0.00	0.50	0.06	0.30	0.04	11.0	-	1.04
Total	24	3.32	5.27	0.50	0.06	2.82	5.21	-	-	-

Mass of Sample	1000
Volume of Water	2000
Pulp Density	33

NaCN Addition	3.3 kg/tonne
Lime Addition	5.3 kg/tonne

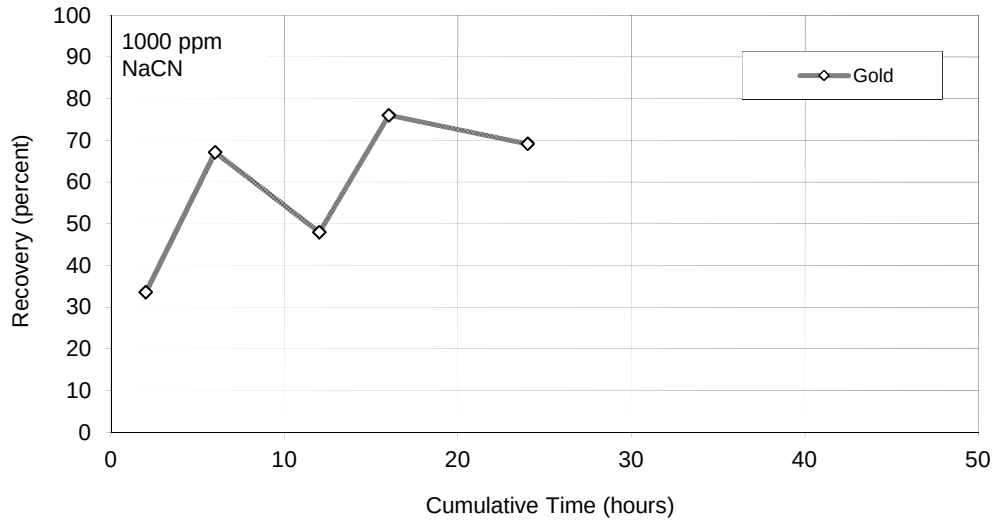
NaCN Consumption	2.8 kg/tonne
Lime Consumption	5.2 kg/tonne

KM3080-27 50:50 P5 Cleaner Tail & P3 Pyrite Concentrate Composite 1 Blend
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Distribution - percent
				Gold	Gold
Carbon (24 hour)	24	56.7	g	17.3	67.0
Cyanide Liquor (24 hr)	24	2000.0	ml	0.01	1.4
Cyanide Tails (2 hr)	2	26.7	g	0.97	1.8
Cyanide Tails (6 hr)	6	34.3	g	0.48	1.1
Cyanide Tails (12 hr)	12	19.9	g	0.76	1.0
Cyanide Tails (16 hr)	16	13.1	g	0.35	0.3
Cyanidation Tails (24hr)	24	889.4	g	0.45	27.4
Calculated Feed		1000	g	1.46	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Recovery - percent
				Gold	Gold
Cyanide Tails (2 hr)	2	1000.0	g	0.97	33.7
Cyanide Tails (6 hr)	6	1000.0	g	0.48	67.2
Cyanide Tails (12 hr)	12	1000.0	g	0.76	48.0
Cyanide Tails (16 hr)	16	1000.0	g	0.35	76.1
Cyanidation Tails (24hr)	24	1000.0	g	0.45	69.2
Calculated Feed		1000	g	1.46	



DATE: October 18, 2011

PROJECT NO: KM3080-28

PURPOSE: Preliminary Leach on P3 Pyrite Concentrate Composite 1.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hrs
1,000 ppm NaCN
28 g/L Carbon
Carbon soaked for 16 hrs in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 500 g P3 Pyrite Concentrate Composite 1.

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	3.1	-	8.05
Aeration	16									0.81
Leach 1	6	1.00	4.37	0.05	0.27	0.95	4.10	11.0	28.00	0.89
Leach 2	24	0.95	0.00	0.32	0.08	0.68	0.19	12.2	-	1.06
Total	24	1.95	4.37	0.32	0.08	1.63	4.29	-	-	-

Mass of Sample	500
Volume of Water	1000
Pulp Density	33

NaCN Addition	3.9 kg/tonne
Lime Addition	8.7 kg/tonne

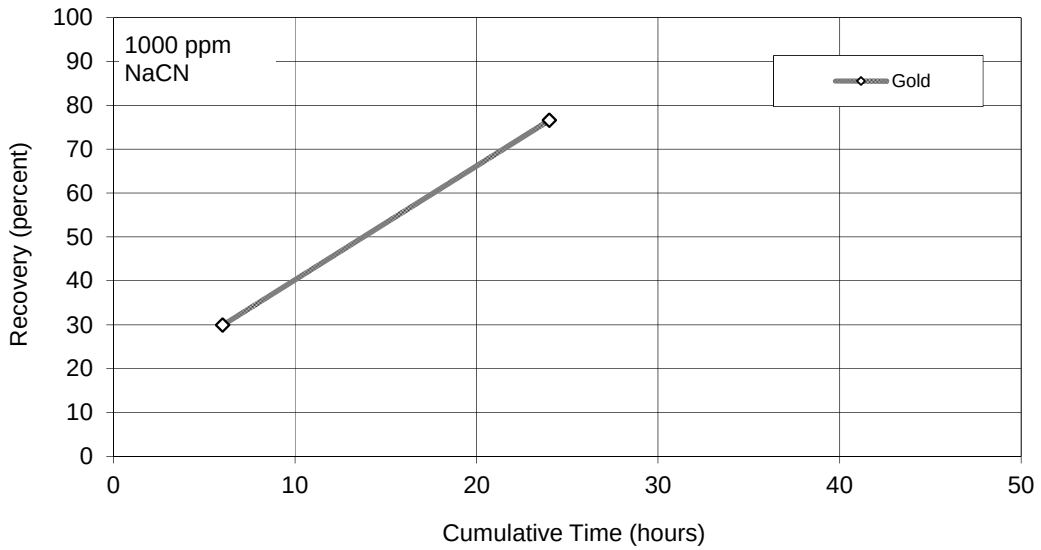
NaCN Consumption	3.3 kg/tonne
Lime Consumption	8.6 kg/tonne

KM3080-28 P3 Pyrite Concentrate Composite 1
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Distribution - percent
				Gold	Gold
Carbon (24 hour)	24	27.4	g	23.9	72.8
Cyanide Liquor (24 hr)	24	1000.0	ml	0.01	1.1
Cyanide Tails (6 hr)	6	32.0	g	1.26	4.5
Cyanidation Tails (24hr)	24	462.2	g	0.42	21.6
Calculated Feed		500	g	1.80	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Recovery - percent
				Gold	Gold
Cyanide Tails (6 hr)	6	500.0	g	1.26	29.9
Cyanidation Tails (24hr)	24	500.0	g	0.42	76.6
Calculated Feed		500	g	1.80	



DATE: October 18, 2011

PROJECT NO: KM3080-29

PURPOSE: Preliminary Leach on P5 Cleaner Tail Composite 1.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hrs
1,000 ppm NaCN
28 g/L Carbon
Carbon soaked for 16 hrs in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 500 g P5 Cleaner Tail Composite 1.

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	8.8	-	8.30
Aeration	16									1.52
Leach 1	6	1.00	1.02	0.14	0.00	0.86	1.02	11.0	28.00	3.82
Leach 2	24	0.86	0.15	0.19	0.00	0.81	0.15	11.0	-	2.68
Total	24	1.86	1.17	0.19	0.00	1.67	1.17	-	-	-

Mass of Sample	500
Volume of Water	1000
Pulp Density	33

NaCN Addition	3.7 kg/tonne
Lime Addition	2.3 kg/tonne

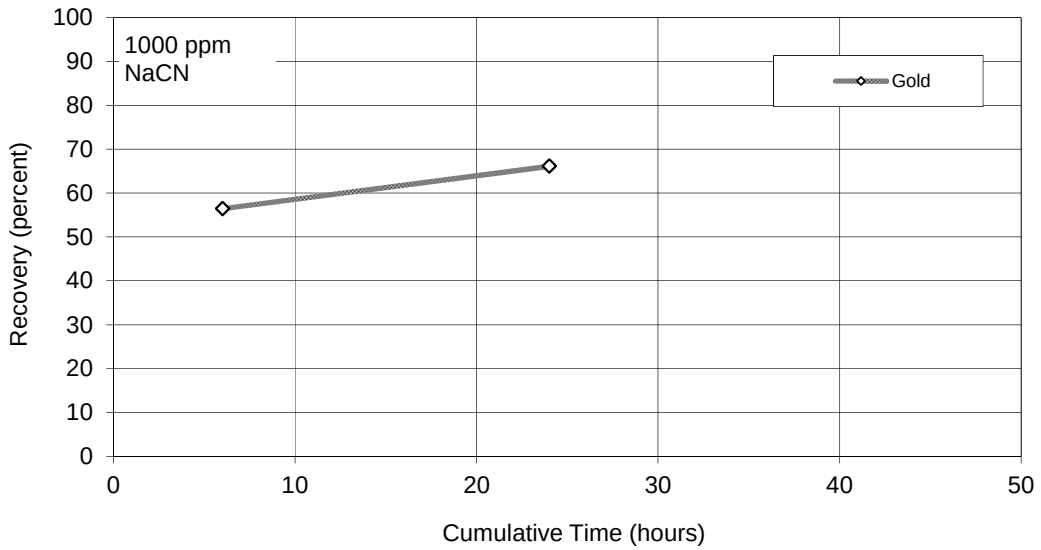
NaCN Consumption	3.3 kg/tonne
Lime Consumption	2.3 kg/tonne

KM3080-29 P5 Cleaner Tail Composite 1
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Distribution - percent Gold
Carbon (24 hour)	24	27.3	g	14.0	61.7
Cyanide Liquor (24 hr)	24	1000.0	ml	0.03	4.8
Cyanide Tails (6 hr)	6	28.1	g	0.54	2.4
Cyanidation Tails (24hr)	24	458.8	g	0.42	31.0
Calculated Feed		500	g	1.24	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t Gold	Recovery - percent Gold
Cyanide Tails (6 hr)	6	500.0	g	0.54	56.5
Cyanidation Tails (24hr)	24	500.0	g	0.42	66.2
Calculated Feed		500	g	1.24	



DATE: November 16, 2011

PROJECT NO: KM3080-30

PURPOSE: To repeat Test 22 Conditions and Produce Wash Residue for Cyanide Testing.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hrs
1,000 ppm NaCN
28 g/L Carbon
Carbon soaked for 16 hrs in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 5,000 g P5 Cleaner Tail Composite 1.

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	7.1	-	9.19
Aeration	16									10.17
Leach 1	2	10.00	7.00	2.00	0.00	8.00	7.00	11.0	280.00	8.48
Leach 2	6	8.00	5.70	5.90	0.00	4.10	5.70	11.0	-	8.91
Leach 3	12	4.10	2.30	6.00	0.10	4.00	2.20	11.0	-	8.19
Leach 4	16	0.00	0.10	4.70	0.00	1.30	0.20	11.0	-	7.63
Leach 5	24	0.30	2.30	1.90	0.10	3.10	2.20	11.0	-	5.08
Total	24	22.40	17.40	1.90	0.10	20.50	17.30	-	-	-

Mass of Sample	5000
Volume of Water	10000
Pulp Density	33

NaCN Addition	4.5 kg/tonne
Lime Addition	3.5 kg/tonne

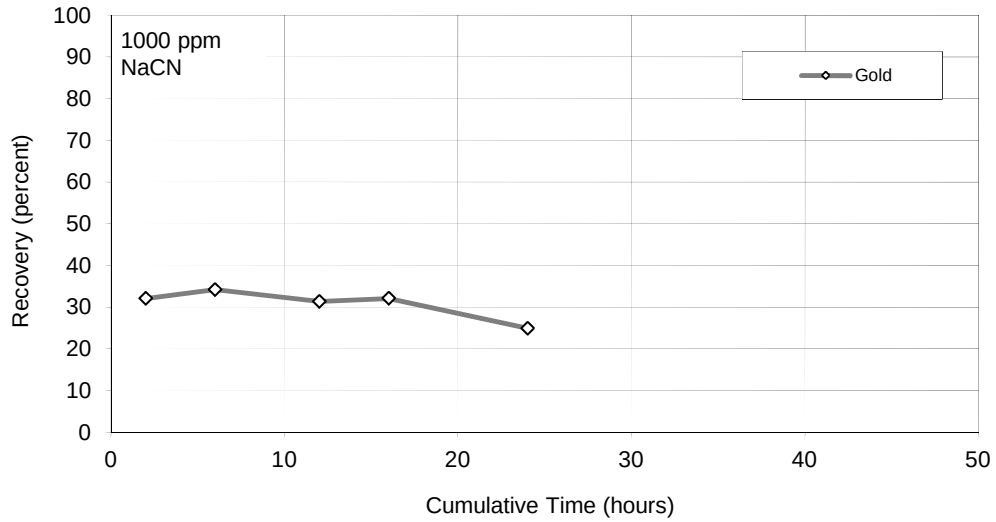
NaCN Consumption	4.1 kg/tonne
Lime Consumption	3.5 kg/tonne

KM3080-30 P5 Cleaner Tail Composite 1
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Distribution - percent
				Gold	Gold
Carbon (24 hour)	24	220.5	g	7.2	22.6
Cyanide Liquor (24 hr)	24	10000.0	ml	0.02	2.9
Cyanide Tails (2 hr)	2	86.2	g	0.95	1.2
Cyanide Tails (6 hr)	6	67.2	g	0.92	0.9
Cyanide Tails (12 hr)	12	51.6	g	0.96	0.7
Cyanide Tails (16 hr)	16	65.4	g	0.95	0.9
Cyanidation Tails (24hr)	24	4729.0	g	1.05	70.9
Calculated Feed		5000	g	1.40	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Recovery - percent
				Gold	Gold
Cyanide Tails (2 hr)	2	5000.0	g	0.95	32.2
Cyanide Tails (6 hr)	6	5000.0	g	0.92	34.3
Cyanide Tails (12 hr)	12	5000.0	g	0.96	31.4
Cyanide Tails (16 hr)	16	5000.0	g	0.95	32.2
Cyanidation Tails (24hr)	24	5000.0	g	1.05	25.0
Calculated Feed		5000	g	1.40	



DATE: November 16, 2011

PROJECT NO: KM3080-31

PURPOSE: To Repeat Test 23 Conditions and Produce Wash Residue for Cyanide Testing.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hrs
1,000 ppm NaCN
28 g/L Carbon
Carbon soaked for 16 hrs in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 5,000 g P3 Pyrite Concentrate Composite 1.

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	3.5	-	9.58
Aeration	16									9.98
Leach 1	2	10.00	28.90	2.60	0.30	7.40	28.60	11.0	280.00	8.10
Leach 2	6	7.40	0.70	6.00	0.20	4.00	0.80	11.0	-	8.79
Leach 3	12	4.00	0.70	6.10	0.20	3.90	0.70	11.0	-	8.42
Leach 4	16	0.00	0.00	4.70	0.10	1.40	0.10	11.0	-	8.06
Leach 5	24	0.30	1.00	1.60	0.10	3.40	1.00	11.0	-	6.12
Total	24	21.70	31.30	1.60	0.10	20.10	31.20	-	-	-

Mass of Sample	5000
Volume of Water	10000
Pulp Density	33

NaCN Addition	4.3 kg/tonne
Lime Addition	6.3 kg/tonne

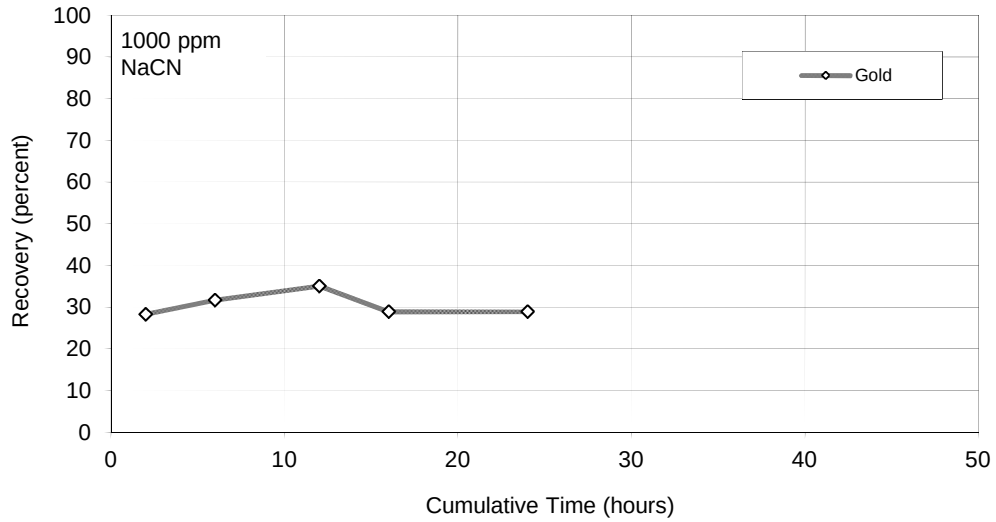
NaCN Consumption	4.0 kg/tonne
Lime Consumption	6.2 kg/tonne

KM3080-31 P3 Pyrite Concentrate Composite 1
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Distribution - percent
				Gold	Gold
Carbon (24 hour)	24	203.6	g	11.8	26.8
Cyanide Liquor (24 hr)	24	10000.0	ml	0.02	2.2
Cyanide Tails (2 hr)	2	56.9	g	1.28	0.8
Cyanide Tails (6 hr)	6	85.4	g	1.22	1.2
Cyanide Tails (12 hr)	12	27.0	g	1.16	0.4
Cyanide Tails (16 hr)	16	52.3	g	1.27	0.7
Cyanidation Tails (24hr)	24	4778.0	g	1.27	67.9
Calculated Feed		5000	g	1.79	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Recovery - percent
				Gold	Gold
Cyanide Tails (2 hr)	2	5000.0	g	1.28	28.4
Cyanide Tails (6 hr)	6	5000.0	g	1.22	31.7
Cyanide Tails (12 hr)	12	5000.0	g	1.16	35.1
Cyanide Tails (16 hr)	16	5000.0	g	1.27	29.0
Cyanidation Tails (24hr)	24	5000.0	g	1.27	29.0
Calculated Feed		5000	g	1.79	



DATE: December 7, 2011

PROJECT NO: KM3080-32

PURPOSE: Preliminary Leach on P5 Cleaner Tail & P3 Pyrite Concentrate Composite 1 Blend.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
Aeration for 16 hrs
1,000 ppm NaCN
28 g/L Carbon
Carbon soaked for 16 hrs in 1,000 ppm NaCN solution prior to leach addition.

SAMPLE: 500 g 50:50 P5 Cleaner Tail & P3 Pyrite Concentrate Composite 1 Blend.

Parameter	Time	Added (g)		Residual (g)		Consumed (g)		pH	Carbon	Dissolved O_2
	Cum	NaCN	CaO	NaCN	CaO	NaCN	CaO		Added (g)	(mg/L)
Natural	-	-	-	-	-	-	-	5.6	-	0.42
Aeration	16							6.9		1.21
Leach 1	6	1.00	1.33	0.01	0.00	0.99	1.33	11.0	28.00	5.40
Leach 2	24	0.99	0.30	0.05	0.00	0.95	0.30	11.0	-	5.71
Total	24	1.99	1.63	0.05	0.00	1.94	1.63	-	-	-

Mass of Sample	500
Volume of Water	1000
Pulp Density	33

NaCN Addition	4.0 kg/tonne
Lime Addition	3.3 kg/tonne

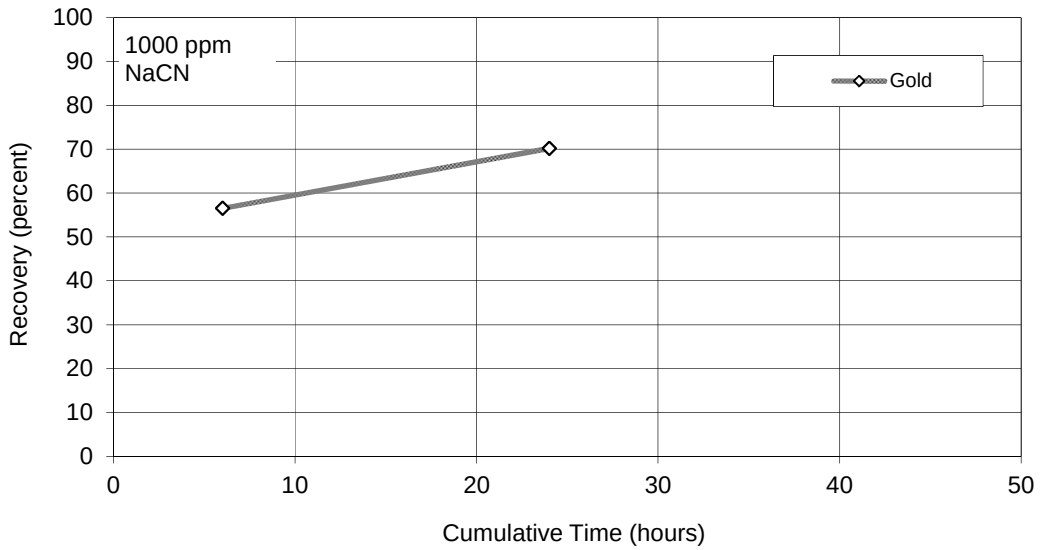
NaCN Consumption	3.9 kg/tonne
Lime Consumption	3.3 kg/tonne

KM3080-32 50:50 P5 Cleaner Tail & P3 Pyrite Concentrate Composite 1 Blend
Overall Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Distribution - percent
				Gold	Gold
Carbon (24 hour)	24	26.3	g	15.7	68.2
Cyanide Liquor (24 hr)	24	1000.0	ml	0.01	1.6
Cyanide Tails (6 hr)	6	35.2	g	0.53	3.1
Cyanidation Tails (24hr)	24	455.2	g	0.36	27.1
Calculated Feed		500	g	1.21	100.0

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/t	Recovery - percent
				Gold	Gold
Cyanide Tails (6 hr)	6	500.0	g	0.53	56.5
Cyanidation Tails (24hr)	24	500.0	g	0.36	70.2
Calculated Feed		500	g	1.21	



APPENDIX III – KM3080

PARTICLE SIZING DATA

INDEX

TABLE III-1
SCREEN ANALYSIS
KM3080 Mitchell Year 0 to 5 - 15 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
48 Mesh	300	0.00	100.0
65 Mesh	212	0.50	99.5
100 Mesh	150	9.30	90.2
150 Mesh	106	18.00	72.2
200 Mesh	75	16.60	55.6
270 Mesh	53	11.50	44.1
400 Mesh	38	7.60	36.5
TOTAL		100.00	**

K80 =124µm

Note: 15 min. grind calibration using 2 kg. Ore, 1500 ml water and
20 kg. of Mild Steel rods in Mill: M6

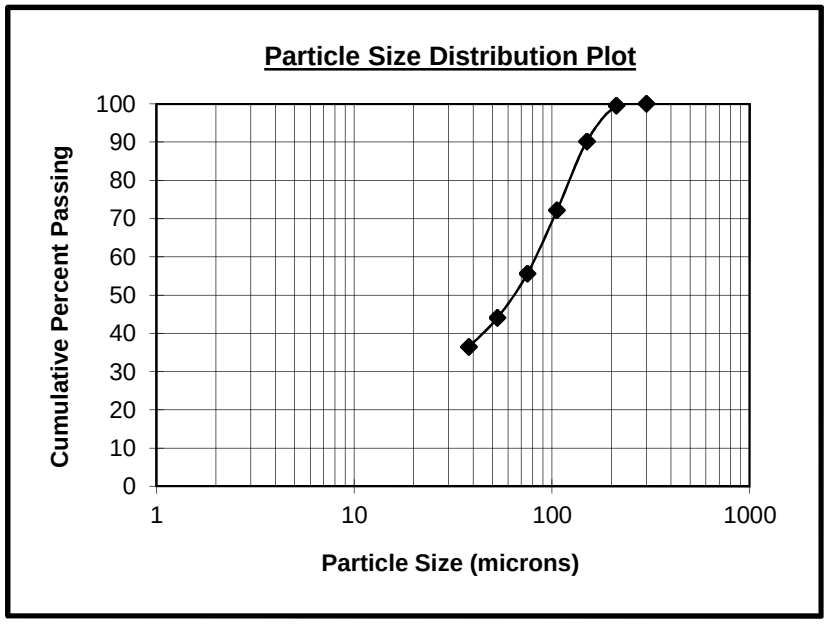


TABLE III-2
SCREEN ANALYSIS
KM3080 Mitchell Year 0 to 10 - 15 Minute Grind Calibration

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	5.30	94.6
100 Mesh	150	18.50	76.1
150 Mesh	106	18.00	58.1
200 Mesh	75	12.70	45.4
270 Mesh	53	8.00	37.4
400 Mesh	38	7.50	29.9
TOTAL		100.00	**

K80 =162µm

Note: 15 min. grind calibration using 2 kg. Ore, 1500 ml water and 20 kg. of Mild Steel rods in Mill: M6

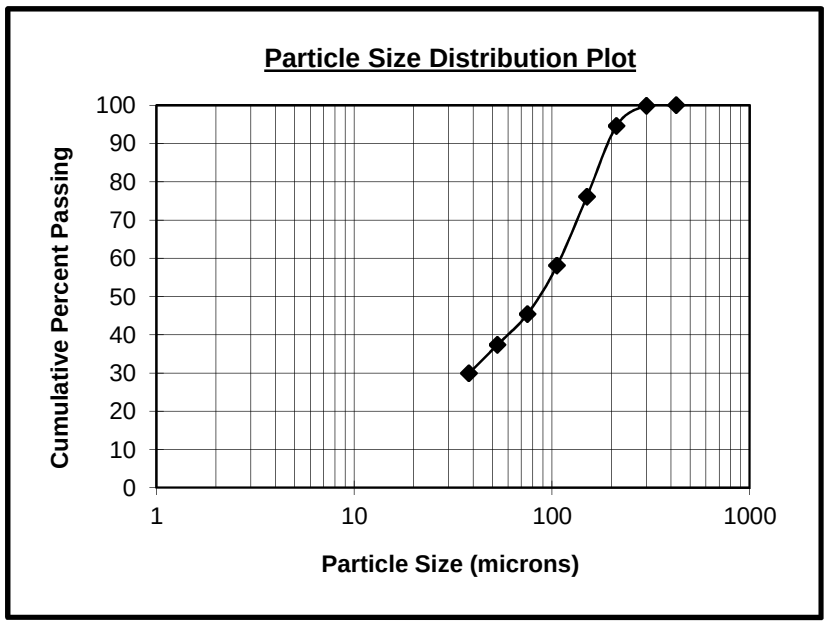


TABLE III-3
SCREEN ANALYSIS
KM3080 Mitchell Year 0 to 10 - 17 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
48 Mesh	300	0.00	100.0
65 Mesh	212	1.10	98.9
100 Mesh	150	13.20	85.7
150 Mesh	106	20.50	65.2
200 Mesh	75	14.20	51.0
270 Mesh	53	10.00	41.0
400 Mesh	38	7.80	33.2
TOTAL		100.00	**

K80 =137µm

Note: 17 min. grind calibration using 2 kg. Ore, 1500 ml water and 20 kg. of Mild Steel rods in Mill: M6

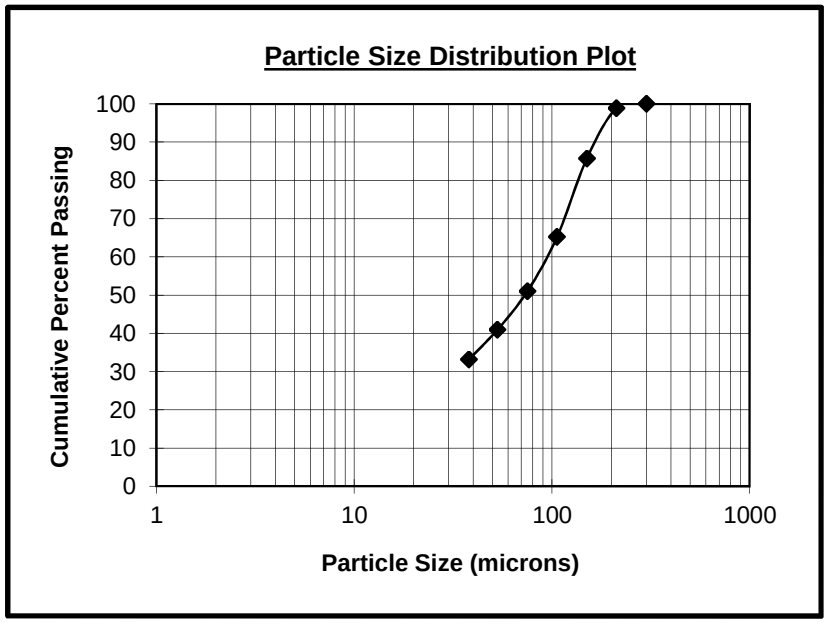


TABLE III-4
SCREEN ANALYSIS
KM3080 Mitchell Year 0 to 10 - 18 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
48 Mesh	300	0.00	100.0
65 Mesh	212	0.10	99.9
100 Mesh	150	4.70	95.2
150 Mesh	106	17.30	77.9
200 Mesh	75	19.10	58.8
270 Mesh	53	5.80	53.0
400 Mesh	38	16.50	36.5
TOTAL		100.00	**

K80 =111µm

Note: 18 min. grind calibration using 2 kg. Ore, 1500 ml water and 20 kg. of Mild Steel rods in Mill: M6

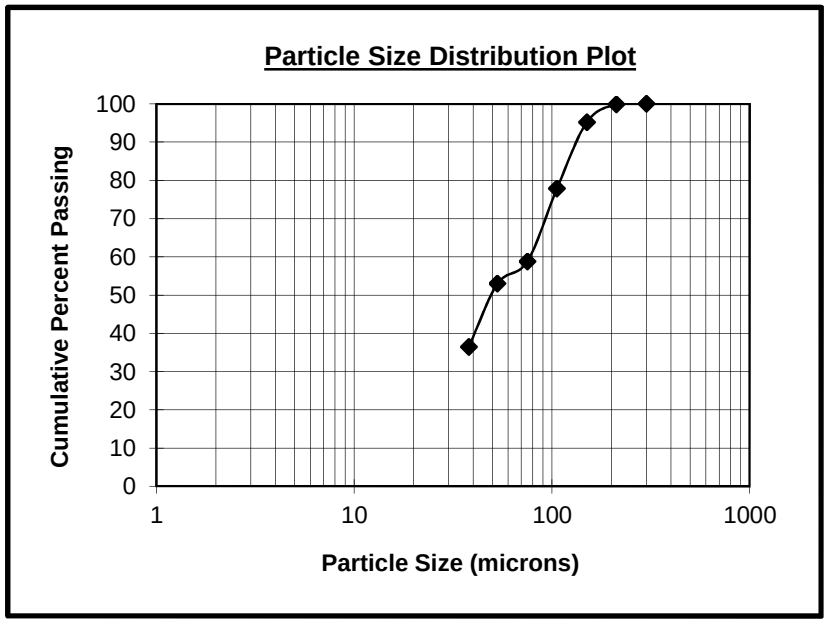


TABLE III-5
SCREEN ANALYSIS
KM3080 Mitchell Year 0 to 20 - 15 Minute Grind Calibration

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	4.90	95.0
100 Mesh	150	19.10	75.9
150 Mesh	106	17.30	58.6
200 Mesh	75	12.80	45.8
270 Mesh	53	9.20	36.6
400 Mesh	38	6.40	30.2
TOTAL		100.00	**

K80 =163µm

Note: 15 min. grind calibration using 2 kg. Ore, 1500 ml water and 20 kg. of Mild Steel rods in Mill: M6

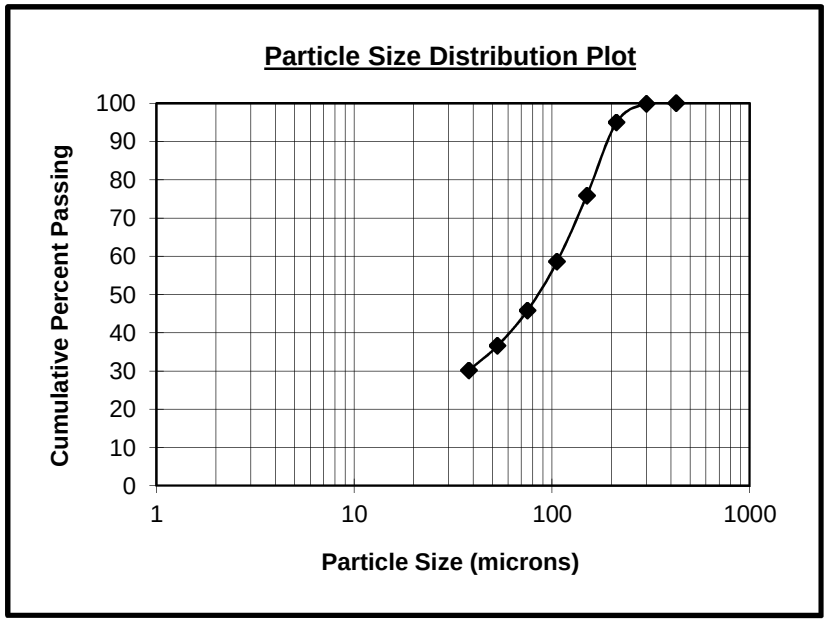


TABLE III-6
SCREEN ANALYSIS
KM3080 Mitchell Year 0 to 20 - 18 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
48 Mesh	300	0.00	100.0
65 Mesh	212	0.20	99.8
100 Mesh	150	8.70	91.1
150 Mesh	106	18.70	72.4
200 Mesh	75	17.20	55.2
270 Mesh	53	11.80	43.4
400 Mesh	38	7.70	35.7
TOTAL		100.00	**

K80 =123µm

Note: 18 min. grind calibration using 2 kg. Ore, 1500 ml water and 20 kg. of Mild Steel rods in Mill: M6

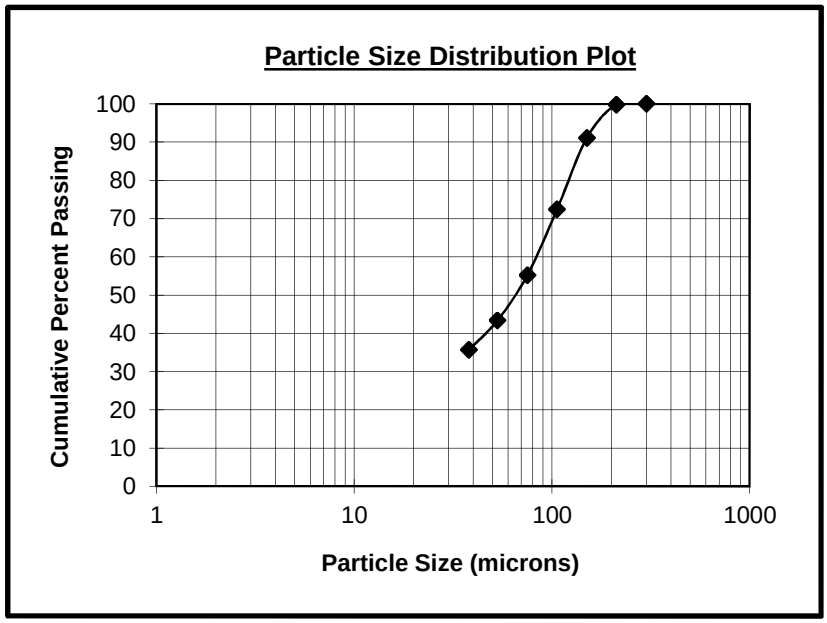


TABLE III-7

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080-01

Measured by:
mike

Measured:
Tuesday, August 23, 2011 12:48:05 PM

Sample Name:
Bulk Regrind Discharge - Average

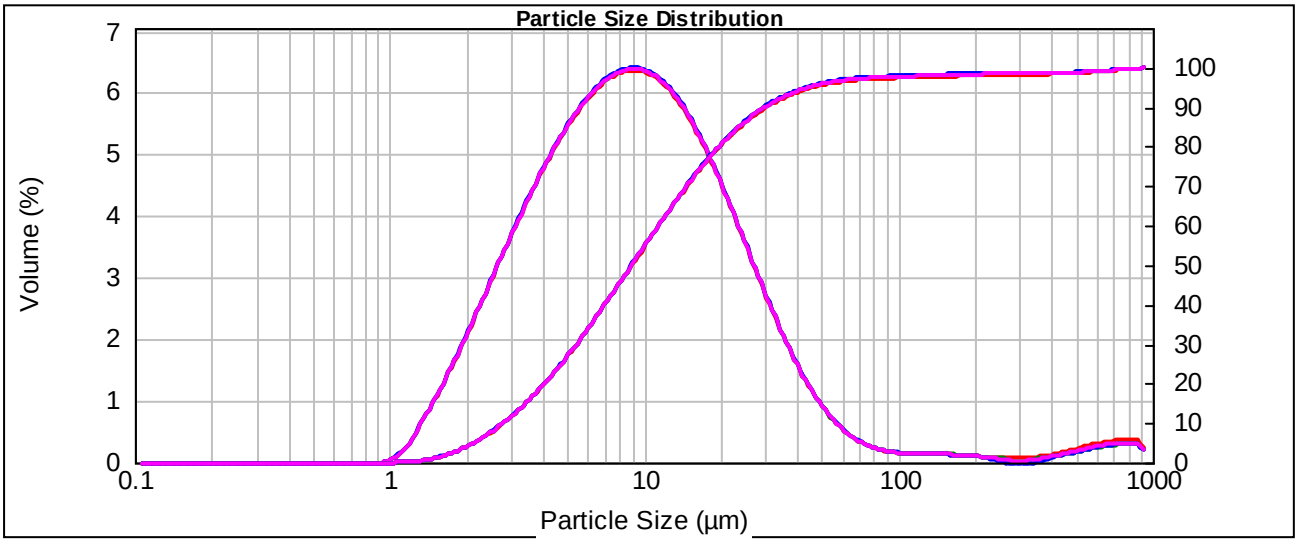
Edited by:
mike

Analysed:
Tuesday, August 23, 2011 12:48:06 PM

Particle Name: Silica 0.01
Accessory Name: Hydro 2000MU (A)
Analysis model: General purpose
Sensitivity: Normal
Particle RI: 1.544
Absorption: 0.01
Size range: 0.100 to 1000.000 um
Obscuration: 19.11 %
Dispersant Name: Water
Dispersant RI: 1.330
Weighted Residual: 0.257 %
Result Emulation: Off

Concentration: 0.0157 %Vol
Span : 3.026
Uniformity: 2.04
Result units: Volume
Specific Surface Area: 0.361 m²/g
Surface Weighted Mean D[3,2]: 6.274 um
Vol. Weighted Mean D[4,3]: 23.143 um

d(0.1): 2.806 um d(0.5): 8.948 um **d(0.8): 19.745 um** d(0.9): 29.880 um d(0.98): 130.59 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.05
1.096	0.12
1.202	0.27
1.318	0.46
1.445	0.62
1.585	0.81
1.738	1.02
1.905	1.23
2.089	1.45
2.291	

Size (µm)	Volume In %
2.291	1.67
2.512	1.89
2.754	2.12
3.020	2.33
3.311	2.55
3.631	2.75
3.981	2.94
4.365	3.13
4.786	3.29
5.248	3.44
5.754	3.57
6.310	3.67
6.918	3.76
7.586	3.81
8.318	3.84
9.120	3.84
10.000	3.84
10.965	3.81

Size (µm)	Volume In %
10.965	3.75
12.023	3.65
13.183	3.53
14.454	3.37
15.849	3.19
17.378	2.98
19.055	2.75
20.893	2.51
22.909	2.26
25.119	2.01
27.542	1.76
30.200	1.51
33.113	1.28
36.308	1.07
39.811	0.87
43.652	0.70
47.863	0.55
52.481	

Size (µm)	Volume In %
52.481	0.43
57.544	0.33
63.096	0.25
69.183	0.19
75.858	0.15
83.176	0.12
91.201	0.10
100.000	0.09
109.648	0.09
120.226	0.09
131.826	0.08
144.544	0.08
158.489	0.08
173.780	0.07
190.546	0.06
208.930	0.05
229.087	0.04
251.189	

Size (µm)	Volume In %
251.189	0.03
275.423	0.02
301.995	0.02
331.131	0.03
363.078	0.05
398.107	0.07
436.516	0.09
478.630	0.11
524.807	0.14
575.440	0.16
630.957	0.18
691.831	0.19
758.578	0.19
831.764	0.19
912.011	0.06
1000.000	

Operator notes:

TABLE III-8

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080-01

Measured by:
mike

Measured:
Tuesday, August 23, 2011 12:38:36 PM

Sample Name:
Pyrite Rougher Concentrate - Average

Edited by:
mike

Analysed:
Tuesday, August 23, 2011 12:38:37 PM

Particle Name:
Silica 0.001

Accessory Name:
Hydro 2000MU (A)

Analysis model:
General purpose

Sensitivity:
Normal

Particle RI:
1.544

Absorption:
0.001

Size range:
0.100 to 1000.000 um

Obscuration:
13.88 %

Dispersant Name:
Water

Dispersant RI:
1.330

Weighted Residual:
0.649 %

Result Emulation:
Off

Concentration:
0.0152 %Vol

Span :
12.511

Uniformity:
3.58

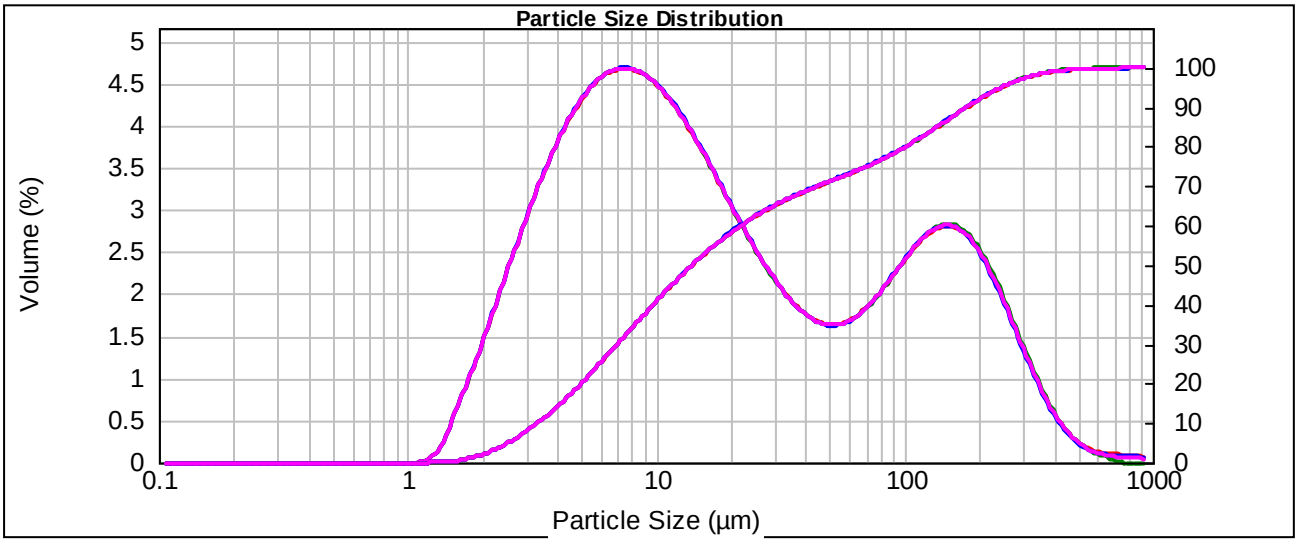
Result units:
Volume

Specific Surface Area:
0.263 m²/g

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

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

d(0.1): 3.352 um d(0.5): 13.954 um **d(0.8): 101.204 um** d(0.9): 177.928 um d(0.98): 329.4 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.00
1.096	0.00
1.202	0.05
1.318	0.11
1.445	0.31
1.585	0.49
1.738	0.65
1.905	0.85
2.089	1.05
2.291	1.25

Size (µm)	Volume In %
2.291	1.25
2.512	1.46
2.754	1.66
3.020	1.85
3.311	2.03
3.631	2.20
3.981	2.35
4.365	2.48
4.786	2.60
5.248	2.69
5.754	2.75
6.310	2.80
6.918	2.82
7.586	2.81
8.318	2.79
9.120	2.74
10.000	2.67
10.965	2.59

Size (µm)	Volume In %
10.965	2.59
12.023	2.49
13.183	2.37
14.454	2.25
15.849	2.12
17.378	1.98
19.055	1.85
20.893	1.71
22.909	1.59
25.119	1.46
27.542	1.35
30.200	1.25
33.113	1.16
36.308	1.09
39.811	1.03
43.652	1.00
47.863	0.98
52.481	0.99

Size (µm)	Volume In %
52.481	0.99
57.544	1.01
63.096	1.06
69.183	1.13
75.858	1.21
83.176	1.30
91.201	1.40
100.000	1.49
109.648	1.58
120.226	1.64
131.826	1.69
144.544	1.70
158.489	1.67
173.780	1.61
190.546	1.52
208.930	1.39
229.087	1.24
251.189	1.07

Size (µm)	Volume In %
251.189	1.07
275.423	0.90
301.995	0.72
331.131	0.56
363.078	0.42
398.107	0.30
436.516	0.21
478.630	0.14
524.807	0.09
575.440	0.07
630.957	0.05
691.831	0.04
758.578	0.03
831.764	0.04
912.011	0.01
1000.000	

Operator notes:

TABLE III-9

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080-02

Measured by:
mike

Measured:
Tuesday, August 23, 2011 1:57:23 PM

Sample Name:
Bulk Regrind Discharge - Average

Edited by:
mike

Analysed:
Tuesday, August 23, 2011 1:57:24 PM

Particle Name:
Silica 0.01

Accessory Name:
Hydro 2000MU (A)

Analysis model:
General purpose

Sensitivity:
Normal

Particle RI:
1.544

Absorption:
0.01

Size range:
0.100 to 1000.000 um

Obscuration:
17.83 %

Dispersant Name:
Water

Dispersant RI:
1.330

Weighted Residual:
0.302 %

Result Emulation:
Off

Concentration:
0.0147 %Vol

Span :
3.060

Uniformity:
1.13

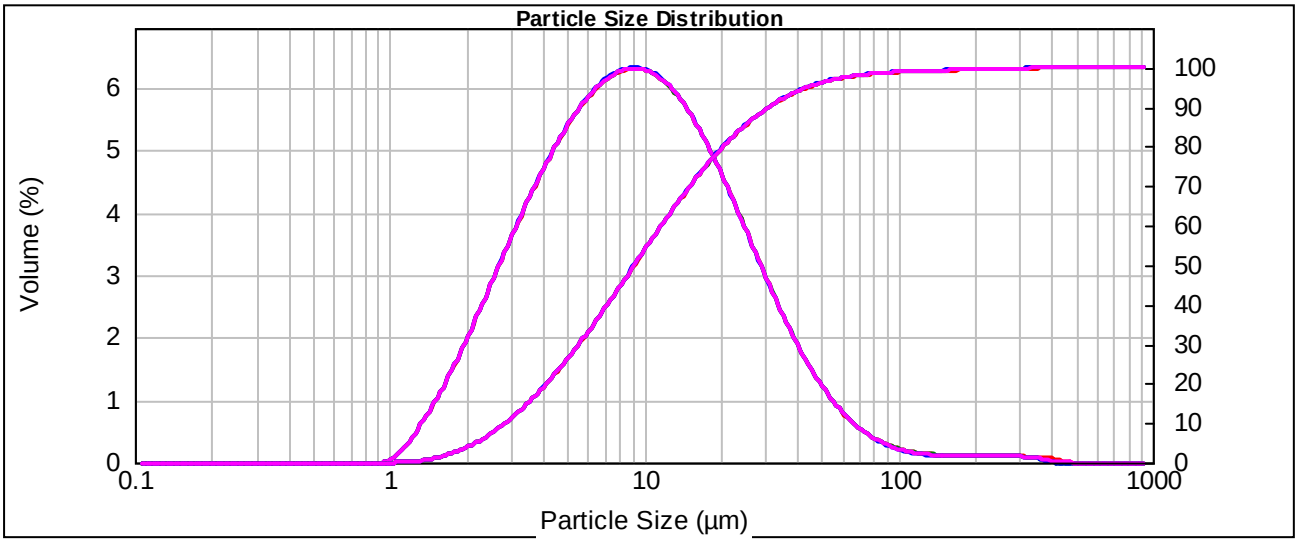
Result units:
Volume

Specific Surface Area:
0.355 m²/g

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

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

d(0.1): 2.854 um d(0.5): 9.165 um **d(0.8): 20.477 um** d(0.9): 30.898 um d(0.98): 67.71 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.06
1.096	0.14
1.202	0.27
1.318	0.44
1.445	0.58
1.585	0.77
1.738	0.96
1.905	1.17
2.089	1.39
2.291	1.61

Size (µm)	Volume In %
2.291	1.61
2.512	1.84
2.754	2.06
3.020	2.28
3.311	2.50
3.631	2.71
3.981	2.90
4.365	3.08
4.786	3.25
5.248	3.39
5.754	3.52
6.310	3.62
6.918	3.71
7.586	3.76
8.318	3.79
9.120	3.79
10.000	3.77
10.965	3.71

Size (µm)	Volume In %
10.965	3.71
12.023	3.62
13.183	3.51
14.454	3.37
15.849	3.20
17.378	3.01
19.055	2.81
20.893	2.59
22.909	2.36
25.119	2.13
27.542	1.90
30.200	1.67
33.113	1.45
36.308	1.25
39.811	1.06
43.652	0.89
47.863	0.73
52.481	0.60

Size (µm)	Volume In %
52.481	0.60
57.544	0.48
63.096	0.38
69.183	0.30
75.858	0.24
83.176	0.19
91.201	0.15
100.000	0.12
109.648	0.10
120.226	0.08
131.826	0.07
144.544	0.07
158.489	0.07
173.780	0.07
190.546	0.07
208.930	0.07
229.087	0.07
251.189	0.07

Size (µm)	Volume In %
251.189	0.07
275.423	0.06
301.995	0.06
331.131	0.05
363.078	0.03
398.107	0.01
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:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080-02

Measured by:
mike

Measured:
Tuesday, August 23, 2011 1:37:56 PM

Sample Name:
Pyrite Rougher Concentrate - Average

Edited by:
mike

Analysed:
Tuesday, August 23, 2011 1:37:57 PM

Particle Name:
Silica 0.01

Accessory Name:
Hydro 2000MU (A)

Analysis model:
General purpose

Sensitivity:
Normal

Particle RI:
1.544

Absorption:
0.01

Size range:
0.100 to 1000.000 um

Obscuration:
14.14 %

Dispersant Name:
Water

Dispersant RI:
1.330

Weighted Residual:
0.515 %

Result Emulation:
Off

Concentration:
0.0125 %Vol

Span :
9.960

Uniformity:
3.18

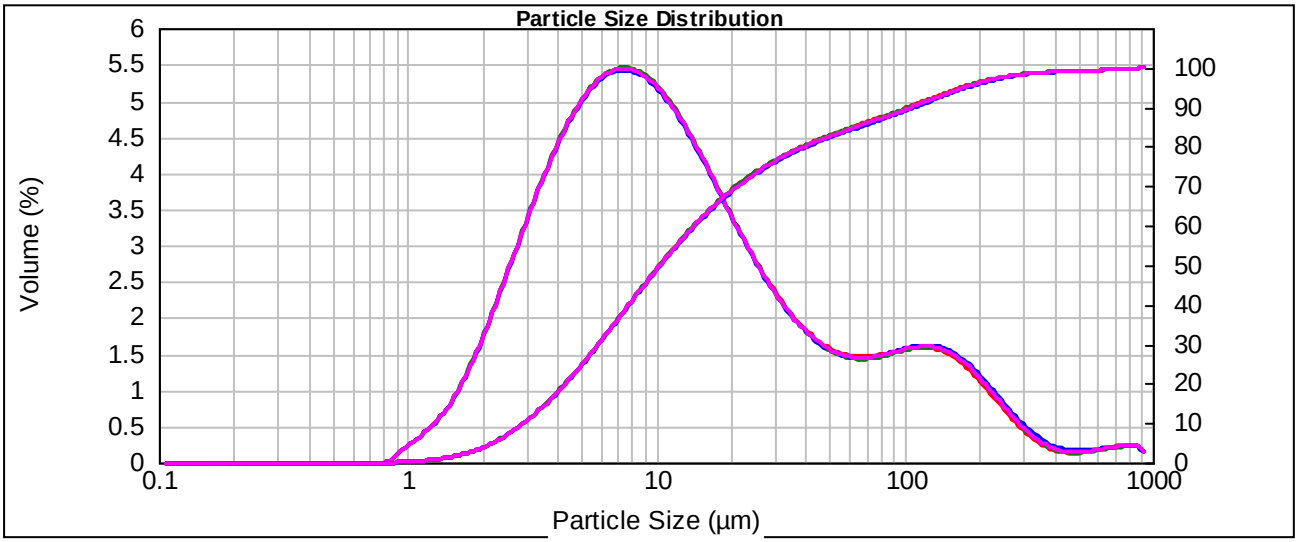
Result units:
Volume

Specific Surface Area:
0.326 m²/g

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

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

d(0.1): 2.944 um d(0.5): 10.387 um **d(0.8): 39.415 um** d(0.9): 106.399 um d(0.98): 272.4 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.02
0.912	0.12
1.000	0.16
1.096	0.24
1.202	0.31
1.318	0.40
1.445	0.52
1.585	0.66
1.738	0.83
1.905	1.02
2.089	1.24
2.291	1.45

Size (µm)	Volume In %
2.291	1.45
2.512	1.68
2.754	1.91
3.020	2.13
3.311	2.34
3.631	2.54
3.981	2.72
4.365	2.88
4.786	3.01
5.248	3.12
5.754	3.20
6.310	3.26
6.918	3.28
7.586	3.27
8.318	3.24
9.120	3.18
10.000	3.09
10.965	2.99

Size (µm)	Volume In %
10.965	2.99
12.023	2.86
13.183	2.71
14.454	2.56
15.849	2.40
17.378	2.24
19.055	2.07
20.893	1.91
22.909	1.76
25.119	1.61
27.542	1.47
30.200	1.35
33.113	1.24
36.308	1.14
39.811	1.06
43.652	0.99
47.863	0.94
52.481	0.90

Size (µm)	Volume In %
52.481	0.90
57.544	0.88
63.096	0.87
69.183	0.87
75.858	0.89
83.176	0.91
91.201	0.93
100.000	0.95
109.648	0.96
120.226	0.96
131.826	0.95
144.544	0.92
158.489	0.87
173.780	0.80
190.546	0.71
208.930	0.62
229.087	0.52
251.189	0.42

Size (µm)	Volume In %
251.189	0.42
275.423	0.33
301.995	0.25
331.131	0.18
363.078	0.13
398.107	0.10
436.516	0.09
478.630	0.09
524.807	0.09
575.440	0.11
630.957	0.12
691.831	0.13
758.578	0.14
831.764	0.14
912.011	0.04
1000.000	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080-03

Sample Name:
Bulk Regrind Discharge - Average

Measured by:
mike

Edited by:
mike

Measured:
Tuesday, August 23, 2011 2:15:35 PM

Analysed:
Tuesday, August 23, 2011 2:15:36 PM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.269 %

Sensitivity: Normal
Obscuration: 16.43 %
Result Emulation: Off

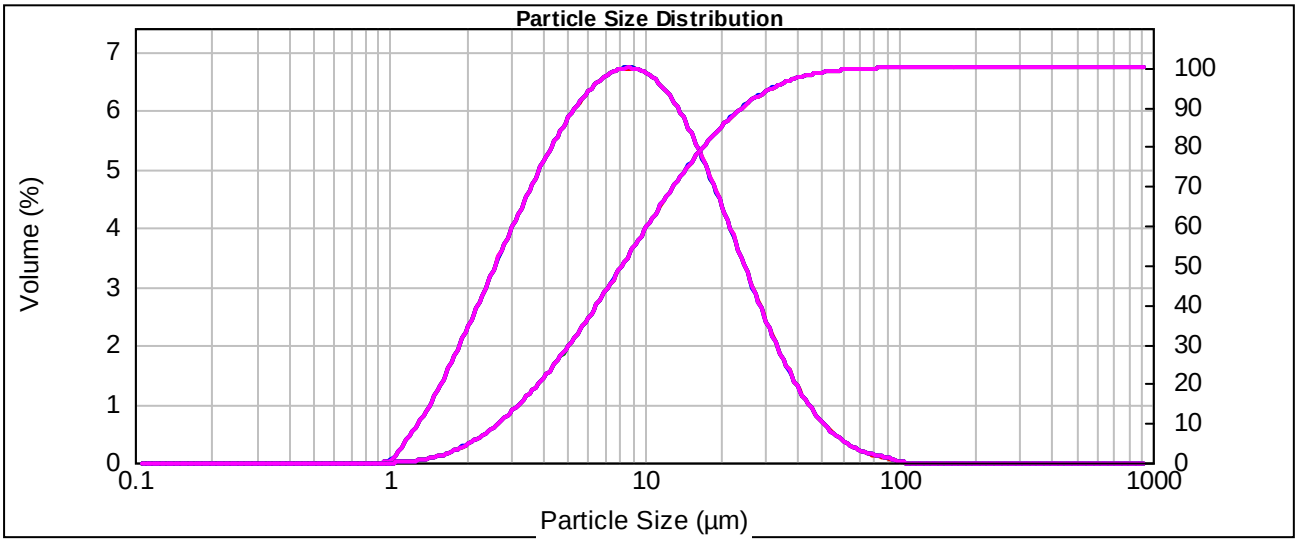
Concentration: 0.0123 %Vol
Specific Surface Area: 0.386 m²/g

Span : 2.646
Surface Weighted Mean D[3,2]: 5.865 um

Uniformity: 0.846
Vol. Weighted Mean D[4,3]: 11.540 um

Result units: Volume

d(0.1): 2.689 um d(0.5): 8.223 um **d(0.8): 17.152 um** d(0.9): 24.448 um d(0.98): 43.31 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.05
1.096	0.20
1.202	0.34
1.318	0.50
1.445	0.69
1.585	0.90
1.738	1.11
1.905	1.34
2.089	1.57
2.291	1.81

Size (µm)	Volume In %
2.291	1.81
2.512	2.04
2.754	2.28
3.020	2.51
3.311	2.74
3.631	2.96
3.981	3.16
4.365	3.35
4.786	3.52
5.248	3.67
5.754	3.81
6.310	3.91
6.918	3.99
7.586	4.04
8.318	4.05
9.120	4.04
10.000	3.98
10.965	3.89

Size (µm)	Volume In %
10.965	3.89
12.023	3.77
13.183	3.60
14.454	3.41
15.849	3.19
17.378	2.94
19.055	2.68
20.893	2.41
22.909	2.13
25.119	1.85
27.542	1.58
30.200	1.33
33.113	1.10
36.308	0.89
39.811	0.71
43.652	0.55
47.863	0.42
52.481	0.31

Size (µm)	Volume In %
52.481	0.31
57.544	0.23
63.096	0.16
69.183	0.12
75.858	0.08
83.176	0.06
91.201	0.03
100.000	0.00
109.648	0.00
120.226	0.00
131.826	0.00
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	0.00

Size (µm)	Volume In %
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080-03

Sample Name:
Pyrite Rougher Concentrate - Average

Measured by:
mike

Edited by:
mike

Measured:
Tuesday, August 23, 2011 2:30:06 PM

Analysed:
Tuesday, August 23, 2011 2:30:07 PM

Particle Name:
Silica 0.01

Particle RI:
1.544

Dispersant Name:
Water

Accessory Name:
Hydro 2000MU (A)

Absorption:
0.01

Dispersant RI:
1.330

Analysis model:
General purpose

Size range:
0.100 to 1000.000 um

Weighted Residual:
1.370 %

Sensitivity:
Normal

Obscuration:
13.96 %

Result Emulation:
Off

Concentration:
0.0135 %Vol

Span :
8.799

Uniformity:
2.4

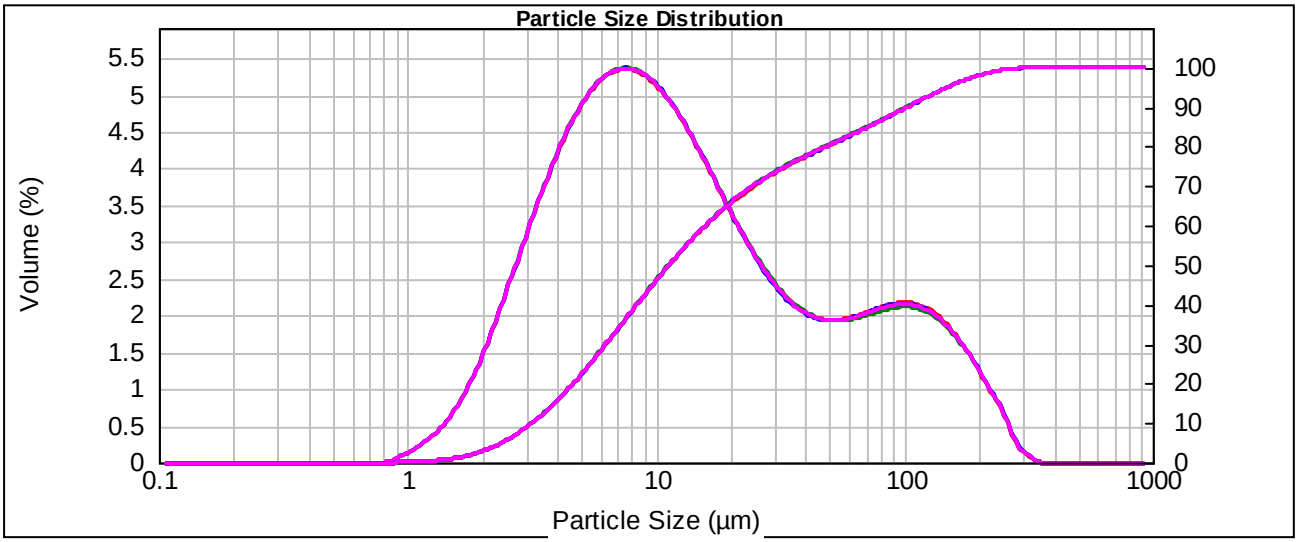
Result units:
Volume

Specific Surface Area:
0.301 m²/g

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

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

d(0.1): 3.175 um d(0.5): 11.270 um **d(0.8): 48.207 um** d(0.9): 102.336 um d(0.98): 198.12 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.01
0.912	0.06
1.000	0.09
1.096	0.15
1.202	0.21
1.318	0.29
1.445	0.39
1.585	0.53
1.738	0.69
1.905	0.87
2.089	1.08
2.291	1.29

Size (µm)	Volume In %
2.291	1.29
2.512	1.52
2.754	1.76
3.020	1.99
3.311	2.21
3.631	2.42
3.981	2.61
4.365	2.79
4.786	2.93
5.248	3.05
5.754	3.14
6.310	3.20
6.918	3.23
7.586	3.22
8.318	3.19
9.120	3.14
10.000	3.05
10.965	2.95

Size (µm)	Volume In %
10.965	2.95
12.023	2.83
13.183	2.68
14.454	2.54
15.849	2.38
17.378	2.22
19.055	2.06
20.893	1.90
22.909	1.76
25.119	1.63
27.542	1.51
30.200	1.40
33.113	1.32
36.308	1.25
39.811	1.20
43.652	1.18
47.863	1.16
52.481	1.16

Size (µm)	Volume In %
52.481	1.16
57.544	1.18
63.096	1.20
69.183	1.23
75.858	1.26
83.176	1.28
91.201	1.29
100.000	1.29
109.648	1.28
120.226	1.24
131.826	1.18
144.544	1.10
158.489	1.00
173.780	0.89
190.546	0.76
208.930	0.61
229.087	0.48
251.189	0.31

Size (µm)	Volume In %
251.189	0.31
275.423	0.12
301.995	0.06
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:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080 - 04

Sample Name:
Bulk Regrind Discharge - Average

Measured by:
julie

Edited by:
julie

Measured:
Tuesday, August 30, 2011 10:11:10 AM

Analysed:
Tuesday, August 30, 2011 10:11:11 AM

Particle Name:
Silica 0.1

Particle RI:
1.544

Dispersant Name:
Water

Accessory Name:
Hydro 2000MU (A)

Absorption:
0.1

Dispersant RI:
1.330

Analysis model:
General purpose

Size range:
0.100 to 1000.000 um

Weighted Residual:
0.445 %

Sensitivity:
Normal

Obscuration:
17.23 %

Result Emulation:
Off

Concentration:
0.0114 %Vol

Span :
2.906

Uniformity:
0.932

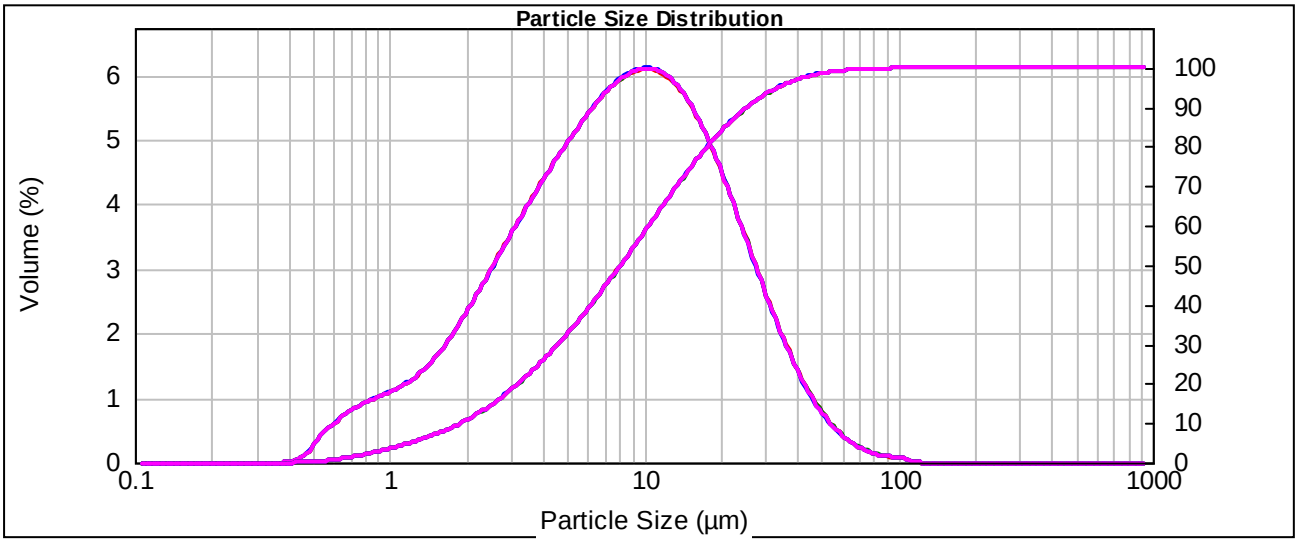
Result units:
Volume

Specific Surface Area:
0.516 m²/g

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

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

d(0.1): 1.906 um d(0.5): 8.094 um **d(0.8): 17.761 um** d(0.9): 25.429 um d(0.98): 45.05 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	0.00
0.363	0.00
0.398	0.00
0.437	0.02
0.479	0.05

Size (µm)	Volume In %
0.479	0.15
0.525	0.29
0.575	0.36
0.631	0.44
0.692	0.50
0.759	0.55
0.832	0.60
0.912	0.64
1.000	0.68
1.096	0.73
1.202	0.79
1.318	0.87
1.445	0.98
1.585	1.10
1.738	1.24
1.905	1.39
2.089	1.55
2.291	

Size (µm)	Volume In %
2.291	1.72
2.512	1.89
2.754	2.05
3.020	2.22
3.311	2.38
3.631	2.54
3.981	2.69
4.365	2.84
4.786	2.99
5.248	3.13
5.754	3.25
6.310	3.37
6.918	3.47
7.586	3.56
8.318	3.63
9.120	3.66
10.000	3.67
10.965	

Size (µm)	Volume In %
10.965	3.65
12.023	3.59
13.183	3.49
14.454	3.35
15.849	3.18
17.378	2.97
19.055	2.75
20.893	2.49
22.909	2.23
25.119	1.96
27.542	1.70
30.200	1.44
33.113	1.20
36.308	0.98
39.811	0.78
43.652	0.61
47.863	0.46
52.481	

Size (µm)	Volume In %
52.481	0.35
57.544	0.25
63.096	0.18
69.183	0.13
75.858	0.09
83.176	0.06
91.201	0.05
100.000	0.04
109.648	0.01
120.226	0.00
131.826	0.00
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	

Size (µm)	Volume In %
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080 - 04

Measured by:
julie

Measured:
Tuesday, August 30, 2011 10:17:57 AM

Sample Name:
Pyrite Rougher Concentrate - Average

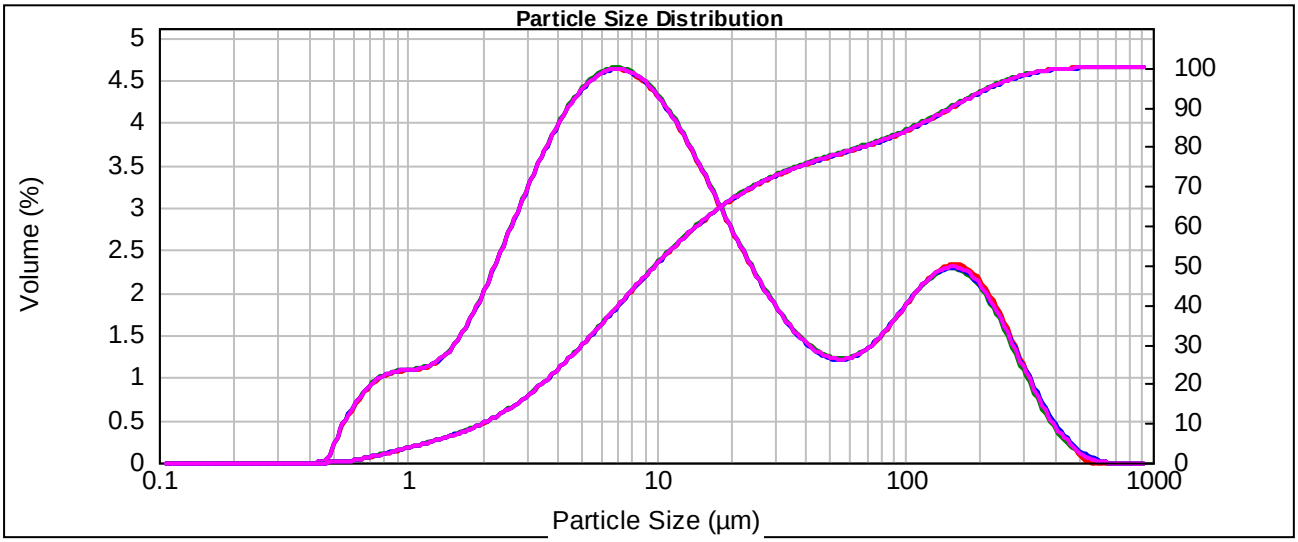
Edited by:
julie

Analysed:
Tuesday, August 30, 2011 10:17:58 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: 12.12 %
Dispersant Name: Water
Dispersant RI: 1.330
Weighted Residual: 0.907 %
Result Emulation: Off

Concentration: 0.0088 %Vol
Span : 15.421
Uniformity: 4.03
Result units: Volume
Specific Surface Area: 0.456 m²/g
Surface Weighted Mean D[3,2]: 4.966 um
Vol. Weighted Mean D[4,3]: 44.709 um

d(0.1): 2.024 um d(0.5): 9.966 um **d(0.8): 68.287 um** d(0.9): 155.709 um d(0.98): 296.68 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.10
0.525	0.27
0.575	0.39
0.631	0.49
0.692	0.56
0.759	0.61
0.832	0.64
0.912	0.65
1.000	0.66
1.096	0.67
1.202	0.69
1.318	0.74
1.445	0.81
1.585	0.92
1.738	1.04
1.905	1.18
2.089	1.34
2.291	

Size (µm)	Volume In %
2.291	1.51
2.512	1.68
2.754	1.85
3.020	2.01
3.311	2.17
3.631	2.31
3.981	2.44
4.365	2.55
4.786	2.64
5.248	2.71
5.754	2.76
6.310	2.78
6.918	2.79
7.586	2.76
8.318	2.72
9.120	2.66
10.000	2.57
10.965	

Size (µm)	Volume In %
10.965	2.47
12.023	2.35
13.183	2.23
14.454	2.09
15.849	1.95
17.378	1.81
19.055	1.67
20.893	1.53
22.909	1.40
25.119	1.28
27.542	1.16
30.200	1.06
33.113	0.97
36.308	0.89
39.811	0.82
43.652	0.77
47.863	0.74
52.481	

Size (µm)	Volume In %
52.481	0.73
57.544	0.74
63.096	0.77
69.183	0.82
75.858	0.89
83.176	0.97
91.201	1.06
100.000	1.15
109.648	1.23
120.226	1.30
131.826	1.36
144.544	1.38
158.489	1.38
173.780	1.34
190.546	1.27
208.930	1.17
229.087	1.05
251.189	

Size (µm)	Volume In %
251.189	0.90
275.423	0.75
301.995	0.60
331.131	0.46
363.078	0.33
398.107	0.22
436.516	0.15
478.630	0.07
524.807	0.03
575.440	0.01
630.957	0.00
691.831	0.00
758.578	0.00
831.764	0.00
912.011	0.00
1000.000	

Operator notes: *Average of 3 measurements from 3080*

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080 - 05

Sample Name:
Bulk Regrind Discharge - Average

Measured by:
julie

Edited by:
julie

Measured:
Tuesday, August 30, 2011 10:50:07 AM

Analysed:
Tuesday, August 30, 2011 10:50:08 AM

Particle Name: Silica 0.1
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.1
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.443 %

Sensitivity: Normal
Obscuration: 15.47 %
Result Emulation: Off

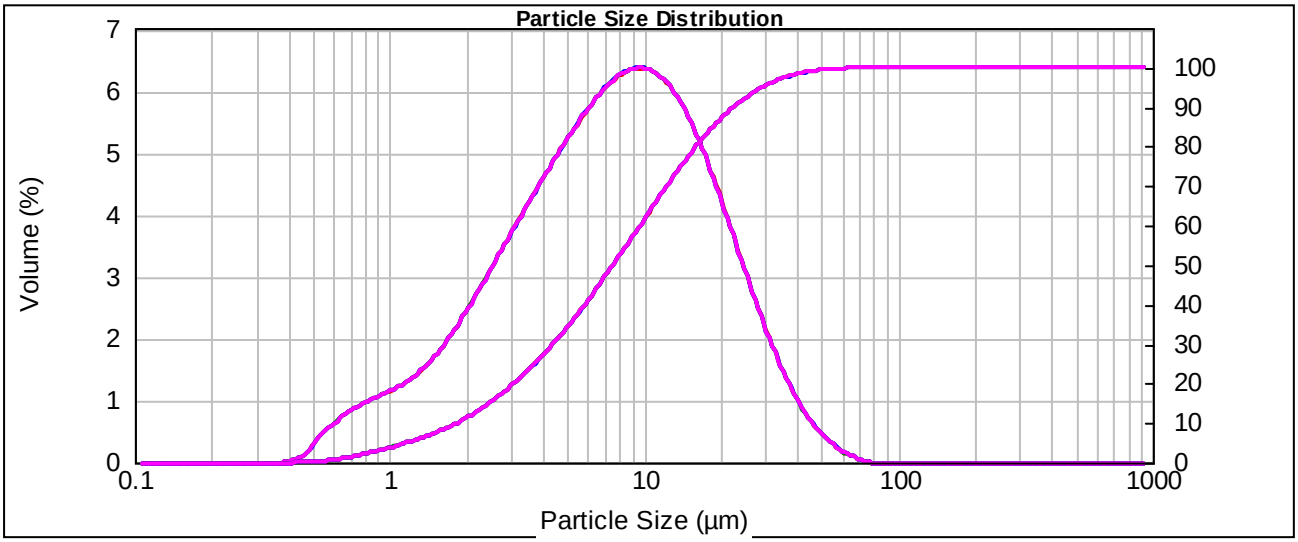
Concentration: 0.0097 %Vol
Specific Surface Area: 0.539 m²/g

Span : 2.720
Surface Weighted Mean D[3,2]: 4.197 um

Uniformity: 0.859
Vol. Weighted Mean D[4,3]: 10.328 um

Result units: Volume

d(0.1): 1.834 um d(0.5): 7.574 um **d(0.8): 16.021 um** d(0.9): 22.439 um d(0.98): 37.63 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	0.00
0.363	0.00
0.398	0.00
0.437	0.02
0.479	0.06

Size (µm)	Volume In %
0.479	0.17
0.525	0.30
0.575	0.38
0.631	0.45
0.692	0.53
0.759	0.58
0.832	0.63
0.912	0.67
1.000	0.72
1.096	0.77
1.202	0.84
1.318	0.93
1.445	1.04
1.585	1.16
1.738	1.31
1.905	1.46
2.089	1.63
2.291	

Size (µm)	Volume In %
2.291	1.80
2.512	1.97
2.754	2.15
3.020	2.32
3.311	2.50
3.631	2.67
3.981	2.83
4.365	3.00
4.786	3.16
5.248	3.30
5.754	3.45
6.310	3.57
6.918	3.68
7.586	3.76
8.318	3.82
9.120	3.84
10.000	3.83
10.965	

Size (µm)	Volume In %
10.965	3.77
12.023	3.67
13.183	3.53
14.454	3.34
15.849	3.12
17.378	2.86
19.055	2.59
20.893	2.30
22.909	2.00
25.119	1.70
27.542	1.42
30.200	1.16
33.113	0.93
36.308	0.72
39.811	0.54
43.652	0.39
47.863	0.27
52.481	

Size (µm)	Volume In %
52.481	0.19
57.544	0.11
63.096	0.07
69.183	0.02
75.858	0.00
83.176	0.00
91.201	0.00
100.000	0.00
109.648	0.00
120.226	0.00
131.826	0.00
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	0.00

Size (µm)	Volume In %
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080 - 05

Measured by:
julie

Measured:
Tuesday, August 30, 2011 10:29:10 AM

Sample Name:
Pyrite Rougher Concentrate - Average

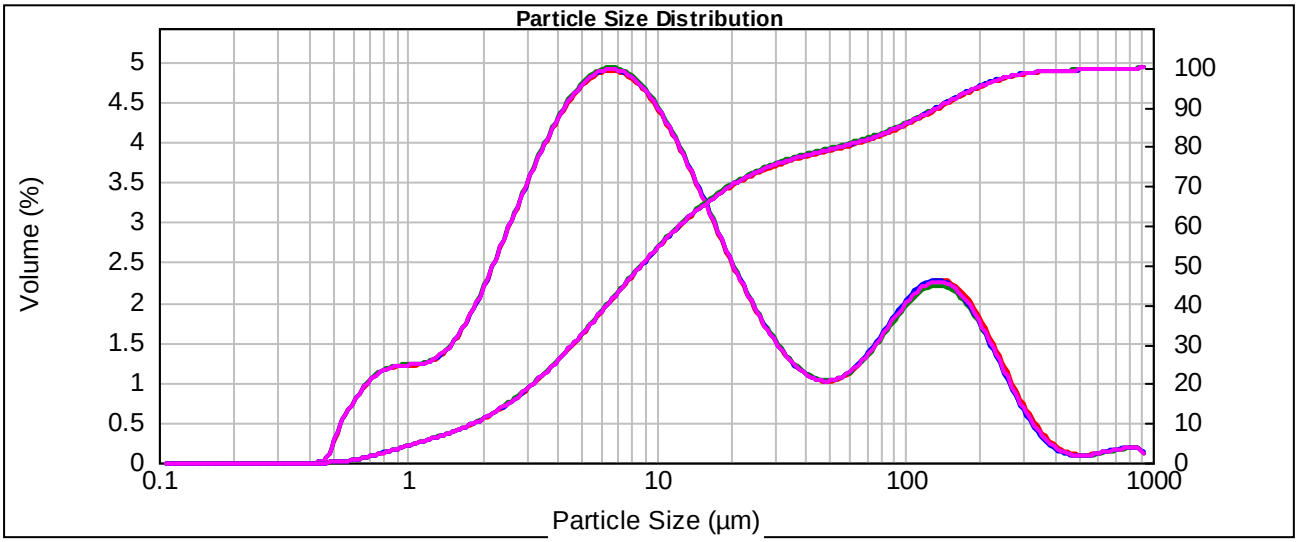
Edited by:
julie

Analysed:
Tuesday, August 30, 2011 10:29:11 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: 15.08 %
Dispersant Name: Water
Dispersant RI: 1.330
Weighted Residual: 0.955 %
Result Emulation: Off

Concentration: 0.0104 %Vol
Span : 15.404
Uniformity: 4.27
Result units: Volume
Specific Surface Area: 0.496 m²/g
Surface Weighted Mean D[3,2]: 4.565 um
Vol. Weighted Mean D[4,3]: 41.491 um

d(0.1): 1.858 um d(0.5): 8.757 um **d(0.8): 55.491 um** d(0.9): 136.758 um d(0.98): 274.55 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.13
0.525	0.33
0.575	0.45
0.631	0.56
0.692	0.64
0.759	0.69
0.832	0.72
0.912	0.73
1.000	0.73
1.096	0.74
1.202	0.77
1.318	0.81
1.445	0.89
1.585	1.00
1.738	1.13
1.905	1.29
2.089	1.46
2.291	

Size (µm)	Volume In %
2.291	1.64
2.512	1.82
2.754	2.00
3.020	2.18
3.311	2.34
3.631	2.50
3.981	2.63
4.365	2.74
4.786	2.84
5.248	2.90
5.754	2.94
6.310	2.96
6.918	2.94
7.586	2.90
8.318	2.83
9.120	2.74
10.000	2.63
10.965	

Size (µm)	Volume In %
10.965	2.50
12.023	2.35
13.183	2.19
14.454	2.03
15.849	1.86
17.378	1.69
19.055	1.53
20.893	1.37
22.909	1.22
25.119	1.09
27.542	0.97
30.200	0.86
33.113	0.77
36.308	0.70
39.811	0.65
43.652	0.62
47.863	0.61
52.481	

Size (µm)	Volume In %
52.481	0.63
57.544	0.67
63.096	0.74
69.183	0.83
75.858	0.92
83.176	1.03
91.201	1.13
100.000	1.23
109.648	1.30
120.226	1.35
131.826	1.36
144.544	1.34
158.489	1.28
173.780	1.19
190.546	1.07
208.930	0.93
229.087	0.77
251.189	

Size (µm)	Volume In %
251.189	0.62
275.423	0.47
301.995	0.34
331.131	0.24
363.078	0.15
398.107	0.10
436.516	0.06
478.630	0.05
524.807	0.06
575.440	0.07
630.957	0.08
691.831	0.10
758.578	0.11
831.764	0.11
912.011	0.03
1000.000	

Operator notes:

TABLE III-17

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080 - 06

Measured by:
julie

Measured:
Tuesday, August 30, 2011 10:55:05 AM

Sample Name:
Bulk Regrind Discharge - Average

Edited by:
julie

Analysed:
Tuesday, August 30, 2011 10:55:06 AM

Particle Name: Silica 0.1
Accessory Name: Hydro 2000MU (A)
Analysis model: General purpose
Sensitivity: Normal

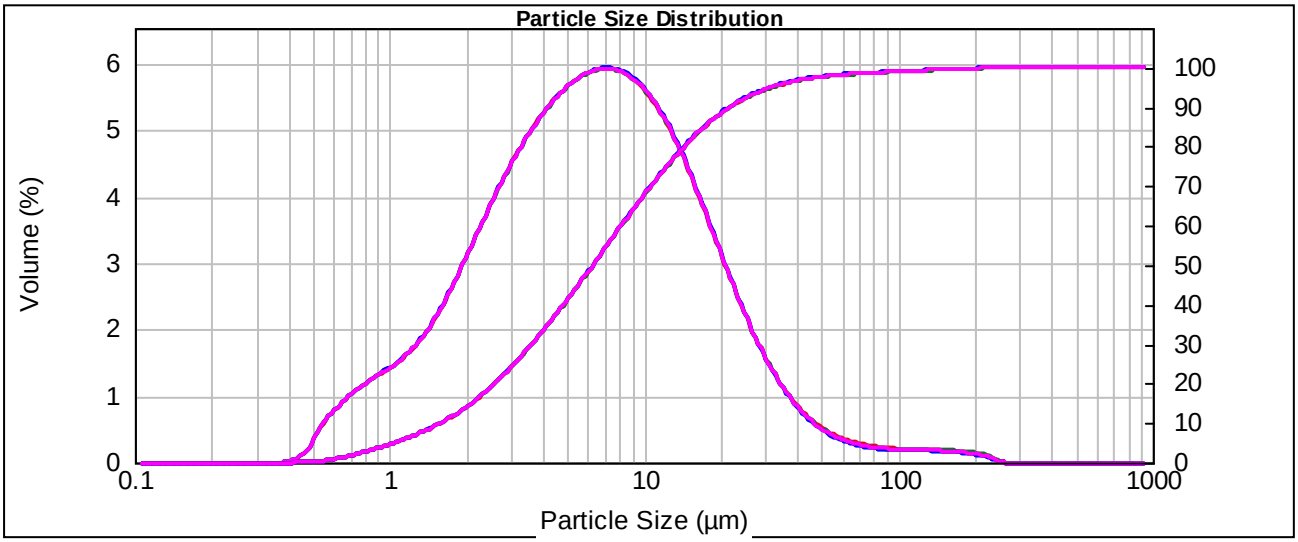
Particle RI: 1.544
Absorption: 0.1
Size range: 0.100 to 1000.000 um
Obscuration: 14.31 %

Dispersant Name: Water
Dispersant RI: 1.330
Weighted Residual: 0.665 %
Result Emulation: Off

Concentration: 0.0078 %Vol
Span : 3.203
Uniformity: 1.23
Result units: Volume

Specific Surface Area: 0.615 m²/g
Surface Weighted Mean D[3,2]: 3.684 um
Vol. Weighted Mean D[4,3]: 10.909 um

d(0.1): 1.586 um d(0.5): 6.292 um **d(0.8): 14.384 um** d(0.9): 21.740 um d(0.98): 54.63 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	0.00
0.363	0.00
0.398	0.00
0.437	0.02
0.479	0.06

Size (µm)	Volume In %
0.479	0.19
0.525	0.37
0.575	0.46
0.631	0.55
0.692	0.64
0.759	0.71
0.832	0.77
0.912	0.83
1.000	0.89
1.096	0.96
1.202	1.05
1.318	1.17
1.445	1.31
1.585	1.47
1.738	1.65
1.905	1.85
2.089	2.05
2.291	

Size (µm)	Volume In %
2.291	2.25
2.512	2.44
2.754	2.62
3.020	2.79
3.311	2.95
3.631	3.09
3.981	3.21
4.365	3.32
4.786	3.41
5.248	3.48
5.754	3.53
6.310	3.56
6.918	3.57
7.586	3.55
8.318	3.51
9.120	3.44
10.000	3.33
10.965	

Size (µm)	Volume In %
10.965	3.20
12.023	3.04
13.183	2.84
14.454	2.63
15.849	2.40
17.378	2.16
19.055	1.92
20.893	1.67
22.909	1.44
25.119	1.23
27.542	1.03
30.200	0.85
33.113	0.70
36.308	0.57
39.811	0.46
43.652	0.38
47.863	0.30
52.481	

Size (µm)	Volume In %
52.481	0.25
57.544	0.21
63.096	0.18
69.183	0.15
75.858	0.14
83.176	0.13
91.201	0.12
100.000	0.12
109.648	0.12
120.226	0.11
131.826	0.11
144.544	0.11
158.489	0.10
173.780	0.09
190.546	0.08
208.930	0.07
229.087	0.02
251.189	

Size (µm)	Volume In %
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	

Operator notes:

TABLE III-18

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080 - 06

Sample Name:
Pyrite Rougher Concentrate - Average

Measured by:
julie

Edited by:
julie

Measured:
Tuesday, August 30, 2011 11:01:20 AM

Analysed:
Tuesday, August 30, 2011 11:01:21 AM

Particle Name: Silica 0.1
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.1
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.673 %

Sensitivity: Normal
Obscuration: 6.20 %
Result Emulation: Off

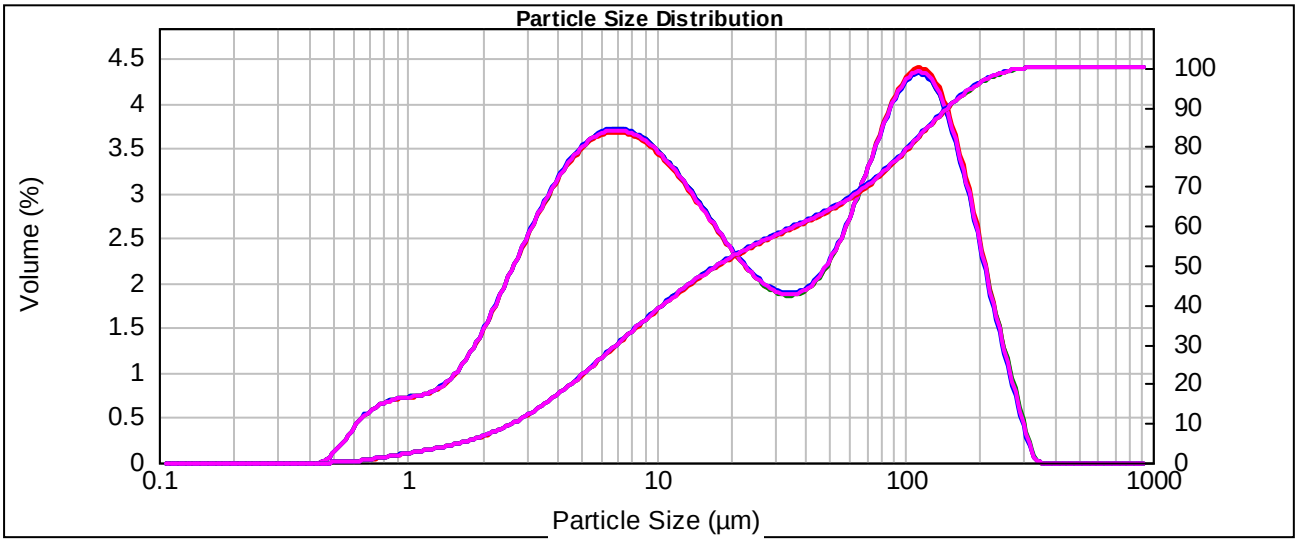
Concentration: 0.0058 %Vol
Specific Surface Area: 0.339 m²/g

Span : 8.286
Surface Weighted Mean D[3,2]: 6.687 um

Uniformity: 2.57
Vol. Weighted Mean D[4,3]: 52.319 um

Result units: Volume

d(0.1): 2.659 um d(0.5): 17.784 um **d(0.8): 104.548 um** d(0.9): 150.025 um d(0.98): 230.22 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.07
0.525	0.12
0.575	0.23
0.631	0.31
0.692	0.36
0.759	0.40
0.832	0.42
0.912	0.43
1.000	0.44
1.096	0.45
1.202	0.47
1.318	0.51
1.445	0.57
1.585	0.65
1.738	0.75
1.905	0.87
2.089	1.01
2.291	1.15

Size (µm)	Volume In %
2.291	1.15
2.512	1.29
2.754	1.44
3.020	1.57
3.311	1.71
3.631	1.83
3.981	1.94
4.365	2.03
4.786	2.11
5.248	2.17
5.754	2.21
6.310	2.23
6.918	2.23
7.586	2.21
8.318	2.18
9.120	2.13
10.000	2.06
10.965	1.99

Size (µm)	Volume In %
10.965	1.99
12.023	1.91
13.183	1.82
14.454	1.72
15.849	1.63
17.378	1.53
19.055	1.44
20.893	1.35
22.909	1.28
25.119	1.21
27.542	1.16
30.200	1.13
33.113	1.12
36.308	1.14
39.811	1.18
43.652	1.25
47.863	1.35
52.481	1.48

Size (µm)	Volume In %
52.481	1.48
57.544	1.64
63.096	1.82
69.183	2.01
75.858	2.19
83.176	2.37
91.201	2.50
100.000	2.59
109.648	2.62
120.226	2.59
131.826	2.48
144.544	2.31
158.489	2.08
173.780	1.81
190.546	1.51
208.930	1.20
229.087	0.90
251.189	0.63

Size (µm)	Volume In %
251.189	0.63
275.423	0.40
301.995	0.12
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:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080-07

Measured by:
mike

Measured:
Friday, September 09, 2011 12:34:17 PM

Sample Name:
24hr Cyanide Tail - Average

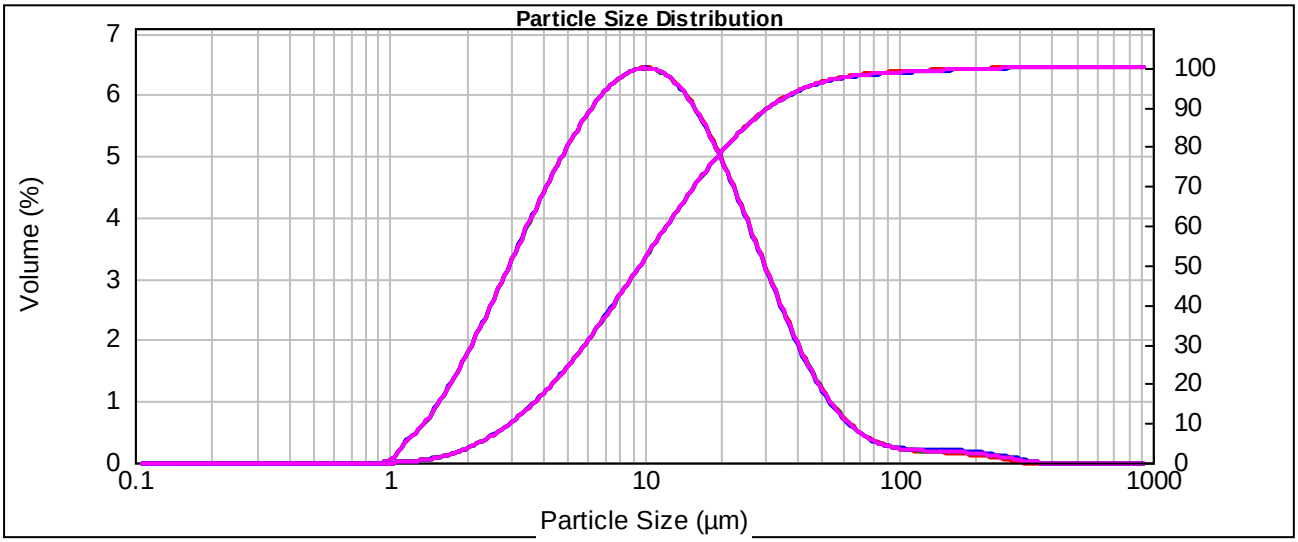
Edited by:
mike

Analysed:
Friday, September 09, 2011 12:34:18 PM

Particle Name: Silica 0.01	**Accessory Name:** Hydro 2000MU (A)	**Analysis model:** General purpose	**Sensitivity:** Normal
Particle RI: 1.544	**Absorption:** 0.01	**Size range:** 0.100 to 1000.000 um	**Obscuration:** 12.21 %
Dispersant Name: Water	**Dispersant RI:** 1.330	**Weighted Residual:** 0.312 %	**Result Emulation:** Off

Concentration: 0.0102 %Vol	**Span :** 2.911	**Uniformity:** 1.06	**Result units:** Volume
Specific Surface Area: 0.341 m²/g	**Surface Weighted Mean D[3,2]:** 6.643 um	**Vol. Weighted Mean D[4,3]:** 15.478 um	

d(0.1): 2.982 um d(0.5): 9.678 um **d(0.8): 21.067 um** d(0.9): 31.152 um d(0.98): 68.1 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.05
1.096	0.20
1.202	0.28
1.318	0.39
1.445	0.53
1.585	0.69
1.738	0.86
1.905	1.04
2.089	1.24
2.291	1.45

Size (µm)	Volume In %
2.291	1.45
2.512	1.66
2.754	1.88
3.020	2.09
3.311	2.31
3.631	2.52
3.981	2.72
4.365	2.92
4.786	3.11
5.248	3.28
5.754	3.43
6.310	3.57
6.918	3.68
7.586	3.77
8.318	3.83
9.120	3.87
10.000	3.87
10.965	3.84

Size (µm)	Volume In %
10.965	3.84
12.023	3.78
13.183	3.69
14.454	3.56
15.849	3.40
17.378	3.22
19.055	3.01
20.893	2.78
22.909	2.54
25.119	2.29
27.542	2.03
30.200	1.78
33.113	1.53
36.308	1.30
39.811	1.09
43.652	0.89
47.863	0.72
52.481	0.57

Size (µm)	Volume In %
52.481	0.57
57.544	0.45
63.096	0.35
69.183	0.27
75.858	0.22
83.176	0.17
91.201	0.15
100.000	0.13
109.648	0.12
120.226	0.12
131.826	0.11
144.544	0.11
158.489	0.11
173.780	0.10
190.546	0.09
208.930	0.08
229.087	0.06
251.189	0.05

Size (µm)	Volume In %
251.189	0.05
275.423	0.04
301.995	0.01
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: *Average of 3 measurements from 3080*

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080-08

Measured by:
mike

Measured:
Friday, September 09, 2011 2:03:46 PM

Sample Name:
24hr Cyanide Tail - Average

Edited by:
mike

Analysed:
Friday, September 09, 2011 2:03:47 PM

Particle Name:
Silica 0.01

Accessory Name:
Hydro 2000MU (A)

Analysis model:
General purpose

Sensitivity:
Normal

Particle RI:
1.544

Absorption:
0.01

Size range:
0.100 to 1000.000 um

Obscuration:
15.19 %

Dispersant Name:
Water

Dispersant RI:
1.330

Weighted Residual:
0.328 %

Result Emulation:
Off

Concentration:
0.0133 %Vol

Span :
3.211

Uniformity:
1.68

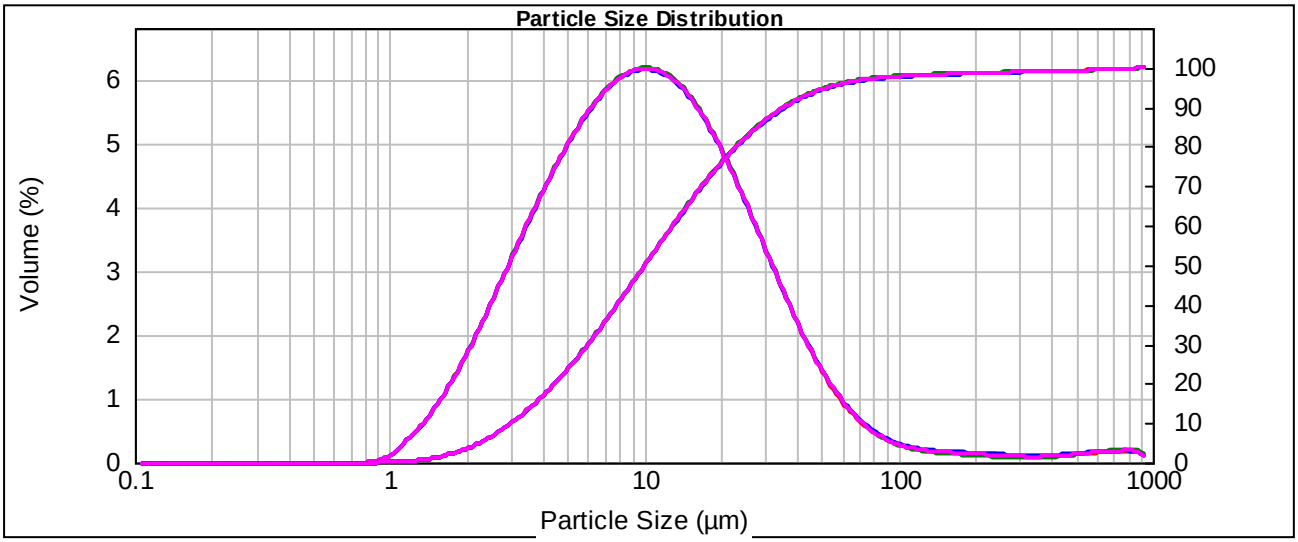
Result units:
Volume

Specific Surface Area:
0.332 m²/g

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

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

d(0.1): 3.017 um d(0.5): 10.102 um **d(0.8): 23.025 um** d(0.9): 35.455 um d(0.98): 111.31 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.01
0.912	0.04
1.000	0.09
1.096	0.19
1.202	0.28
1.318	0.38
1.445	0.51
1.585	0.66
1.738	0.83
1.905	1.01
2.089	1.20
2.291	1.40

Size (µm)	Volume In %
2.291	1.40
2.512	1.61
2.754	1.82
3.020	2.03
3.311	2.24
3.631	2.44
3.981	2.64
4.365	2.82
4.786	3.00
5.248	3.16
5.754	3.30
6.310	3.43
6.918	3.53
7.586	3.62
8.318	3.67
9.120	3.71
10.000	3.71
10.965	3.69

Size (µm)	Volume In %
10.965	3.69
12.023	3.64
13.183	3.56
14.454	3.45
15.849	3.31
17.378	3.15
19.055	2.97
20.893	2.78
22.909	2.56
25.119	2.34
27.542	2.11
30.200	1.88
33.113	1.66
36.308	1.44
39.811	1.23
43.652	1.04
47.863	0.87
52.481	0.71

Size (µm)	Volume In %
52.481	0.71
57.544	0.58
63.096	0.46
69.183	0.37
75.858	0.29
83.176	0.23
91.201	0.19
100.000	0.16
109.648	0.13
120.226	0.12
131.826	0.11
144.544	0.10
158.489	0.09
173.780	0.09
190.546	0.08
208.930	0.08
229.087	0.07
251.189	0.06

Size (µm)	Volume In %
251.189	0.06
275.423	0.06
301.995	0.06
331.131	0.06
363.078	0.06
398.107	0.06
436.516	0.07
478.630	0.08
524.807	0.09
575.440	0.10
630.957	0.11
691.831	0.11
758.578	0.12
831.764	0.11
912.011	0.03
1000.000	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080-09

Measured by:
mike

Measured:
Friday, September 09, 2011 2:09:21 PM

Sample Name:
24hr Cyanide Tail - Average

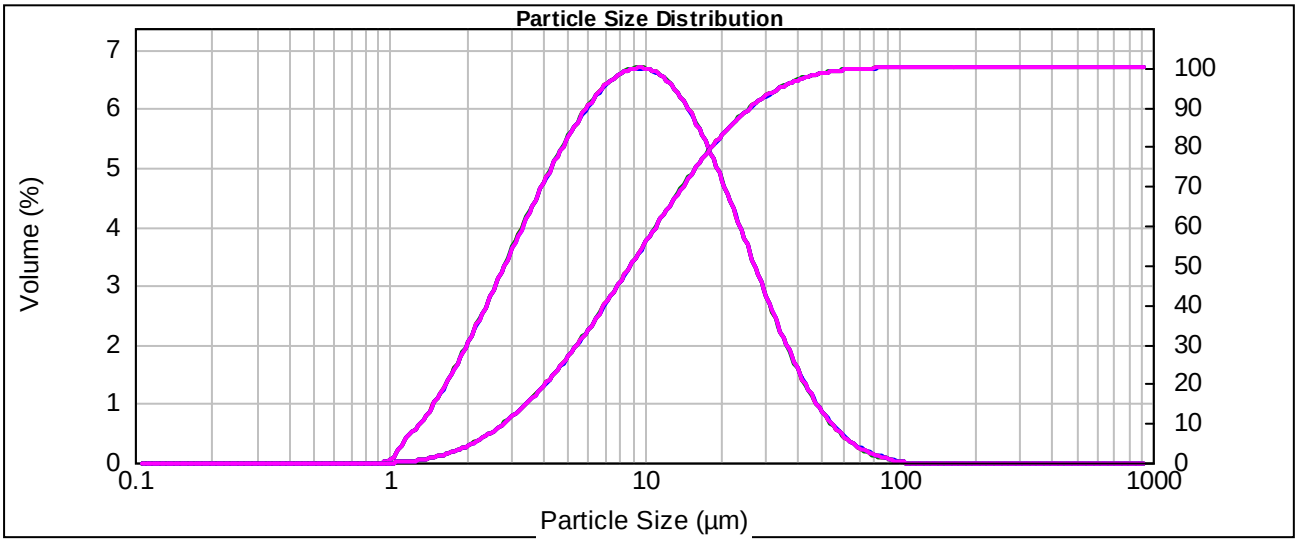
Edited by:
mike

Analysed:
Friday, September 09, 2011 2:09:22 PM

Particle Name: Silica 0.01
Accessory Name: Hydro 2000MU (A)
Analysis model: General purpose
Sensitivity: Normal
Particle RI: 1.544
Absorption: 0.01
Size range: 0.100 to 1000.000 um
Obscuration: 15.91 %
Dispersant Name: Water
Dispersant RI: 1.330
Weighted Residual: 0.284 %
Result Emulation: Off

Concentration: 0.0126 %Vol
Span : 2.647
Uniformity: 0.84
Result units: Volume
Specific Surface Area: 0.365 m²/g
Surface Weighted Mean D[3,2]: 6.197 um
Vol. Weighted Mean D[4,3]: 12.363 um

d(0.1): 2.822 um d(0.5): 8.890 um **d(0.8): 18.562 um** d(0.9): 26.354 um d(0.98): 45.62 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.06
1.096	0.24
1.202	0.34
1.318	0.46
1.445	0.62
1.585	0.79
1.738	0.98
1.905	1.18
2.089	1.39
2.291	1.60

Size (µm)	Volume In %
2.291	1.60
2.512	1.83
2.754	2.05
3.020	2.28
3.311	2.50
3.631	2.72
3.981	2.92
4.365	3.13
4.786	3.31
5.248	3.48
5.754	3.64
6.310	3.77
6.918	3.87
7.586	3.96
8.318	4.01
9.120	4.03
10.000	4.01
10.965	3.96

Size (µm)	Volume In %
10.965	3.96
12.023	3.87
13.183	3.74
14.454	3.59
15.849	3.39
17.378	3.17
19.055	2.93
20.893	2.67
22.909	2.39
25.119	2.11
27.542	1.84
30.200	1.57
33.113	1.32
36.308	1.08
39.811	0.87
43.652	0.68
47.863	0.52
52.481	0.39

Size (µm)	Volume In %
52.481	0.39
57.544	0.28
63.096	0.19
69.183	0.13
75.858	0.08
83.176	0.05
91.201	0.02
100.000	0.00
109.648	0.00
120.226	0.00
131.826	0.00
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	0.00

Size (µm)	Volume In %
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:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

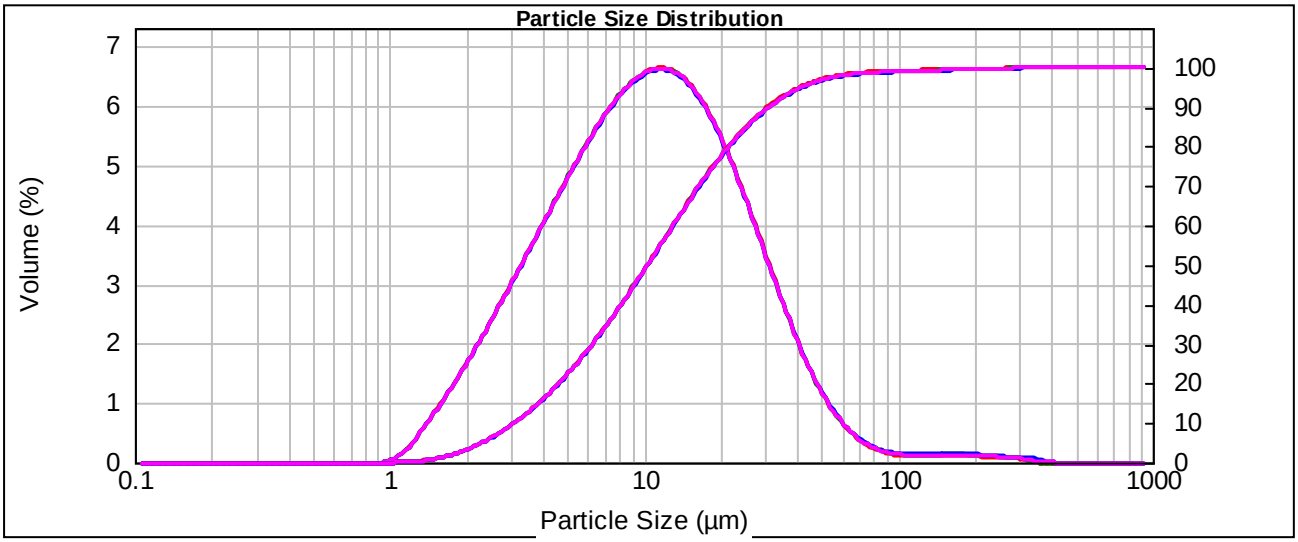
Result Analysis Report

Project and Test number: KM3080-10
Measured by: mike
Measured: Friday, September 09, 2011 2:18:51 PM
Sample Name: 24hr Cyanide Tail - Average
Edited by: mike
Analysed: Friday, September 09, 2011 2:18:52 PM

Particle Name: Silica 0.01
Accessory Name: Hydro 2000MU (A)
Analysis model: General purpose
Sensitivity: Normal
Particle RI: 1.544
Absorption: 0.01
Size range: 0.100 to 1000.000 um
Obscuration: 15.55 %
Dispersant Name: Water
Dispersant RI: 1.330
Weighted Residual: 0.182 %
Result Emulation: Off

Concentration: 0.0139 %Vol
Span : 2.686
Uniformity: 0.967
Result units: Volume
Specific Surface Area: 0.326 m²/g
Surface Weighted Mean D[3,2]: 6.941 um
Vol. Weighted Mean D[4,3]: 15.543 um

d(0.1): 3.093 um d(0.5): 10.312 um **d(0.8): 21.562 um** d(0.9): 30.788 um d(0.98): 59.49 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.04
1.096	0.11
1.202	0.23
1.318	0.38
1.445	0.51
1.585	0.66
1.738	0.83
1.905	0.99
2.089	1.17
2.291	

Size (µm)	Volume In %
2.291	1.35
2.512	1.53
2.754	1.72
3.020	1.91
3.311	2.11
3.631	2.30
3.981	2.50
4.365	2.69
4.786	2.89
5.248	3.07
5.754	3.25
6.310	3.42
6.918	3.57
7.586	3.71
8.318	3.82
9.120	3.91
10.000	3.97
10.965	

Size (µm)	Volume In %
10.965	3.99
12.023	3.98
13.183	3.93
14.454	3.83
15.849	3.70
17.378	3.52
19.055	3.32
20.893	3.08
22.909	2.81
25.119	2.53
27.542	2.24
30.200	1.94
33.113	1.66
36.308	1.38
39.811	1.13
43.652	0.91
47.863	0.71
52.481	

Size (µm)	Volume In %
52.481	0.54
57.544	0.40
63.096	0.29
69.183	0.21
75.858	0.15
83.176	0.11
91.201	0.09
100.000	0.08
109.648	0.07
120.226	0.07
131.826	0.08
144.544	0.08
158.489	0.08
173.780	0.08
190.546	0.07
208.930	0.07
229.087	0.06
251.189	

Size (µm)	Volume In %
251.189	0.05
275.423	0.05
301.995	0.04
331.131	0.01
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	

Operator notes:

TABLE III-23

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080-11

Measured by:
mike

Measured:
Friday, September 09, 2011 2:35:25 PM

Sample Name:
24hr Cyanide Tail - Average

Edited by:
mike

Analysed:
Friday, September 09, 2011 2:35:26 PM

Particle Name: Silica 0.01
Accessory Name: Hydro 2000MU (A)
Analysis model: General purpose
Sensitivity: Normal

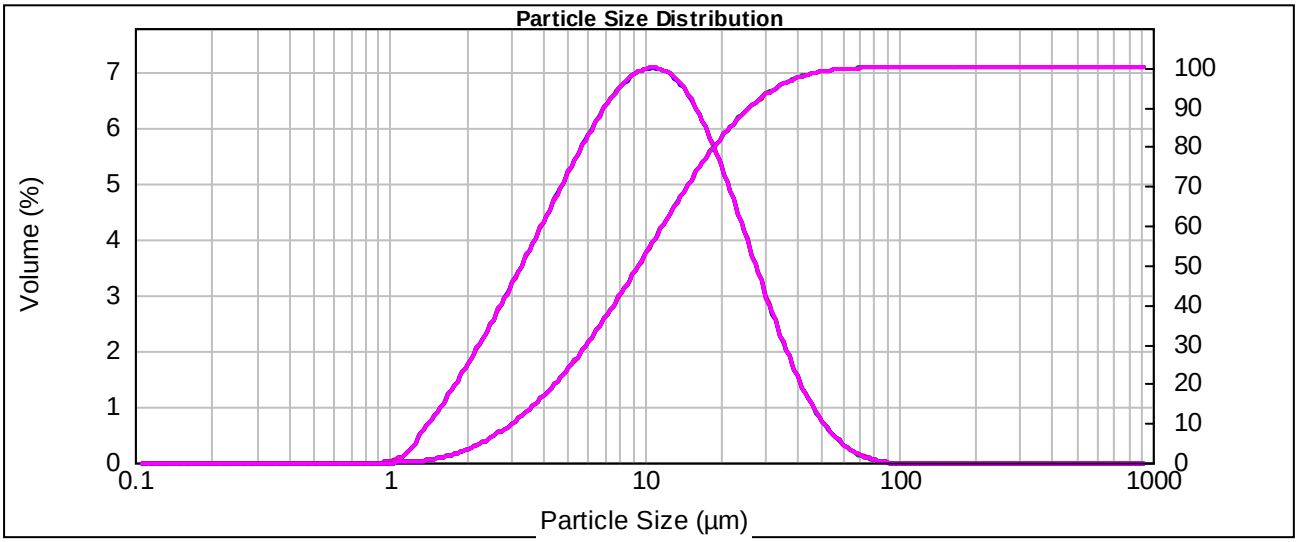
Particle RI: 1.544
Absorption: 0.01
Size range: 0.100 to 1000.000 um
Obscuration: 16.90 %

Dispersant Name: Water
Dispersant RI: 1.330
Weighted Residual: 0.218 %
Result Emulation: Off

Concentration: 0.0146 %Vol
Span : 2.414
Uniformity: 0.76
Result units: Volume

Specific Surface Area: 0.341 m²/g
Surface Weighted Mean D[3,2]: 6.649 um
Vol. Weighted Mean D[4,3]: 12.564 um

d(0.1): 3.048 um d(0.5): 9.541 um **d(0.8): 18.939 um** d(0.9): 26.080 um d(0.98): 42.72 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.03
1.096	0.07
1.202	0.21
1.318	0.38
1.445	0.51
1.585	0.68
1.738	0.85
1.905	1.03
2.089	1.22
2.291	1.41

Size (µm)	Volume In %
2.291	1.41
2.512	1.61
2.754	1.81
3.020	2.02
3.311	2.24
3.631	2.46
3.981	2.68
4.365	2.91
4.786	3.12
5.248	3.34
5.754	3.54
6.310	3.73
6.918	3.89
7.586	4.04
8.318	4.15
9.120	4.23
10.000	4.27
10.965	4.26

Size (µm)	Volume In %
10.965	4.26
12.023	4.21
13.183	4.10
14.454	3.95
15.849	3.76
17.378	3.51
19.055	3.24
20.893	2.94
22.909	2.62
25.119	2.29
27.542	1.96
30.200	1.64
33.113	1.35
36.308	1.07
39.811	0.83
43.652	0.63
47.863	0.45
52.481	0.31

Size (µm)	Volume In %
52.481	0.31
57.544	0.21
63.096	0.13
69.183	0.06
75.858	0.04
83.176	0.00
91.201	0.00
100.000	0.00
109.648	0.00
120.226	0.00
131.826	0.00
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	0.00

Size (µm)	Volume In %
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:

TABLE III-24

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080-12

Measured by:
mike

Measured:
Friday, September 09, 2011 2:48:35 PM

Sample Name:
24hr Cyanide Tail - Average

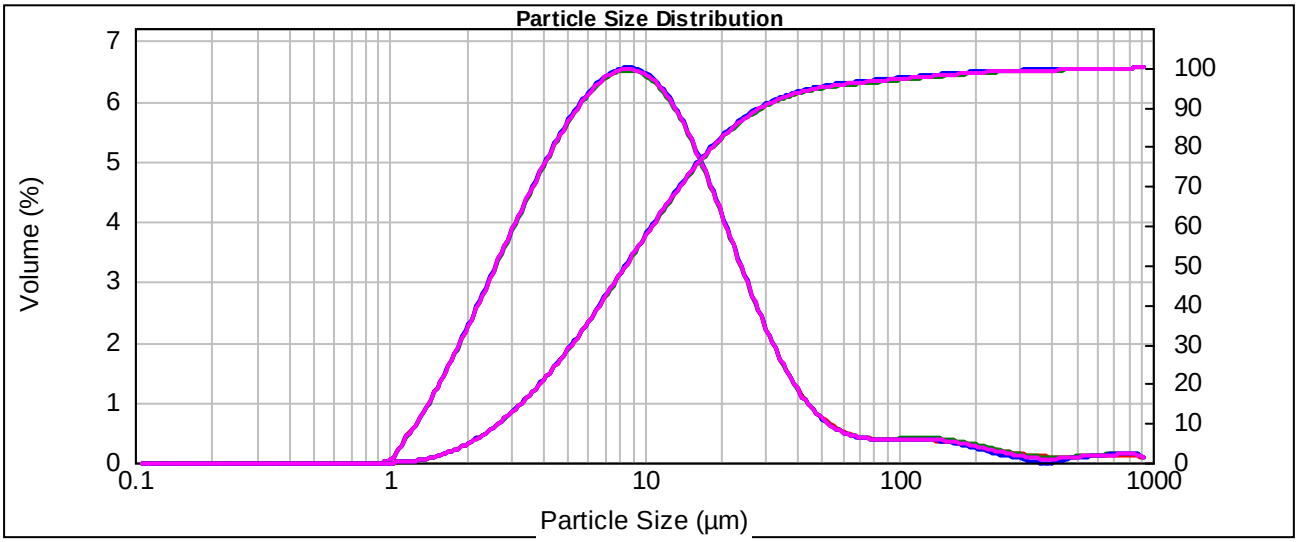
Edited by:
mike

Analysed:
Friday, September 09, 2011 2:48:36 PM

Particle Name: Silica 0.01
Accessory Name: Hydro 2000MU (A)
Analysis model: General purpose
Sensitivity: Normal
Particle RI: 1.544
Absorption: 0.01
Size range: 0.100 to 1000.000 um
Obscuration: 16.01 %
Dispersant Name: Water
Dispersant RI: 1.330
Weighted Residual: 0.144 %
Result Emulation: Off

Concentration: 0.0122 %Vol
Span : 3.110
Uniformity: 1.78
Result units: Volume
Specific Surface Area: 0.377 m²/g
Surface Weighted Mean D[3,2]: 6.013 um
Vol. Weighted Mean D[4,3]: 19.827 um

d(0.1): 2.697 um d(0.5): 8.518 um **d(0.8): 18.666 um** d(0.9): 29.190 um d(0.98): 142.58 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.06
1.096	0.23
1.202	0.37
1.318	0.52
1.445	0.71
1.585	0.90
1.738	1.11
1.905	1.32
2.089	1.53
2.291	1.75

Size (µm)	Volume In %
2.291	1.75
2.512	1.97
2.754	2.20
3.020	2.41
3.311	2.63
3.631	2.84
3.981	3.03
4.365	3.22
4.786	3.39
5.248	3.55
5.754	3.68
6.310	3.79
6.918	3.86
7.586	3.91
8.318	3.93
9.120	3.91
10.000	3.85
10.965	3.76

Size (µm)	Volume In %
10.965	3.76
12.023	3.63
13.183	3.46
14.454	3.26
15.849	3.03
17.378	2.78
19.055	2.52
20.893	2.25
22.909	1.97
25.119	1.71
27.542	1.46
30.200	1.22
33.113	1.01
36.308	0.83
39.811	0.67
43.652	0.54
47.863	0.44
52.481	0.36

Size (µm)	Volume In %
52.481	0.36
57.544	0.31
63.096	0.27
69.183	0.25
75.858	0.23
83.176	0.23
91.201	0.23
100.000	0.23
109.648	0.23
120.226	0.24
131.826	0.23
144.544	0.23
158.489	0.22
173.780	0.21
190.546	0.19
208.930	0.16
229.087	0.14
251.189	0.12

Size (µm)	Volume In %
251.189	0.10
275.423	0.08
301.995	0.06
331.131	0.04
363.078	0.04
398.107	0.04
436.516	0.05
478.630	0.06
524.807	0.06
575.440	0.07
630.957	0.08
691.831	0.08
758.578	0.08
831.764	0.08
912.011	0.02
1000.000	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080-13

Measured by:
mike

Measured:
Monday, September 12, 2011 9:46:23 AM

Sample Name:
24hr Cyanide Tail - Average

Edited by:
mike

Analysed:
Monday, September 12, 2011 9:46:24 AM

Particle Name:
Silica 0.01

Accessory Name:
Hydro 2000MU (A)

Analysis model:
General purpose

Sensitivity:
Normal

Particle RI:
1.544

Absorption:
0.01

Size range:
0.100 to 1000.000 um

Obscuration:
17.56 %

Dispersant Name:
Water

Dispersant RI:
1.330

Weighted Residual:
0.218 %

Result Emulation:
Off

Concentration:
0.0109 %Vol

Span :
2.495

Uniformity:
2.12

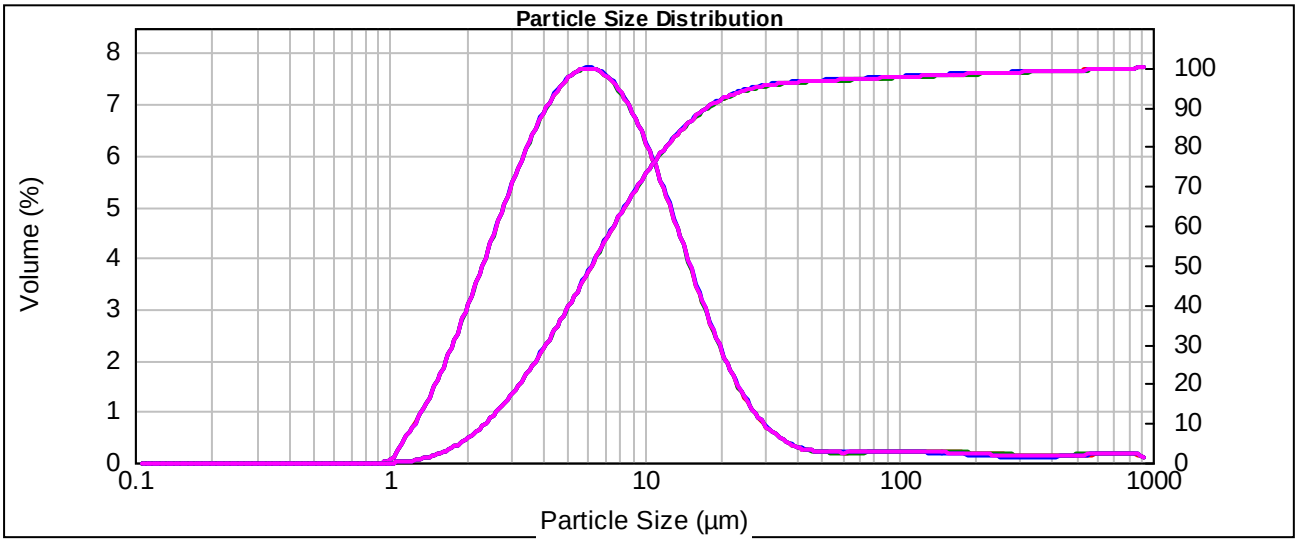
Result units:
Volume

Specific Surface Area:
0.462 m²/g

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

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

d(0.1): 2.389 um d(0.5): 6.230 um **d(0.8): 12.238 um** d(0.9): 17.930 um d(0.98): 134.55 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.07
1.096	0.29
1.202	0.46
1.318	0.66
1.445	0.91
1.585	1.18
1.738	1.47
1.905	1.78
2.089	2.11
2.291	2.44

Size (µm)	Volume In %
2.291	2.44
2.512	2.77
2.754	3.10
3.020	3.41
3.311	3.70
3.631	3.96
3.981	4.19
4.365	4.38
4.786	4.52
5.248	4.61
5.754	4.64
6.310	4.61
6.918	4.53
7.586	4.39
8.318	4.20
9.120	3.96
10.000	3.68
10.965	3.37

Size (µm)	Volume In %
10.965	3.37
12.023	3.03
13.183	2.68
14.454	2.33
15.849	1.98
17.378	1.65
19.055	1.35
20.893	1.08
22.909	0.85
25.119	0.65
27.542	0.49
30.200	0.37
33.113	0.28
36.308	0.21
39.811	0.17
43.652	0.14
47.863	0.12
52.481	0.12

Size (µm)	Volume In %
52.481	0.12
57.544	0.12
63.096	0.12
69.183	0.12
75.858	0.12
83.176	0.12
91.201	0.12
100.000	0.12
109.648	0.12
120.226	0.12
131.826	0.12
144.544	0.12
158.489	0.11
173.780	0.11
190.546	0.10
208.930	0.10
229.087	0.10
251.189	0.09

Size (µm)	Volume In %
251.189	0.09
275.423	0.08
301.995	0.08
331.131	0.07
363.078	0.07
398.107	0.08
436.516	0.08
478.630	0.09
524.807	0.09
575.440	0.10
630.957	0.10
691.831	0.10
758.578	0.11
831.764	0.10
912.011	0.03
1000.000	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080-14

Sample Name:
24hr Cyanide Tail - Average

Measured by:
mike

Edited by:
mike

Measured:
Monday, September 12, 2011 9:55:24 AM

Analysed:
Monday, September 12, 2011 9:55:25 AM

Particle Name:
Silica 0.01

Particle RI:
1.544

Dispersant Name:
Water

Accessory Name:
Hydro 2000MU (A)

Absorption:
0.01

Dispersant RI:
1.330

Analysis model:
General purpose

Size range:
0.100 to 1000.000 um

Weighted Residual:
0.282 %

Sensitivity:
Normal

Obscuration:
16.50 %

Result Emulation:
Off

Concentration:
0.0089 %Vol

Span :
2.063

Uniformity:
0.649

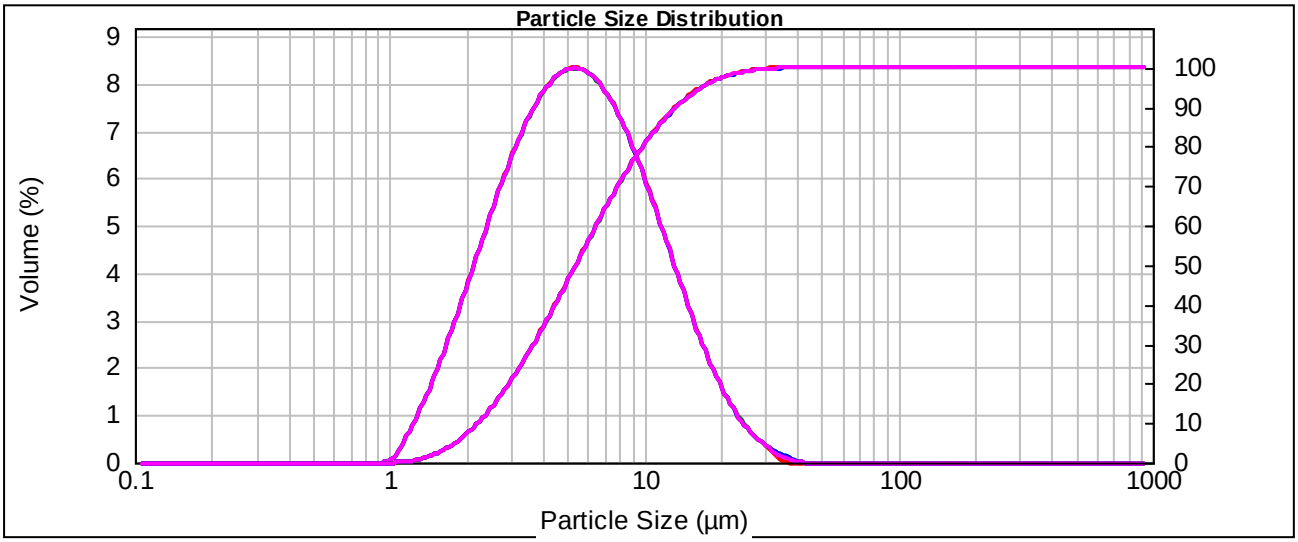
Result units:
Volume

Specific Surface Area:
0.52 m²/g

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

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

d(0.1): 2.222 um d(0.5): 5.384 um **d(0.8): 9.884 um** d(0.9): 13.329 um d(0.98): 21.34 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.06
1.096	0.29
1.202	0.53
1.318	0.80
1.445	1.12
1.585	1.47
1.738	1.83
1.905	2.21
2.089	2.60
2.291	2.98

Size (µm)	Volume In %
2.291	2.98
2.512	3.35
2.754	3.71
3.020	4.04
3.311	4.33
3.631	4.58
3.981	4.78
4.365	4.92
4.786	5.00
5.248	5.01
5.754	4.96
6.310	4.84
6.918	4.66
7.586	4.43
8.318	4.14
9.120	3.82
10.000	3.46
10.965	3.08

Size (µm)	Volume In %
10.965	3.08
12.023	2.70
13.183	2.31
14.454	1.94
15.849	1.59
17.378	1.27
19.055	0.99
20.893	0.75
22.909	0.54
25.119	0.38
27.542	0.26
30.200	0.16
33.113	0.07
36.308	0.03
39.811	0.00
43.652	0.00
47.863	0.00
52.481	0.00

Size (µm)	Volume In %
52.481	0.00
57.544	0.00
63.096	0.00
69.183	0.00
75.858	0.00
83.176	0.00
91.201	0.00
100.000	0.00
109.648	0.00
120.226	0.00
131.826	0.00
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	0.00

Size (µm)	Volume In %
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:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080-15

Measured by:
mike

Measured:
Monday, September 12, 2011 10:11:26 AM

Sample Name:
24hr Cyanide Tail - Average

Edited by:
mike

Analysed:
Monday, September 12, 2011 10:11:27 AM

Particle Name:
Silica 0.01

Accessory Name:
Hydro 2000MU (A)

Analysis model:
General purpose

Sensitivity:
Normal

Particle RI:
1.544

Absorption:
0.01

Size range:
0.100 to 1000.000 um

Obscuration:
16.63 %

Dispersant Name:
Water

Dispersant RI:
1.330

Weighted Residual:
0.242 %

Result Emulation:
Off

Concentration:
0.0099 %Vol

Span :
2.466

Uniformity:
2.4

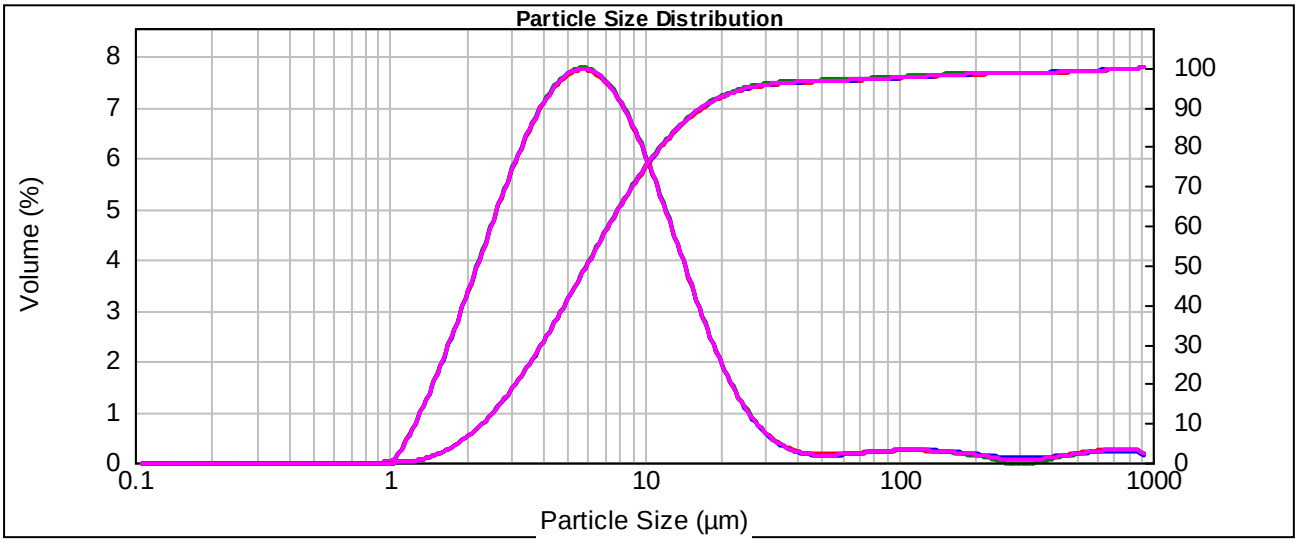
Result units:
Volume

Specific Surface Area:
0.477 m²/g

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

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

d(0.1): 2.327 um d(0.5): 5.959 um **d(0.8): 11.663 um** d(0.9): 17.024 um d(0.98): 138.22 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.04
1.096	0.22
1.202	0.45
1.318	0.71
1.445	0.99
1.585	1.30
1.738	1.62
1.905	1.95
2.089	2.30
2.291	2.64

Size (µm)	Volume In %
2.291	2.64
2.512	2.97
2.754	3.30
3.020	3.60
3.311	3.89
3.631	4.13
3.981	4.34
4.365	4.50
4.786	4.61
5.248	4.67
5.754	4.67
6.310	4.61
6.918	4.50
7.586	4.32
8.318	4.10
9.120	3.84
10.000	3.54
10.965	3.21

Size (µm)	Volume In %
10.965	3.21
12.023	2.87
13.183	2.51
14.454	2.16
15.849	1.82
17.378	1.50
19.055	1.21
20.893	0.95
22.909	0.73
25.119	0.55
27.542	0.40
30.200	0.29
33.113	0.21
36.308	0.15
39.811	0.11
43.652	0.10
47.863	0.09
52.481	0.09

Size (µm)	Volume In %
52.481	0.09
57.544	0.10
63.096	0.11
69.183	0.12
75.858	0.13
83.176	0.13
91.201	0.14
100.000	0.15
109.648	0.15
120.226	0.15
131.826	0.14
144.544	0.13
158.489	0.12
173.780	0.11
190.546	0.09
208.930	0.08
229.087	0.06
251.189	0.04

Size (µm)	Volume In %
251.189	0.04
275.423	0.04
301.995	0.03
331.131	0.03
363.078	0.05
398.107	0.07
436.516	0.09
478.630	0.10
524.807	0.12
575.440	0.14
630.957	0.15
691.831	0.15
758.578	0.15
831.764	0.15
912.011	0.04
1000.000	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080-16

Sample Name:
24hr Cyanide Tail - Average

Measured by:
mike

Edited by:
mike

Measured:
Monday, September 12, 2011 10:39:39 AM

Analysed:
Monday, September 12, 2011 10:41:34 AM

Particle Name:
Silica 0.1

Particle RI:
1.544

Dispersant Name:
Water

Accessory Name:
Hydro 2000MU (A)

Absorption:
0.1

Dispersant RI:
1.330

Analysis model:
General purpose

Size range:
0.100 to 1000.000 um

Weighted Residual:
0.713 %

Sensitivity:
Normal

Obscuration:
20.07 %

Result Emulation:
Off

Concentration:
0.0086 %Vol

Span :
2.508

Uniformity:
0.843

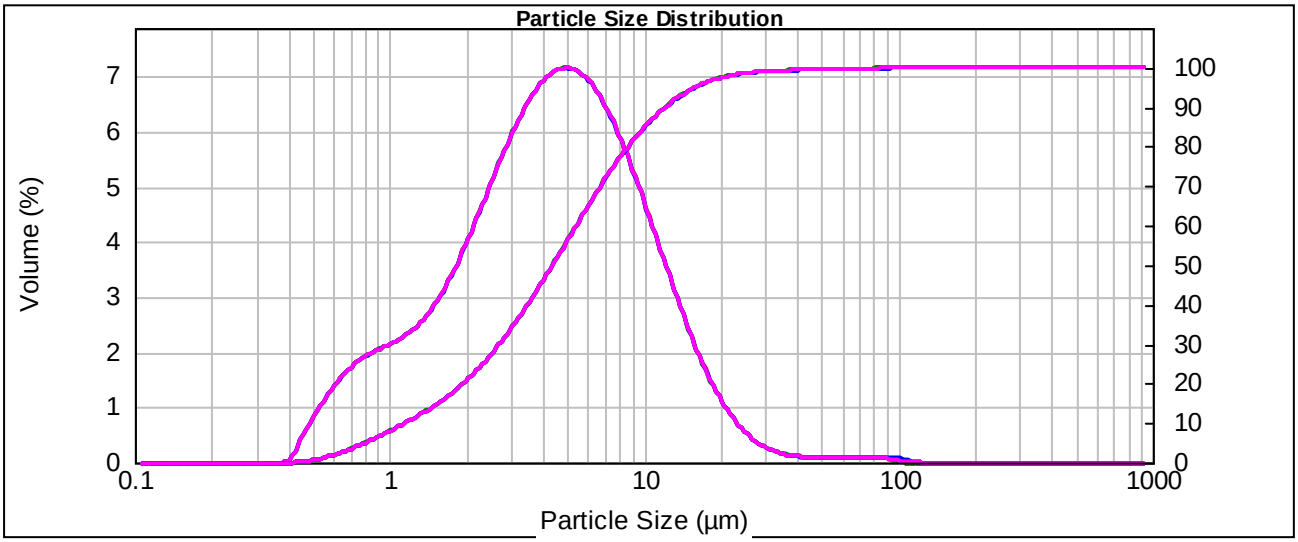
Result units:
Volume

Specific Surface Area:
0.831 m²/g

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

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

d(0.1): 1.150 um d(0.5): 4.369 um **d(0.8): 8.673 um** d(0.9): 12.109 um d(0.98): 21.72 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	0.00
0.363	0.00
0.398	0.00
0.437	0.05
0.479	0.30

Size (µm)	Volume In %
0.479	0.49
0.525	0.66
0.575	0.83
0.631	0.96
0.692	1.07
0.759	1.15
0.832	1.21
0.912	1.26
1.000	1.32
1.096	1.38
1.202	1.46
1.318	1.57
1.445	1.72
1.585	1.91
1.738	2.13
1.905	2.38
2.089	2.65
2.291	2.92

Size (µm)	Volume In %
2.291	2.92
2.512	3.19
2.754	3.45
3.020	3.69
3.311	3.91
3.631	4.08
3.981	4.21
4.365	4.29
4.786	4.31
5.248	4.27
5.754	4.18
6.310	4.03
6.918	3.83
7.586	3.59
8.318	3.31
9.120	3.01
10.000	2.69
10.965	2.36

Size (µm)	Volume In %
10.965	2.36
12.023	2.04
13.183	1.72
14.454	1.42
15.849	1.15
17.378	0.91
19.055	0.70
20.893	0.52
22.909	0.38
25.119	0.27
27.542	0.19
30.200	0.14
33.113	0.10
36.308	0.08
39.811	0.06
43.652	0.06
47.863	0.06
52.481	0.06

Size (µm)	Volume In %
52.481	0.06
57.544	0.06
63.096	0.06
69.183	0.06
75.858	0.05
83.176	0.05
91.201	0.04
100.000	0.01
109.648	0.00
120.226	0.00
131.826	0.00
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	0.00

Size (µm)	Volume In %
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080-17

Sample Name:
24hr Cyanide Tail - Average

Measured by:
mike

Edited by:
mike

Measured:
Monday, September 12, 2011 10:56:02 AM

Analysed:
Monday, September 12, 2011 10:56:03 AM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.283 %

Sensitivity: Normal
Obscuration: 19.11 %
Result Emulation: Off

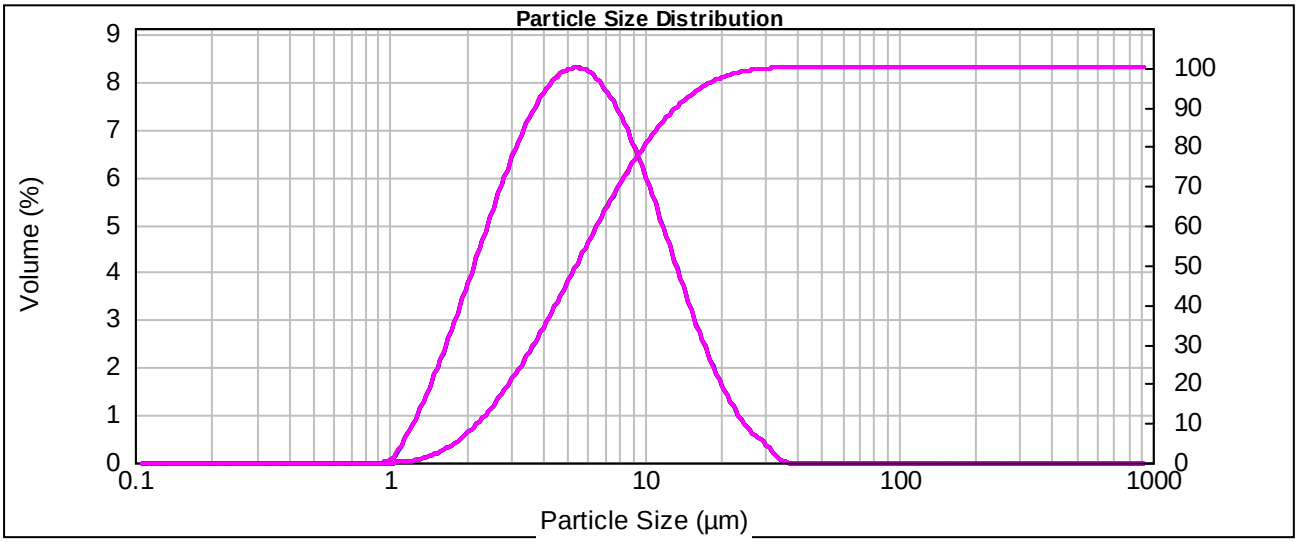
Concentration: 0.0105 %Vol
Specific Surface Area: 0.518 m²/g

Span : 2.064
Surface Weighted Mean D[3,2]: 4.371 um

Uniformity: 0.647
Vol. Weighted Mean D[4,3]: 6.847 um

Result units: Volume

d(0.1): 2.224 um d(0.5): 5.422 um **d(0.8): 9.962 um** d(0.9): 13.416 um d(0.98): 21.27 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.07
1.096	0.29
1.202	0.53
1.318	0.81
1.445	1.12
1.585	1.46
1.738	1.82
1.905	2.19
2.089	2.57
2.291	2.95

Size (µm)	Volume In %
2.291	2.95
2.512	3.32
2.754	3.67
3.020	4.00
3.311	4.29
3.631	4.54
3.981	4.74
4.365	4.89
4.786	4.97
5.248	4.99
5.754	4.95
6.310	4.84
6.918	4.67
7.586	4.44
8.318	4.17
9.120	3.85
10.000	3.50
10.965	3.13

Size (µm)	Volume In %
10.965	3.13
12.023	2.75
13.183	2.36
14.454	1.99
15.849	1.63
17.378	1.31
19.055	1.02
20.893	0.77
22.909	0.56
25.119	0.39
27.542	0.29
30.200	0.16
33.113	0.01
36.308	0.00
39.811	0.00
43.652	0.00
47.863	0.00
52.481	0.00

Size (µm)	Volume In %
52.481	0.00
57.544	0.00
63.096	0.00
69.183	0.00
75.858	0.00
83.176	0.00
91.201	0.00
100.000	0.00
109.648	0.00
120.226	0.00
131.826	0.00
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	0.00

Size (µm)	Volume In %
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:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080-18

Measured by:
mike

Measured:
Monday, September 12, 2011 11:10:48 AM

Sample Name:
24hr Cyanide Tail - Average

Edited by:
mike

Analysed:
Monday, September 12, 2011 11:14:21 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:
15.00 %

Dispersant Name:
Water

Dispersant RI:
1.330

Weighted Residual:
0.405 %

Result Emulation:
Off

Concentration:
0.0063 %Vol

Span :
2.437

Uniformity:
0.835

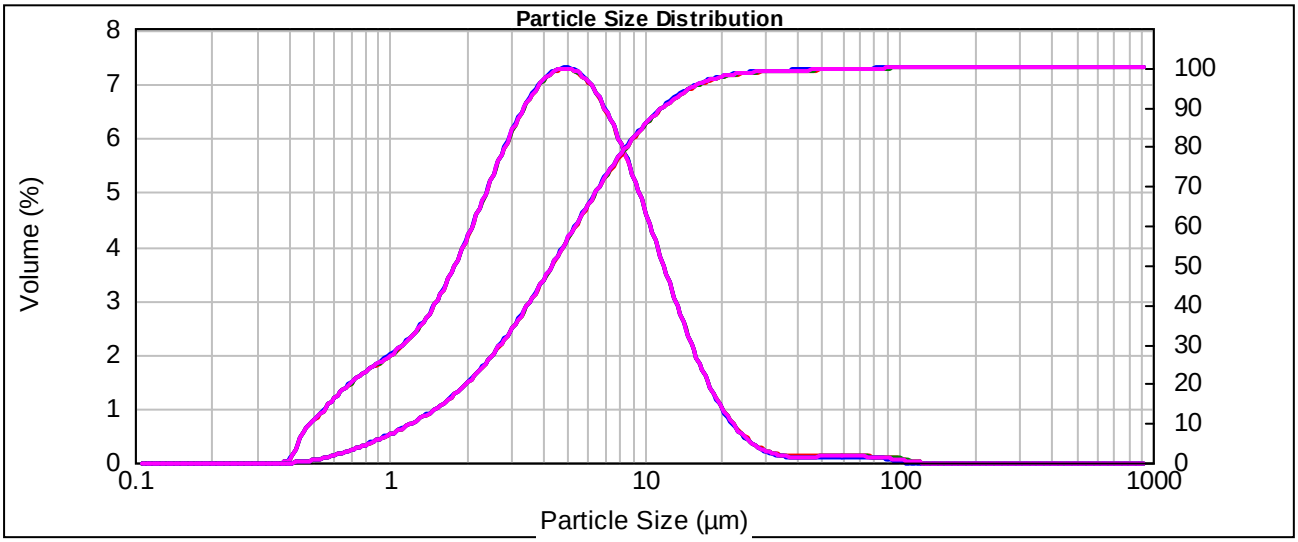
Result units:
Volume

Specific Surface Area:
0.812 m²/g

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

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

d(0.1): 1.229 um d(0.5): 4.365 um **d(0.8): 8.556 um** d(0.9): 11.868 um d(0.98): 21.18 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	0.00
0.363	0.00
0.398	0.00
0.437	0.07
0.479	0.34

Size (µm)	Volume In %
0.479	0.46
0.525	0.57
0.575	0.71
0.631	0.82
0.692	0.91
0.759	1.00
0.832	1.07
0.912	1.15
1.000	1.23
1.096	1.33
1.202	1.44
1.318	1.59
1.445	1.76
1.585	1.98
1.738	2.21
1.905	2.47
2.089	2.74
2.291	

Size (µm)	Volume In %
2.291	3.02
2.512	3.29
2.754	3.56
3.020	3.80
3.311	4.01
3.631	4.18
3.981	4.30
4.365	4.38
4.786	4.39
5.248	4.35
5.754	4.25
6.310	4.09
6.918	3.88
7.586	3.62
8.318	3.33
9.120	3.02
10.000	2.68
10.965	

Size (µm)	Volume In %
10.965	2.34
12.023	2.00
13.183	1.67
14.454	1.37
15.849	1.09
17.378	0.84
19.055	0.64
20.893	0.46
22.909	0.33
25.119	0.22
27.542	0.15
30.200	0.10
33.113	0.08
36.308	0.06
39.811	0.06
43.652	0.06
47.863	0.07
52.481	

Size (µm)	Volume In %
52.481	0.07
57.544	0.07
63.096	0.07
69.183	0.07
75.858	0.06
83.176	0.05
91.201	0.04
100.000	0.03
109.648	0.00
120.226	0.00
131.826	0.00
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	

Size (µm)	Volume In %
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	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080-19

Measured by:
Mel

Measured:
Wednesday, November 02, 2011 2:47:01 PM

Sample Name:
24hr Cyanide Tail - Average

Edited by:
Mel

Analysed:
Wednesday, November 02, 2011 2:47:02 PM

Particle Name:
Silica 0.01

Accessory Name:
Hydro 2000MU (A)

Analysis model:
General purpose

Sensitivity:
Normal

Particle RI:
1.544

Absorption:
0.01

Size range:
0.100 to 1000.000 um

Obscuration:
14.10 %

Dispersant Name:
Water

Dispersant RI:
1.330

Weighted Residual:
0.296 %

Result Emulation:
Off

Concentration:
0.0115 %Vol

Span :
2.879

Uniformity:
0.95

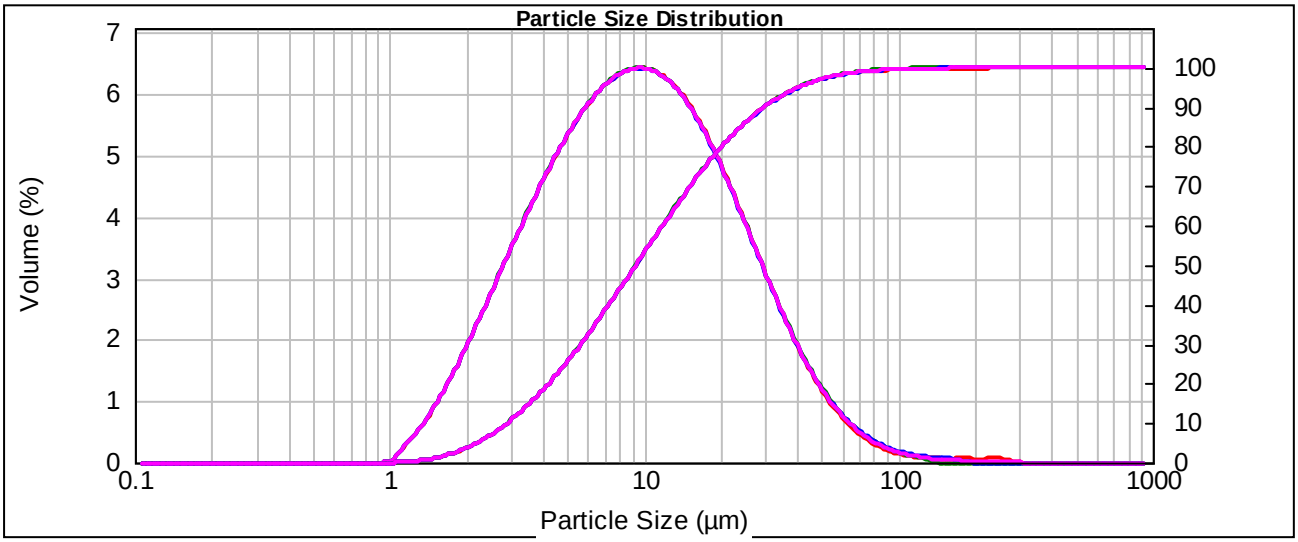
Result units:
Volume

Specific Surface Area:
0.351 m²/g

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

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

d(0.1): 2.900 um d(0.5): 9.290 um **d(0.8): 20.208 um** d(0.9): 29.651 um d(0.98): 56.6 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.00
1.096	0.17
1.202	0.28
1.318	0.41
1.445	0.56
1.585	0.74
1.738	0.92
1.905	1.12
2.089	1.34
2.291	1.55

Size (µm)	Volume In %
2.291	1.55
2.512	1.78
2.754	2.00
3.020	2.22
3.311	2.44
3.631	2.65
3.981	2.85
4.365	3.04
4.786	3.21
5.248	3.37
5.754	3.51
6.310	3.63
6.918	3.73
7.586	3.80
8.318	3.85
9.120	3.87
10.000	3.86
10.965	3.81

Size (µm)	Volume In %
10.965	3.81
12.023	3.74
13.183	3.63
14.454	3.50
15.849	3.33
17.378	3.14
19.055	2.93
20.893	2.70
22.909	2.46
25.119	2.21
27.542	1.96
30.200	1.72
33.113	1.49
36.308	1.27
39.811	1.07
43.652	0.88
47.863	0.72
52.481	0.58

Size (µm)	Volume In %
52.481	0.58
57.544	0.46
63.096	0.35
69.183	0.27
75.858	0.21
83.176	0.15
91.201	0.11
100.000	0.08
109.648	0.07
120.226	0.05
131.826	0.03
144.544	0.03
158.489	0.03
173.780	0.03
190.546	0.02
208.930	0.01
229.087	0.01
251.189	0.01

Size (µm)	Volume In %
251.189	0.01
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:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080-20

Sample Name:
24hr Cyanide Tail - Average

Measured by:
Mel

Edited by:
Mel

Measured:
Wednesday, November 02, 2011 2:50:27 PM

Analysed:
Wednesday, November 02, 2011 2:50:28 PM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.282 %

Sensitivity: Normal
Obscuration: 16.64 %
Result Emulation: Off

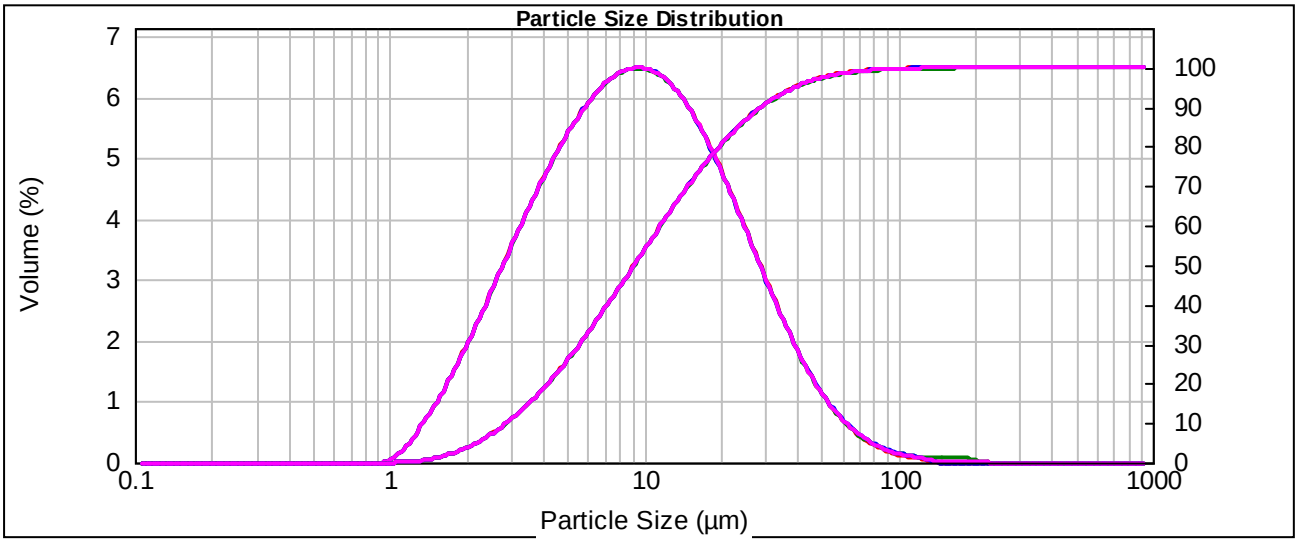
Concentration: 0.0137 %Vol
Specific Surface Area: 0.354 m²/g

Span : 2.839
Surface Weighted Mean D[3,2]: 6.390 um

Uniformity: 0.924
Vol. Weighted Mean D[4,3]: 13.488 um

Result units: Volume

d(0.1): 2.885 um d(0.5): 9.161 um **d(0.8): 19.792 um** d(0.9): 28.898 um d(0.98): 54.14 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.06
1.096	0.13
1.202	0.26
1.318	0.42
1.445	0.57
1.585	0.75
1.738	0.94
1.905	1.14
2.089	1.36
2.291	1.58

Size (µm)	Volume In %
2.291	1.58
2.512	1.80
2.754	2.03
3.020	2.25
3.311	2.47
3.631	2.68
3.981	2.89
4.365	3.08
4.786	3.26
5.248	3.41
5.754	3.56
6.310	3.68
6.918	3.77
7.586	3.84
8.318	3.89
9.120	3.90
10.000	3.88
10.965	3.83

Size (µm)	Volume In %
10.965	3.83
12.023	3.75
13.183	3.64
14.454	3.50
15.849	3.33
17.378	3.13
19.055	2.91
20.893	2.67
22.909	2.43
25.119	2.18
27.542	1.93
30.200	1.68
33.113	1.45
36.308	1.23
39.811	1.03
43.652	0.84
47.863	0.68
52.481	0.54

Size (µm)	Volume In %
52.481	0.54
57.544	0.43
63.096	0.33
69.183	0.25
75.858	0.18
83.176	0.14
91.201	0.10
100.000	0.07
109.648	0.06
120.226	0.04
131.826	0.02
144.544	0.01
158.489	0.01
173.780	0.01
190.546	0.01
208.930	0.01
229.087	0.00
251.189	0.00

Size (µm)	Volume In %
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:

TABLE III-33

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080-21

Measured by:
Mel

Measured:
Wednesday, November 02, 2011 2:53:31 PM

Sample Name:
24hr Cyanide Tail - Average

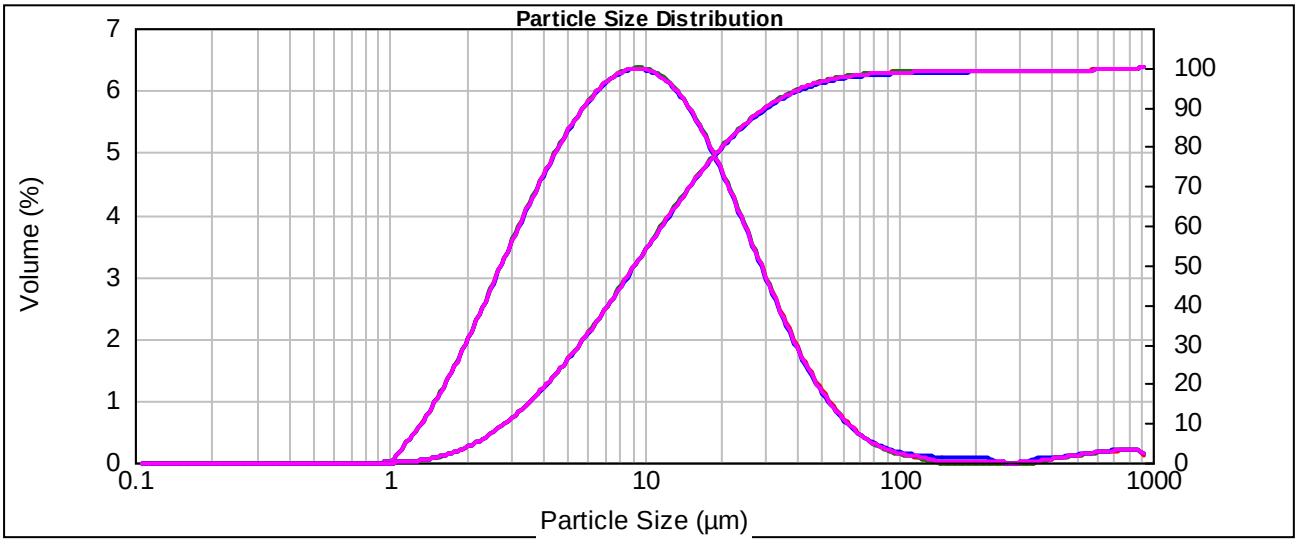
Edited by:
Mel

Analysed:
Wednesday, November 02, 2011 2:53:32 PM

Particle Name: Silica 0.01
Accessory Name: Hydro 2000MU (A)
Analysis model: General purpose
Sensitivity: Normal
Particle RI: 1.544
Absorption: 0.01
Size range: 0.100 to 1000.000 um
Obscuration: 16.88 %
Dispersant Name: Water
Dispersant RI: 1.330
Weighted Residual: 0.243 %
Result Emulation: Off

Concentration: 0.0140 %Vol
Span : 2.978
Uniformity: 1.56
Result units: Volume
Specific Surface Area: 0.353 m²/g
Surface Weighted Mean D[3,2]: 6.405 um
Vol. Weighted Mean D[4,3]: 19.481 um

d(0.1): 2.866 um d(0.5): 9.242 um **d(0.8): 20.378 um** d(0.9): 30.392 um d(0.98): 66.91 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.04
1.096	0.17
1.202	0.29
1.318	0.43
1.445	0.59
1.585	0.77
1.738	0.96
1.905	1.16
2.089	1.37
2.291	1.59

Size (µm)	Volume In %
2.291	1.59
2.512	1.80
2.754	2.03
3.020	2.24
3.311	2.46
3.631	2.66
3.981	2.86
4.365	3.04
4.786	3.21
5.248	3.37
5.754	3.50
6.310	3.62
6.918	3.71
7.586	3.78
8.318	3.82
9.120	3.83
10.000	3.81
10.965	3.76

Size (µm)	Volume In %
10.965	3.76
12.023	3.68
13.183	3.57
14.454	3.44
15.849	3.27
17.378	3.08
19.055	2.87
20.893	2.64
22.909	2.40
25.119	2.16
27.542	1.92
30.200	1.68
33.113	1.45
36.308	1.23
39.811	1.03
43.652	0.85
47.863	0.69
52.481	0.55

Size (µm)	Volume In %
52.481	0.55
57.544	0.43
63.096	0.33
69.183	0.25
75.858	0.19
83.176	0.14
91.201	0.10
100.000	0.08
109.648	0.06
120.226	0.05
131.826	0.02
144.544	0.01
158.489	0.02
173.780	0.02
190.546	0.01
208.930	0.01
229.087	0.01
251.189	0.01

Size (µm)	Volume In %
251.189	0.00
275.423	0.00
301.995	0.00
331.131	0.01
363.078	0.03
398.107	0.05
436.516	0.06
478.630	0.07
524.807	0.09
575.440	0.10
630.957	0.11
691.831	0.12
758.578	0.12
831.764	0.12
912.011	0.12
1000.000	0.04

Operator notes:

TABLE III-34

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080-22

Measured by:
Mel

Measured:
Wednesday, November 02, 2011 2:56:28 PM

Sample Name:
24hr Cyanide Tail - Average

Edited by:
Mel

Analysed:
Wednesday, November 02, 2011 2:56:29 PM

Particle Name:
Silica 0.01

Accessory Name:
Hydro 2000MU (A)

Analysis model:
General purpose

Sensitivity:
Normal

Particle RI:
1.544

Absorption:
0.01

Size range:
0.100 to 1000.000 um

Obscuration:
13.81 %

Dispersant Name:
Water

Dispersant RI:
1.330

Weighted Residual:
0.353 %

Result Emulation:
Off

Concentration:
0.0113 %Vol

Span :
2.783

Uniformity:
0.897

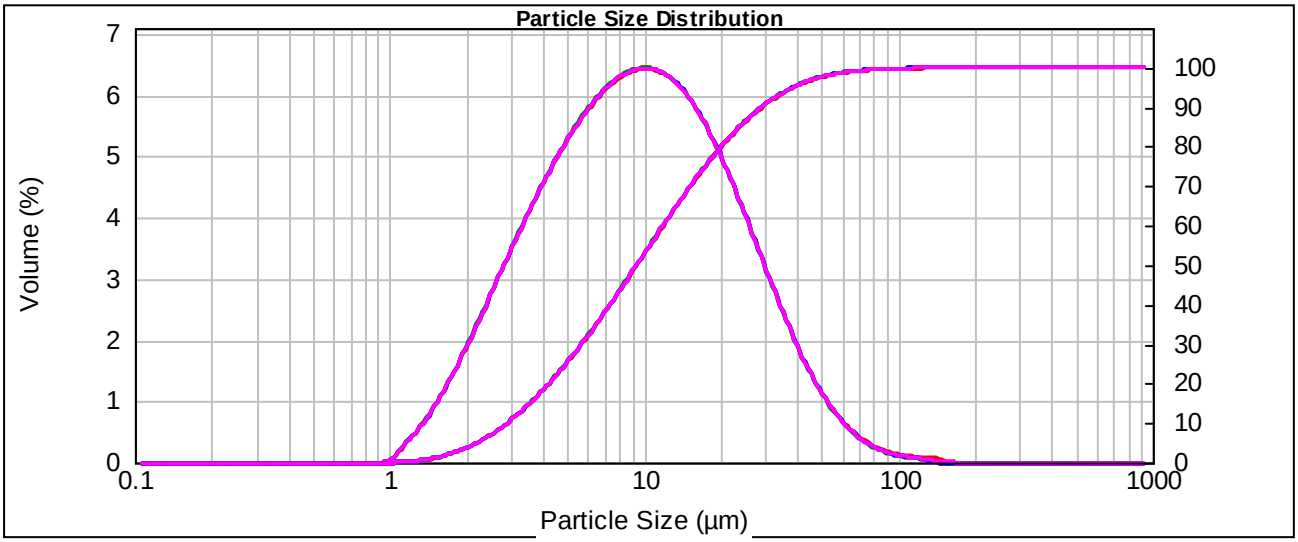
Result units:
Volume

Specific Surface Area:
0.351 m²/g

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

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

d(0.1): 2.900 um d(0.5): 9.367 um **d(0.8): 20.121 um** d(0.9): 28.973 um d(0.98): 52.28 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.05
1.096	0.18
1.202	0.28
1.318	0.41
1.445	0.56
1.585	0.73
1.738	0.92
1.905	1.12
2.089	1.33
2.291	1.55

Size (µm)	Volume In %
2.291	1.55
2.512	1.77
2.754	1.99
3.020	2.21
3.311	2.42
3.631	2.63
3.981	2.82
4.365	3.01
4.786	3.18
5.248	3.33
5.754	3.47
6.310	3.60
6.918	3.70
7.586	3.78
8.318	3.84
9.120	3.87
10.000	3.87
10.965	3.87

Size (µm)	Volume In %
10.965	3.84
12.023	3.79
13.183	3.70
14.454	3.58
15.849	3.42
17.378	3.24
19.055	3.03
20.893	2.80
22.909	2.55
25.119	2.29
27.542	2.03
30.200	1.77
33.113	1.52
36.308	1.27
39.811	1.05
43.652	0.86
47.863	0.68
52.481	0.53

Size (µm)	Volume In %
52.481	0.53
57.544	0.40
63.096	0.30
69.183	0.22
75.858	0.16
83.176	0.11
91.201	0.08
100.000	0.06
109.648	0.05
120.226	0.04
131.826	0.02
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	0.00

Size (µm)	Volume In %
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:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080-23

Measured by:
Mel

Measured:
Wednesday, November 02, 2011 2:59:23 PM

Sample Name:
24hr Cyanide Tail - Average

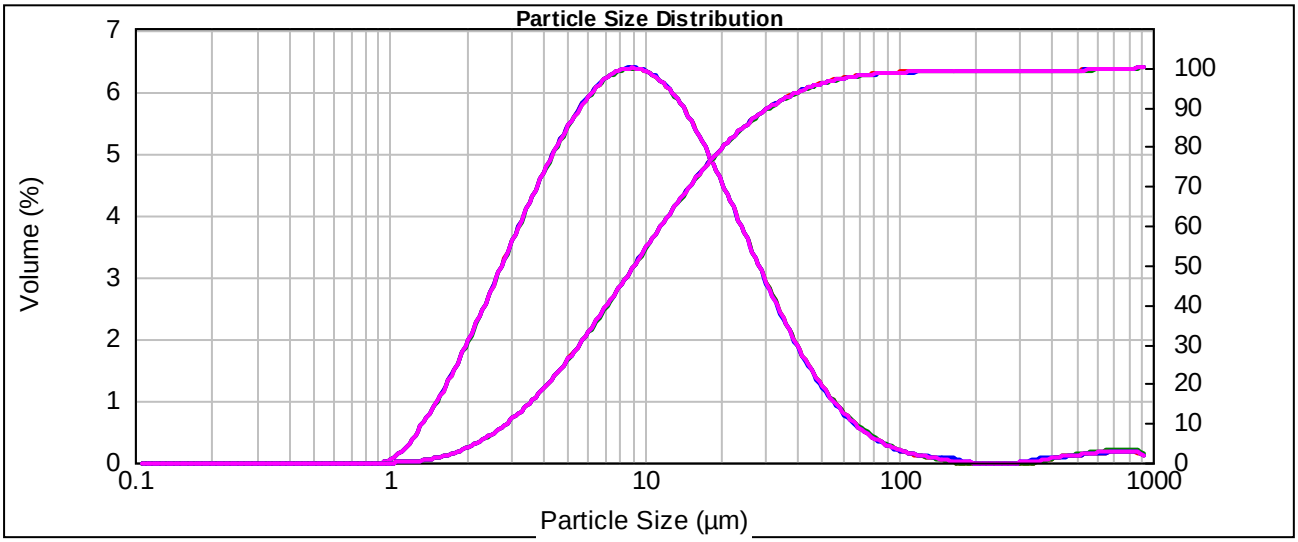
Edited by:
Mel

Analysed:
Wednesday, November 02, 2011 2:59:24 PM

Particle Name: Silica 0.01
Accessory Name: Hydro 2000MU (A)
Analysis model: General purpose
Sensitivity: Normal
Particle RI: 1.544
Absorption: 0.01
Size range: 0.100 to 1000.000 um
Obscuration: 16.23 %
Dispersant Name: Water
Dispersant RI: 1.330
Weighted Residual: 0.253 %
Result Emulation: Off

Concentration: 0.0135 %Vol
Span : 3.090
Uniformity: 1.56
Result units: Volume
Specific Surface Area: 0.352 m²/g
Surface Weighted Mean D[3,2]: 6.441 um
Vol. Weighted Mean D[4,3]: 19.344 um

d(0.1): 2.896 um d(0.5): 9.184 um **d(0.8): 20.530 um** d(0.9): 31.275 um d(0.98): 71.12 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.05
1.096	0.13
1.202	0.26
1.318	0.42
1.445	0.56
1.585	0.74
1.738	0.93
1.905	1.13
2.089	1.35
2.291	1.57

Size (µm)	Volume In %
2.291	1.57
2.512	1.79
2.754	2.02
3.020	2.25
3.311	2.47
3.631	2.69
3.981	2.90
4.365	3.09
4.786	3.27
5.248	3.43
5.754	3.56
6.310	3.68
6.918	3.76
7.586	3.82
8.318	3.84
9.120	3.84
10.000	3.84
10.965	3.80

Size (µm)	Volume In %
10.965	3.73
12.023	3.64
13.183	3.51
14.454	3.35
15.849	3.18
17.378	2.98
19.055	2.77
20.893	2.55
22.909	2.32
25.119	2.10
27.542	1.87
30.200	1.65
33.113	1.44
36.308	1.24
39.811	1.06
43.652	0.90
47.863	0.75
52.481	0.61

Size (µm)	Volume In %
52.481	0.61
57.544	0.50
63.096	0.40
69.183	0.31
75.858	0.25
83.176	0.19
91.201	0.14
100.000	0.11
109.648	0.08
120.226	0.06
131.826	0.05
144.544	0.03
158.489	0.01
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	0.00

Size (µm)	Volume In %
251.189	0.00
275.423	0.00
301.995	0.00
331.131	0.01
363.078	0.03
398.107	0.05
436.516	0.06
478.630	0.07
524.807	0.09
575.440	0.10
630.957	0.10
691.831	0.11
758.578	0.11
831.764	0.11
912.011	0.11
1000.000	0.03

Operator notes:

TABLE III-36

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080-24

Sample Name:
24hr Cyanide Tail - Average

Measured by:
Mel

Edited by:
Mel

Measured:
Wednesday, November 02, 2011 3:03:23 PM

Analysed:
Wednesday, November 02, 2011 3:03:24 PM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.894 %

Sensitivity: Normal
Obscuration: 14.95 %
Result Emulation: Off

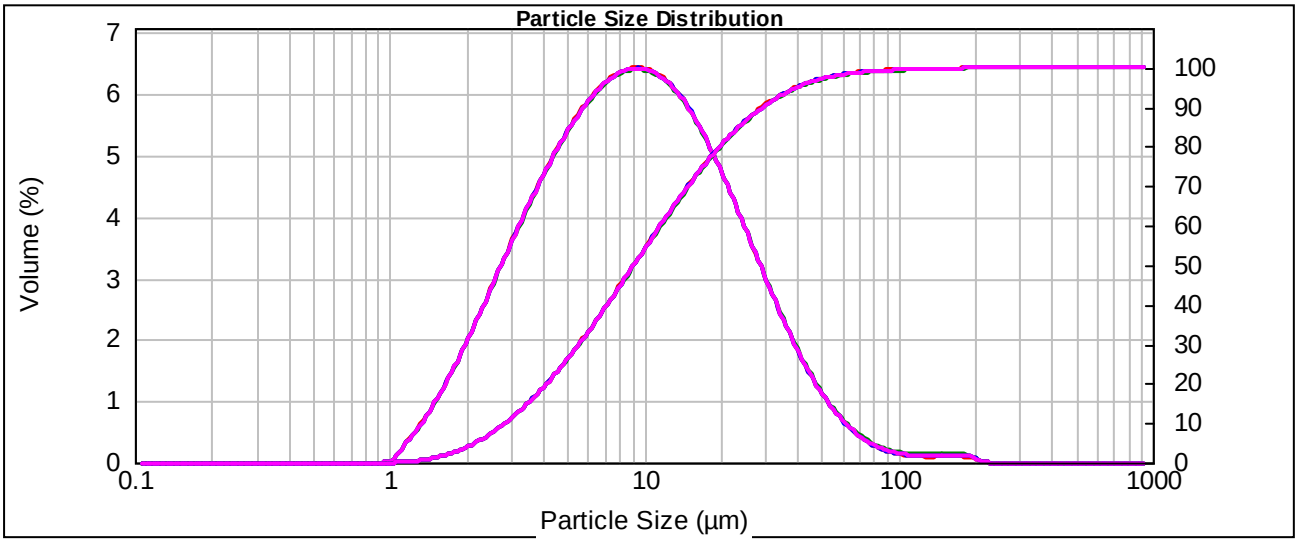
Concentration: 0.0121 %Vol
Specific Surface Area: 0.357 m²/g

Span : 2.891
Surface Weighted Mean D[3,2]: 6.346 um

Uniformity: 0.975
Vol. Weighted Mean D[4,3]: 13.888 um

Result units: Volume

d(0.1): 2.854 um d(0.5): 9.129 um **d(0.8): 19.898 um** d(0.9): 29.247 um d(0.98): 56.88 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.04
1.096	0.18
1.202	0.29
1.318	0.43
1.445	0.59
1.585	0.77
1.738	0.96
1.905	1.17
2.089	1.38
2.291	1.60

Size (µm)	Volume In %
2.291	1.60
2.512	1.82
2.754	2.05
3.020	2.27
3.311	2.48
3.631	2.69
3.981	2.89
4.365	3.08
4.786	3.25
5.248	3.40
5.754	3.54
6.310	3.66
6.918	3.75
7.586	3.81
8.318	3.85
9.120	3.86
10.000	3.84
10.965	3.79

Size (µm)	Volume In %
10.965	3.79
12.023	3.71
13.183	3.60
14.454	3.46
15.849	3.29
17.378	3.09
19.055	2.88
20.893	2.65
22.909	2.41
25.119	2.16
27.542	1.92
30.200	1.67
33.113	1.44
36.308	1.22
39.811	1.02
43.652	0.84
47.863	0.68
52.481	0.54

Size (µm)	Volume In %
52.481	0.54
57.544	0.42
63.096	0.32
69.183	0.24
75.858	0.18
83.176	0.13
91.201	0.10
100.000	0.08
109.648	0.07
120.226	0.07
131.826	0.07
144.544	0.07
158.489	0.07
173.780	0.07
190.546	0.07
208.930	0.05
229.087	0.00
251.189	0.00

Size (µm)	Volume In %
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:

TABLE III-37

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080-25

Sample Name:
24hr Cyanide Tail - Average

Measured by:
Mel

Edited by:
Mel

Measured:
Wednesday, November 02, 2011 3:06:50 PM

Analysed:
Wednesday, November 02, 2011 3:06:51 PM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.338 %

Sensitivity: Normal
Obscuration: 10.92 %
Result Emulation: Off

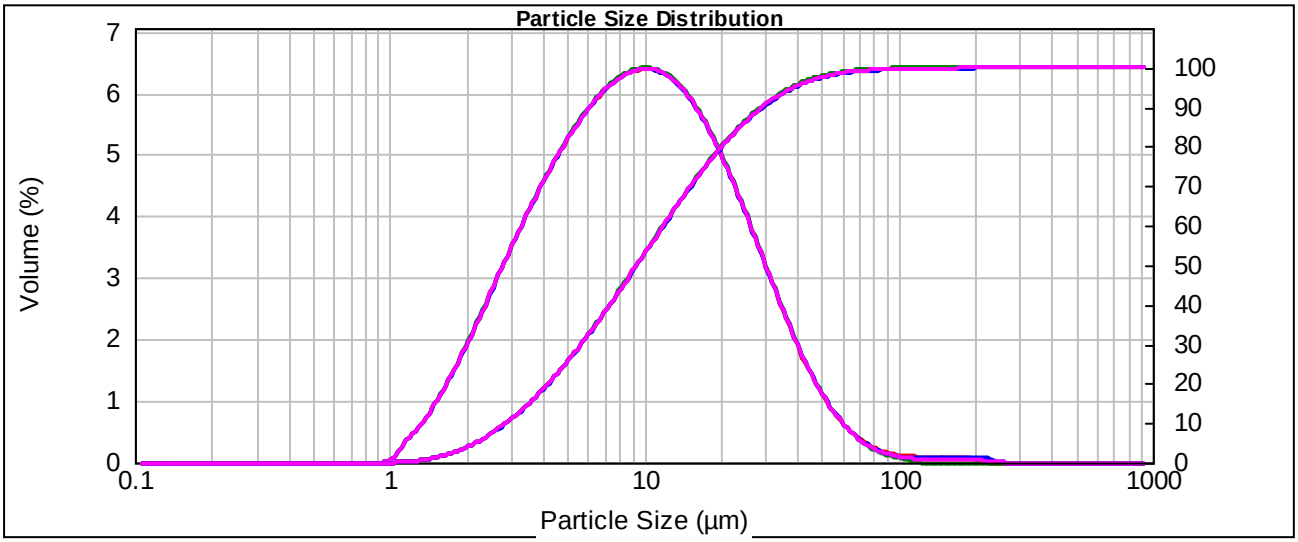
Concentration: 0.0088 %Vol
Specific Surface Area: 0.352 m²/g

Span : 2.795
Surface Weighted Mean D[3,2]: 6.426 um

Uniformity: 0.918
Vol. Weighted Mean D[4,3]: 13.689 um

Result units: Volume

d(0.1): 2.881 um d(0.5): 9.372 um **d(0.8): 20.202 um** d(0.9): 29.081 um d(0.98): 52.52 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.05
1.096	0.20
1.202	0.30
1.318	0.42
1.445	0.57
1.585	0.75
1.738	0.93
1.905	1.13
2.089	1.35
2.291	1.56

Size (µm)	Volume In %
2.291	1.56
2.512	1.78
2.754	2.00
3.020	2.21
3.311	2.42
3.631	2.63
3.981	2.82
4.365	3.00
4.786	3.17
5.248	3.32
5.754	3.45
6.310	3.57
6.918	3.67
7.586	3.75
8.318	3.81
9.120	3.84
10.000	3.85
10.965	3.82

Size (µm)	Volume In %
10.965	3.82
12.023	3.77
13.183	3.68
14.454	3.57
15.849	3.42
17.378	3.24
19.055	3.04
20.893	2.81
22.909	2.56
25.119	2.31
27.542	2.05
30.200	1.78
33.113	1.53
36.308	1.29
39.811	1.06
43.652	0.86
47.863	0.67
52.481	0.52

Size (µm)	Volume In %
52.481	0.52
57.544	0.39
63.096	0.28
69.183	0.20
75.858	0.14
83.176	0.10
91.201	0.07
100.000	0.05
109.648	0.04
120.226	0.03
131.826	0.03
144.544	0.03
158.489	0.03
173.780	0.03
190.546	0.04
208.930	0.03
229.087	0.02
251.189	0.00

Size (µm)	Volume In %
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:

TABLE III-38

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number: KM3080-26

Sample Name: 24hr Cyanide Tail - Average

Measured by: Mel

Edited by: Mel

Measured: Wednesday, November 02, 2011 3:10:01 PM

Analysed: Wednesday, November 02, 2011 3:10:02 PM

Particle Name: Silica 0.01

Particle RI: 1.544

Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)

Absorption: 0.01

Dispersant RI: 1.330

Analysis model: General purpose

Size range: 0.100 to 1000.000 um

Weighted Residual: 0.598 %

Sensitivity: Normal

Obscuration: 12.45 %

Result Emulation: Off

Concentration: 0.0099 %Vol

Span : 2.970

Uniformity: 1.02

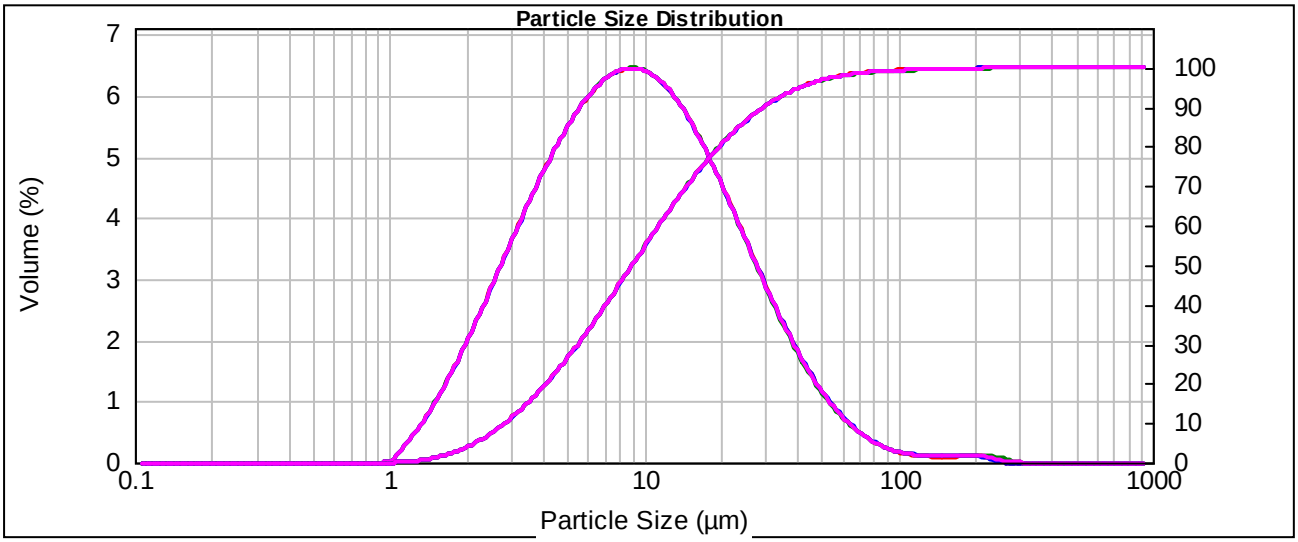
Result units: Volume

Specific Surface Area: 0.359 m²/g

Surface Weighted Mean D[3,2]: 6.311 um

Vol. Weighted Mean D[4,3]: 14.111 um

d(0.1): 2.848 um d(0.5): 8.990 um **d(0.8): 19.769 um** d(0.9): 29.549 um d(0.98): 59.98 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.04
1.096	0.17
1.202	0.29
1.318	0.43
1.445	0.59
1.585	0.78
1.738	0.97
1.905	1.17
2.089	1.39
2.291	1.61

Size (µm)	Volume In %
2.291	1.61
2.512	1.84
2.754	2.07
3.020	2.29
3.311	2.52
3.631	2.74
3.981	2.94
4.365	3.13
4.786	3.31
5.248	3.47
5.754	3.61
6.310	3.72
6.918	3.80
7.586	3.86
8.318	3.88
9.120	3.88
10.000	3.88
10.965	3.84

Size (µm)	Volume In %
10.965	3.77
12.023	3.67
13.183	3.54
14.454	3.38
15.849	3.20
17.378	2.99
19.055	2.77
20.893	2.55
22.909	2.31
25.119	2.08
27.542	1.84
30.200	1.62
33.113	1.41
36.308	1.21
39.811	1.02
43.652	0.85
47.863	0.70
52.481	0.57

Size (µm)	Volume In %
52.481	0.57
57.544	0.45
63.096	0.35
69.183	0.27
75.858	0.21
83.176	0.16
91.201	0.12
100.000	0.09
109.648	0.08
120.226	0.07
131.826	0.06
144.544	0.06
158.489	0.07
173.780	0.07
190.546	0.06
208.930	0.06
229.087	0.04
251.189	0.01

Size (µm)	Volume In %
251.189	0.01
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:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080-27

Sample Name:
24hr Cyanide Tail - Average

Measured by:
Mel

Edited by:
Mel

Measured:
Wednesday, November 02, 2011 3:13:24 PM

Analysed:
Wednesday, November 02, 2011 3:13:25 PM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.219 %

Sensitivity: Normal
Obscuration: 15.68 %
Result Emulation: Off

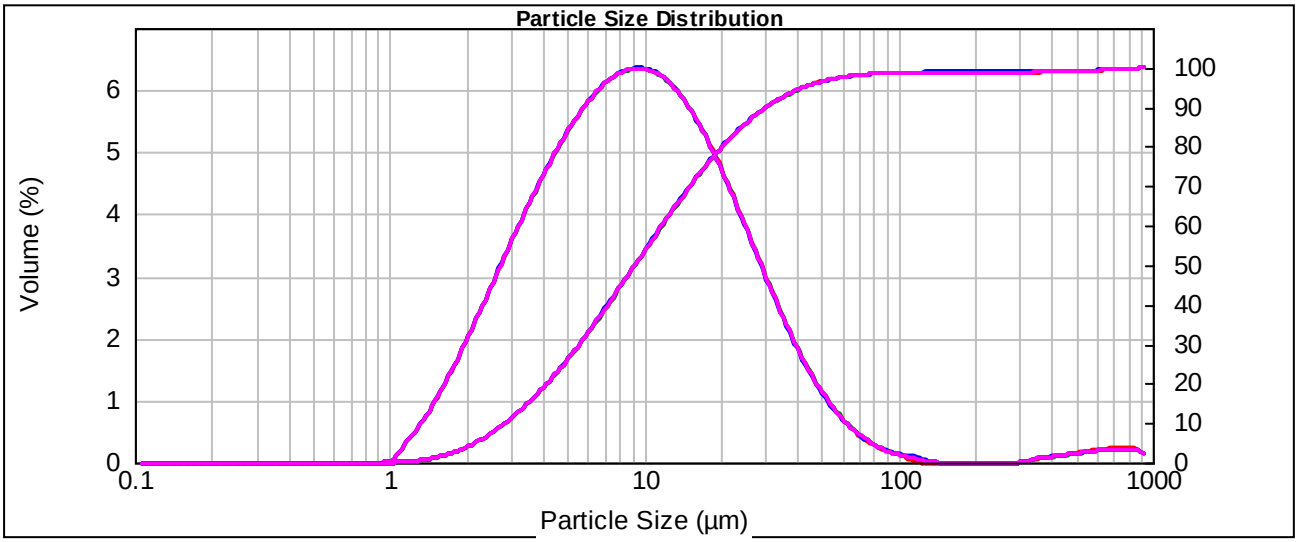
Concentration: 0.0128 %Vol
Specific Surface Area: 0.355 m²/g

Span : 2.973
Surface Weighted Mean D[3,2]: 6.386 um

Uniformity: 1.65
Vol. Weighted Mean D[4,3]: 20.209 um

Result units: Volume

d(0.1): 2.854 um d(0.5): 9.228 um **d(0.8): 20.339 um** d(0.9): 30.293 um d(0.98): 66.53 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.04
1.096	0.18
1.202	0.29
1.318	0.43
1.445	0.60
1.585	0.78
1.738	0.97
1.905	1.17
2.089	1.38
2.291	1.60

Size (µm)	Volume In %
2.291	1.60
2.512	1.81
2.754	2.03
3.020	2.25
3.311	2.46
3.631	2.67
3.981	2.86
4.365	3.04
4.786	3.21
5.248	3.36
5.754	3.50
6.310	3.61
6.918	3.70
7.586	3.77
8.318	3.81
9.120	3.82
10.000	3.81
10.965	3.76

Size (µm)	Volume In %
10.965	3.76
12.023	3.68
13.183	3.57
14.454	3.44
15.849	3.27
17.378	3.08
19.055	2.87
20.893	2.64
22.909	2.40
25.119	2.16
27.542	1.92
30.200	1.68
33.113	1.45
36.308	1.23
39.811	1.03
43.652	0.85
47.863	0.68
52.481	0.54

Size (µm)	Volume In %
52.481	0.54
57.544	0.42
63.096	0.32
69.183	0.24
75.858	0.18
83.176	0.13
91.201	0.09
100.000	0.07
109.648	0.04
120.226	0.02
131.826	0.00
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	0.00

Size (µm)	Volume In %
251.189	0.00
275.423	0.00
301.995	0.00
331.131	0.04
363.078	0.05
398.107	0.06
436.516	0.08
478.630	0.09
524.807	0.10
575.440	0.12
630.957	0.13
691.831	0.13
758.578	0.13
831.764	0.13
912.011	0.04
1000.000	

Operator notes:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080-28

Sample Name:
24hr Cyanide Tail - Average

Measured by:
tristan

Edited by:
tristan

Measured:
Thursday, November 03, 2011 8:17:30 AM

Analysed:
Thursday, November 03, 2011 8:17:31 AM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.423 %

Sensitivity: Normal
Obscuration: 14.28 %
Result Emulation: Off

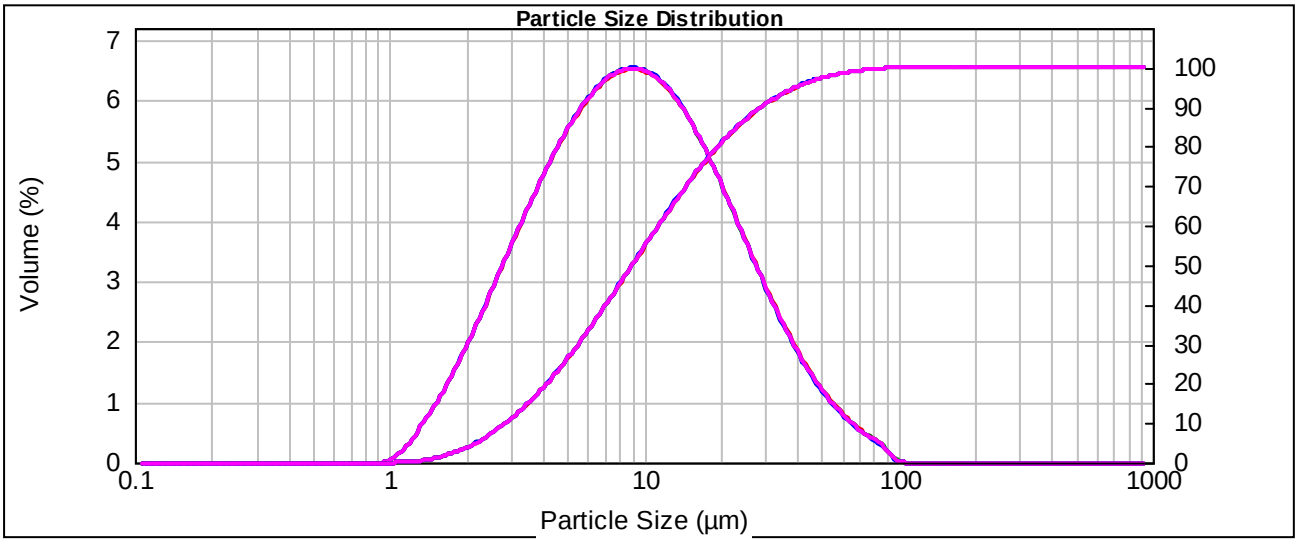
Concentration: 0.0115 %Vol
Specific Surface Area: 0.358 m²/g

Span : 2.890
Surface Weighted Mean D[3,2]: 6.330 um

Uniformity: 0.92
Vol. Weighted Mean D[4,3]: 13.220 um

Result units: Volume

d(0.1): 2.873 um d(0.5): 8.985 um **d(0.8): 19.513 um** d(0.9): 28.839 um d(0.98): 54.12 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.06
1.096	0.13
1.202	0.26
1.318	0.43
1.445	0.57
1.585	0.75
1.738	0.95
1.905	1.15
2.089	1.37
2.291	1.59

Size (µm)	Volume In %
2.291	1.59
2.512	1.82
2.754	2.06
3.020	2.29
3.311	2.51
3.631	2.74
3.981	2.95
4.365	3.15
4.786	3.33
5.248	3.49
5.754	3.63
6.310	3.75
6.918	3.84
7.586	3.90
8.318	3.93
9.120	3.93
10.000	3.89
10.965	3.82

Size (µm)	Volume In %
10.965	3.82
12.023	3.72
13.183	3.58
14.454	3.42
15.849	3.23
17.378	3.02
19.055	2.80
20.893	2.57
22.909	2.33
25.119	2.09
27.542	1.85
30.200	1.63
33.113	1.42
36.308	1.22
39.811	1.03
43.652	0.87
47.863	0.72
52.481	0.59

Size (µm)	Volume In %
52.481	0.59
57.544	0.48
63.096	0.38
69.183	0.30
75.858	0.24
83.176	0.17
91.201	0.04
100.000	0.00
109.648	0.00
120.226	0.00
131.826	0.00
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	0.00

Size (µm)	Volume In %
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:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080-29

Sample Name:
24hr Cyanide Tail - Average

Measured by:
tristan

Edited by:
tristan

Measured:
Thursday, November 03, 2011 8:23:30 AM

Analysed:
Thursday, November 03, 2011 8:23:31 AM

Particle Name:
Silica 0.01

Particle RI:
1.544

Dispersant Name:
Water

Accessory Name:
Hydro 2000MU (A)

Absorption:
0.01

Dispersant RI:
1.330

Analysis model:
General purpose

Size range:
0.100 to 1000.000 um

Weighted Residual:
0.396 %

Sensitivity:
Normal

Obscuration:
13.95 %

Result Emulation:
Off

Concentration:
0.0114 %Vol

Span :
2.790

Uniformity:
0.89

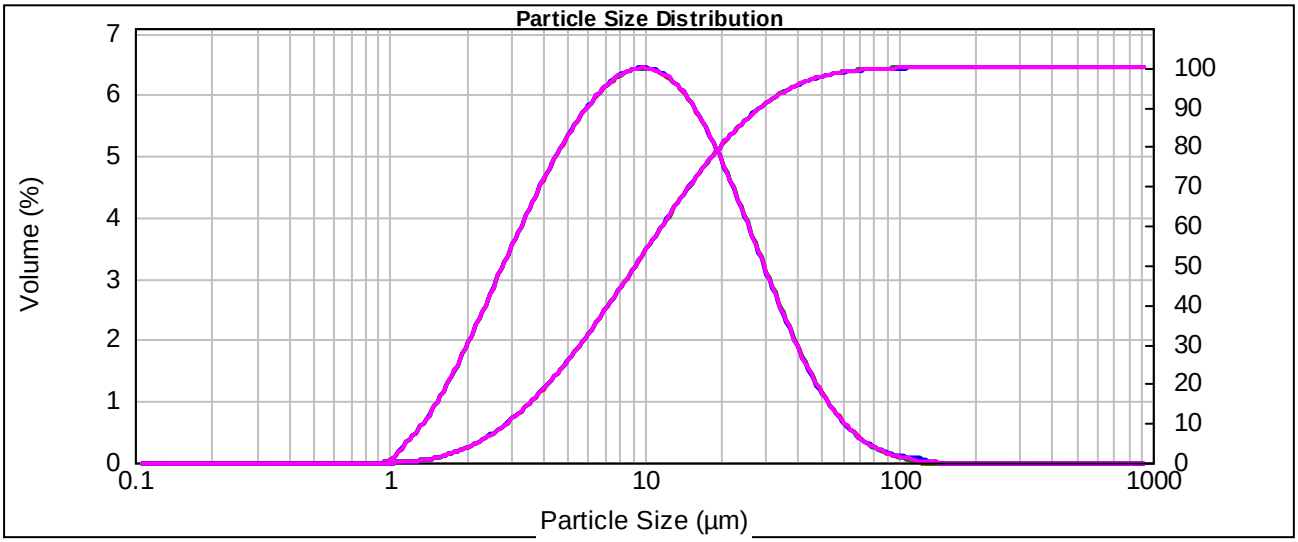
Result units:
Volume

Specific Surface Area:
0.353 m²/g

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

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

d(0.1): 2.893 um d(0.5): 9.291 um **d(0.8): 19.985 um** d(0.9): 28.814 um d(0.98): 51.56 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.05
1.096	0.18
1.202	0.28
1.318	0.41
1.445	0.56
1.585	0.74
1.738	0.92
1.905	1.13
2.089	1.34
2.291	1.56

Size (µm)	Volume In %
2.291	1.56
2.512	1.79
2.754	2.01
3.020	2.23
3.311	2.44
3.631	2.65
3.981	2.85
4.365	3.03
4.786	3.21
5.248	3.36
5.754	3.50
6.310	3.62
6.918	3.72
7.586	3.80
8.318	3.85
9.120	3.87
10.000	3.87
10.965	3.84

Size (µm)	Volume In %
10.965	3.84
12.023	3.78
13.183	3.68
14.454	3.55
15.849	3.40
17.378	3.21
19.055	3.00
20.893	2.77
22.909	2.52
25.119	2.27
27.542	2.01
30.200	1.75
33.113	1.51
36.308	1.27
39.811	1.05
43.652	0.86
47.863	0.68
52.481	0.53

Size (µm)	Volume In %
52.481	0.53
57.544	0.41
63.096	0.30
69.183	0.22
75.858	0.16
83.176	0.11
91.201	0.07
100.000	0.05
109.648	0.03
120.226	0.01
131.826	0.00
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	0.00

Size (µm)	Volume In %
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:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080 - P3

Sample Name:
Reground Pyrite Concentrate - Average

Measured by:
julie

Edited by:
julie

Measured:
Tuesday, August 30, 2011 9:06:12 AM

Analysed:
Tuesday, August 30, 2011 9:06:13 AM

Particle Name:
Silica 0.01

Particle RI:
1.544

Dispersant Name:
Water

Accessory Name:
Hydro 2000MU (A)

Absorption:
0.01

Dispersant RI:
1.330

Analysis model:
General purpose

Size range:
0.100 to 1000.000 um

Weighted Residual:
0.211 %

Sensitivity:
Normal

Obscuration:
18.17 %

Result Emulation:
Off

Concentration:
0.0151 %Vol

Span :
3.025

Uniformity:
1

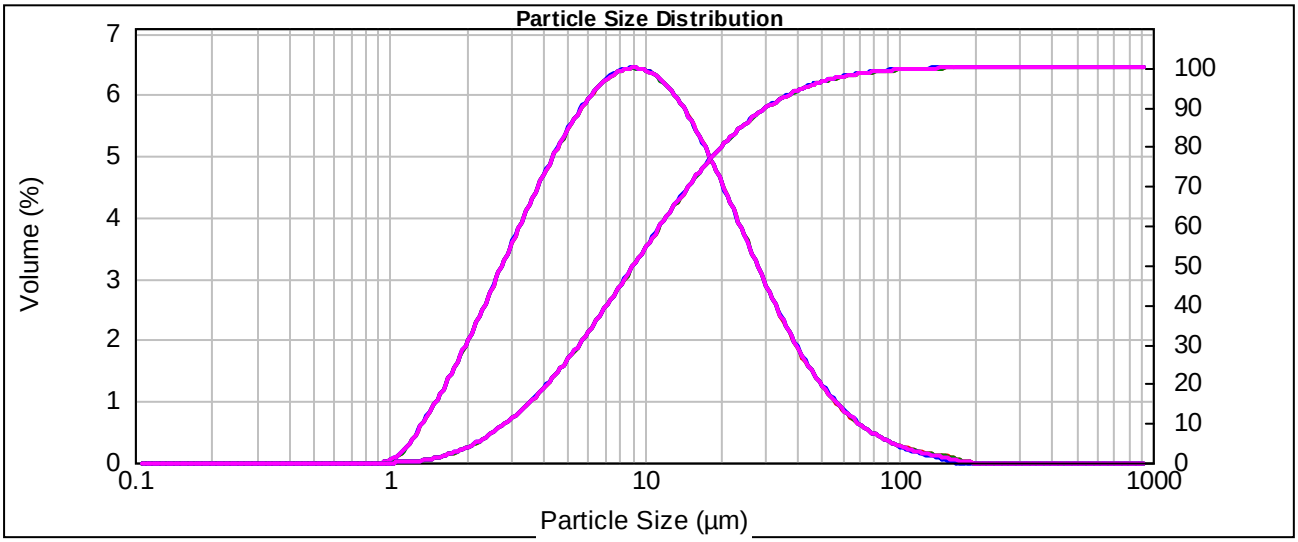
Result units:
Volume

Specific Surface Area:
0.354 m²/g

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

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

d(0.1): 2.878 um d(0.5): 9.133 um **d(0.8): 20.196 um** d(0.9): 30.501 um d(0.98): 63.27 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.05
1.096	0.12
1.202	0.26
1.318	0.43
1.445	0.58
1.585	0.76
1.738	0.96
1.905	1.16
2.089	1.37
2.291	1.58

Size (µm)	Volume In %
2.291	1.58
2.512	1.80
2.754	2.03
3.020	2.25
3.311	2.47
3.631	2.69
3.981	2.89
4.365	3.09
4.786	3.27
5.248	3.43
5.754	3.57
6.310	3.69
6.918	3.78
7.586	3.84
8.318	3.87
9.120	3.87
10.000	3.84
10.965	3.77

Size (µm)	Volume In %
10.965	3.77
12.023	3.67
13.183	3.54
14.454	3.38
15.849	3.20
17.378	3.00
19.055	2.78
20.893	2.55
22.909	2.32
25.119	2.09
27.542	1.86
30.200	1.64
33.113	1.43
36.308	1.23
39.811	1.06
43.652	0.90
47.863	0.76
52.481	0.63

Size (µm)	Volume In %
52.481	0.63
57.544	0.53
63.096	0.43
69.183	0.35
75.858	0.29
83.176	0.23
91.201	0.19
100.000	0.15
109.648	0.12
120.226	0.09
131.826	0.07
144.544	0.05
158.489	0.03
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	0.00

Size (µm)	Volume In %
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:

TABLE III-43

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080-P5

Sample Name:
Bulk Cleaner Tail - Average

Measured by:
julie

Edited by:
julie

Measured:
Tuesday, August 30, 2011 9:26:19 AM

Analysed:
Tuesday, August 30, 2011 9:26:21 AM

Particle Name: Silica 0.01
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.01
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.343 %

Sensitivity: Normal
Obscuration: 16.83 %
Result Emulation: Off

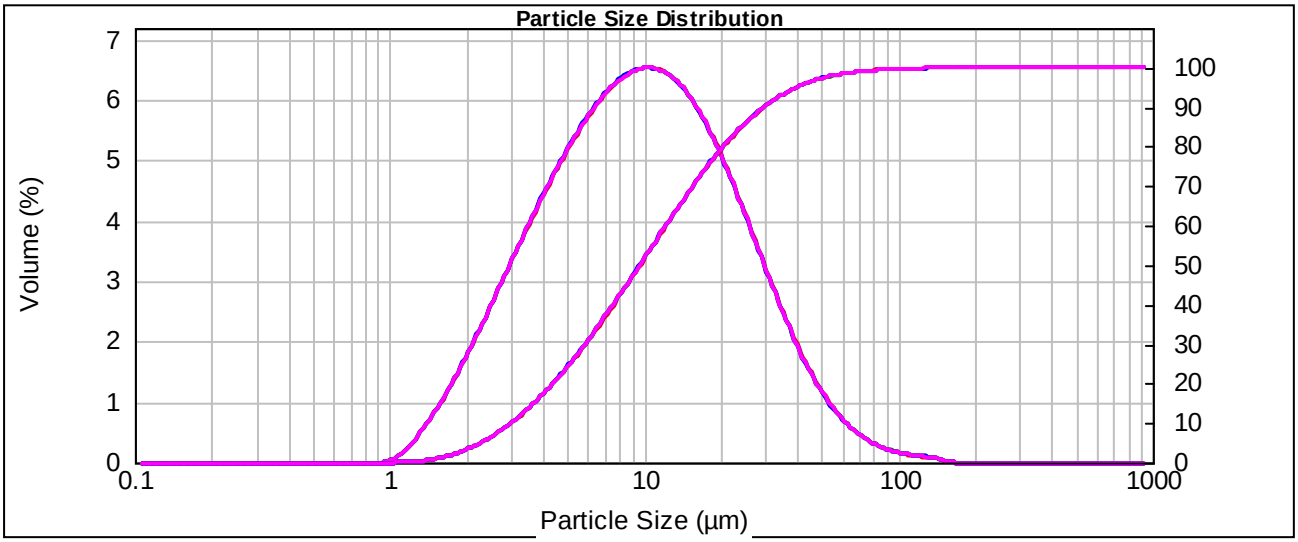
Concentration: 0.0145 %Vol
Specific Surface Area: 0.34 m²/g

Span : 2.762
Surface Weighted Mean D[3,2]: 6.656 um

Uniformity: 0.903
Vol. Weighted Mean D[4,3]: 13.956 um

Result units: Volume

d(0.1): 3.000 um d(0.5): 9.634 um **d(0.8): 20.513 um** d(0.9): 29.612 um d(0.98): 55.17 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.00
0.525	0.00
0.575	0.00
0.631	0.00
0.692	0.00
0.759	0.00
0.832	0.00
0.912	0.00
1.000	0.05
1.096	0.11
1.202	0.23
1.318	0.37
1.445	0.51
1.585	0.67
1.738	0.86
1.905	1.05
2.089	1.25
2.291	1.46

Size (µm)	Volume In %
2.291	1.46
2.512	1.68
2.754	1.90
3.020	2.11
3.311	2.33
3.631	2.54
3.981	2.74
4.365	2.94
4.786	3.12
5.248	3.29
5.754	3.45
6.310	3.59
6.918	3.71
7.586	3.81
8.318	3.88
9.120	3.92
10.000	3.93
10.965	3.91

Size (µm)	Volume In %
10.965	3.91
12.023	3.86
13.183	3.77
14.454	3.65
15.849	3.49
17.378	3.30
19.055	3.09
20.893	2.85
22.909	2.59
25.119	2.33
27.542	2.06
30.200	1.79
33.113	1.54
36.308	1.29
39.811	1.07
43.652	0.88
47.863	0.70
52.481	0.55

Size (µm)	Volume In %
52.481	0.55
57.544	0.43
63.096	0.33
69.183	0.25
75.858	0.19
83.176	0.15
91.201	0.11
100.000	0.09
109.648	0.07
120.226	0.06
131.826	0.05
144.544	0.02
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	0.00

Size (µm)	Volume In %
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:

G&T METALLURGICAL SERVICES LTD.

ISO9001:2008
Certificate No. FS63170

Result Analysis Report

Project and Test number:
KM3080-P5

Sample Name:
Cleaner Tails - Average

Measured by:
Brandon R

Edited by:
Brandon R

Measured:
Friday, August 19, 2011 2:41:02 PM

Analysed:
Friday, August 19, 2011 2:41:03 PM

Particle Name: Silica 0.1
Particle RI: 1.544
Dispersant Name: Water

Accessory Name: Hydro 2000MU (A)
Absorption: 0.1
Dispersant RI: 1.330

Analysis model: General purpose
Size range: 0.100 to 1000.000 um
Weighted Residual: 0.651 %

Sensitivity: Normal
Obscuration: 16.31 %
Result Emulation: Off

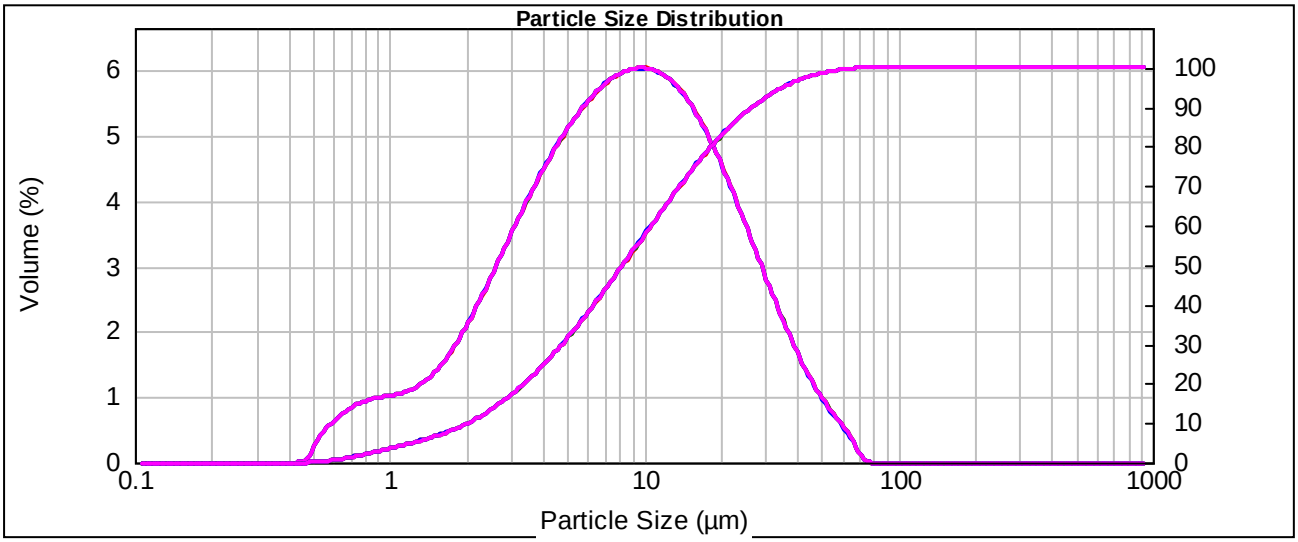
Concentration: 0.0111 %Vol
Specific Surface Area: 0.497 m²/g

Span : 2.960
Surface Weighted Mean D[3,2]: 4.552 um

Uniformity: 0.925
Vol. Weighted Mean D[4,3]: 11.821 um

Result units: Volume

d(0.1): 2.040 um d(0.5): 8.268 um **d(0.8): 18.390 um** d(0.9): 26.512 um d(0.98): 45.6 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	0.00
0.363	0.00
0.398	0.00
0.437	0.00
0.479	0.00

Size (µm)	Volume In %
0.479	0.12
0.525	0.30
0.575	0.38
0.631	0.45
0.692	0.52
0.759	0.56
0.832	0.59
0.912	0.61
1.000	0.62
1.096	0.64
1.202	0.68
1.318	0.74
1.445	0.83
1.585	0.95
1.738	1.08
1.905	1.25
2.089	1.43
2.291	

Size (µm)	Volume In %
2.291	1.62
2.512	1.81
2.754	2.01
3.020	2.21
3.311	2.40
3.631	2.59
3.981	2.77
4.365	2.93
4.786	3.08
5.248	3.21
5.754	3.33
6.310	3.43
6.918	3.51
7.586	3.57
8.318	3.61
9.120	3.63
10.000	3.63
10.965	

Size (µm)	Volume In %
10.965	3.59
12.023	3.53
13.183	3.44
14.454	3.31
15.849	3.16
17.378	2.98
19.055	2.77
20.893	2.55
22.909	2.31
25.119	2.07
27.542	1.82
30.200	1.58
33.113	1.35
36.308	1.13
39.811	0.93
43.652	0.75
47.863	0.59
52.481	

Size (µm)	Volume In %
52.481	0.46
57.544	0.35
63.096	0.21
69.183	0.03
75.858	0.00
83.176	0.00
91.201	0.00
100.000	0.00
109.648	0.00
120.226	0.00
131.826	0.00
144.544	0.00
158.489	0.00
173.780	0.00
190.546	0.00
208.930	0.00
229.087	0.00
251.189	

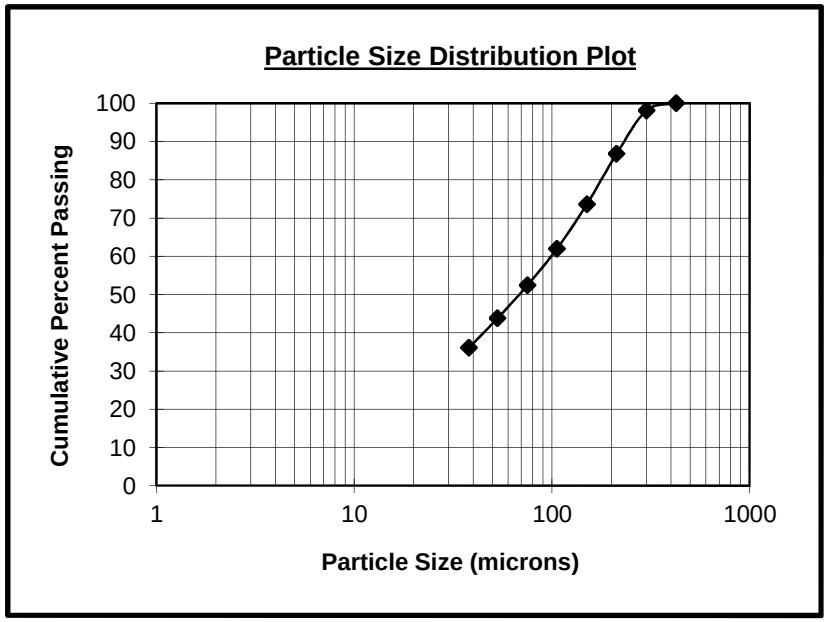
Size (µm)	Volume In %
251.189	0.00
275.423	0.00
301.995	0.00
331.131	0.00
363.078	0.00
398.107	0.00
436.516	0.00
478.630	0.00
524.807	0.00
575.440	0.00
630.957	0.00
691.831	0.00
758.578	0.00
831.764	0.00
912.011	0.00
1000.000	

Operator notes:

TABLE III-45
SCREEN ANALYSIS
KM3080-P3 Pyrite Concentrate

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
35 Mesh	425	0.00	100.0
48 Mesh	300	1.90	98.1
65 Mesh	212	11.30	86.8
100 Mesh	150	13.20	73.6
150 Mesh	106	11.60	62.0
200 Mesh	75	9.60	52.4
270 Mesh	53	8.60	43.8
400 Mesh	38	7.70	36.1
TOTAL		100.00	**

K80 =179µm



APPENDIX IV – KM3080

SPECIAL DATA

INDEX

TABLE IV-1
REPLICATE HEAD ASSAY DATA

Composite	Elements for Assay - percent or g/tonne											
	Cu	Mo	Pb	Zn	Fe	Sb	As	Cd	Au	Ag	S	C
Mitchell Year 0 to 5 Head 1	0.21	0.006	0.01	0.02	3.9	0.002	36	2	0.64	4	3.46	0.32
Mitchell Year 0 to 5 Head 2	0.21	0.009	0.01	0.02	4.0	0.002	39	2	0.56	4	3.69	0.31
Average	**0.21**	**0.008**	**0.01**	**0.02**	**4.0**	**0.002**	**38**	**2**	**0.60**	**4**	**3.58**	**0.31**
Mitchell Year 0 to 10 Head 1	0.20	0.005	0.02	0.01	3.8	0.001	30	2	0.70	4	3.37	0.28
Mitchell Year 0 to 10 Head 2	0.20	0.005	0.01	0.01	3.7	0.001	29	2	0.64	4	3.37	0.28
Average	**0.20**	**0.005**	**0.02**	**0.01**	**3.7**	**0.001**	**30**	**2**	**0.67**	**4**	**3.37**	**0.28**
Mitchell Year 0 to 20 Head 1	0.21	0.006	<0.01	0.02	4.3	<0.001	30	2	0.52	3	3.59	0.40
Mitchell Year 0 to 20 Head 2	0.23	0.006	0.01	0.02	4.5	<0.001	24	2	0.56	3	3.62	0.38
Average	**0.22**	**0.006**	**0.01**	**0.02**	**4.4**	**<0.001**	**27**	**2**	**0.54**	**3**	**3.61**	**0.39**

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

TABLE IV-2
STATISTICAL ANALYSIS OF HEAD ASSAYS
Mitchell Year 0 to 5

Test	Assay - percent or grams/tonne						
	Cu	Mo	Fe	S	Ag	Au	C
1	0.22	0.005	4.3	3.5	5	0.70	0.34
4	0.20	0.006	4.1	3.5	6	0.73	0.37
Calculated	**0.21**	**0.005**	**4.2**	**3.5**	**5**	**0.71**	**0.35**
Measured	0.21	0.008	4.0	3.6	4	0.60	0.31

Mitchell Year 0 to 10

Test	Assay - percent or grams/tonne						
	Cu	Mo	Fe	S	Ag	Au	C
2	0.21	0.004	4.0	3.3	5	0.64	0.29
5	0.20	0.005	4.1	3.3	5	0.69	0.31
Calculated	**0.20**	**0.005**	**4.0**	**3.3**	**5**	**0.67**	**0.30**
Measured	0.20	0.005	3.7	3.4	4	0.67	0.28

Mitchell Year 0 to 10

Test	Assay - percent or grams/tonne						
	Cu	Mo	Fe	S	Ag	Au	C
3	0.20	0.006	4.8	3.4	3	0.58	0.42
6	0.22	0.006	4.9	3.4	4	0.66	0.40
Calculated	**0.21**	**0.006**	**4.8**	**3.4**	**4**	**0.62**	**0.41**
Measured	0.22	0.006	4.4	3.6	3	0.54	0.39

TABLE IV-3
COMPARATIVE COPPER CONCENTRATE ASSAYS

Test	Copper - percent	
	AAS	Titre
1	26.0	26.7
2	26.0	26.6
3	29.6	29.5
4	27.4	29.3
5	28.1	29.1
6	25.1	27.2

TABLE IV-4
CIL TEST GOLD GRADES

Test	Composite	Source Test	Stream	Float Test Au g/t	CN Test Au g/t
7	Year 0 to 5	1	Clnr Scav Tail	1.46	1.47
8	Year 0 to 10	2	Clnr Scav Tail	1.37	1.64
9	Year 0 to 20	3	Clnr Scav Tail	0.87	1.08
10	Year 0 to 5	4	Clnr Scav Tail	2.64	2.19
11	Year 0 to 10	5	Clnr Scav Tail	2.11	1.72
12	Year 0 to 20	6	Clnr Scav Tail	1.95	1.62
13	Year 0 to 5	1	Pyrite Con	1.47	1.62
14	Year 0 to 10	2	Pyrite Con	1.27	1.68
15	Year 0 to 20	3	Pyrite Con	1.36	1.48
16	Year 0 to 5	4	Pyrite Con	2.27	1.87
17	Year 0 to 10	5	Pyrite Con	1.80	1.56
18	Year 0 to 20	6	Pyrite Con	2.84	2.05
19	-	-	Blend	-	1.32
20	-	-	Blend	-	1.51
21	-	-	Blend	-	1.67
22	-	-	P5 Clnr Tail	-	1.37
23	-	-	P3 Py Con	-	1.79
24	-	-	Blend	-	1.54
25	-	-	P5 Clnr Tail	-	1.01
26	-	-	P3 Py Con	-	1.58
27	-	-	Blend	-	1.46
28	-	-	P3 Py Con	-	1.8
29	-	-	P5 Clnr Tail	-	1.24
30	-	-	P5 Clnr Tail	-	1.4
31	-	-	P3 Py Con	-	1.79
32	-	-	Blend	-	1.21
Avg Blend	-	-	-	-	1.45
Avg P3 Py Con	-	-	-	-	1.74
Avg P5 Clnr Tail	-	-	-	-	1.25

TABLE IV-5
KSM PROJECTS BY G&T METALLURGICAL SERVICES LTD.

KM	Project Title	Date
1909	Preliminary Assessment of Mitchell Zone Samples	June 2007
2153	Pre-Feasibility Metallurgical Testing – Mitchell Zone-Kerr Sulphurets	December 2008
2344	Metallurgical and Pilot Plant Testing on Samples from the KSM Project	December 2009
2535	Miscellaneous Metallurgical Testing on Samples from the KSM Project	March 2010
2654	Sample Homogenization and Shipping – Kerr Project	July 2010
2670	Bench Scale and Pilot Plant Testing – KSM Project	August 2010
2755	Ancillary Testing – Kerr-Sulphurets-Mitchell-KSM Project	December 2010
2748	Preliminary Metallurgical Testing on Samples from the Iron Cap Zone - KSM Project	January 2010
2897	Supplemental Flotation and Cyanidation Testing - KSM Project	March 2011
3005	ICP Scan Data - KSM Feed Samples	June 2011
3081	Flotation and Cyanidation Testing - Snowfields Samples, Composites, and Blends	November 2011
3174	Ore Hardness and Flotation Testing - Kerr-Sulphurets-Mitchell Project	January 2012

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V1S 1W5, Canada

Phone: 250-828-6157
Fax:250-828-6159

December 23, 2011

Date Rec. : 28 November 2011
LR Report : **CA03650-NOV11**
Client Ref : PO# A8208

CERTIFICATE OF ANALYSIS

Final Report

Sample ID	Cu mg/L	As mg/L	Sb mg/L	Cd mg/L	Pb mg/L	Zn mg/L	Se mg/L	CN(T) mg/L	CNWAD mg/L	CNS mg/L	SO4 mg/L
1: KM3080-30,31 Blend B5 FWS	155	< 3	< 1	< 0.09	< 2	< 2	< 3	172	164	290	1800
2: KM3080-30,31 Blend B5 1WS	89.2	< 3	< 1	< 0.09	< 2	< 2	< 3	139	121	180	1600

Control Quality Assays: Not for Commercial Exchange

April Rice
Project Coordinator

OnLine LIMS