An Investigation into

THE METALLURGICAL TESTING OF SAMPLES FROM THE JUNIOR LAKE - VW MINERALISATION

prepared for

LANDORE RESOURCES LTD

Project 11366-002 – Final Report
August 15, 2008

NOTE:
This report refers to the samples as received.

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Executive Summary

Samples originating from the Junior Lake VW Zone were combined to produce a master composite and four variability composites. The head grades of the five composites are presented in Table 1.

Table 1: Head Assay

Sample	Assay, %			
	Ni	Cu	Co	S
Batch #1	1.32	0.039	0.12	3.49
Batch #2	0.74	0.026	0.09	1.94
Batch #3	0.57	0.016	0.063	1.98
Batch #4	0.38	0.015	0.068	1.81
Master Comp	0.61	0.021	0.072	1.97

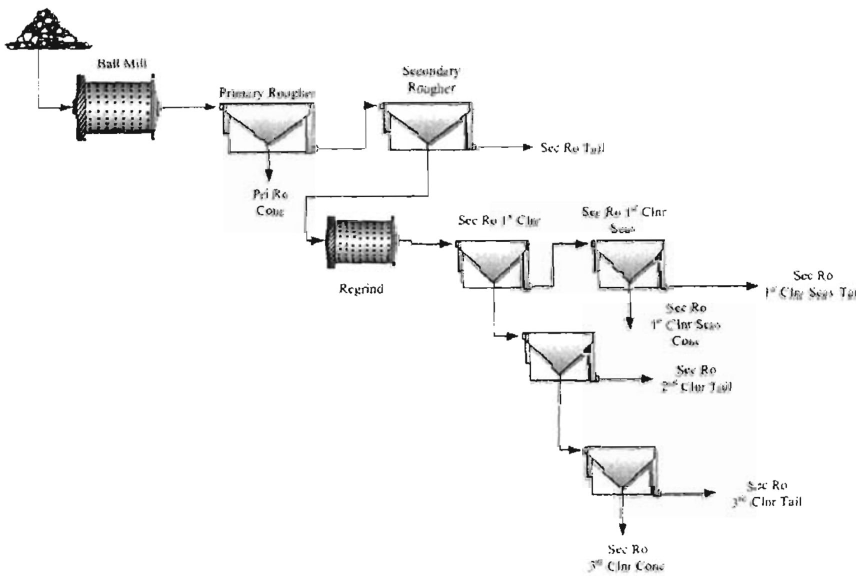
Grindability tests performed on the Master composite and the four variability composites yielded relatively low Bond ball mill work indices of 10.6 kWh/t to 11.6 kWh/t. Bond rod mill and Bond abrasion tests performed on the Master composite produced indices of 16.1 kWh/t and 0.1808 Ai, respectively.

A detailed QEMSCAN analysis was carried out on the Master composite. Pentlandite makes up almost 70% of the nickel-bearing minerals, followed by violarite (20.8%) and amphibole (3.5%). Almost 10% of the nickel contained in the Master composite is associated with pyrrhotite and non-sulphide gangue minerals and this amount of nickel is considered unrecoverable by means of flotation. Almost 40% of the pentlandite reported to the finest size fraction of -20 microns. As the flotation kinetics of pentlandite decreases for finer grain sizes, sufficient flotation time is paramount for a good pentlandite recovery into the concentrate.

Chalcopyrite is the dominant copper-bearing mineral and contains 98% of the copper value. The remaining Cu is contained in cubanite and as trace amounts in bornite and covellite/chalcocite. The majority of the chalcopyrite reported to the coarser size fractions and less than 18% was found in the -20 size fraction.

A total of eighteen (18) batch rougher and batch cleaner tests, one locked cycle test, and four variability tests were carried out to optimise grinding requirements and regent regime, to develop close-circuit metallurgical predictions through locked cycle tests, and to test the stability of the proposed flowsheet on variability samples. The flowsheet that was used in these tests was developed in the previous phase of metallurgical testing and is depicted in Figure 1[1].

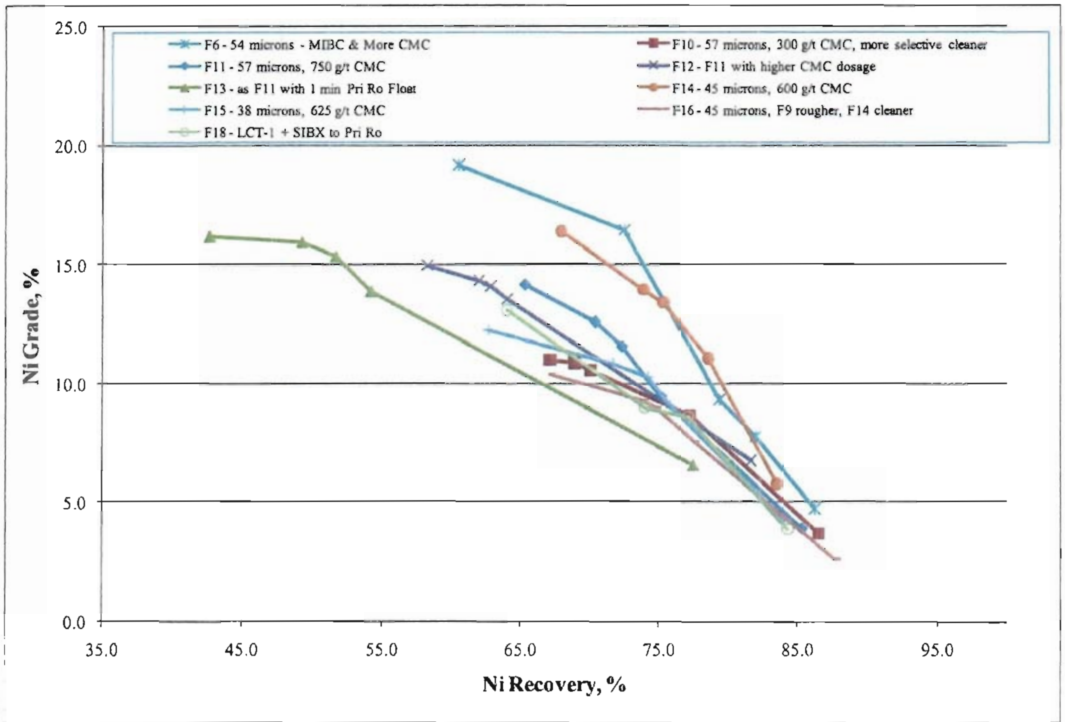
Figure 1: Flowsheet for the Junior Lake VW Zone



The Ni grade-recovery curves of selected cleaner tests are shown in Figure 2. The test conditions of tests F6 and F14 produced the best overall metallurgical response and, therefore, were used in the locked cycle test albeit with a slightly coarser grind. However, aging of the samples became apparent towards the end of the test program. Instead of producing a primary rougher concentrate of 14-19% Ni at 60-70% Ni recovery, only a very small amount of sulphide minerals reported to the primary rougher concentrate.

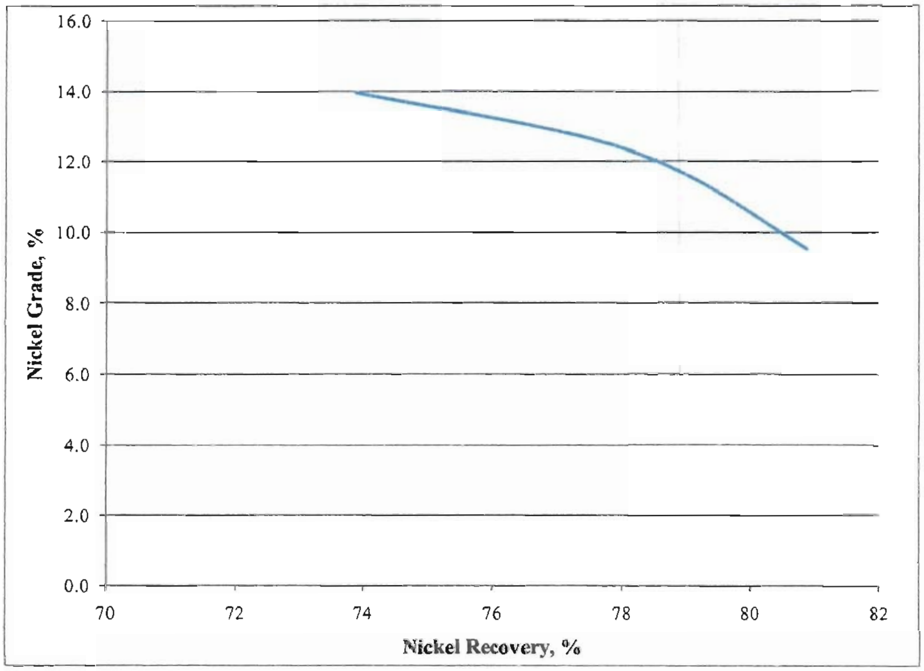
[1] *SGS Lakefield Research Report titled "11366-001 – The Recovery of Ni and Cu from the Junior Lake VW Deposit" dated November 7, 2006*

Figure 2: Ni Grade-Recovery Curves for Selected Batch Cleaner Tests



Since the locked cycle test results were not suitable for metallurgical projections due to this aging issue, the results from test F14 and experience with similar deposits were used to forecast the flotation response of the intermediate streams. The results of these projections are summarised in the Ni grade-recovery curve shown in Figure 3. Note that this curve was generated using assumptions for the intermediate streams and, therefore, it is imperative that the results are treated as such and not as actual test data.

Figure 3: Projected Ni Grade-Recovery Curve for the Final Concentrate



The following work is recommended for the next phase of metallurgical testing:

- Carry out an ore aging test program to develop a better understanding of the aging process of the Junior Lake VW Zone ore;
- Evaluate the effectiveness of a talc pre-float prior to the primary rougher concentrate;
- Assess the impact of CMC dosage on the amount of floatable gangue minerals in a series of rougher flotation tests using the CMC dosage as the only variable;
- Quantify the amount of Ni contained in pyrrhotite using SEM analysis;;
- Perform a baseline environmental test program to identify any deleterious elements in the waste streams and to quantify the acid generating potential of the tailings streams;
- Carry out solid/liquid separation tests on the tailings;
- Evaluate the flotation response of the optimised flowsheet on a number of variability samples to assess the stability of the proposed circuit.

Introduction

In late 2007, Mr. Bill Humphries and Mr. Jim Garber, both of Landore Resources Limited, approached SGS Lakefield requesting a proposal to advance the metallurgical characterisation of the Junior Lake VW mineralisation. The ore arrived at SGS Lakefield on December 20, 2007 and testing commenced in early January.

The test program included chemical and mineralogical sample characterisation, flowsheet optimisation through batch rougher and cleaner flotation tests, a single locked cycle test, and variability flotation tests. The original scope of work also included a detailed analysis of the final flotation products. These tests were not carried out as aging of the flotation test charges became apparent towards the end of the flotation program.

Results were reported to Mr. Kevin Scott of Roscoe Postle Associates Inc., who represented the client, as well as Mr. Bill Humphries and Mr. Jim Garber as they became available.

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Report preparation by: Su McKenzie

Testwork Summary

1. Background

The Junior Lake property is located in the province of Ontario, Canada, approximately 235 kilometres north-northeast of Thunder Bay. The VW Nickel Deposit is located at the Ketchikan Lake towards the south eastern end of the Junior Lake property, and the B4-7 Deposit is located approximately 3 kilometres to the north-west of the VW Deposit.

A global resource base of 22,407 tonnes Nickel equivalent (NiEq) at 0.2% nickel cut-off grade has been identified at an average grade of 0.45% NiEq.[2]

A preliminary metallurgical test program was completed in 2006 on both the VW and B4-7 Zones. In late 2007, Landore Resources decided to advance the metallurgical characterisation of the VW Zone to the next level.

2. Deliverables

The primary objectives of this phase of testing were to:

- Perform basic grindability tests to assist in the sizing of the grinding circuit and to estimate grinding media wear rates;
- Perform a QEMSCAN analysis on a Master composite to obtain detailed mineralogical data including modal analysis, cumulative grain size distributions, characterisation of the Ni and Cu sulphides, theoretical grade-recovery curves, and mineral release curves;
- Optimise the flowsheet that was developed during the last phase of testing using the Master composite;
- Subject four variability samples to the optimised flowsheet to assess the stability of the circuit.

3. Sample Description and Ore Characterization

A shipment of twenty (20) pails was received at the SGS Lakefield site on December 20, 2007 and was given the sample receipt number 0277-DEC07. The total weight of the shipment was approximately 260 kg.

[2] *Source: Landore Resources web site, July 25, 2008*

The 20 pails comprised four (4) different composites, which were identified as Batch 1, Batch 2, Batch 3, and Batch 4. A detailed list of the drill core intervals that made up the four batches is included in Appendix A.

The drill core sections of each batch were combined and crushed to minus 1 ¼". A 6 kg sub-sample for a Bond mill grindability test and a 7 kg sub-sample for variability flotation work were extracted and the remaining drill core was retained. The 7 kg sub-sample for flotation work was stage-crushed to minus 10 mesh, blended, and split into 2 kg test charges. A representative sub-sample of each batch was submitted for Ni, Cu, Co, and S assays.

Predetermined weights of the four batches were combined to generate a Master composite. The weights and blending recipe of the four batches are specified in Table 2.

Table 2: Master Composite Make-up

Sample	Mass in Master Comp, kg	Content in Master Comp, %
Batch #1	19.3	13.1
Batch #2	17.2	11.7
Batch #3	27.6	18.7
Batch #4	83.4	56.5
Master Comp	147.6	100

Once combined, the master composite was blended and sub-samples for Bond rod mill, Bond ball mill, and Bond abrasion tests were extracted. Subsequently, the remaining ore was stage-crushed to minus 10mesh, blended, and split into 2 kg test charges. A representative head sample was submitted for Ni, Cu, Co, S, ICP, and whole rock analysis (WRA).

The analytical results for the four individual batches and the master composite are shown in Table 3 to Table 5.

Table 3: Head Analysis

Sample	Assay, %			
	Ni	Cu	Co	S
Batch #1	1.32	0.039	0.12	3.49
Batch #2	0.74	0.026	0.09	1.94
Batch #3	0.57	0.016	0.063	1.98
Batch #4	0.38	0.015	0.068	1.81
Master Comp	0.61	0.021	0.072	1.97

Table 4: Whole Rock Analysis – Master Composite

Assay, %						
SiO_2	Al_2O_3	Fe_2O_3	MgO	CaO	Na_2O	K_2O
45.1	7.57	10.5	14.4	10.9	1.28	0.38
TiO_2	P_2O_5	MnO	Cr_2O_3	V_2O_5	LOI	Sum
0.37	0.02	0.17	0.26	0.04	5.51	96.6

Table 5: Minor Element Scan – Master Composite

Product	Assays, g/t								
	Ag	As	Ba	Be	Bi	Cd	Li	Mo	Pb
Master Comp	< 2	< 30	130	< 0.4	< 20	< 2	< 5	< 5	54

Product	Assays, g/t							
	Sb	Se	Sn	Sr	Tl	U	Y	Zn
Master Comp	< 10	< 30	< 20	42	< 30	< 20	15	240

4. Grindability

Samples of the master composite were subjected to Bond ball mill, Bond rod mill, and Bond abrasion testing to provide data for mill sizing and to facilitate grinding media wear rate calculations. Further, the variability composites were submitted for Bond ball mill grindability tests only. The results of these tests are summarized in Table 6. Due to an oversight during sample preparation, no Bond ball mill grindability sample was extracted for Batch 1 and, therefore, no grindability data is available for this sample. Using a weighted average of the individual Bond ball mill tests and weights included in the master composite, Batch 1 has a calculated Bond ball mill work index of 12.5 kWh/t. The detailed test data is included in Appendix A.

Table 6: Grindability Test Data

Sample	Bond Ball Mill Work Index, kWh/t	Bond Rod Mill Work Index, kWh/t	Bond Abrasion Index, Ai
Master Composite	11.3	16.1	0.1808
Batch 2	11.6	N/A	N/A
Batch 3	10.6	N/A	N/A
Batch 4	11.2	N/A	N/A

*all values in metric

5. QEMSCAN Mineralogical Analysis

The Master composite was submitted for a QEMSCAN analysis. The purpose of the study was to identify mineralogical characteristics and to develop mineral release curves for the nickel and copper sulphides.

5.1. Sample Description and Preparation

A sample of the Master composite was ground to a product size of P_{80} ~ 160 microns and submitted for mineralogy. The sample was screened at 150, 75, 38, and 20 microns to form the following five size fractions: +150, -150/+75, -75/+38, -38/+20 and -20 microns. A portion of each fraction was submitted for Cu, Mo, S and whole rock analyses for data validation. These results are presented in the assay reconciliation portion of this report.

5.2. Operational Modes and Quality Control

Bulk Mineral Analyses (BMA) and Trace Mineral Search Analyses (TMS) were performed on each of the submitted polished sections. Bulk Mineral Analysis uses the linear intercept method and provides a robust data set for determination of the bulk mineralogy with mineral identities and proportions, along with grain size measurements. Trace Mineral Search is a modified particle mapping routine aimed at resolving liberation and locking characteristics of a set of particles, specifically a phase that reports as a low-grade constituent.

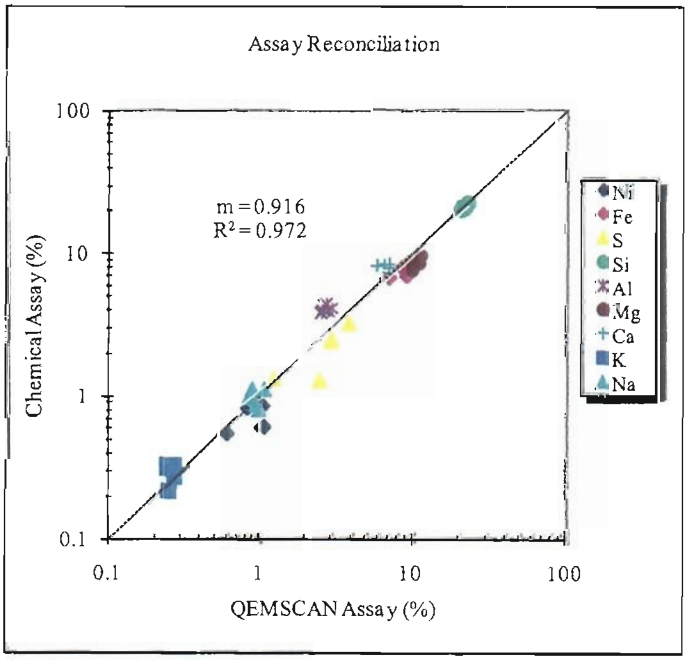
The QEMSCAN and the direct chemical assays were then compared as a quality control, as presented in Table 7. Assay reconciliation and R^2 analysis of the entire population for this sample was acceptable, as shown in Figure 4.

Table 7: QEMSCAN and Direct Assay Reconciliation

Ore	Fraction	Assays, %									
		Ni		Fe		S		Si		Al	
		QEM	Chem.	QEM	Chem.	QEM	Chem.	QEM	Chem.	QEM	Chem.
Master Composite	+150	0.28	0.30	7.03	6.61	1.23	1.28	23.1	22.0	2.78	4.24
	-150/+75	0.60	0.53	8.51	7.69	3.04	2.45	21.5	20.9	2.65	3.93
	-75/+38	1.04	0.82	9.53	8.32	3.94	3.08	20.8	20.0	2.59	3.68
	-38/+20	0.81	0.80	9.23	7.76	3.02	2.35	21.7	20.2	2.85	3.75
	-20	1.05	0.60	9.30	6.84	2.47	1.26	21.8	20.2	3.02	4.04

Ore	Fraction	Assays, %							
		Mg		Ca		K		Na	
		QEM	Chem.	QEM	Chem.	QEM	Chem.	QEM	Chem.
Master Composite	+150	11.2	8.20	7.08	7.11	0.24	0.32	1.04	1.09
	-150/+75	10.2	7.66	7.15	7.72	0.27	0.32	0.88	1.11
	-75/+38	9.85	7.42	7.08	8.22	0.24	0.31	0.83	0.94
	-38/+20	10.6	8.14	6.53	8.29	0.26	0.27	0.94	0.86
	-20	11.4	9.47	5.90	7.93	0.25	0.22	0.99	0.78

Figure 4: QEMSCAN and Direct Assay Reconciliation



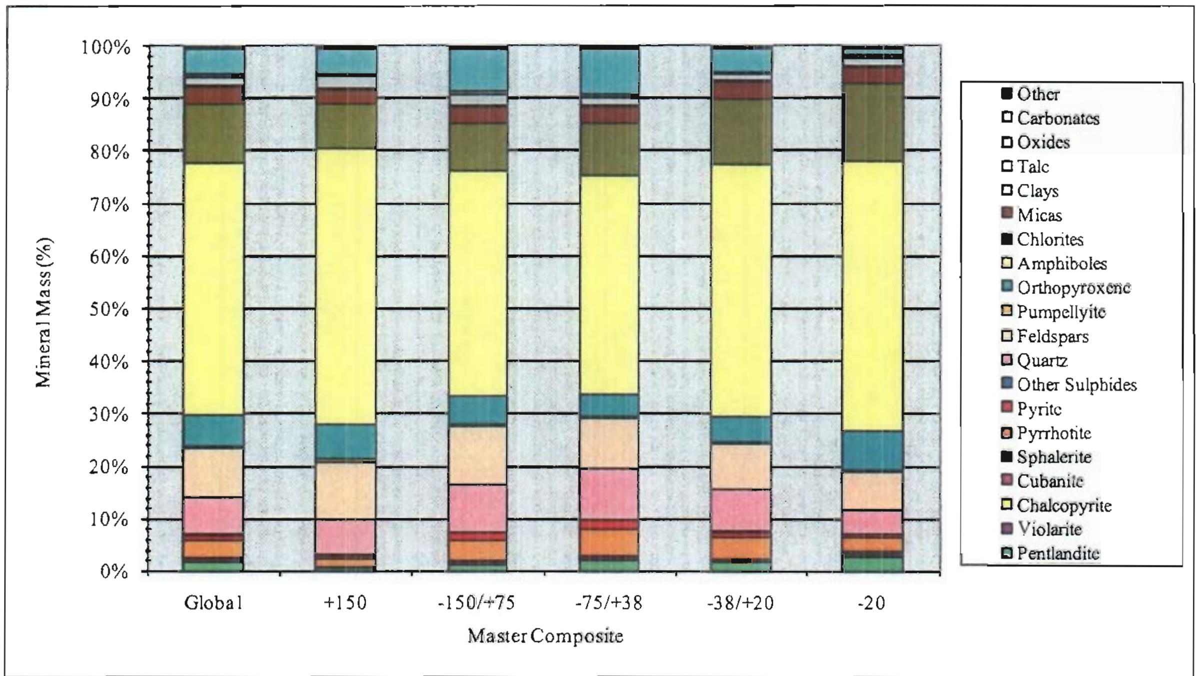
5.3. *Modal Analysis and Grain Size Distribution*

Bulk modal analysis of the Master composite is presented in Table 8 and the mineral distribution is graphically illustrated in Figure 5. Nickel occurs as pentlandite and violarite, while copper occurs primarily as chalcopyrite and cubanite. Pyrrhotite is the most dominant sulphide mineral present at 3.3% of the overall mineral mass. Amphiboles, chlorides and feldspars account for the majority of the non-sulphide minerals.

Table 8: Modal Analysis – Master Composite

Survey	Name	Landore Resources - Junior Lake										
	Id	MI5004-FEB08										
Sample	Name	Master Composite										
Fraction	Name	Combined	+150		-150/+75		-75/+38		-38/+20		-20	
	Mass Size Dist. (%)	100.0	18.2		19.4		16.1		13.4		33.0	
	Particle Size	19	138		65		35		21		9	
		Combined	+150		-150/+75		-75/+38		-38/+20		-20	
		Sample	Sample	Fraction	Sample	Fraction	Sample	Fraction	Sample	Fraction	Sample	Fraction
Mineral Mass (%)	Pentlandite	1.79	0.10	0.53	0.22	1.16	0.33	2.03	0.22	1.64	0.92	2.78
	Violarite	0.34	0.02	0.14	0.07	0.38	0.11	0.70	0.06	0.46	0.06	0.19
	Chalcopyrite	0.37	0.03	0.15	0.07	0.35	0.04	0.24	0.04	0.27	0.20	0.59
	Cubanite	0.01	0.00	0.01	0.00	0.02	0.00	0.02	0.00	0.01	0.00	0.01
	Sphalerite	0.05	0.00	0.00	0.01	0.03	0.00	0.02	0.00	0.04	0.03	0.10
	Pyrrhotite	3.28	0.25	1.40	0.76	3.95	0.81	5.00	0.56	4.17	0.90	2.72
	Pyrite	1.17	0.16	0.87	0.32	1.66	0.29	1.80	0.15	1.10	0.25	0.75
	Other Sulphides	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.05	0.00	0.00
	Quartz	7.04	1.21	6.66	1.71	8.82	1.56	9.68	1.05	7.84	1.51	4.59
	Feldspars	9.28	1.96	10.79	2.16	11.13	1.55	9.58	1.19	8.94	2.42	7.34
	Pumpellyite	0.32	0.12	0.66	0.10	0.49	0.04	0.27	0.03	0.20	0.04	0.12
	Orthopyroxene	6.10	1.22	6.74	1.03	5.34	0.71	4.38	0.64	4.79	2.49	7.56
	Amphiboles	47.95	9.56	52.59	8.33	43.03	6.73	41.67	6.42	48.02	16.92	51.32
	Chlorites	11.37	1.54	8.45	1.71	8.84	1.63	10.08	1.65	12.33	4.85	14.72
	Micas	3.32	0.55	3.04	0.67	3.46	0.51	3.18	0.47	3.55	1.11	3.38
	Clays	0.06	0.02	0.10	0.02	0.10	0.01	0.08	0.01	0.05	0.00	0.01
	Talc	1.69	0.40	2.22	0.39	2.03	0.24	1.47	0.17	1.24	0.49	1.49
	Oxides	0.53	0.04	0.25	0.11	0.58	0.10	0.61	0.06	0.43	0.21	0.64
	Carbonates	5.28	0.98	5.38	1.65	8.55	1.47	9.10	0.64	4.80	0.54	1.63
	Other	0.05	0.00	0.01	0.02	0.08	0.01	0.07	0.01	0.08	0.01	0.04
	Total	100.00	18.17	100.00	19.36	100.00	16.14	100.00	13.37	100.00	32.96	100.00
Mean Grain Size (µm)	Pentlandite		20		21		18		14		7	
	Violarite		13		14		11		9		5	
	Chalcopyrite		21		28		23		20		8	
	Cubanite		8		9		8		7		3	
	Sphalerite		0		28		24		22		8	
	Pyrrhotite		34		35		23		15		6	
	Pyrite		46		37		27		17		8	
	Other Sulphides		7		0		0		35		0	
	Quartz		35		29		23		14		7	
	Feldspars		33		32		25		18		9	
	Pumpellyite		8		6		5		4		3	
	Orthopyroxene		9		7		5		4		4	
	Amphiboles		34		26		21		15		7	
	Chlorites		18		16		12		9		6	
	Micas		24		22		16		14		7	
	Clays		8		6		6		4		3	
	Talc		14		13		10		9		6	
	Oxides		21		21		17		14		8	
	Carbonates		37		34		25		16		9	
	Other		10		26		29		23		11	

Figure 5: Mineral Distribution – Master Composite



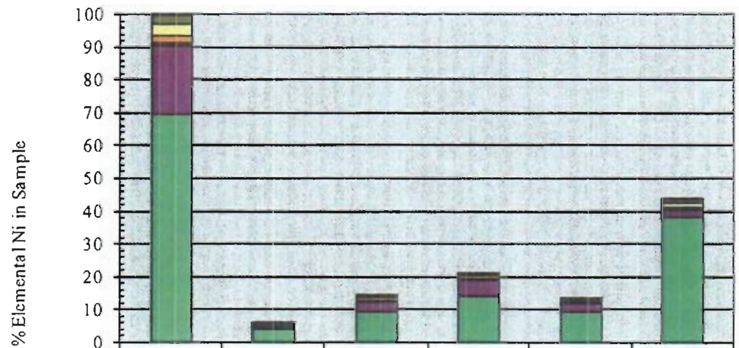
5.4. Nickel and Copper Occurrence

The nickel and copper occurrence in the Master composite by size fraction is illustrated in Figure 6 and Figure 7, respectively.

Pentlandite makes up almost 70% of the nickel-bearing minerals, followed by violarite (20.8%) and amphibole (3.5%). Almost 10% of the nickel that is contained in the Master composite is associated with pyrrhotite and non-sulphide gangue minerals and this amount of nickel is considered unrecoverable by means of flotation. Almost 40% of the pentlandite reported to the finest size fraction of -20 microns. As the flotation kinetics of pentlandite decreases for finer grain sizes, sufficient flotation time is paramount for good pentlandite recovery into the concentrate.

Chalcopyrite is the dominant copper-bearing mineral and contains 98% of the copper value. The remaining Cu is contained in cubanite and as trace amounts in bornite and covellite/chalcocite. The majority of the chalcopyrite reported to the coarser size fractions and less than 18% was found in the -20 size fraction.

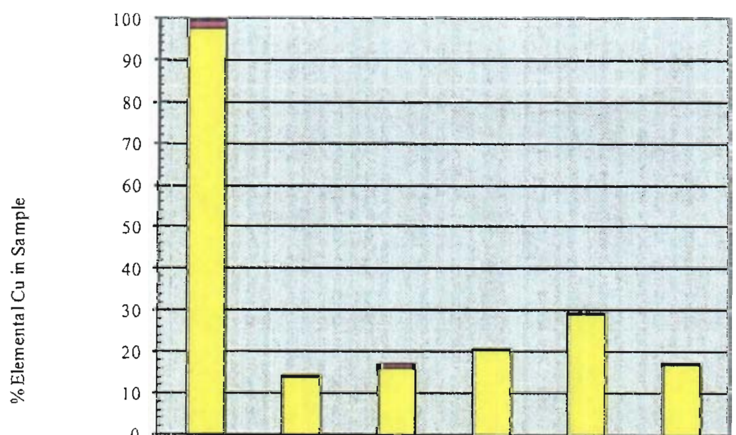
Figure 6: Nickel Occurrence in Master Composite



	Master Composite	+150	-150/+75	-75/+38	-38/+20	-20
Talc	0.35	0.08	0.08	0.05	0.03	0.12
Chlorite	2.69	0.36	0.40	0.38	0.39	1.15
Amphibole	3.52	0.67	0.57	0.48	0.48	1.33
Pyrrhotite	2.37	0.18	0.57	0.61	0.42	0.58
Millerite Group	0.56	0.05	0.04	0.22	0.03	0.25
Violarite	20.8	1.05	3.53	5.03	2.83	2.27
Pentlandite	69.7	4.10	9.50	14.4	9.53	38.2

Sample: Fraction

Figure 7: Copper Occurrence in Master Composite



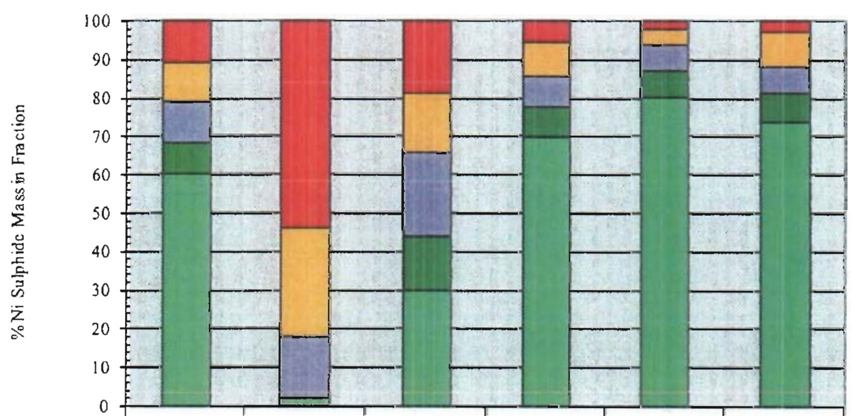
	Master Composite	+150	-150/+75	-75/+38	-38/+20	-20
Covellite/Chalcocite	0.02	0.02	0.00	0.00	0.00	0.00
Bornite	0.00	0.00	0.00	0.00	0.00	0.00
Cubanite	2.03	0.43	0.75	0.35	0.33	0.18
Chalcopyrite	98.0	14.0	16.4	20.8	29.3	17.4

Sample: Fraction

5.5. *Characterization of Nickel Sulphide Minerals in the Master Composite*

As described in the previous section, nickel sulphides and specifically pentlandite make up the dominant value minerals occurring in the Junior Lake VW Zone deposit. Liberation of nickel sulphides in each ore type is shown in Figure 8. For the purposes of this analysis, mineral liberation is defined based on 2D particle area percent. Nickel sulphide mineral area is greater than or equal to 80% particle area for liberated particles, less than 80% and greater than equal to 50% for middling particles, between 50% and 20% for sub-middlings and less than 20% for locked particles.

Figure 8: Nickel Sulphide Liberation



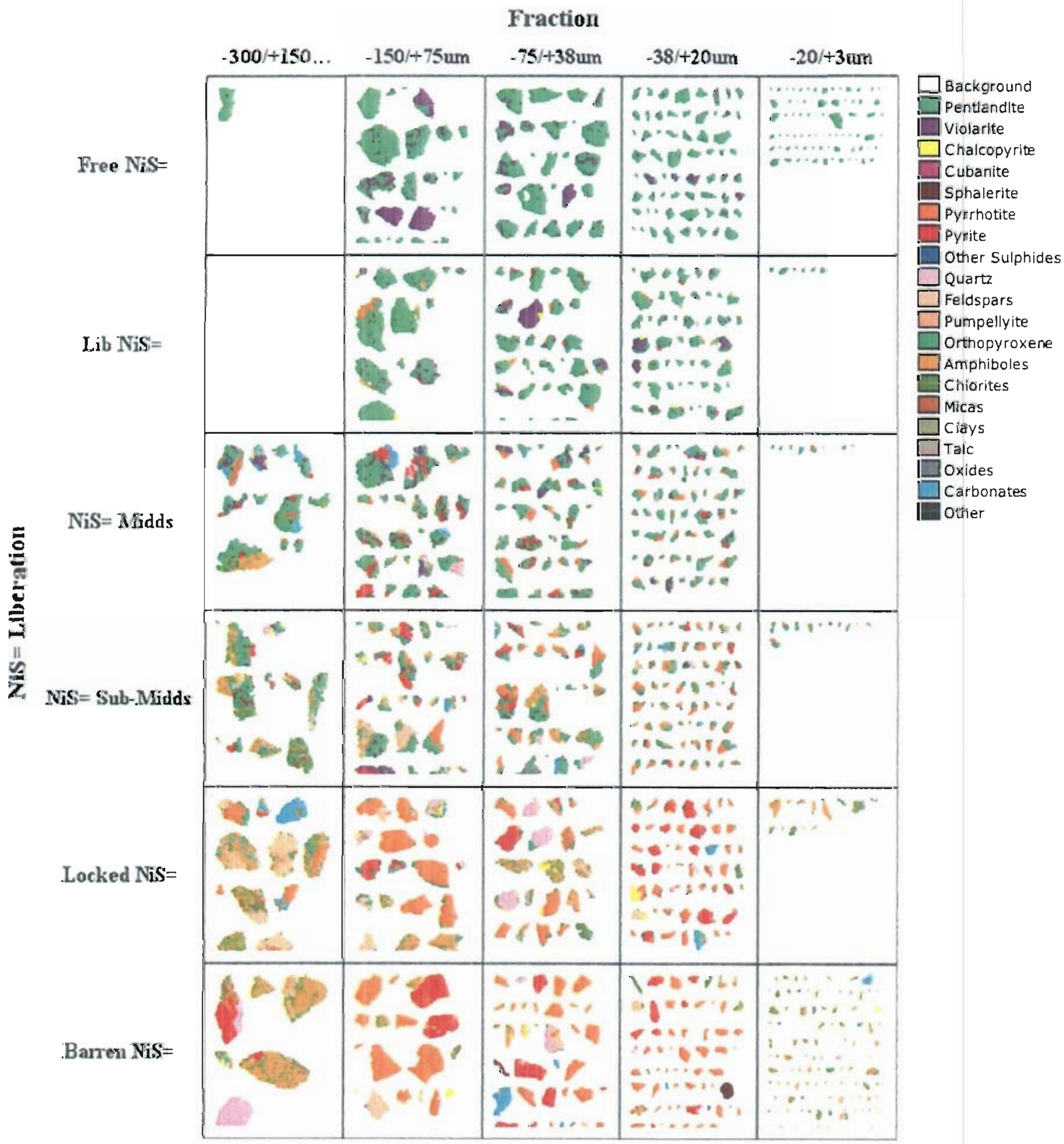
	Master Comp	+150	-150/+75	-75/+38	-38/+20	-20
Locked NiS=	10.66	53.97	18.60	5.46	2.26	2.95
NiS= Sub-Midds	10.21	27.99	15.71	9.01	3.99	8.97
NiS= Midds	10.67	15.61	21.72	7.71	6.69	6.61
Lib NiS=	8.20	0.00	14.02	8.13	6.85	7.81
Free NiS=	60.27	2.43	29.95	69.69	80.21	73.66

Sample: Fraction

The nickel sulphide liberation data shows a distinct difference between the +75 microns and the -75 microns fractions. While the proportions of free nickel sulphides is less than 30% in the coarser fractions, it improves to more than 70% in the finer fractions. These results suggest that a fine primary grind of P_{80} = 75 microns ore less will be required to produce a high grade primary concentrate as proposed in the flowsheet that was developed during the last phase of testing in 2006.

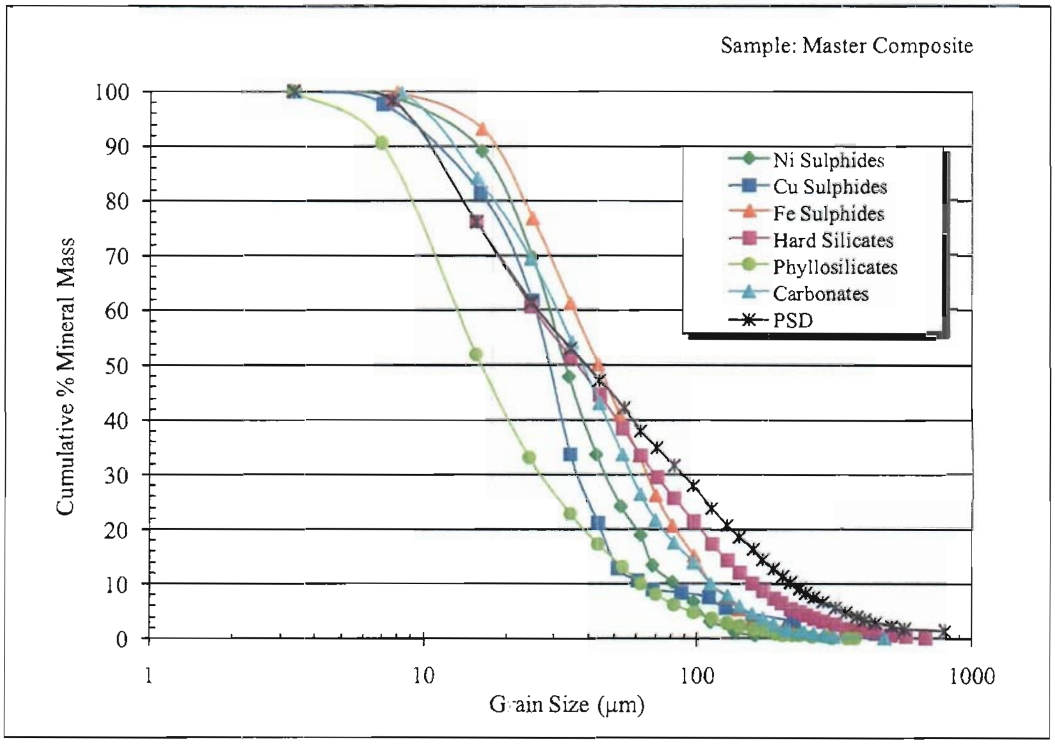
The fact that only 74% of the nickel sulphides are liberated in the -20 microns fraction suggests that a significant number of pentlandite grain sizes are locked up with other minerals. Visual representation of nickel sulphides sorted by liberation class for each size fraction is presented in Figure 9. From examination of both the middling and locked groups, it is evident that nickel sulphides are associated with pyrrhotite, pyrite and non-sulphide gangue minerals.

Figure 9: Nickel Sulphide Liberation – Master Composite



The potentially problematic nickel mineralogy is further illustrated in Figure 10, which shows the cumulative % mineral mass versus the grain size curves. In the case of the nickel sulphides, almost 50% of the mineral mass of the Ni sulphides is associated with slow floating grain sizes of 30 microns or less.

Figure 10: Average Grain Size Distribution

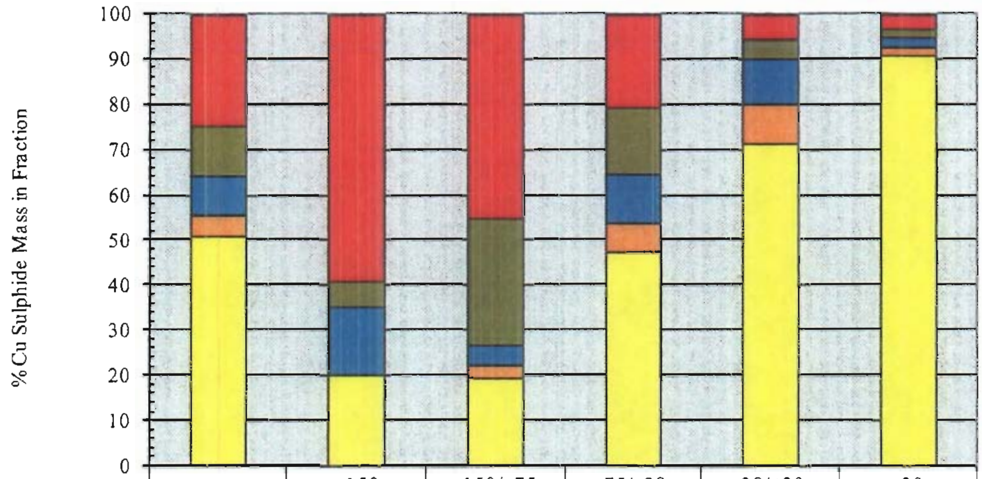


5.6. Characterization of Copper Sulphide Minerals in the Master Composite

Chalcopyrite and cubanite make up the dominant copper value minerals occurring in the Junior Lake VW Zone Master composite. Liberation of copper sulphides is shown in Figure 11. For the purposes of this analysis, mineral liberation is defined based on 2D particle area percent. Copper sulphide mineral area is greater than or equal to 80% particle area for liberated particles, less than 80% and greater than equal to 50% for middling particles, between 50% and 20% for sub-middlings and less than 20% for locked particles.

In comparison to the nickel sulphides a smaller percentage of the copper sulphides are free and liberated at the intermediate size fractions, which suggests that the mineral grain sizes of the copper minerals are smaller compared to the pentlandite grain sizes. At the finest size fraction of -20 microns 92.6% of Cu minerals are free or liberated.

Figure 11: Copper Sulphide Liberation

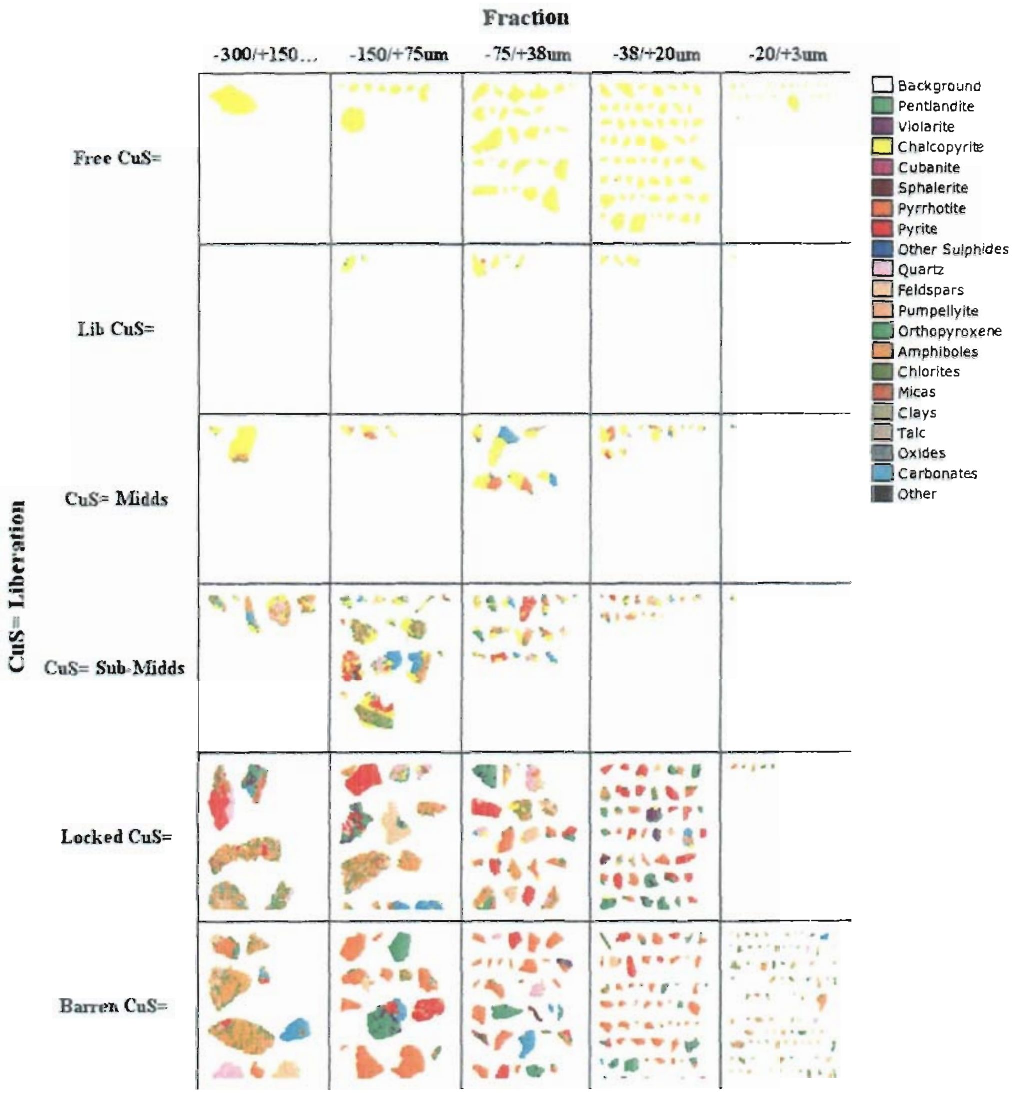


		+150	-150/+75	-75/+38	-38/+20	-20
Locked CuS=	24.6	58.9	44.9	20.6	5.41	3.23
CuS= Sub-Midds	11.0	5.93	28.3	14.8	4.37	1.80
CuS= Midds	8.70	15.0	4.17	10.6	10.1	2.42
Lib CuS=	4.63	0.00	3.18	6.42	8.65	1.70
Free CuS=	51.1	20.2	19.5	47.6	71.4	90.9

Sample: Fraction

Visual representation of copper sulphides sorted by liberation class for each of the size fractions is presented in Figure 12. From examination of both the middling and locked groups, it is evident that copper sulphides are associated with pyrrhotite, pyrite, and non-sulphide gangue minerals.

Figure 12: Copper Sulphide Liberation – Master Composite



5.7. Theoretical Nickel and Copper Grade-Recovery Curves

The mineralogical limiting grade-recovery curves of nickel and copper for the Master composite, both globally and by fraction, are presented in Figure 13 and Figure 14, respectively. These graphs compare the theoretical maximum nickel and copper grade achievable, limited by mineralogy and liberation, at this particle size distribution, with the maximum nickel and copper recovery achievable. It should be noted that this is a theoretical maximum because it does not account for grade dilution due to gangue activation and/or entrainment or other factors that may be observed in the actual metallurgical process.

Figure 13: Theoretical Nickel Grade-Recovery Curves

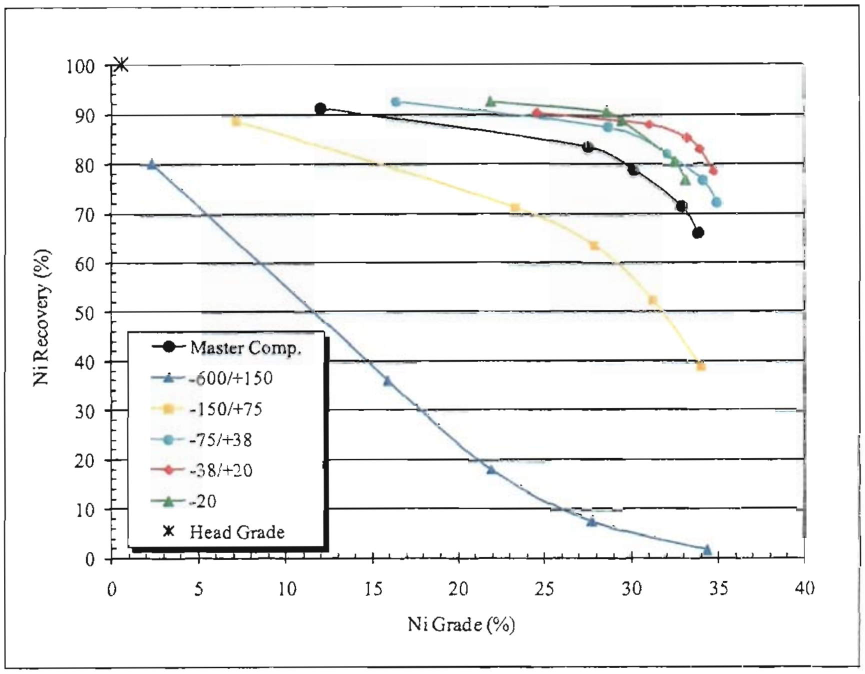
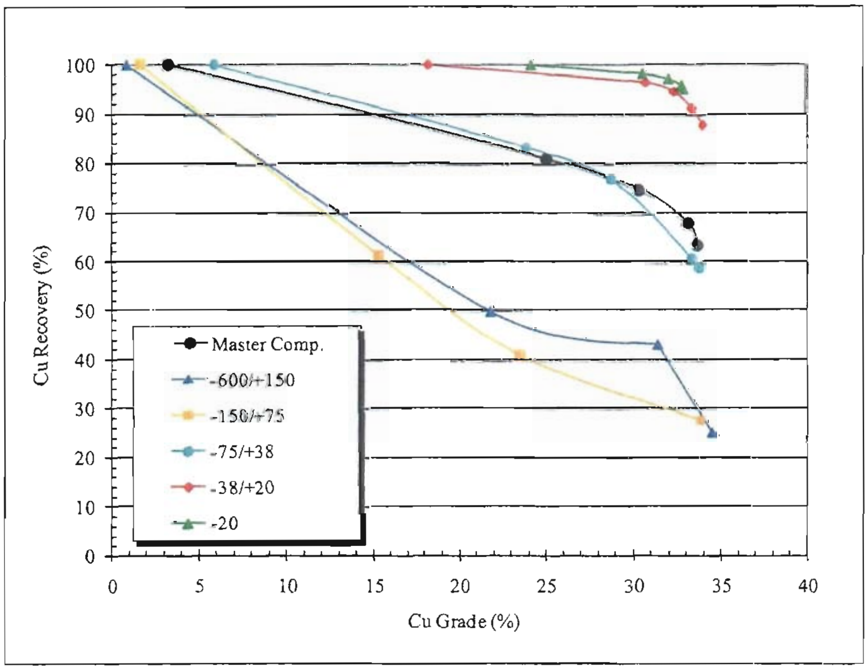
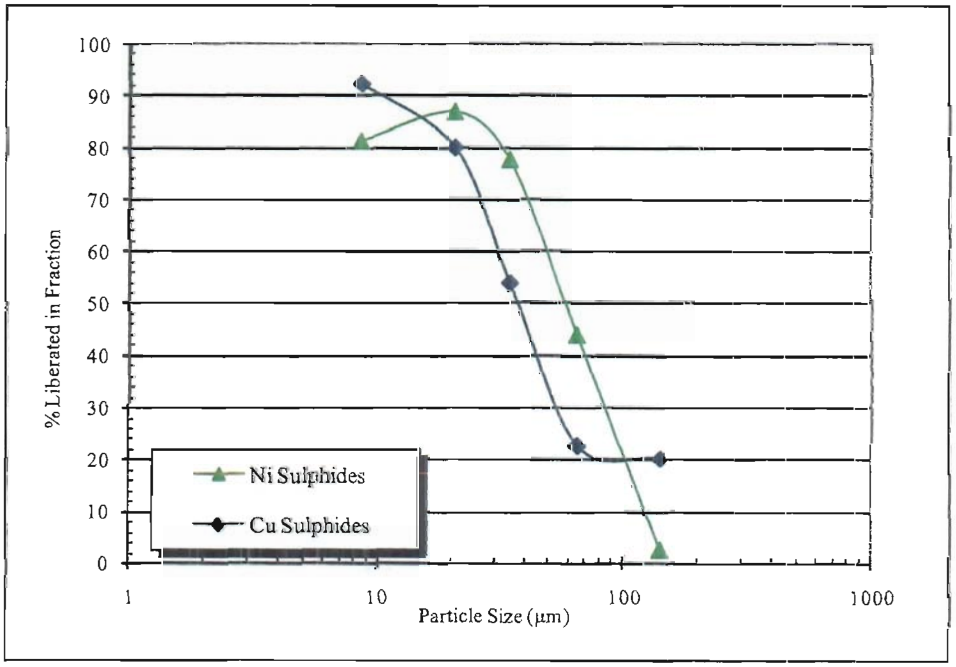


Figure 14: Theoretical Copper Grade-Recovery Curves



The mineral release curves for nickel and copper sulphides are presented in Figure 15. The mineral release curve is used to predict the amount of liberated mineral of interest at varying size distributions. This can be an indicator of optimum grind targets for metallurgical processes to achieve the most liberation for the least amount of grind energy. The release curves illustrate that a grind size of P_{80} = 50-60 microns is required to achieve Ni and Cu sulphide liberations of approximately 50%. For any given grind size in the range between P_{80} = 20 microns and P_{80} = 100 microns the Ni sulphide liberation is 10% to 30% better compared to the Cu sulphide liberation.

Figure 15: Ni and Cu Sulphides Mineral Release Curves

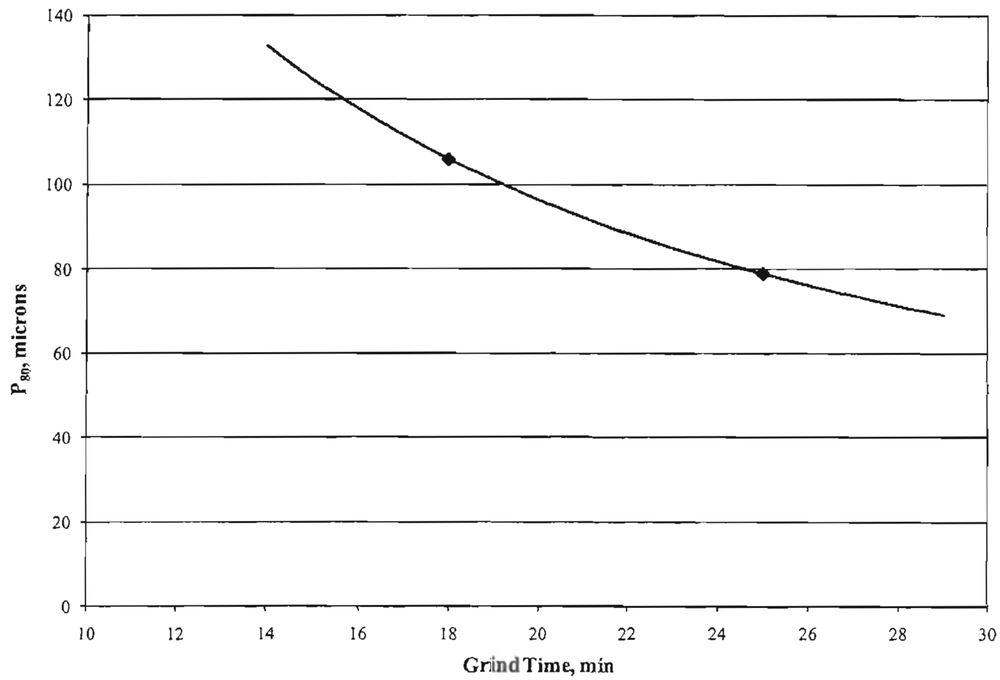


6. Laboratory Flotation Program

6.1. Mill Calibration Tests

Two mill calibration tests were carried out to develop a laboratory mill grind time versus grind size relationship. The two data points and a trend curve are presented in Figure 16. The complete size analysis for the two grind tests is included in Appendix B.

Figure 16: Mill Calibration Results



6.2. Objectives of Flotation Program

The primary objectives of the flotation program were to:

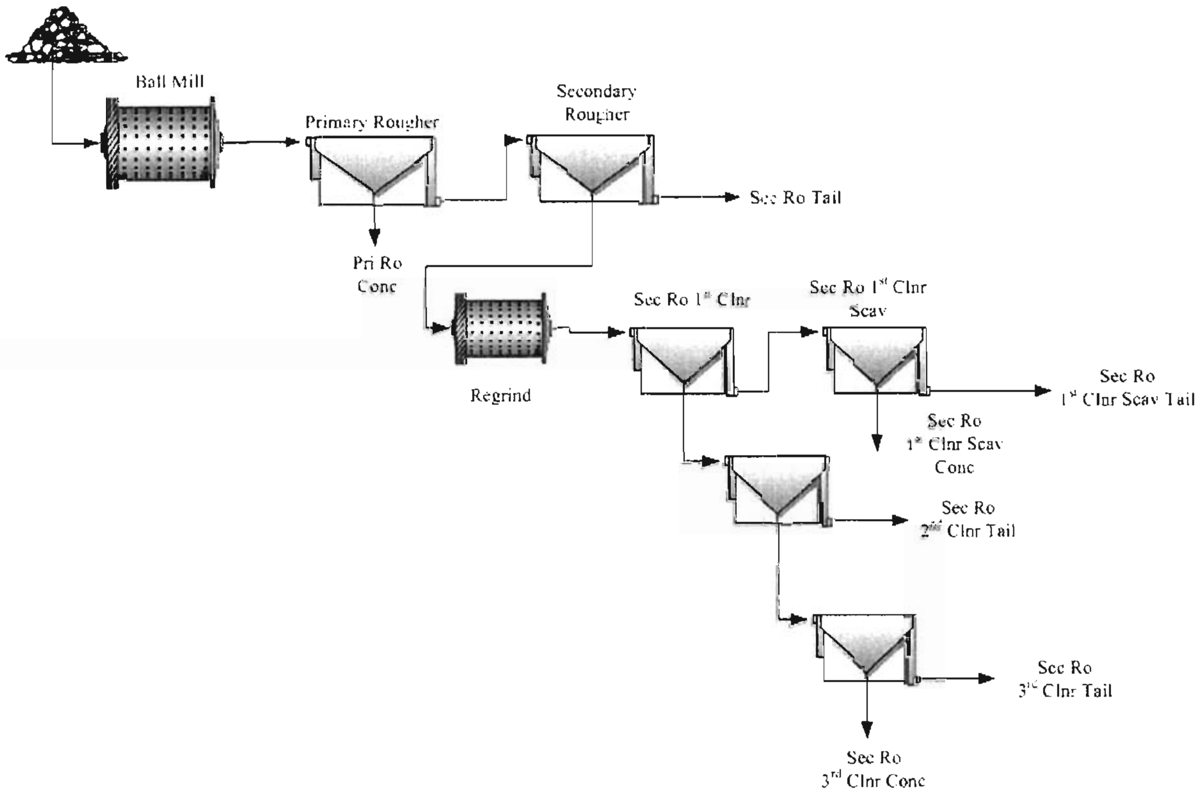
- Optimise primary and regrind requirements;
- Optimise the reagent regime and dosages;
- Develop closed-circuit metallurgical predictions through locked cycle tests;
- Test the stability of the proposed flowsheet on variability samples.

6.3. Batch Rougher and Cleaner Flotation

A total of eighteen (18) open circuit rougher and batch cleaner tests were carried out in this phase of flowsheet development.

The flowsheet shown in Figure 17 was developed during the previous phase of metallurgical testing. The primary rougher produces a concentrate that constitutes a saleable product and that does not require further upgrading. In the last phase of testing, two samples were subjected to this flowsheet and produced a primary rougher concentrate grade of 14.2% to 17.3% Ni at approximately 55%% Ni recovery.

Figure 17: Proposed Flowsheet for the Junior Lake VW Ore



6.3.1. Rougher Kinetics Tests

The first five flotation tests F1 to F4 were rougher kinetics tests to assess the impact of primary grind on the flotation response. A grind size range from P_{80} = 110 microns to P_{80} = 54 microns was evaluated. The grade-recovery curves for Ni, Cu, and Co are depicted in Figure 18, Figure 19, and Figure 20, respectively. A summary of the flotation results is shown in Table 9 and complete mass balances with product sizing data are included in Appendix D. Although the total rougher recovery did not vary significantly for the tested grind size range, a finer grind of less than 90 microns increased nickel recovery into the primary and secondary rougher concentrate by 2% compared to the coarser primary grind of P_{80} = 110 microns in test F1.

During the first four tests it was noted that the frother Dowfroth 250 was too strong for the Master composite. Hence, it was replaced with MIBC in test F5, which otherwise was a repeat test of F4. As evidenced by the grade-recovery curves for Ni, Cu, and Co in Figure 18, Figure 19, and Figure 20, respectively, the selectivity of the first two incremental rougher concentrates improved significantly in test F5. Selectivity in these first incremental rougher concentrates is important as they constitute the primary rougher concentrate. This reagent substitution proved successful in producing a higher grade primary rougher concentrate. The overall recovery did not appear to be affected for Ni and Co. This was not the case for Cu, however. It is postulated that this noticeable deterioration was the result of an incorrect secondary rougher tailings Cu assay, being more than five times higher than those of the first four tests. Taking into account the fact that chalcopyrite is more hydrophobic than most other sulphide minerals, it should float more readily than pentlandite under the more selective conditions. The validity of this assumption was confirmed in subsequent flotation tests, when Cu recoveries returned to previous levels despite the use of MIBC. A Cu grade-recovery curve with an adjusted secondary rougher tailings Cu grade for test F5 is included in Figure 19 and clearly illustrates the improvement in flotation selectivity.

Figure 18: Ni Grade Recovery Curves – F1 to F5

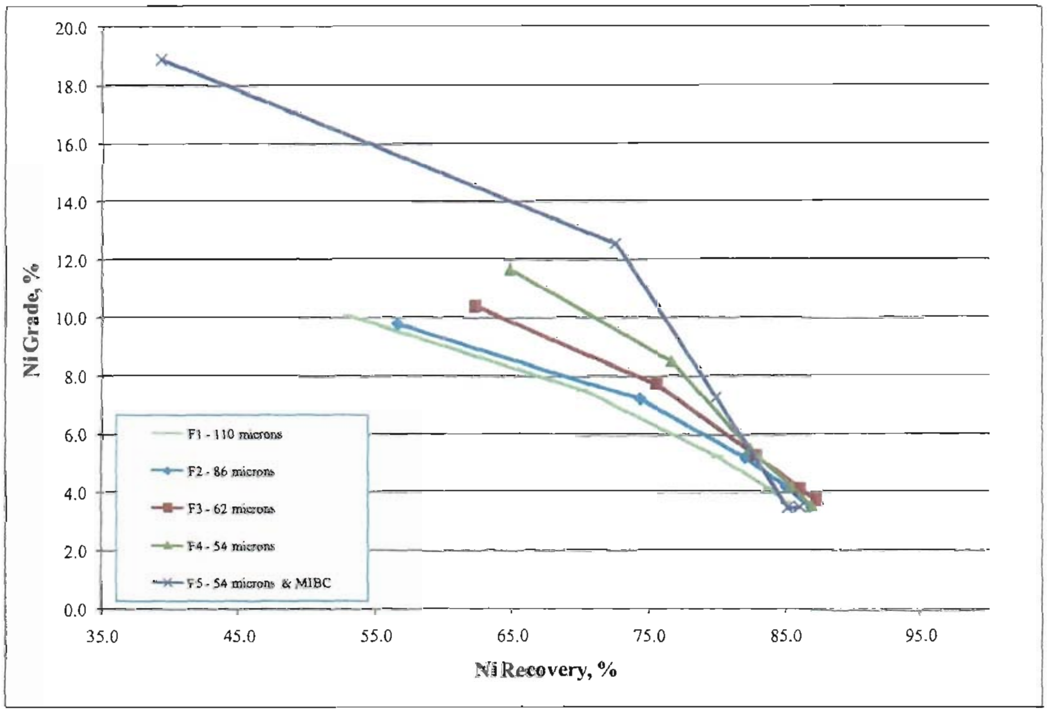


Figure 19: Cu Grade Recovery Curves – F1 to F5

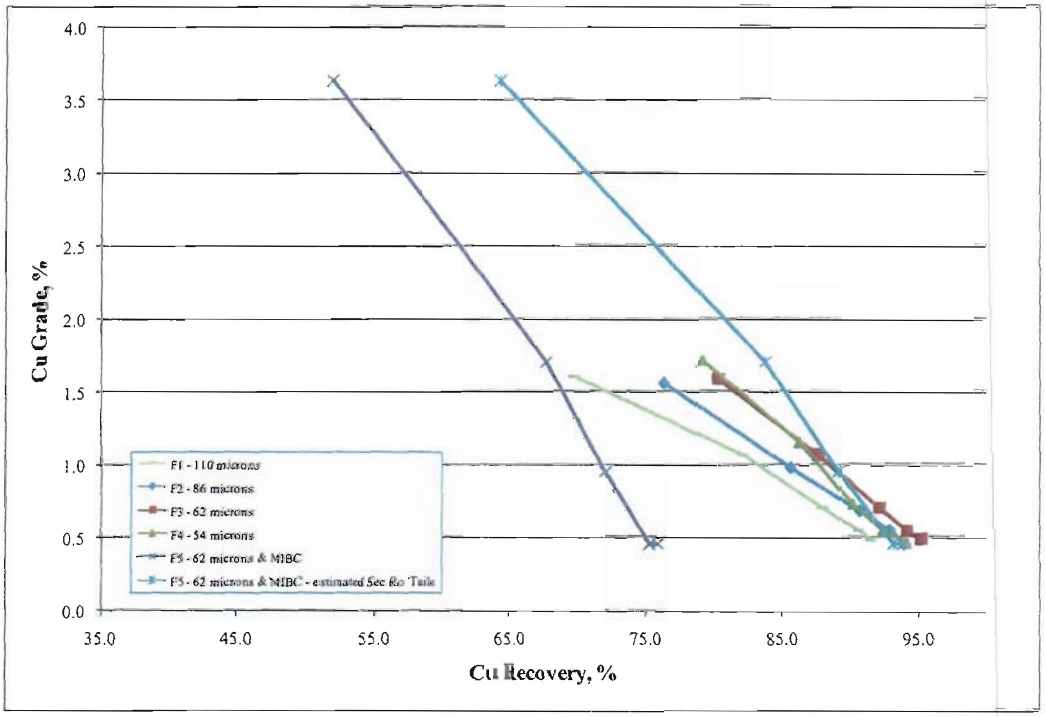


Figure 20: Co Grade Recovery Curves – F1 to F5

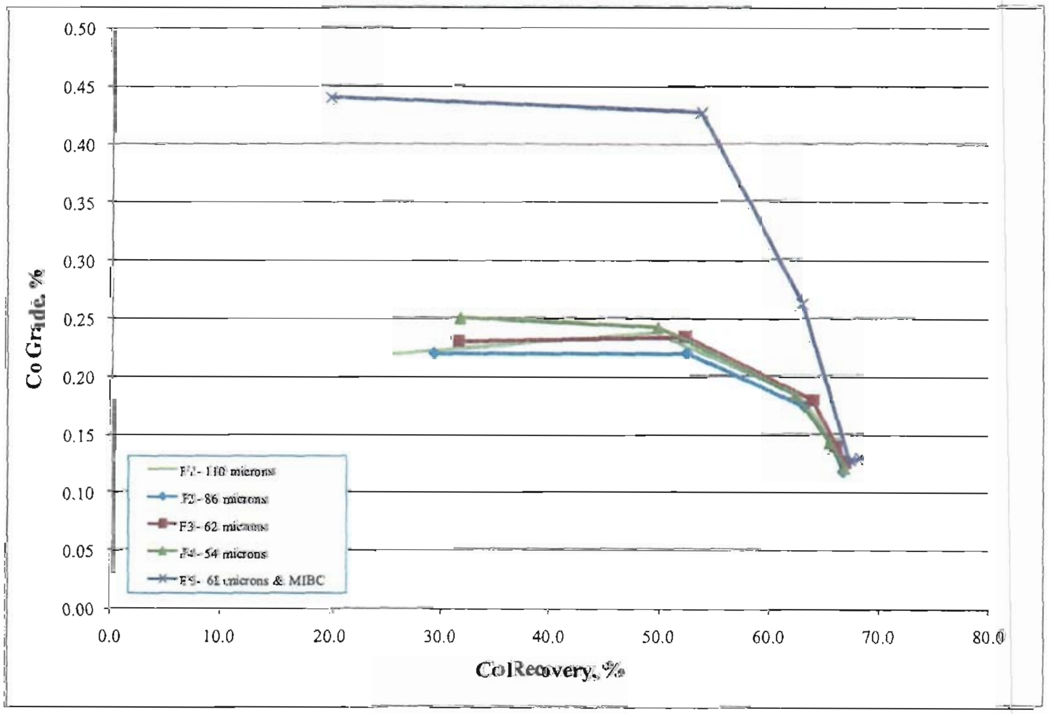


Table 9: Summary of Flotation Tests

Test	Product	Wt	Assays, %				Distribution, %			
		%	Ni	Cu	Co	S	Ni	Cu	Co	S
F1 Rougher 110 microns	Ro Conc 1	3.06	10.1	1.61	0.22	14.9	53.1	69.8	25.9	23.8
	Ro Conc 1 + 2	5.42	7.55	1.07	0.24	17.3	70.3	82.1	49.5	49.0
	Ro Conc 1 - 3	8.86	5.27	0.70	0.18	16.4	80.1	87.9	62.4	76.1
	Ro Conc 1 - 4	11.8	4.15	0.54	0.15	14.1	83.9	90.5	65.8	86.9
	Ro Conc 1 - 5	13.4	3.69	0.48	0.13	12.8	85.1	91.4	66.7	90.1
	Head (calc.)		0.58	0.07	0.03	1.91	100	100	100	100
	Head (direct)		0.61	0.07	0.02	1.97				
F2 Rougher 86 microns	Ro Conc 1	3.39	9.82	1.56	0.22	13.0	56.7	76.3	29.2	24.5
	Ro Conc 1 + 2	6.07	7.21	0.98	0.22	14.5	74.5	85.5	52.3	49.0
	Ro Conc 1 - 3	9.27	5.21	0.68	0.17	14.0	82.1	90.6	63.0	71.8
	Ro Conc 1 - 4	11.8	4.25	0.55	0.14	12.8	85.0	92.8	65.5	83.3
	Ro Conc 1 - 5	14.5	3.52	0.45	0.12	11.4	86.9	93.8	66.5	91.5
	Head (calc.)		0.59	0.07	0.03	1.80	100	100	100	100
	Head (direct)		0.61	0.07	0.02	1.97				
F3 Rougher 62 microns	Ro Conc 1	3.56	10.4	1.59	0.23	14.9	62.4	80.3	31.5	28.0
	Ro Conc 1 + 2	5.80	7.74	1.06	0.23	15.8	75.7	87.6	52.2	48.5
	Ro Conc 1 - 3	9.26	5.31	0.70	0.18	14.3	82.9	92.1	63.8	69.9
	Ro Conc 1 - 4	12.3	4.15	0.54	0.14	12.9	86.1	94.1	65.9	83.8
	Ro Conc 1 - 5	13.8	3.75	0.49	0.13	12.3	87.4	95.1	66.8	89.5
	Head (calc.)		0.59	0.07	0.03	1.89	100	100	100	100
	Head (direct)		0.61	0.07	0.02	1.97				
F4 Rougher 54 microns	Ro Conc 1	3.26	11.7	1.72	0.25	15.8	64.9	79.1	31.6	27.3
	Ro Conc 1 + 2	5.28	8.53	1.16	0.24	16.3	76.8	86.2	49.7	45.7
	Ro Conc 1 - 3	8.75	5.54	0.73	0.18	14.4	82.5	90.1	62.2	66.6
	Ro Conc 1 - 4	11.9	4.23	0.55	0.14	12.5	85.4	92.3	65.4	78.6
	Ro Conc 1 - 5	14.3	3.58	0.47	0.12	11.5	87.0	94.0	66.7	86.8
	Head (calc.)		0.59	0.07	0.03	1.89	100	100	100	100
	Head (direct)		0.61	0.07	0.02	1.97				
F5 Rougher 54 microns & MIBC	Ro Conc 1	1.20	18.9	3.63	0.44	26.5	39.4	52.0	20.0	17.3
	Ro Conc 1 + 2	3.33	12.6	1.71	0.43	25.7	72.6	67.7	53.7	46.5
	Ro Conc 1 - 3	6.36	7.26	0.95	0.26	19.2	80.0	72.0	62.8	66.3
	Ro Conc 1 - 4	14.1	3.50	0.45	0.13	11.4	85.2	75.2	67.2	86.8
	Ro Conc 1 - 5	15.4	3.53	0.45	0.13	11.8	86.1	75.8	68.1	89.9
	Head (calc.)		0.58	0.08	0.03	1.84	100	100	100	100
	Head (direct)		0.61	0.07	0.02	1.97				
F6 Cleaner (Single-Stage) Pri Grind: 54 microns Regrind: ~19 microns 235 g/t CMC	Pri Ro Conc	1.88	19.2	2.87	0.42	25.8	60.6	76.0	28.5	25.4
	Pri Ro Conc & Sec Ro Conc1	2.63	16.5	2.35	0.54	26.7	72.5	86.7	50.8	36.8
	Pri Ro Conc & Sec Ro Conc 1+2	5.08	9.34	1.26	0.33	20.8	79.4	90.2	60.5	55.2
	Pri Ro Conc & Sec Ro Conc 1-3	6.31	7.76	1.03	0.28	19.2	82.0	91.4	64.5	63.4
	Pr Ro Conc & Sec Ro Conc	11	4.74	0.61	0.17	15.1	86.3	93.7	67.9	86.0
	Head (calc.)		0.60	0.07	0.03	1.91	100	100	100	100
	Head (direct)		0.61	0.07	0.02	1.97				
F7 Cleaner (Single-Stage) Pri Grind: 76 microns Regrind: 16 microns 275 g/t CMC	Pri Ro Conc	1.88	19.2	2.87	0.42	25.8	60.6	76.0	28.5	25.4
	Pri Ro Conc & Sec Ro Conc1	2.63	16.5	2.35	0.54	26.7	72.5	86.7	50.8	36.8
	Pri Ro Conc & Sec Ro Conc 1+2	5.08	9.34	1.26	0.33	20.8	79.4	90.2	60.5	55.2
	Pri Ro Conc & Sec Ro Conc 1-3	6.31	7.76	1.03	0.28	19.2	82.0	91.4	64.5	63.4
	Pr Ro Conc & Sec Ro Conc	11	4.74	0.61	0.17	15.1	86.3	93.7	67.9	86.0
	Head (calc.)		0.59	0.07	0.03	1.89	100	100	100	100
	Head (direct)		0.61	0.07	0.02	1.97				
F8 Cleaner (Single-Stage) Pri Grind: 57 microns Regrind: 15 microns 275 g/t CMC	Pri Ro Conc	2.55	13.9	2.16	0.33	20.4	62.1	77.4	31.4	25.8
	Pri Ro Conc & Sec Ro Conc1	3.74	10.9	1.65	0.35	22.2	71.2	86.3	48.7	41.1
	Pri Ro Conc & Sec Ro Conc 1+2	5.06	8.66	1.25	0.31	20.9	76.6	88.7	58.0	52.1
	Pri Ro Conc & Sec Ro Conc 1-3	6.25	7.29	1.03	0.27	19.2	79.7	90.2	62.2	59.1
	Pr Ro Conc & Sec Ro Conc	12	3.88	0.53	0.15	11.9	83.1	91.4	67.3	71.8
	Head (calc.)		0.57	0.07	0.03	2.02	100	100	100	100
	Head (direct)		0.61	0.07	0.02	1.97				
F9 Cleaner (Single-Stage) Pri Grind: 57 microns Regrind: 19 microns 275 g/t CMC	Pri Ro Conc	2.93	13.8	2.03	0.32	20.3	70.3	83.3	36.1	30.6
	Pri Ro Conc & Sec Ro Conc1	3.67	11.7	1.71	0.36	22.9	74.6	87.5	50.4	43.1
	Pri Ro Conc & Sec Ro Conc 1+2	4.56	10.1	1.42	0.34	22.4	80.0	90.5	60.4	52.5
	Pri Ro Conc & Sec Ro Conc 1-3	5.67	8.40	1.16	0.29	19.9	82.8	92.1	63.4	57.9
	Pr Ro Conc & Sec Ro Conc	14	3.59	0.47	0.12	12.3	88.4	94.0	67.0	89.4
	Head (calc.)		0.58	0.07	0.03	1.95	100	100	100	100
	Head (direct)		0.61	0.07	0.02	1.97				

Table 9: Summary of Flotation Tests (continued)

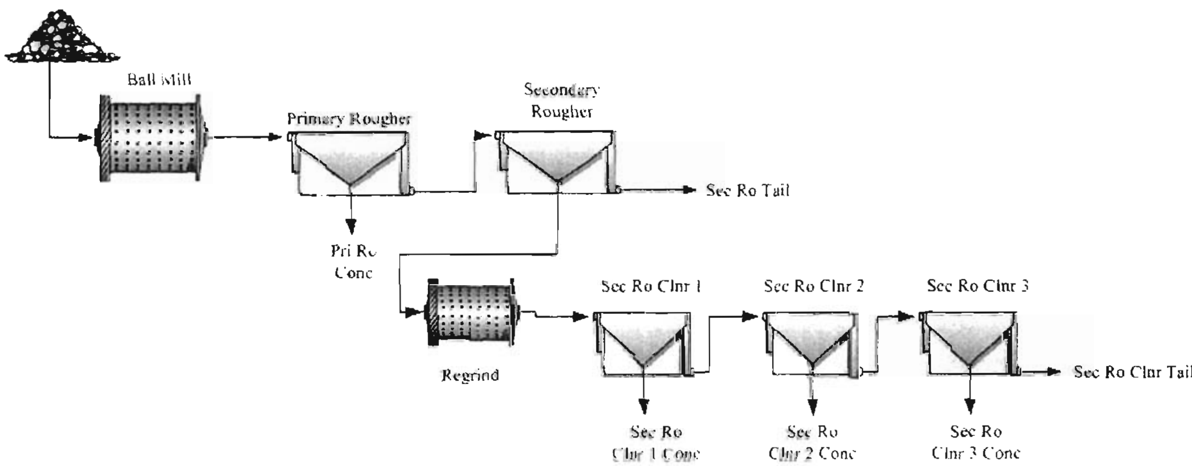
Test	Product	Wt	Assays, %				Distribution, %			
		%	Ni	Cu	Co	S	Ni	Cu	Co	S
F10	Pri Ro Conc	3.50	11.0	1.71	0.23	13.8	67.2	77.0	32.1	27.3
Cleaner	Pri Ro Conc & Sec 3rd Clnr Conc	3.63	10.9	1.70	0.24	14.6	68.9	79.5	35.5	30.1
(3-Stage)	Pri Ro Conc & Sec 2nd Clnr Conc	3.79	10.6	1.64	0.26	15.4	70.0	80.2	39.0	32.9
	Pri Ro Conc & Sec 1st Clnr Conc	5.13	8.63	1.26	0.26	15.9	77.3	83.2	52.4	46.2
Pri Grind: 57 microns	Pr Ro Conc & Sec Ro Conc	13.51	3.67	0.50	0.12	10.5	86.6	86.6	65.4	80.4
Regrind: ~19 microns	Head (calc.)		0.57	0.08	0.03	1.77	100	100	100	100
300 g/t CMC	Head (direct)		0.61	0.07	0.02	1.97				
F11	Pri Ro Conc	2.64	14.2	2.11	0.37	21.3	65.3	82.3	35.8	31.5
Cleaner	Pri Ro Conc & Sec 3rd Clnr Conc	3.20	12.6	1.82	0.39	23.2	70.4	86.1	46.4	41.8
(3-Stage)	Pri Ro Conc & Sec 2nd Clnr Conc	3.58	11.6	1.65	0.38	22.7	72.3	87.4	49.7	45.6
	Pri Ro Conc & Sec 1st Clnr Conc	4.54	9.49	1.33	0.32	20.1	75.1	89.2	53.6	51.1
Pri Grind: 57 microns	Pr Ro Conc & Sec Ro Conc	12.44	3.93	0.51	0.15	11.8	85.3	93.5	67.9	82.8
Regrind: ~19 microns	Head (calc.)		0.57	0.07	0.03	1.78	100	100	100	100
750 g/t CMC	Head (direct)		0.61	0.07	0.02	1.97				
F12	Pri Ro Conc	2.17	15.0	2.41	0.45	29.0	58.3	77.6	37.9	33.2
Cleaner	Pri Ro Conc & Sec 3rd Clnr Conc	2.42	14.4	2.27	0.46	30.0	62.1	81.1	43.3	38.1
(3-Stage)	Pri Ro Conc & Sec 2nd Clnr Conc	2.49	14.1	2.21	0.46	30.0	62.9	81.6	44.5	39.4
	Pri Ro Conc & Sec 1st Clnr Conc	2.64	13.6	2.10	0.45	29.4	64.1	82.3	45.8	41.0
Pri Grind: 57 microns	Pr Ro Conc & Sec Ro Conc	6.77	6.75	0.87	0.24	21.0	81.7	87.6	63.9	74.9
Regrind: ~19 microns	Head (calc.)		0.56	0.07	0.03	1.90	100	100	100	100
1,400 g/t CMC	Head (direct)		0.61	0.07	0.02	1.97				
F13	Pri Ro Conc	1.43	16.2	3.15	0.36	22.6	42.7	68.7	21.1	17.6
Cleaner	Pri Ro Conc & Sec 3rd Clnr Conc	1.67	16.0	2.92	0.40	24.4	49.3	74.3	27.2	22.2
(3-Stage)	Pri Ro Conc & Sec 2nd Clnr Conc	1.82	15.4	2.72	0.41	24.7	51.7	75.7	30.3	24.5
	Pri Ro Conc & Sec 1st Clnr Conc	2.11	13.9	2.39	0.38	23.5	54.3	77.0	33.3	27.1
Pri Grind: 57 microns	Pr Ro Conc & Sec Ro Conc	6.37	6.58	0.88	0.24	14.9	77.5	85.7	61.6	51.9
Regrind: ~19 microns	Head (calc.)		0.54	0.07	0.02	1.83	100	100	100	100
900 g/t CMC	Head (direct)		0.61	0.07	0.02	1.97				
F14	Pri Ro Conc	2.31	16.4	2.27	0.43	25.4	67.9	81.0	38.2	31.6
Cleaner	Pri Ro Conc & Sec 3rd Clnr Conc	2.95	14.0	1.93	0.47	28.5	73.9	88.1	53.2	45.3
(3-Stage)	Pri Ro Conc & Sec 2nd Clnr Conc	3.13	13.4	1.84	0.46	28.1	75.3	88.9	55.1	47.3
	Pri Ro Conc & Sec 1st Clnr Conc	3.98	11.0	1.47	0.38	24.6	78.6	90.5	58.6	52.5
Pri Grind: 45 microns	Pr Ro Conc & Sec Ro Conc	8.07	5.77	0.75	0.21	15.7	83.5	92.9	64.7	68.3
Regrind: 13 microns	Head (calc.)		0.56	0.06	0.03	1.86	100	100	100	100
600 g/t CMC	Head (direct)		0.61	0.07	0.02	1.97				
F15	Pri Ro Conc	2.84	12.3	1.73	0.34	18.7	62.8	66.7	36.5	28.6
Cleaner	Pri Ro Conc & Sec 3rd Clnr Conc	3.67	10.9	1.71	0.38	22.9	71.7	85.0	53.2	45.3
(3-Stage)	Pri Ro Conc & Sec 2nd Clnr Conc	4.01	10.3	1.60	0.37	22.5	74.2	87.2	55.4	48.4
	Pri Ro Conc & Sec 1st Clnr Conc	4.64	9.10	1.41	0.32	20.3	75.8	88.6	56.6	50.5
Pri Grind: 38 microns	Pr Ro Conc & Sec Ro Conc	10.95	4.27	0.62	0.16	12.3	84.0	92.8	66.3	72.7
Regrind: 12 microns	Head (calc.)		0.56	0.07	0.03	1.86	100	100	100	100
625 g/t CMC	Head (direct)		0.61	0.07	0.02	1.97				
F16	Pri Ro Conc	3.69	10.4	1.50	0.25	15.7	67.1	82.4	35.3	30.0
Cleaner	Pri Ro Conc & Sec 3rd Clnr Conc	4.54	9.29	1.31	0.31	20.4	73.9	88.7	53.9	47.9
(3-Stage)	Pri Ro Conc & Sec 2nd Clnr Conc	4.76	8.97	1.26	0.30	19.9	74.8	89.3	55.0	49.2
	Pri Ro Conc & Sec 1st Clnr Conc	5.87	7.55	1.04	0.26	17.3	77.6	90.8	57.5	52.6
Pri Grind: 45 microns	Pr Ro Conc & Sec Ro Conc	19.20	2.61	0.33	0.09	8.25	87.7	95.2	69.1	82.0
Regrind: 13 microns	Head (calc.)		0.57	0.07	0.03	1.93	100	100	100	100
300 g/t CMC	Head (direct)		0.61	0.07	0.02	1.97				
	Ro Conc 1	1.95	0.96	2.14	0.05	3.75	3.19	59.2	3.77	3.78
	Ro Conc 1 + 2	4.16	8.53	1.35	0.18	11.1	60.4	79.9	27.5	23.8
F17	Ro Conc 1 - 3	8.08	5.70	0.78	0.21	13.2	78.4	88.7	61.1	54.9
	Ro Conc 1 - 4	12.68	3.85	0.51	0.15	9.97	83.2	92.4	66.4	65.3
Rougher	Ro Conc 1 - 5	17.05	2.95	0.39	0.11	8.35	85.6	93.6	68.9	73.6
	Ro Conc 1 - 6	19.89	2.57	0.33	0.10	7.70	86.9	94.2	70.3	79.1
45 microns	Ro Conc 1 - 7	22.99	2.25	0.29	0.09	7.13	88.1	95.1	71.7	84.7
NaHS	Ro Conc 1-7 + Mags	23.81	2.20	0.28	0.09	7.81	89.0	95.7	72.7	96.1
	Head (calc.)		0.59	0.07	0.03	1.94	100	100	100	100
	Head (direct)		0.61	0.07	0.02	1.97				
F18	Pri Ro Conc	2.74	13.1	1.89	0.42	27.2	64.1	77.3	44.3	38.7
Cleaner	Pri Ro Conc 1 + 2	4.62	8.99	1.22	0.31	21.0	74.0	84.0	55.9	50.3
(3-Stage)	Pri Ro Conc & Sec 2nd Clnr Conc	5.03	8.60	1.18	0.31	20.8	77.1	88.5	59.5	54.1
Pri Grind: 60 microns	Pri Ro Conc & Sec 1st Clnr Conc	6.86	6.55	0.88	0.24	16.7	80.2	90.4	62.2	59.5
Regrind: 36 microns	Pr Ro Conc & Sec Ro Conc	12.2	3.88	0.51	0.14	11.8	84.3	92.1	66.2	74.5
LCT-1 Conditions with additional	Head (calc.)		0.56	0.07	0.03	1.93	100	100	100	100
SIBX in Pri Ro	Head (direct)		0.61	0.07	0.02	1.97				

Unlike the previous two composites of the Junior Lake VW deposit, the Master composite in this study contained a noticeable amount of floatable non-sulphide gangue minerals, presumably talc. In order to reduce the gangue dilution in the primary rougher concentrate, CMC was added at dosages of 50 to 135 g/t in the first 5 rougher kinetics tests. Higher CMC dosages were the tested to improve gangue mineral depression.

6.3.2. Single-Stage Cleaner Tests

The cleaning circuit was setup as a single stage cleaner with three incremental concentrates, which is illustrated in Figure 21.

Figure 21: Single-Stage Cleaning Circuit



The Ni and Cu grade-recovery curves for the batch cleaner tests are presented in Figure 22 and Figure 23, respectively. The cleaning response of the ore was evaluated in test F6 using a primary grind of P_{80} = 54 microns, a CMC dosage of 200 g/t in the primary rougher and a 7 minute regrind. Test F7 employed the same test conditions with the exception of a coarser primary grind of P_{80} = 76 microns and a 10 minute regrind. As shown in Figure 22, a comparison of the flotation response of tests F6 and F7 supports the previous conclusion that a finer primary grind is required to maximize Ni recovery and primary rougher concentrate grade. Test F8 was a repeat of Test F6, but with a longer regrind time to assess if a higher grade secondary rougher concentrate could be obtained with improved liberation between pentlandite and iron sulphides. However, the secondary rougher concentrate grade decreased in Test F8. It is postulated that pentlandite flotation kinetics were slower at the finer regrind size of P_{80} = 13 microns. This has been observed in numerous other Ni-Cu sulphide ores.

The final cleaner kinetics test F9 used similar test conditions to F6, but with a slightly lower pH in the secondary cleaner in an effort to improve pentlandite recovery without promoting pyrrhotite flotation. However, this strategy had very little impact on pentlandite response.

Primary rougher conditions were held constant in tests F6, F8, and F9. Although Ni recovery for these three tests was consistent between 60% and 70%, the primary rougher concentrate grade fluctuated between 13.8% Ni and 19.2% Ni, suggesting that fluctuations in the primary rougher stage could lead to inconsistent plant performance. However, since consistent froth removal is more difficult to achieve on a laboratory scale compared to the full-scale plant, the potential problem is amplified in the laboratory tests.

Based on these four cleaner kinetics tests, the conditions of test F6 were used as the baseline for the multi-stage cleaning tests.

Figure 22: Ni Grade-Recovery Curves – F6 to F9

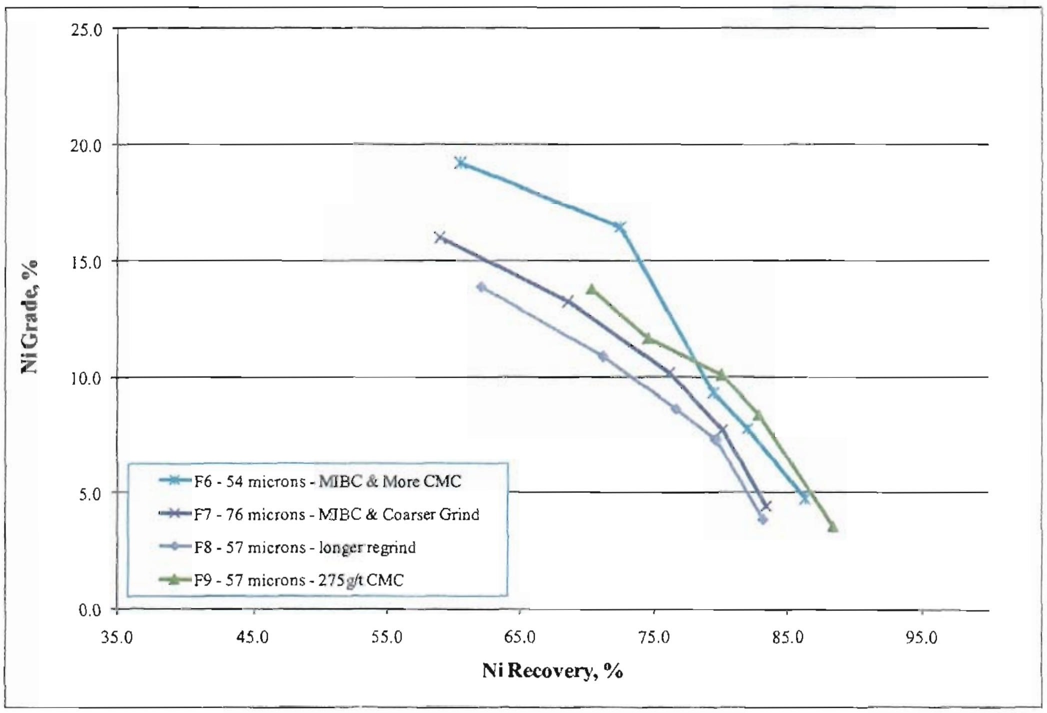
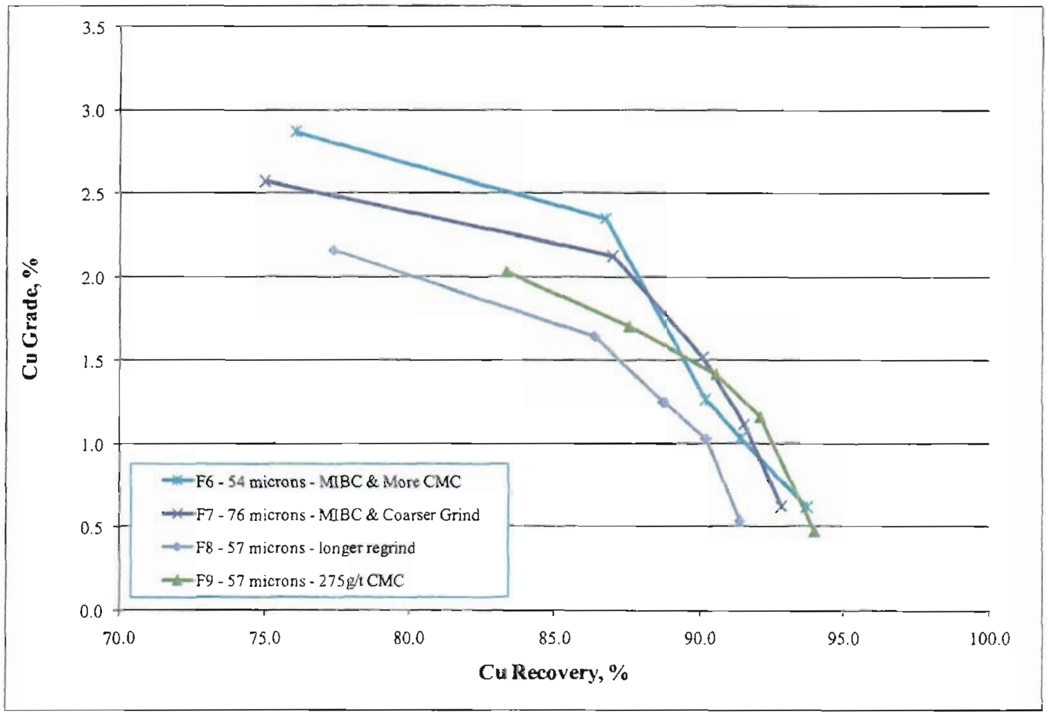


Figure 23: Cu Grade-Recovery Curves – F6 to F9



6.3.3. Multi-Stage Cleaning Tests

Following the single-stage cleaner testing, a 3-stage cleaner circuit was applied, which is illustrated in Figure 24. The Ni, Cu, and Co grade-recovery curves for F6, F9, and subsequent cleaner tests are depicted in Figure 25, Figure 26, and Figure 27, respectively. Note that F17 has been excluded as it was a batch rougher test. Test F10 employed the same conditions as F6, but with a three-stage cleaner in the secondary circuit. The Ni recovery into the primary rougher concentrate was 67.2% albeit at a relatively low grade of 11.0% Ni. The low sulphur content of 13.8% suggests that non-sulphide gangue flotation was once again the reason for the low primary rougher concentrate grade. Although an upgrading of the pentlandite occurred in the three-stage cleaner, the selected pH conditions were too selective and depressed the majority of the pentlandite together with the pyrrhotite. Consequently, less than 2% of the Ni reported to the Secondary 3rd Cleaner concentrate.

Figure 24: 3-Stage Cleaning Circuit

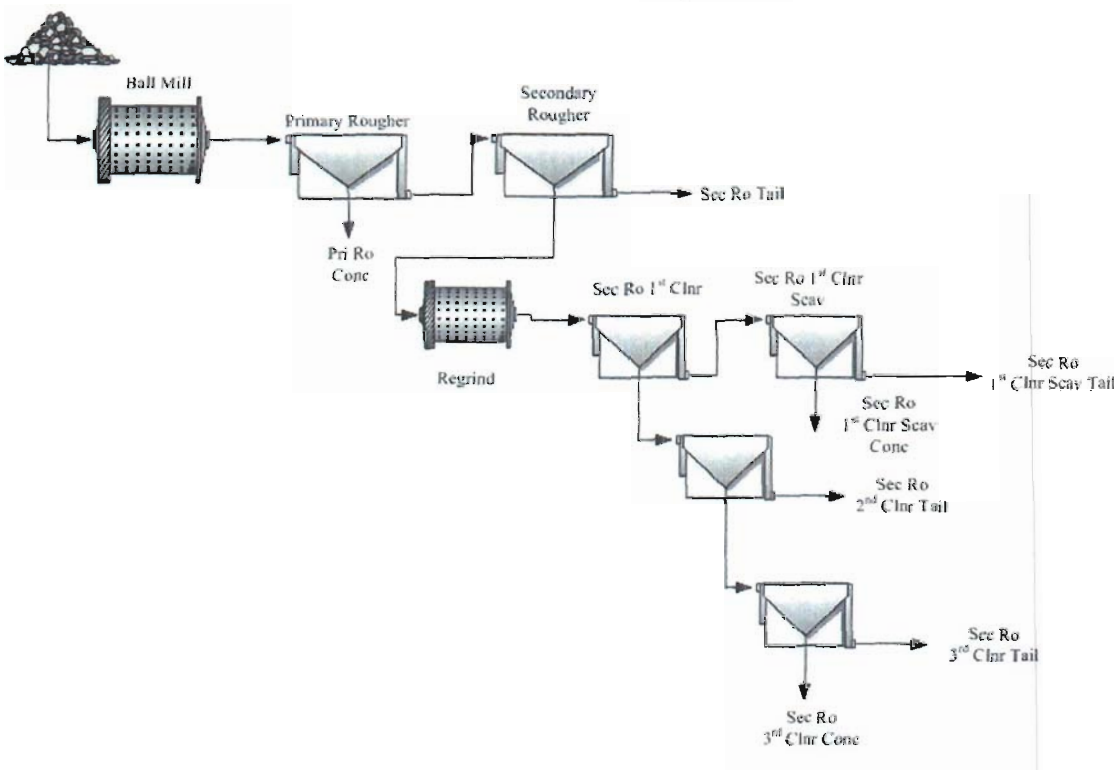


Figure 25: Ni Grade-Recovery Curves – F6, F9 to F16 & F18

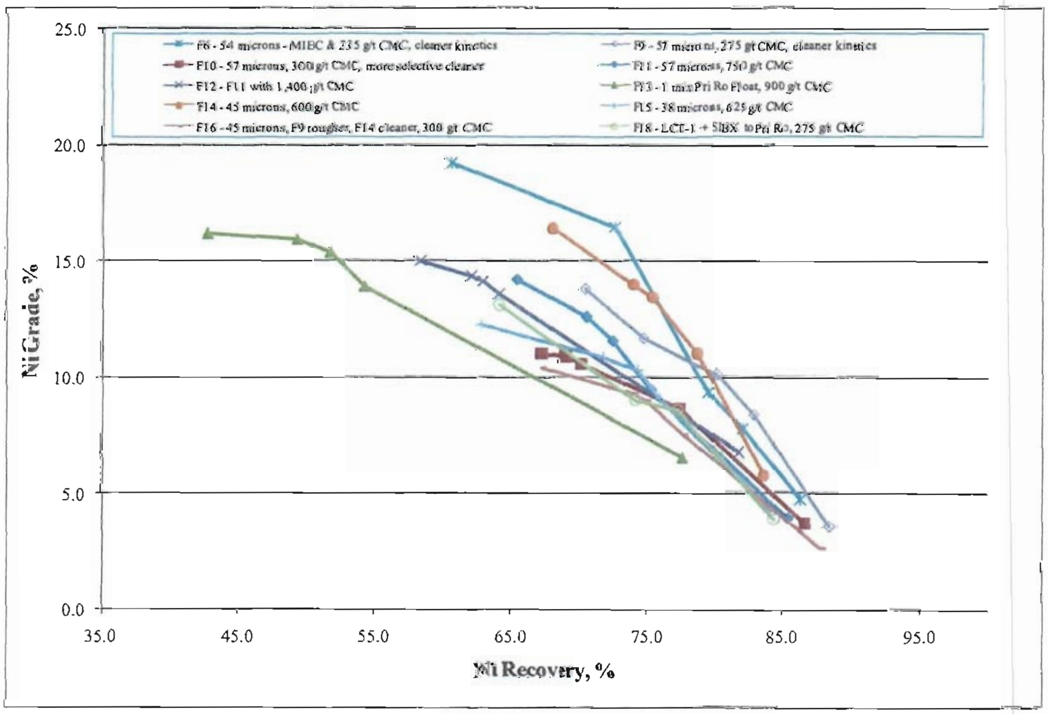


Figure 26: Cu Grade-Recovery Curves – F6, F9 to F16 & F18

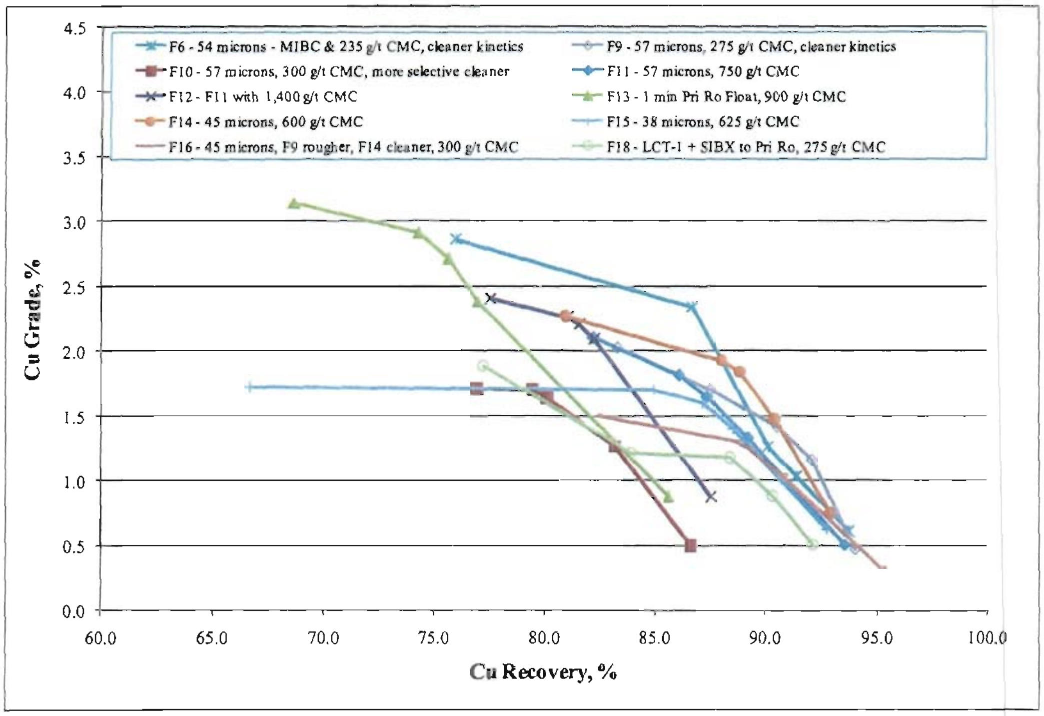
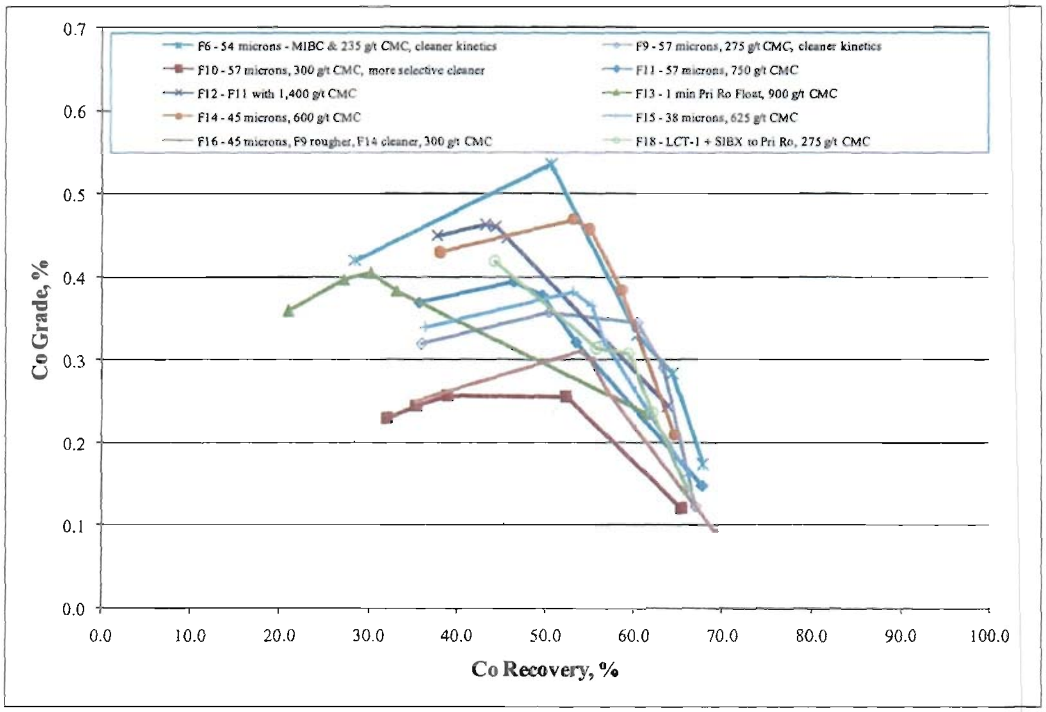


Figure 27: Co Grade-Recovery Curves – F6, F9 to F16 & F18



Based on the observations made in test F10, the CMC dosage in the primary rougher stage of F11 was increased from 200 g/t to 500 g/t and the pH in the cleaners was lowered. The increased CMC dosage in the primary rougher improved the concentrate grade to 14.2% Ni at 65.3% Ni recovery. As expected, the higher CMC dosage depressed more floatable non-sulphide gangue minerals and the S content in the concentrate increased from 13.8% to 21.3% S. Further, the less selective cleaner produced a Secondary 3rd Cleaner concentrate of 5.15% Ni at 5% Ni recovery.

To assess the potential of further upgrading of the primary rougher concentrate, a staged CMC dosage of 1,000 g/t was added to the primary rougher in test F12. The CMC dosage was also increased in the cleaners to a total dosage of 1,400 g/t for the entire test. The S content in the primary rougher concentrate increased to 29.0% S. However, the Ni grade only marginally increased to 15.0% Ni at a reduced Ni recovery of 58.3%. It is postulated that more iron sulphides reported to the primary rougher concentrate. Overall, the CMC dosage increase of 650 g/t between F11 and F12 did not produce the anticipated grade and recovery improvements. Similar effects were seen in Cu flotation response.

Test F13 was a repeat of test F11, but with a reduced primary rougher flotation time of only 1 minute instead of 2 minutes. This flowsheet adjustment was carried out in the hope that only readily floating liberated pentlandite and chalcopyrite mineral grains would report to the concentrate, thus improving the concentrate grade. The higher primary rougher concentrate grade in F13 of 16.2% Ni at a lower Ni recovery of 42.7% confirms that the second minute of primary rougher flotation produces a lower-grade incremental concentrate. The reduced primary rougher flotation time resulted in more nickel and copper units reporting to the secondary rougher concentrate. Although the Secondary 3rd Cleaner concentrate yielded a high grade of 14.7% Ni, the Ni recovery into this concentrate was only 6.6%. Overall, the reduced primary rougher flotation time in F13 led to inferior Ni and Cu grade-recovery relationships. Further, the reduced overall primary and secondary rougher flotation time resulted in higher Ni and Cu losses to the tailings compared to the baseline conditions.

Batch cleaner test F14 was carried out to evaluate the performance of the 3-stage cleaning circuit using similar conditions to F10, but with a longer primary grind time, collector additions in the cleaners, and a lower pH in the cleaners. These modifications were done to increase nickel recovery into the Secondary 3rd Cleaner concentrate. The Ni and Cu grade-recovery curves of this test were very similar to those of Test F6.

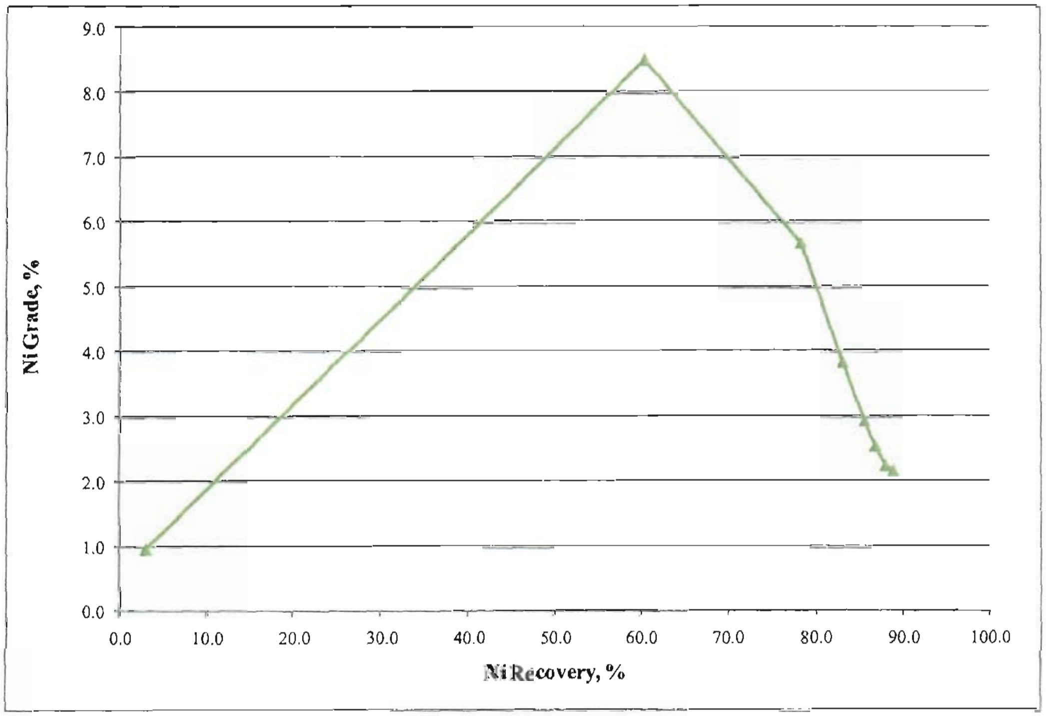
In order to evaluate the effect of an even finer primary grind on primary rougher selectivity, test F15 employed an even longer primary grind resulting in a mill discharge size of P_{80} = 38 microns. Figure 25 and Figure 26 clearly illustrate that the very fine grind resulted in an inferior Ni and Cu sulphide flotation response. Both the Ni and the Cu concentrate grade-recovery points were inferior to those of test F6 and F14. It was concluded at that time that the sulphide flotation kinetics were negatively impacted by the fine grind and that the non-sulphide gangue minerals were readily floating.

Taking into account the results of the entire series of batch cleaner tests, a final batch cleaner test F16 was carried out to confirm the proposed locked cycle test conditions. This test used the rougher conditions of test F6 (with a primary grind of P_{80} = ~55 microns and a CMC dosage of 200 g/t) and the cleaner conditions of test F14 (with a regrind time of 4 minutes, moderate pH conditions, and a CMC dosage of 75 g/t). Although the Ni and Cu recovery into the primary rougher concentrate of 67.1 % and 82.4%, respectively, was in line with other tests, the sulphur content was only 15.7%. As a result of the higher percentage of gangue dilution, the Ni grade in the primary rougher concentrate was only 10.4%. Although a higher CMC dosage was warranted to reduce the amount of non-sulphide gangue minerals in the primary rougher concentrate, a decision was made by Roscoe Postle Associates Inc. to carry out the locked cycle test with the conditions of test F16, but with a slight reduction in the primary grind time to target a flotation feed size of P_{80} = ~60 microns.

Typically, 10-20% of the contained nickel was lost to the secondary rougher tailings, which could have been the result of altered nickel minerals. In an effort to sulphidize any altered nickel minerals. NaSH was added to the mill in batch rougher test F17 as recommended by Roscoe Postle Associated Inc. The Ni grade-recovery curve of this test is shown in Figure 28. The first incremental rougher concentrate yielded a very poor Ni grade and recovery. The froth was very thin and contained orange/red particles. Only after additional xanthate was added to the flotation cell prior to the second incremental rougher did a brassy froth develop and sulphide minerals start to float. The second incremental rougher concentrate yielded a concentrate grade of 15.2%

Ni at 57.2% Ni recovery. The secondary rougher tailings contained 12% Ni, which was in line with previous tests.

Figure 28: Ni Grade-Recovery Curve for Test with NaSH

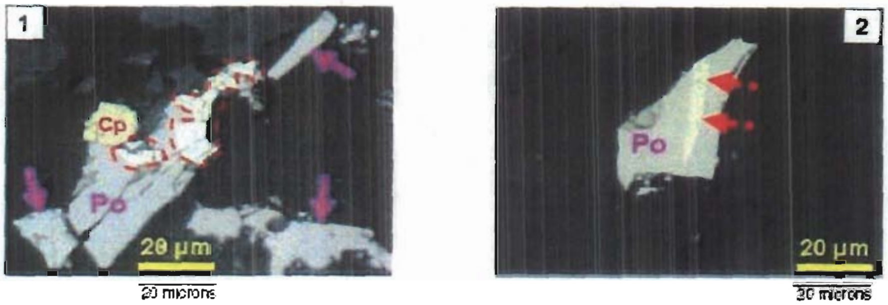


6.3.4. Mineralogy Analysis of Secondary Rougher Tails

The Ni losses to the rougher tails were consistently between 10% and 20% throughout the batch rougher and batch cleaner test series. In order to develop a better understanding of the source of Ni losses, a sample of the secondary rougher tails of test F14 was submitted to the mineralogical department for a Rapid Mineral Scan (RMS). The nickel losses in this particular test were 16.5%.

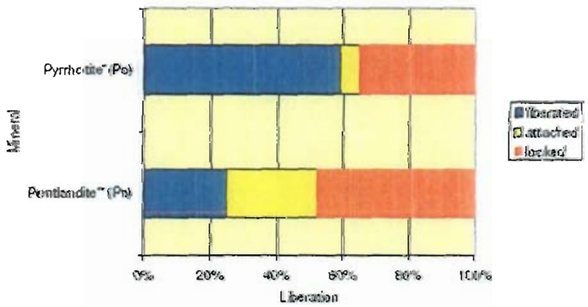
The photomicrographs shown in Figure 29 depict typical minerals grains containing pentlandite and chalcopyrite that were identified in the tailings sample. The photomicrograph on the left hand side shows a composite grain of pentlandite (red broken lines), chalcopyrite (Cp), and pyrrhotite (Po). The pink arrows point at disseminated pyrrhotite particles. The second photomicrograph shows flame-like pentlandite within pyrrhotite (broken red arrows and Po, respectively).

Figure 29: Photomicrographs of F14 Secondary Rougher Tails



The liberation data for pentlandite and pyrrhotite is presented in Figure 30 and shows that only 25% of the pentlandite is liberated and almost 50% is locked. The majority of the pyrrhotite is liberated and only 35% is locked. A closer look at the mid grain sizes of the sulphide and non-opaque minerals shown in Figure 31 reveals that the pentlandite is relatively fine grained between 10 and 20 microns. At this particle size even liberated pentlandite particles have very slow flotation kinetics and require a long residence time to report to the concentrate.

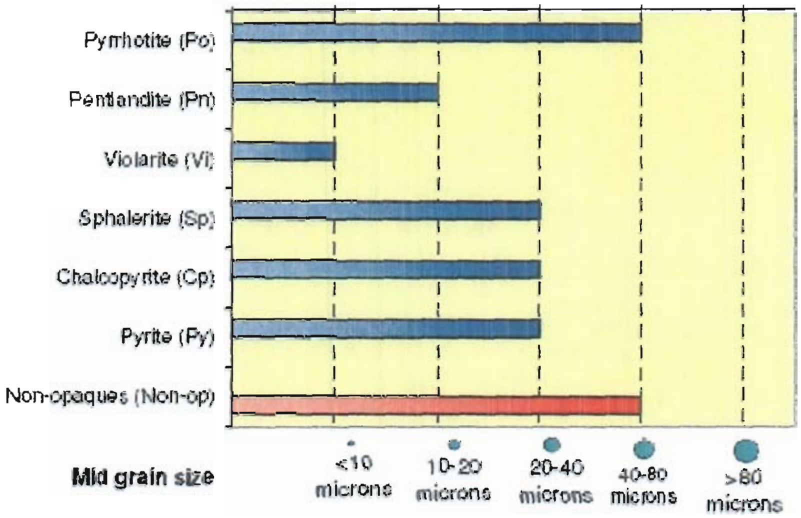
Figure 30: Liberation of Pentlandite and Pyrrhotite



Mineral	No of analyses	liberated	attached	locked
Pyrrhotite*(Po)	406	59%	6%	35%
Pentlandite**(Pn)	102	25%	27%	48%
Total	508			

*including Sp, Cp and Py & fine inclusions of Pn
**including violarite
***including Mt, Goe, Ht and Rt

Figure 31: Mid Grain Sizes for Sulphides and Non-Opaques



Based on this RMS results the following sources of nickel losses can be identified:

- Flame-like pentlandite within pyrrhotite;
- Small liberated pentlandite particles with very slow flotation kinetics;
- Locked pentlandite with other sulphide minerals;
- Nickel in solid solution within pyrrhotite.

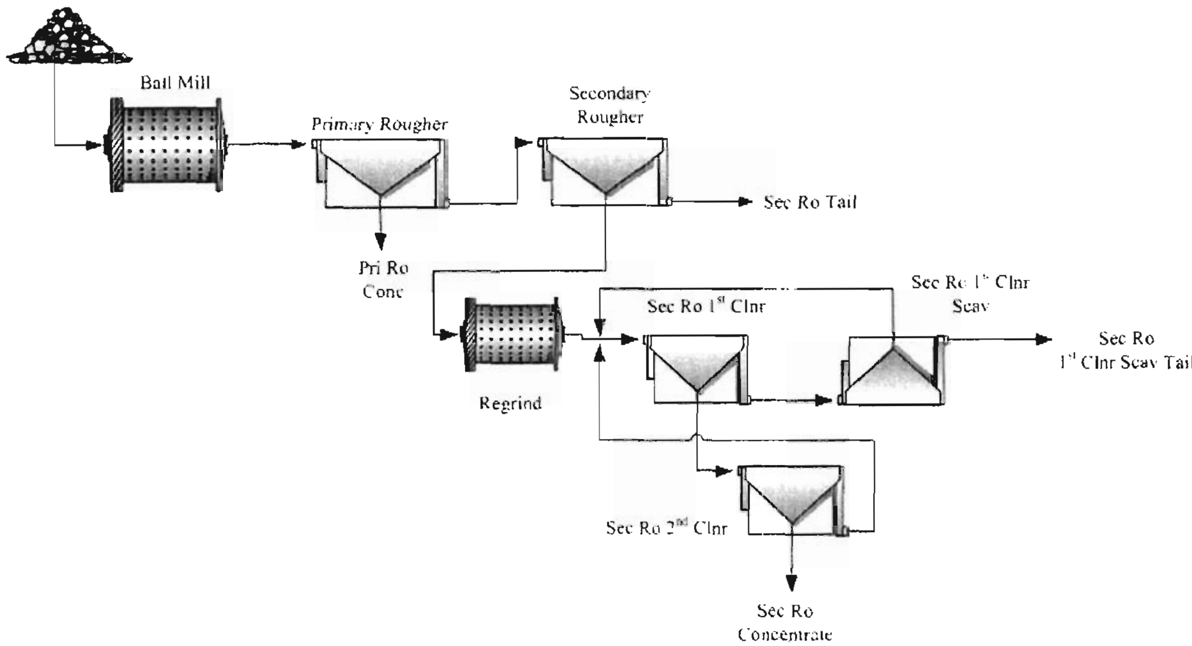
In order to improve overall nickel recovery into the secondary rougher concentrate a longer flotation time and more aggressive flotation conditions may prove beneficial. However, it is difficult to predict the quantity of the additionally recovered metal units that would ultimately report to the Secondary 3rd Cleaner concentrate.

6.4. Locked Cycle Test

A single locked cycle test was carried out on the Master composite using the test conditions from the batch cleaner test F16. Locked cycle tests are frequently used in mineral processing laboratories during the flowsheet development exercise to confirm batch results and to get an approximation of a continuous circuit material balance.

The flowsheet that was used for the locked cycle test is shown in Figure 32. The Secondary Rougher 2nd Cleaner tailings and the Secondary Rougher 1st Cleaner Scavenger concentrate were both circulated back to the regrind mill discharge.

Figure 32: Locked Cycle Test Flowsheet



The locked cycle test comprised six cycles. The mass and metal accounting plots are shown in Figure 33 and illustrate that the circuit did not reach stability until the end of the cycle test. The metallurgical projections of the LCT are presented in Table 10. In addition to the poor stability, only 13.4% of the contained Ni reported to the primary rougher concentrate, which is well below the 67% Ni recovery attained in Test F16. Further, the primary rougher concentrate grade was less than 3% Ni instead of the expected 12-16% Ni. The detailed LCT test results are included in Appendix D.

Figure 33: Mass and Metal Accounting – LCT 1

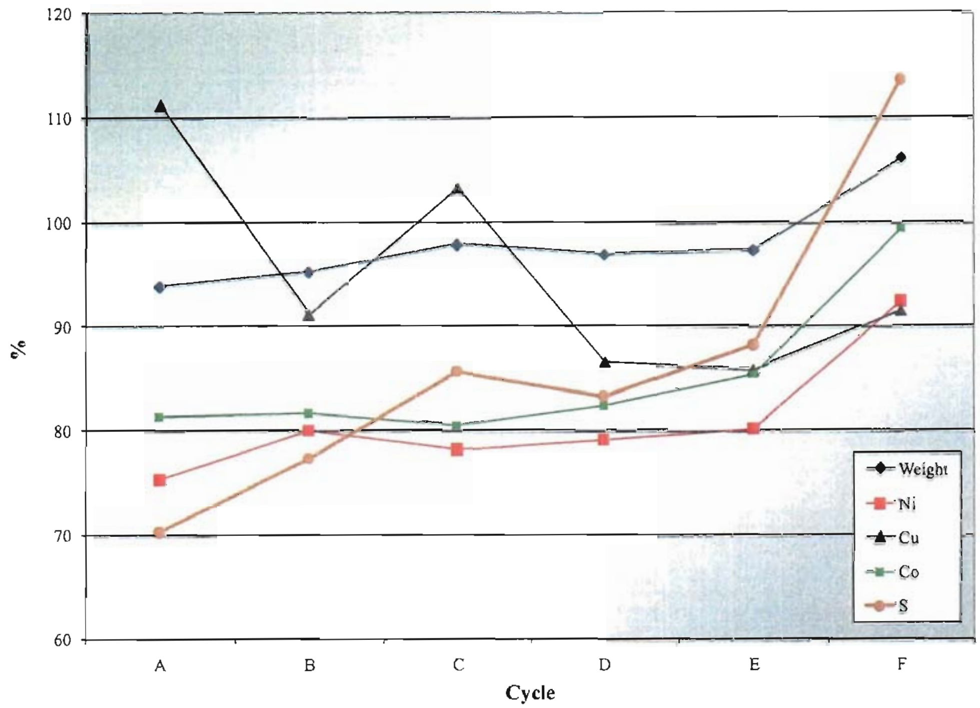


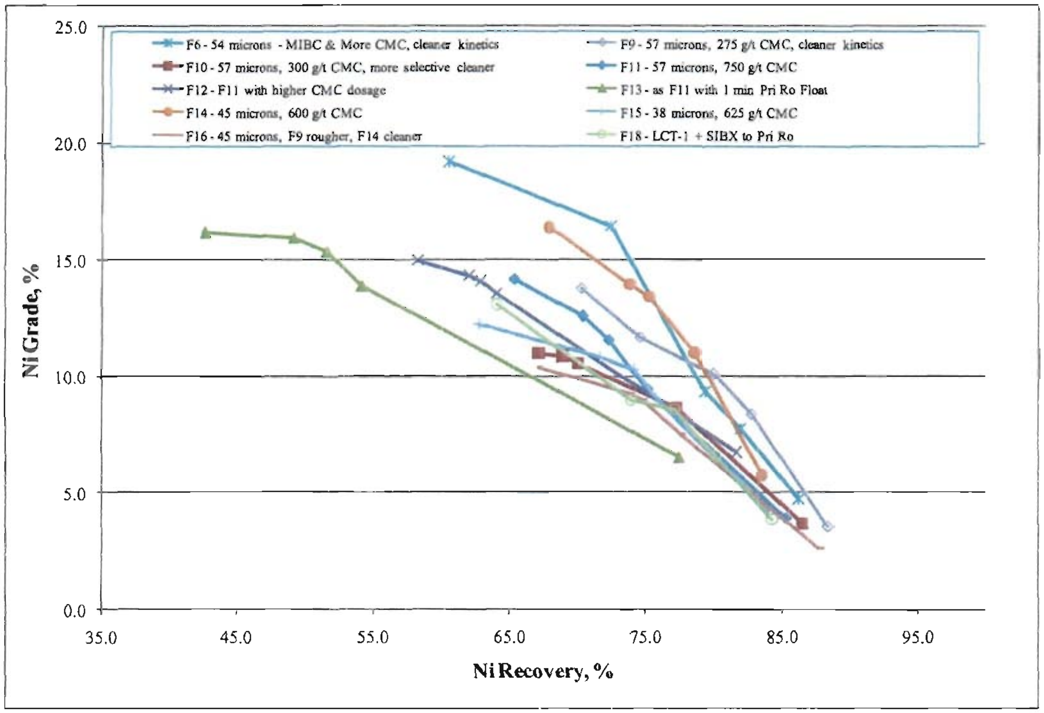
Table 10: Locked Cycle Test Metallurgical Projections

Product	Weight %	Assay, % Ni	Assay, % Cu	Assay, % Co	Assay, % S	Distribution, % Ni	Distribution, % Cu	Distribution, % Co	Distribution, % S
Pri Ro Conc	2.56	2.97	1.30	0.09	5.55	13.4	51.2	8.52	6.71
Sec 2nd Cl Conc	1.96	14.5	1.18	0.56	33.9	50.1	35.4	39.7	31.4
Sec 1st Cl Scav Tail	14.0	0.89	0.03	0.04	5.86	21.9	5.70	20.3	38.7
Sec Ro Tail	81.5	0.10	0.01	0.01	0.61	14.6	7.63	31.5	23.3
	100	0.57	0.07	0.03	2.12	100	100	100	100.0

During the execution of the locked cycle test it became apparent that some form of alteration of the ore had taken place and that the flotation response changed compared to earlier tests. The orange/red particles that were observed during the batch rougher test F17 also appeared during each cycle in the LCT and once again additional xanthate was required to promote the flotation of nickel and copper sulphides.

The overall Ni losses to the secondary rougher tailings of 14.6% were in line with previous flotation tests suggesting that the pentlandite could be promoted to float in the primary rougher stage if exposed to additional xanthate. In order to determine if a small xanthate addition to the mill discharge product prior to the primary rougher flotation would benefit Ni grade and recovery into the primary rougher concentrate, a final batch cleaner test was carried out using LCT conditions with an additional 7.5 g/t SIBX added to the primary rougher. The results are included in Figure 34 and confirm that the pentlandite can be in fact collected with only a small amount of SIBX. Approximately 64% of the contained nickel reported to the primary rougher concentrate at a grade of 13.1% Ni grade. The S grade in the primary rougher concentrate was 27.2%, which suggests that more iron sulphides were activated as a result of the additional SIBX dosage.

Figure 34: Ni Grade-Recovery Curves – F6, F9 to F16 & F18



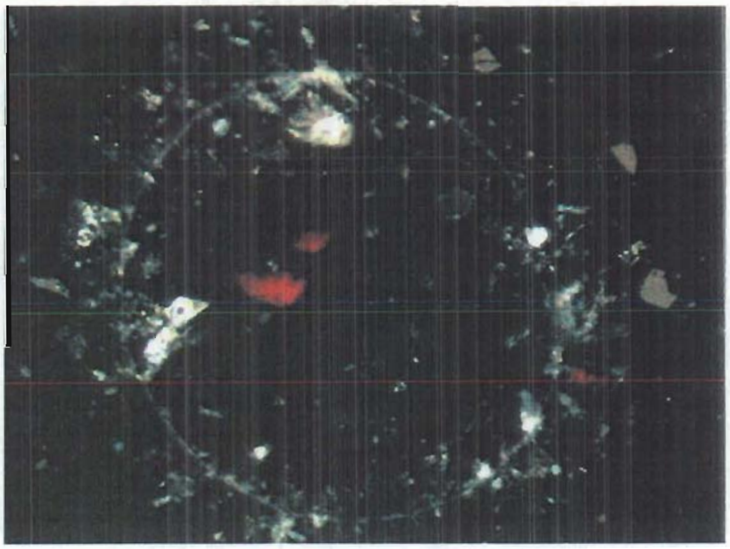
6.4.1. Mineralogy Analysis of Primary Rougher Concentrate

A sample of the primary rougher concentrate of LCT-1 was submitted to mineralogy to help identify the orange/red particles, which had the visual appearance of paint chips. A representative portion was split from the sample for polished section preparation and for XRD analysis.

The sample was mainly composed of non-opaques with minor amounts of pentlandite (including violarite), chalcopyrite and pyrrhotite and traces of pyrite, sphalerite, bornite and covellite. The major sulphides (pentlandite and chalcopyrite), in general, were liberated. Most of the pentlandite and chalcopyrite occurred as liberated (70 - 80%) irregular elongated/sub-rounded grains with an average grain-size (10 - 30µm). A few medium/coarse grained (40 -60 µm) liberated/composite pentlandite, pyrrhotite and chalcopyrite and flame-like pentlandite within pyrrhotite were noted. Alteration of pentlandite to violarite was also observed in some places.

Tiny orange materials were noted during the optical microscopic study and a few are shown on the photomicrograph in Figure 35. A SEM-EDS study was carried out on these particles and they appear to be contaminants/agglomerates with a high amount of Fe, Ba, S, Si, Cl and O. A search of naturally occurring minerals that contain these chemical components and colour using the Mindat.org[3] web site did not produce any matches.

Figure 35: Orange Particles in Optical Microscopic Photomicrograph



6.5. Variability Flotation Testing

The four variability composites that were generated during the sample preparation were subjected to a single batch cleaner test using the LCT conditions.

As with the Master composite in the last batch cleaner test F16 and the LCT, the froth in the primary rougher was very poor and the sulphides only started to float in the secondary rougher after a second xanthate addition. The Ni and Cu grade-recovery curves for the four tests are

[3] www.mindat.org, *July 29, 2008*

shown in Figure 36 and Figure 37, respectively. Note that the primary rougher concentrate was excluded from the Ni grade-recovery curves as the grades were very poor, ranging between 0.7% and 5.2% Ni. Consequently, combining the primary rougher concentrate with the secondary 3rd cleaner concentrate would have resulted in a very low concentrate grade of less than 9% Ni. A summary of the flotation results is shown in Table 11 and the detailed mass balances are included in Appendix H.

The grade-recovery curves for the Cu are interesting in that the lowest head grade sample yielded the best grade-recovery curve, which is the opposite of what is typically observed. Incidentally, the sample with the lowest Cu head grade also contains only 1.60% S, which is the lowest of all four composites. Since the majority of the sulphur is associated with pyrrhotite, which is particularly sensitive to aging, the assumption that the poor primary rougher flotation response may be the result of aging is further supported by these results.

Figure 36: Ni Grade-Recovery Curves without Pri Ro Conc – V1 to V4

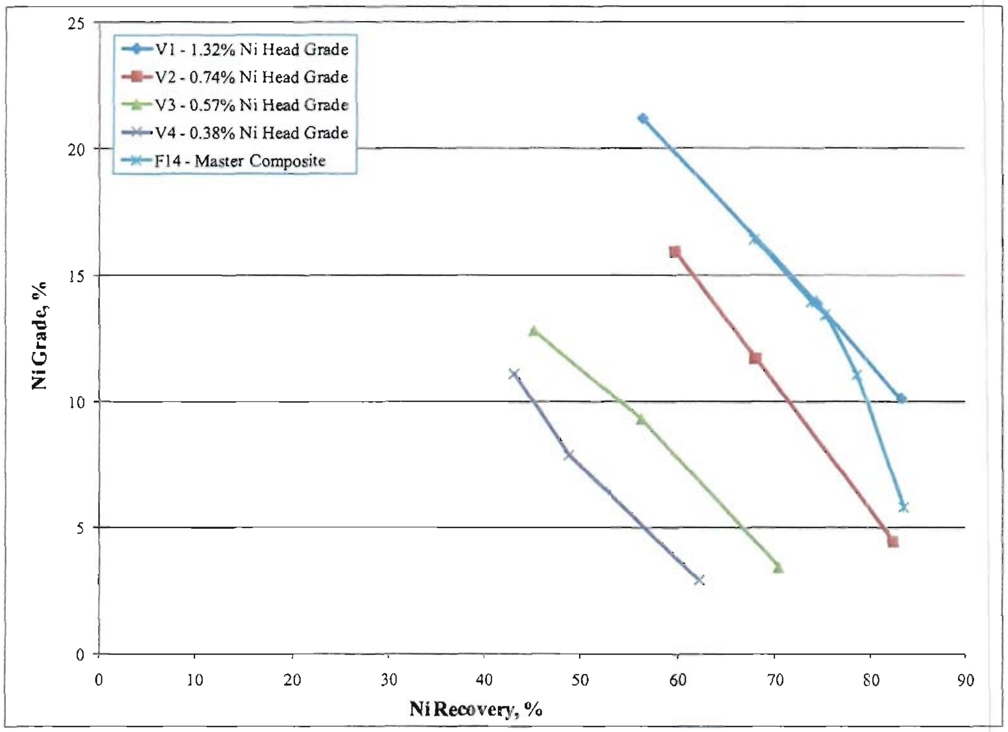


Figure 37: Cu Grade-Recovery Curves with Pri Ro Conc – V1 to V4

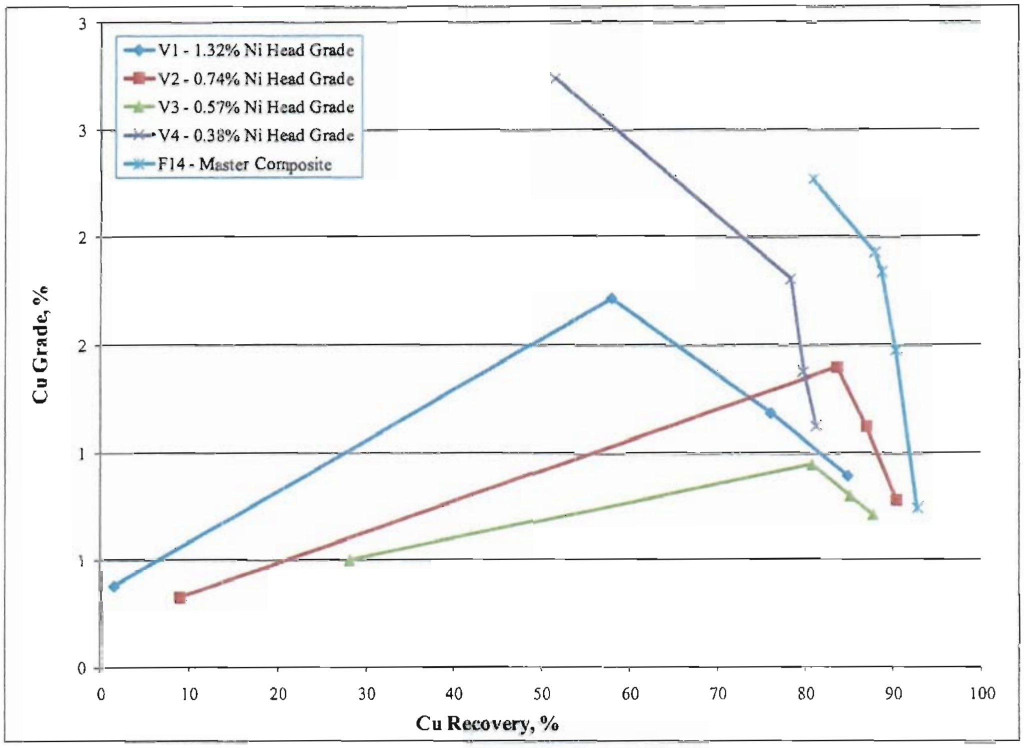


Table 11: Summary of Variability Flotation Results

Test	Product	Wt	Assays, %				Distribution, %			
		%	Ni	Cu	Co	S	Ni	Cu	Co	S
V1	Pri Ro Conc	2.84	0.73	0.38	0.02	1.46	1.7	8.6	1.3	1.2
	Sec 2nd Clnr Conc	3.27	21.2	2.88	0.50	34.8	56.4	74.8	34.4	32.4
Cleaner	Sec 1st Clnr Conc	3.32	6.67	0.21	0.20	15.4	18.1	5.5	14.0	14.6
	Sec 1st Clnr Conc & Sec 1st Clnr Scav Conc	3.53	3.06	0.12	0.14	17.1	8.8	3.4	10.4	17.2
1.32% Ni	Sec Ro Tail	81.3	0.17	0.01	0.02	1.12	11.3	6.5	34.3	26.0
Head Grade	Head (calc.)	100	1.23	0.13	0.05	3.51	100	100	100	100
	Head (direct)		1.32	0.12	0.04	3.49				
V2	Pri Ro Conc	2.33	1.02	0.33	0.04	2.22	3.3	9.2	3.0	2.5
	Sec 2nd Clnr Conc	2.67	15.9	2.33	0.52	34.0	59.7	74.5	47.4	44.1
Cleaner	Sec 1st Clnr Conc	4.14	11.7	1.57	0.37	24.9	68.0	77.9	52.4	50.1
	Sec 1st Clnr Conc & Sec 1st Clnr Scav Conc	13.1	4.46	0.53	0.15	12.0	82.4	82.7	68.2	76.5
0.74% Ni	Sec Ro Tail	84.5	0.12	0.01	0.01	0.51	14.3	8.1	28.8	20.9
Head Grade	Head (calc.)	100	0.71	0.08	0.03	2.06	100	100	100	100
	Head (direct)		0.74	0.09	0.03	1.94				
V3	Pri Ro Conc	3.77	2.09	0.50	0.05	2.90	14.5	28.2	7.2	5.7
	Sec 2nd Clnr Conc	1.92	12.8	1.83	0.51	36.8	45.3	52.6	38.1	37.0
Cleaner	Sec 1st Clnr Conc	3.29	9.29	1.16	0.37	31.8	56.3	56.9	47.7	54.8
	Sec 1st Clnr Conc & Sec 1st Clnr Scav Conc	11.1	3.43	0.38	0.14	15.0	70.4	64.1	59.7	87.2
0.57% Ni	Sec Ro Tail	85.1	0.10	0.01	0.01	0.16	15.0	7.6	33.1	7.1
Head Grade	Head (calc.)	100	0.54	0.07	0.03	1.91	100	100	100	100
	Head (direct)		0.57	0.06	0.02	1.98				
V4	Pri Ro Conc	1.09	5.18	2.74	0.15	9.85	15.5	51.7	7.9	6.7
	Sec 2nd Clnr Conc	1.42	11.1	1.09	0.50	31.6	43.3	26.7	34.0	27.9
Cleaner	Sec 1st Clnr Conc	2.26	7.87	0.72	0.35	23.1	48.9	28.1	37.9	32.6
	Sec 1st Clnr Conc & Sec 1st Clnr Scav Conc	7.76	2.91	0.23	0.13	10.6	62.2	31.0	48.4	51.2
0.38% Ni	Sec Ro Tail	91.1	0.09	0.01	0.01	0.74	22.3	17.3	43.8	42.1
Head Grade	Head (calc.)	100	0.36	0.06	0.02	1.60	100	100	100	100
	Head (direct)		0.38	0.07	0.02	1.81				

7. Conclusions and Recommendations

The flotation response of the Master composite that was generated for this second phase of testing was distinctively different than the two composites that were previously tested. While the pentlandite and chalcopyrite responded in similar ways, the percentage of floatable non-sulphide gangue minerals was substantially higher. The addition of CMC reduced the amount of gangue minerals reporting to the concentrates, thus improving the grades. However, a proper relationship between CMC dosage and resulting concentrate grade was not defined due to limitations in the test design.

Towards the end of the test program, the floatability of the pentlandite was reduced significantly and the LCT did not produce data that was reflective of earlier batch cleaner tests. In the first 14 batch flotation tests, approximately 60-70% of the Ni reported to the primary rougher concentrate at concentrate grades of 13% to 19% Ni. In the last two batch cleaner tests more non-sulphide gangue minerals were floated and an additional xanthate dosage was required in the primary rougher to promote pentlandite flotation. At the same time, orange particles were observed in the froth, which were identified by mineralogy as a contaminant/agglomerate. In investigation into possible causes for the change in flotation response identified the following potential reasons:

- *Contamination of the sample on the drilling site:* The orange particles that were observed in the froth during the last few flotation tests could have been paint that was used to mark the drill core. However, paint is eliminated as the primary reason for the changed flotation response as it would have also been present in the flotation charges used in the earlier tests, which responded ok - as expected;
- *Contamination during sample preparation at SGS:* This is a remote possibility, as the statistical probability of selecting non-contaminated charges in the first part of the program and then only contaminated charges in the last few tests is exceptionally small;
- *Contamination in storage:* Standard SGS Lakefield procedure is that each flotation charge is individually bagged and placed in cardboard boxes that only contain charges of the same project. This standard procedure was applied in this project. Hence, the possibility of cross-contamination of samples once there are prepared is very small;
- *Changes in equipment or test procedure:* The same mill and flotation cell were used throughout the entire test program. Although grinding steel charges are adjusted on a regular basis to ensure a constant mass of grinding media in the mill, only grinding media with the same chemical composition as the worn media is added. Also, no changes in the flotation procedure were implemented and the same technician performed all flotation tests;

- *Alteration of the sample due to aging:* The presence of pyrrhotite in the ore makes it more susceptible to aging. This is a commonly observed process in similar ore types. In order to minimise the risk of oxidation, the test charges were stored in a freezer. While this slows down the aging process, it cannot completely stop it. Possibly, after 4 months in storage the aging process started to impact the flotation response in the observed manner.

Although the changes in flotation response happened rather quickly over a time period of approximately 1 month, ore aging is the only reasonable explanation for the significantly changed flotation response of the ore.

Since the LCT results could not be used to develop metallurgical projections taking into account circulating streams, the results of the batch cleaner test F14 were used to simulate a number of scenarios for the intermediate streams that were generated in that test. The flowsheet streams are comprised of the intermediate products that would normally circulate within the circuit and exclude final tailings products. In the case of the proposed Junior Lake VW flowsheet, these intermediate streams include the Secondary 3rd Cleaner Tails, the Secondary 2nd Cleaner Tails, and the Secondary 1st Cleaner Scavenger Concentrate.

Two extreme scenarios can be identified for the intermediate streams. The worst case scenario assumes that no metal units that are contained in the intermediate streams report to the final concentrate and instead will be entirely lost to the tailings. The best case scenario on the other hand assumes that 100% of the metal units contained in the intermediate streams are recovered to the final concentrate at a high grade. Both of these scenarios are unlikely and a certain percentage of the contained metal units would ultimately report to the Secondary 3rd Cleaner concentrate. In order to present a range of possible outcomes for the VW Zone, three options have been computed:

- 75% of the metal units report to the concentrate at 25% mass pull
- 50% of the metal units report to the concentrate at 25% mass pull
- 75% of the metal units report to the concentrate at 50% mass pull

The resulting concentrate grades and recoveries for the combined concentrate including Primary Rougher concentrate, Secondary Rougher 3rd Cleaner concentrate, and intermediate streams is presented at the bottom part of Table 12. Although these calculations cannot replace a locked cycle test, they allow the modeling of numerous scenarios between worst and best cases.

Table 12: Metallurgical Projections from Batch Cleaner Test F14

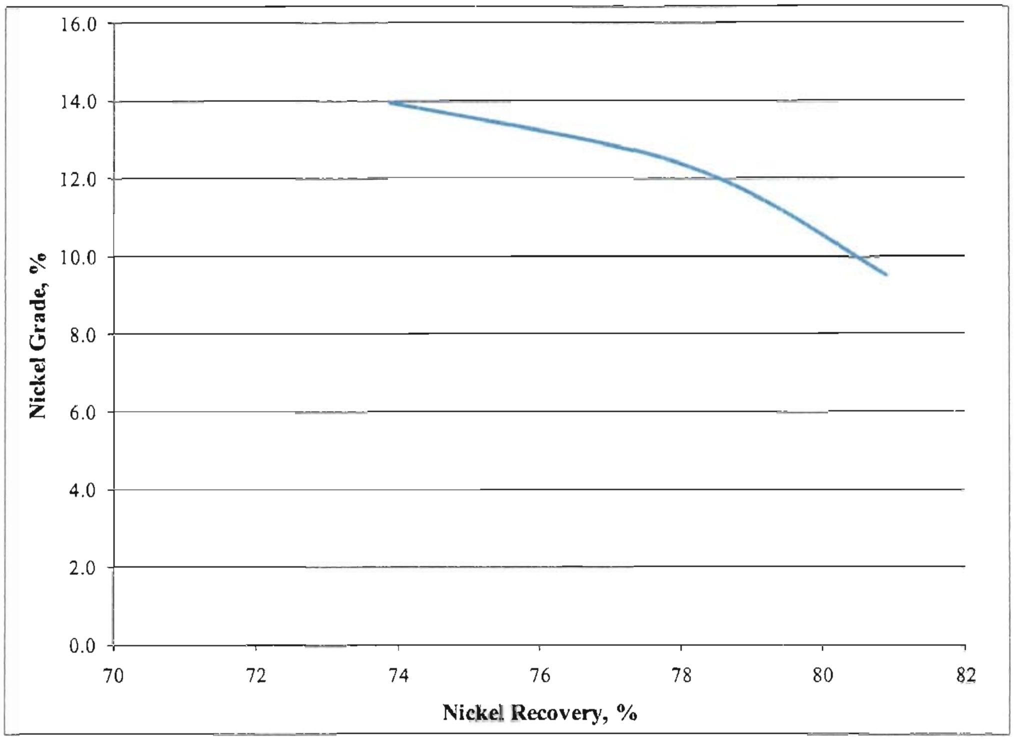
Combined Products	Wt %	Assays, %				% Distribution			
		Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro Conc	2.31	16.4	2.27	0.43	25.4	67.9	81.0	38.2	31.6
Pri Ro Conc & Sec 3rd Clnr Conc	2.95	14.0	1.93	0.47	28.5	73.9	88.1	53.2	45.3
Intermediate Products	1.78	2.20	0.14	0.12	12.5	7.00	3.92	7.98	11.9

Intermediate Products	Wt %	Assays, %				% Distribution			
		Ni	Cu	Co	S	Ni	Cu	Co	S
75% Recovery at 25% mass	0.44	6.60	0.43	0.35	37.4	5.25	2.94	5.99	8.93
50% Recovery at 25% mass	0.44	4.40	0.29	0.23	24.9	3.50	1.96	3.99	5.95
75% Recovery at 50% Mass	0.89	3.30	0.21	0.18	18.7	5.25	2.94	5.99	8.93

Final Combined Concentrate	Wt %	Assays, %				% Distribution			
		Ni	Cu	Co	S	Ni	Cu	Co	S
75% Recovery at 25% mass	3.40	13.0	1.73	0.45	29.6	79.1	91.0	59.2	54.2
50% Recovery at 25% mass	3.40	12.7	1.72	0.44	28.0	77.4	90.0	57.2	51.2
75% Recovery at 50% Mass	3.84	11.5	1.53	0.40	26.2	79.1	91.0	59.2	54.2

Using the calculated possible outcomes and the experience with similar Ni deposits, the projected Ni grade-recovery curve shown in Figure 38 is derived. This curve can be used to determine the projected Ni recovery for a given Ni concentrate grade. Note that this graph has been generated using assumptions about the response of the intermediate products and cannot be reported as actual test results.

Figure 38: Projected Nickel Grade-Recovery Curve



The following work is recommended for the next phase of metallurgical testing:

- The flotation response of the ore changed significantly towards the end of the test program, presumably as a result of aging. This was observed for both the Master composite as well as the variability composites. In an effort to develop a better understanding of the aging process of the Junior Lake VW Zone, an ore aging program should be included in the next phase of testing. This would assess the flotation response of ore that was exposed to ambient temperature and moisture in pre-determined time intervals (e.g. 0.25, 0.5, 1, 2, and 4 months). This information will be helpful in determining how long ore can be stockpiled before a detrimental change in flotation response can be observed.
- Evaluate the effectiveness of a talc pre-float prior to the primary rougher concentrate. This would not only reduce or eliminate the need for CMC, but should help to improve the primary rougher concentrate grade. A decision was made to carry out pre-float tests as part of this phase of testing and the results will be reported in a separate memo as they were not available at the time this report was issued;
- Assess the impact of CMC dosage on non-sulphide gangue mineral flotation in a series of rougher flotation tests using the CMC dosage as the only variable;
- Quantify the amount of Ni contained in pyrrhotite using SEM analysis. This value typically ranges between 0.2% Ni and 1.5% Ni for most Ni-Cu sulphide ores;
- Carry out locked cycle tests on the optimised flowsheet;

- Perform a baseline environmental test program to identify any deleterious elements in the waste streams and to quantify the acid generating potential of the tailings streams;
- Carry out solid liquid separation tests on the tailings. This will provide critical data for the design and sizing of the dewatering circuit prior to tailings disposal;
- Evaluate the flotation response of the optimised flowsheet on a number of variability samples to assess the stability of the proposed circuit. These samples would be stored as a coarse product and would only be crushed and split into test charges immediately before the testing.

Appendix A – Drill Core Data

	Section E	DDH	Sample	From (m)	To (m)	Interval (m)	Ni PPM	Cu PPM	Co PPM	Ni G X W	Pod	Wt (g)	Sample
1	2950	0407-139	806691	64	65	1	4677	206	171	4677	West	1092.5	Batch 4
2	2950	0407-145	806956	199	200	1	3684	541	141	3684	West	1220.5	Batch 4
3	2950	0407-145	806961	203	204	1	3221	296	127	3221	West	1304.5	Batch 4
4	2950	0407-151B	416230	277.11	278	0.89	4647	451	304	4135.83	West	1114	Batch 4
5	2975	0407-149	368612	202	203	1	3517	282	114	3517	West	1160.9	Batch 4
6	2975	0407-160	445013	228	229	1	3047	235	92	3047	West	1343.5	Batch 4
7	2975	0407-160	445023	237	238	1	4931	889	168	4931	West	1126.7	Batch 4
8	2975	0407-160	445042	254	255	1	3502	203	111	3502	West	1128.6	Batch 4
9	2975	0407-160	445058	271.45	273	1.55	4714	270	120	7306.7	West	2000	Batch 4
10	2975	0407-160	445062	274	275	1	3172	230	108	3172	West	1379.4	Batch 4
11	3000	0407-120	205088	183	184	1	4774	211	129	4774	West	1267.4	Batch 4
12	3000	0407-120	205093	188	189	1	4336	163	132	4336	West	1283.8	Batch 4
13	3000	0407-120	205119	213	214	1	3222	1039	128	3222	West	1113.2	Batch 4
14	3000	0407-120	205123	216	217	1	3652	182	106	3652	West	1208.5	Batch 4
15	3000	0407-121	206203	181.82	183	1.18	4416	610	223	5210.88	West	1416.9	Batch 4
16	3000	0407-121	206256	242	243	1	3714	287	113	3714	West	1107.8	Batch 4
17	3000	0407-121	206271	256	257	1	3290	308	98	3290	West	1182.4	Batch 4
18	3000	0407-121	206317	303	304	1	3198	288	111	3198	West	1166.9	Batch 4
19	3000	0407-121	206338	323	324	1	3585	181	119	3585	West	1186.9	Batch 4
20	3000	0407-121	206349	332	333	1	4566	310	179	4566	West	1239.9	Batch 4
21	3000	0407-122	205233	197	198	1	3995	746	228	3995	West	1002.5	Batch 4
22	3000	0407-122	205247	210	211	1	3268	272	60	3268	West	978.8	Batch 4
23	3000	0407-122	205275	236	237	1	4011	262	127	4011	West	900.1	Batch 4
24	3000	0407-125	205419	165.8	166.54	0.74	3109	310	131	2300.66	West	758.7	Batch 4
25	3000	0407-125	205473	214	215	1	4203	329	134	4203	West	801.1	Batch 4
26	3000	0407-125	205508	246	247	1	3319	514	136	3319	West	1065.3	Batch 4
27	3000	0407-125	205557	296	297	1	3688	1832	104	3688	West	1002	Batch 4
28	3000	0407-125	205564	301	302	1	3126	335	113	3126	West	944.7	Batch 4
29	3025	0407-109	204682	119	120	1	4582	225	130	4582	West	1139.9	Batch 4
30	3025	0407-109	204704	139	140	1	4909	599	144	4909	West	1038.5	Batch 4
31	3025	0407-110	204783	172	173	1	3530	253	103	3530	West	963.2	Batch 4
32	3025	0407-110	204802	190	191	1	3618	433	118	3618	West	1121.3	Batch 4
33	3025	0407-110	204838	218	219	1	4139	787	130	4139	West	1009.6	Batch 4
34	3025	0407-110	204852	230	231	1	3840	577	164	3840	West	896.6	Batch 4
35	3025	0407-113	208137	176	177	1	4466	651	197	4466	West	707	Batch 4
36	3025	0407-113	208185	244	245	1	4733	242	155	4733	West	786.8	Batch 4
37	3025	0407-113	208210	267	268	1	3005	222	134	3005	West	734.1	Batch 4
38	3025	0407-113	208218	275	276	1	3897	253	156	3897	West	932.8	Batch 4
39	3025	0407-113	208243	298	299	1	4137	2666	335	4137	West	817.8	Batch 4
40	3025	0407-113	208266	321	322	1	3891	407	143	3891	West	1080.6	Batch 4
41	3025	0407-128	206426	152	153	1	3153	529	127	3153	West	1193	Batch 4
42	3025	0407-128	206436	162	163	1	3004	220	112	3004	West	1123.1	Batch 4
43	3025	0407-128	206463	186	187	1	4690	632	159	4690	West	1068	Batch 4
44	3025	0407-130	206604	212	213	1	3805	608	192	3805	West	1337	Batch 4
45	3025	0407-130	206630	250	251	1	3071	390	155	3071	West	1440.7	Batch 4
46	3025	0407-130	206658	276	277	1	3249	338	106	3249	West	972.5	Batch 4
47	3025	0407-130	206698	313	314	1	4779	351	94	4779	West	1164.8	Batch 4
48	3025	0407-130	206717	330	331	1	3486	391	106	3486	West	1070.5	Batch 4
49	3025	0407-130	206743	353	354	1	4016	353	115	4016	West	1260.1	Batch 4
50	3050	0406-98	194309	271.35	271.75	0.4	4532	448	133	1812.8	West	463.9	Batch 4
51	3050	0407-101	204256	332	333	1	4309	456	135	4309	West	952.5	Batch 4
52	3050	0407-102	204413	218	219	1	3066	445	131	3066	West	942.1	Batch 4
53	3050	0407-102	204439	252.34	253	0.66	3928	314	111	2592.48	West	657.3	Batch 4
54	3050	0407-102	204464	274	275	1	3162	217	98	3162	West	780.3	Batch 4
55	3050	0407-102	204485	293	294	1	3205	253	111	3205	West	930.9	Batch 4
56	3050	0407-102	204498	306	307	1	3204	487	118	3204	West	895.5	Batch 4
57	3050	0407-102	204530	333	334	1	4215	212	142	4215	West	1010.1	Batch 4
58	3050	0407-102	204552	353	354	1	3421	141	131	3421	West	1025.1	Batch 4
59	3050	0407-102	204567	367	368	1	4917	1017	190	4917	West	987.8	Batch 4

	Section_E	DDH	Sample	From (m)	To (m)	Interval (m)	Ni_PPM	Cu_PPM	Co_PPM	Ni_G X W	Pod	Wt (g)	Sample
60	3050	0407-99	204029	74	75	1	3372	472	107	3372	West	926.1	Batch 4
61	3050	0407-99	204039	83	84	1	4051	827	153	4051	West	946.2	Batch 4
62	3075	0407-100	204054	43	44	1	3930	288	102	3930	West	980.6	Batch 4
63	3075	0407-103	207013	72	73	1	4119	404	131	4119	West	966.9	Batch 4
64	3075	0407-103	207026	84	85	1	4970	326	155	4970	West	919.3	Batch 4
65	3075	0407-103	207037	94	95	1	4316	444	147	4316	West	1161.1	Batch 4
66	3075	0407-103	207042	98	99	1	3877	579	140	3877	West	998.8	Batch 4
67	3075	0407-104	207084	122	123	1	4488	553	148	4488	West	1052.5	Batch 4
68	3075	0407-104	207095	144	145	1	3486	618	139	3486	West	973	Batch 4
69	3075	0407-104	207114	162	163	1	3383	393	122	3383	West	1052.2	Batch 4
70	3075	0407-105	207213	162	163	1	3056	362	141	3056	West	942.6	Batch 4
71	3075	0407-105	207282	225	226	1	3877	475	135	3877	West	797.9	Batch 4
72	3075	0407-106	207417	170	171	1	3946	704	251	3946	West	958.8	Batch 4
73	3075	0407-106	207442	205	206	1	3390	265	155	3390	West	919.9	Batch 4
74	3075	0407-106	207457	227	228	1	4682	814	253	4682	West	952.4	Batch 4
75	3075	0407-106	207461	230	231	1	3404	114	149	3404	West	737.1	Batch 4
76	3075	0407-107	207629	244	245	1	3320	185	134	3320	West	717.1	Batch 4
77	3075	0407-107	207639	260	261	1	3831	657	272	3831	West	807.2	Batch 4
78	3075	0407-107	207655	275	276	1	4666	892	228	4666	West	1048.7	Batch 4
79	3075	0407-107	207665	283	284	1	3018	1345	196	3018	West	1057.9	Batch 4
80	3075	0407-107	207673	291	292	1	4449	1383	328	4449	West	1049.7	Batch 4
81	3125	0407-111	207793	52	53	1	3876	498	131	3876	Centre	1258.8	Batch 4
82	3125	0407-112	207812	68	69	1	3291	1876	133	3291	Centre	1116.2	Batch 4
83	3125	0407-112	207826	81	82	1	4214	560	222	4214	Centre	1094.7	Batch 4
84	3125	0407-115	207926	55	56	1	4666	1402	286	4666	Centre	1267.5	Batch 4
85	3125	0407-115	207972	114	115	1	3356	1028	376	3356	Centre	1057.2	Batch 4
86	3125	0407-115	207995	135	136	1	3915	417	154	3915	Centre	1254	Batch 4
87	3125	0407-115	208038	189	190	1	3879	1335	127	3879	Centre	1242.9	Batch 4
88	3125	0407-116	208404	202	203	1	4430	671	142	4430	Centre	1125.7	Batch 4
89	3125	0407-116	208432	235	236	1	4103	308	121	4103	Centre	1128.7	Batch 4
90	3125	0407-117A	208567	193	194	1	3834	1586	274	3834	Centre	1178.1	Batch 4
91	3125	0407-117A	208669	286.15	287	0.85	4908	880	135	4171.8	Centre	913.7	Batch 4
92	3150	0407-124A	209209	216	217	1	3217	1322	150	3217	Centre	1272.7	Batch 4
93	3150	0407-124A	209288	315	316	1	4318	219	151	4318	Centre	969.2	Batch 4
94	3160	0407-127	205728	75	76	1	4570	181	114	4570	Centre	1053.6	Batch 4
95	3160	0407-127	205793	135	136	1	3026	612	178	3026	Centre	1141.2	Batch 4
96	3160	0407-127	205869	204	205	1	4925	475	177	4925	Centre	1067.6	Batch 4
97	3160	0407-127	205874	209	210	1	3610	801	129	3610	Centre	1017.6	Batch 4
98	3175	0407-123	205596	47	48	1	3650	2658	371	3650	Centre	1109.3	Batch 4
99	3175	0407-123	205626	74	75	1	3911	326	123	3911	Centre	1085.3	Batch 4
100	3175	0407-123	205661	106	107	1	3314	387	104	3314	Centre	1084.4	Batch 4
101	3175	0407-129	206916	183	184	1	4065	572	142	4065	Centre	980.2	Batch 4
102	3175	0407-129	209373	302	303	1	3644	601	150	3644	Centre	1056.6	Batch 4
103	3175	0407-131	301062	227	228	1	3540	313	108	3540	Centre	1195.4	Batch 4
104	3180	0407-126	206033	89	90	1	4287	466	316	4287	Centre	1016.7	Batch 4
105	3180	0407-126	206082	132	133	1	3598	220	123	3598	Centre	1027.3	Batch 4
106	3180	0407-126	206098	148	149	1	3759	316	109	3759	Centre	1051.6	Batch 4
107	3200	0407-134	301899	205	205.62	0.62	3640	347	133	2256.8	Centre	654.7	Batch 4
108	3200	0407-135	202325	287	288	1	3541	126	78	3541	Centre	1077.6	Batch 4
109	3200	0407-135	202348	308	309	1	3872	786	246	3872	Centre	1059.6	Batch 4
110	3212.5	0407-154	419617	254	255	1	3642	356	130	3642	Centre	1284.8	Batch 4
111	3212.5	0407-154	419638	273	274	1	3560	613	127	3560	Centre	1162.2	Batch 4
112	3225	0407-156	419870	100	101	1	4667	328	151	4667	Centre	844.2	Batch 4
113	3225	0407-156	362041	319	320	1	3489	717	136	3489	Centre	878.6	Batch 4
114	3300	0407-146	416396	92	93	1	3477	232	108	3477	East	1051.5	Batch 4
115	3300	0407-148	368795	190	191	1	4957	515	172	4957	East	1139.6	Batch 4
116	3300	0407-148	368821	213	214	1	3090	248	113	3090	East	1258.2	Batch 4
117	3300	0407-148	368827	219	220	1	4892	1336	282	4892	East	1194.4	Batch 4
118	3300	0407-150	368989	268	269	1	3355	849	170	3355	East	940.4	Batch 4
119	3325	0407-142	415631	83.64	85	1.36	4827	613	212	6564.72	East	1374	Batch 4
120	3325	0407-143	415823	157	158	1	3309	255	97	3309	East	988.6	Batch 4

	Section_E	DDH	Sample	From (m)	To (m)	Interval (m)	Ni_PPM	Cu_PPM	Co_PPM	Ni_G X W	Pod	Wt (g)	Sample
121	3325	0407-143	415842	181	182	1	3363	361	129	3363	East	821.3	Batch 4
122	3325	0407-143	415859	198	199	1	3069	301	111	3069	East	1055.8	Batch 4
123	3325	0407-143	415864	201	202	1	3990	141	143	3990	East	1129.7	Batch 4
124	3325	0407-143	415868	205	206	1	4805	577	305	4805	East	1023.1	Batch 4
125	3350	0406-86	191103	131.2	131.8	0.6	3008	611	108	1804.8	East	686.9	Batch 4
126	3350	0407-133	301662	184	185	1	4858	783	155	4858	East	711.7	Batch 4
127	3375	0407-138	301454	92	93	1	3925	1176	153	3925	East	1058.1	Batch 4
128	3375	0407-138	301463	100	101	1	3708	762	131	3708	East	1199.1	Batch 4
129	3375	0407-140	209756	142	143	1	3316	181	116	3316	East	958	Batch 4
130	3375	0407-140	209779	164	165	1	3026	433	131	3026	East	843.3	Batch 4
131	3375	0407-140	209785	169	170	1	4504	415	170	4504	East	1092.9	Batch 4
132	3400	0407-157	362091	60	61	1	3129	632	125	3129	East	1119.6	Batch 4
133	3400	0407-157	362110	79	80	1	3726	838	153	3726	East	1098.1	Batch 4
134	2950	0407-145	806964	206	207	1	6509	361	204	6509	West	1055.5	Batch 3
135	2975	0407-149	368611	201	202	1	6375	278	162	6375	West	1167.5	Batch 3
136	2975	0407-160	445011	226	227	1	6673	363	195	6673	West	1152	Batch 3
137	2975	0407-160	445046	258	259	1	5500	657	146	5500	West	1094.8	Batch 3
138	3000	0407-120	205090	185	186	1	5583	1812	184	5583	West	1029.9	Batch 3
139	3000	0407-120	205125	218	219	1	5045	578	141	5045	West	1041.4	Batch 3
140	3000	0407-121	206245	232	233	1	6062	295	126	6062	West	1074.7	Batch 3
141	3000	0407-121	206343	326	327	1	6317	477	202	6317	West	1069.8	Batch 3
142	3000	0407-122	205252	215	216	1	5378	368	201	5378	West	1058.4	Batch 3
143	3000	0407-122	205302	260	261	1	5045	731	207	5045	West	1088.9	Batch 3
144	3025	0407-108	204635	55	56	1	5074	685	308	5074	West	787.4	Batch 3
145	3025	0407-109	204694	130	131	1	6163	415	184	6163	West	1172.6	Batch 3
146	3025	0407-110	204812	199	200	1	5690	710	198	5690	West	1207.8	Batch 3
147	3025	0407-110	204849	227	228	1	5637	256	196	5637	West	1109.7	Batch 3
148	3025	0407-113	208207	264	265	1	6217	381	221	6217	West	1022.2	Batch 3
149	3025	0407-113	208246	301	302	1	6094	386	145	6094	West	1058.2	Batch 3
150	3025	0407-128	206455	180	181	1	6497	392	180	6497	West	1090.2	Batch 3
151	3050	0407-101	204228	306	307	1	6357	291	174	6357	West	998.7	Batch 3
152	3050	0407-102	204522	325	326.35	1.35	5090	224	87	6871.5	West	1552.2	Batch 3
153	3050	0407-102	204558	359	360	1	5487	726	174	5487	West	1192.4	Batch 3
154	3050	0407-99	204036	80	81	1	6270	711	204	6270	West	1032.3	Batch 3
155	3075	0407-104	207068	107	108	1	6505	491	239	6505	West	970.1	Batch 3
156	3075	0407-104	207115	163	164	1	5541	417	177	5541	West	1092.6	Batch 3
157	3075	0407-105	207283	226	227	1	5927	185	195	5927	West	1073.2	Batch 3
158	3075	0407-106	207456	226	227	1	5695	303	241	5695	West	954.3	Batch 3
159	3075	0407-107	207657	277	278	1	5537	1398	281	5537	West	1253.6	Batch 3
160	3125	0407-115	207979	121	122	1	6699	1826	692	6699	Centre	1238	Batch 3
161	3125	0407-118	208957	244	245	1	5672	1035	255	5672	Centre	1120	Batch 3
162	3160	0407-127	205796	138	139	1	5097	1475	266	5097	Centre	1084.8	Batch 3
163	3175	0407-129	209374	303	304	1	5361	1246	204	5361	Centre	987	Batch 3
164	3175	0407-131	301137	349	350	1	5083	988	203	5083	Centre	1112.9	Batch 3
165	3180	0407-126	206097	147	148	1	5210	289	134	5210	Centre	922.3	Batch 3
166	3200	0407-135	202344	304	305	1	6597	586	251	6597	Centre	977.3	Batch 3
167	3212.5	0407-154	419597	235	236	1	6754	255	202	6754	Centre	1181.2	Batch 3
168	3212.5	0407-154	419635	269.82	271	1.18	6127	487	169	7229.86	Centre	1479.7	Batch 3
169	3225	0407-156	419867	97	98	1	6518	564	239	6518	Centre	976.3	Batch 3
170	3225	0407-156	362036	315	316	1	6452	654	196	6452	Centre	1146.1	Batch 3
171	3275	0407-152	369202	252	253	1	5809	1258	184	5809	East	903.3	Batch 3
172	3275	0407-153	369368	124	125	1	6815	347	176	6815	East	1113.8	Batch 3
173	3300	0407-146	416389	85	85.78	0.78	6570	1154	203	5124.6	East	765.7	Batch 3
174	3300	0407-148	368825	217	218	1	5747	700	236	5747	East	1127.7	Batch 3
175	3325	0407-143	415862	199	200	1	5549	355	162	5549	East	1034.2	Batch 3
176	3350	0407-133	301664	186	187	1	5080	399	174	5080	East	1030.4	Batch 3
177	3375	0407-140	209788	172	173	1	6266	551	190	6266	East	1029.7	Batch 3
178	2950	0407-145	806959	202	203	1	8954	472	263	8954	West	1177.9	Batch 2
179	2950	0407-151B	416231	278	279	1	7728	385	193	7728	West	1172.1	Batch 2
180	2975	0407-149	368609	199	200	1	8522	563	237	8522	West	1285.8	Batch 2

	Section E	DDH	Sample	From (m)	To (m)	Interval (m)	Ni PPM	Cu PPM	Co PPM	Ni G X W	Pod	Wt (g)	Sample
181	2975	0407-160	445064	276	277	1	8483	572	247	8483	West	1278.2	Batch 2
182	3000	0407-120	205098	193	194	1	7819	1322	179	7819	West	1370.8	Batch 2
183	3000	0407-121	206330	315	316	1	8242	351	219	8242	West	1132.1	Batch 2
184	3000	0407-122	205314	271.77	273	1.23	8969	606	242	11031.87	West	1393.2	Batch 2
185	3025	0407-108	204637	61	62	1	7974	594	272	7974	West	923.7	Batch 2
186	3025	0407-110	204850	228	229	1	7799	4575	530	7799	West	1287.4	Batch 2
187	3025	0407-113	208244	299	300	1	8532	1186	250	8532	West	1158.3	Batch 2
188	3025	0407-128	206472	195	196	1	8382	3013	270	8382	West	1176.2	Batch 2
189	3050	0407-102	204529	332	333	1	7254	347	232	7254	West	1241.2	Batch 2
190	3050	0407-99	204035	79	80	1	7687	850	262	7687	West	1105.5	Batch 2
191	3075	0407-104	207066	105	106	1	7945	301	222	7945	West	922.1	Batch 2
192	3075	0406-106	207451	221	222	1	8055	572	416	8055	West	1212.2	Batch 2
193	3125	0407-115	207986	127	128	1	8516	270	321	8516	Centre	1286.1	Batch 2
194	3125	0407-117A	208676	293	294	1	8962	454	263	8962	Centre	1102.4	Batch 2
195	3175	0407-123	205623	71	72	1	7159	977	327	7159	Centre	1137	Batch 2
196	3175	0407-129	209375	304	305	1	7271	868	337	7271	Centre	1160.5	Batch 2
197	3200	0407-134	301892	198	198.74	0.74	7264	698	209	5375.36	Centre	932.2	Batch 2
198	3212.5	0407-154	369466	87	88	1	8976	351	178	8976	Centre	1327.9	Batch 2
199	3300	0407-150	368868	57	58	1	7137	428	141	7137	East	1088.2	Batch 2
200	3325	0407-143	415870	207	208	1	7203	703	210	7203	East	1152.3	Batch 2
201	3350	0407-133	301670	192	193	1	7520		334	7520	East	1019.5	Batch 2
202	3375	0407-140	209789	173	174	1	7719	1392	247	7719	East	1166.3	Batch 2
203	2950	0407-151B	416232	279	280	1	13382	654	361	13382	West	1091.6	Batch 1
204	2975	0407-149	368614	204	205	1	12418	1374	371	12418	West	1207.4	Batch 1
205	2975	0407-160	445067	279	280	1	9961	793	256	9961	West	1231.4	Batch 1
206	3000	0407-119	204988	112	113	1	10476	306	230	10476	West	835.3	Batch 1
207	3000	0407-120	205097	192	193	1	9162	352	227	9162	West	1139.4	Batch 1
208	3000	0407-121	206329	314	315	1	18180	2938	401	18180	West	964.6	Batch 1
209	3000	0407-122	205305	263	264	1	14331	686	379	14331	West	1045.9	Batch 1
210	3025	0407-108	204641	64	65	1	10296	650	532	10296	West	954.3	Batch 1
211	3025	0407-109	204685	122	123	1	21198	712	595	21198	West	1235.7	Batch 1
212	3025	0407-110	204777	168	169	1	9797	1538	243	9797	West	1175.4	Batch 1
213	3025	0407-110	204855	233	234	1	19258	1188	707	19258	West	1275.5	Batch 1
214	3025	0407-113	208247	302	303	1	13459	1932	436	13459	West	1078.1	Batch 1
215	3050	0406-98	194317	276.5	277.3	0.8	9495	524	135	7596	West	1013.7	Batch 1
216	3050	0407-101	204257	333	334	1	19760	573	576	19760	West	1128.9	Batch 1
217	3050	0407-102	204564	364	365	1	9923	1870	505	9923	West	1295.9	Batch 1
218	3050	0407-99	204037	81	82	1	12297	1300	423	12297	West	1083.3	Batch 1
219	3075	0407-105	207290	233	234	1	9751	1023	304	9751	West	1057.3	Batch 1
220	3075	0407-107	207636	257	258	1	12113	820	661	12113	West	1044.1	Batch 1
221	3125	0407-117A	208673	290	291	1	12442	1322	343	12442	Centre	1095.7	Batch 1
222	3125	0407-118	209035	373.9	374.7	0.8	9206	2662	162	7364.8	Centre	877	Batch 1
223	3150	0407-124A	209289	316	317	1	13364	1048	337	13364	Centre	1084.5	Batch 1
224	3175	0407-129	209376	305	306	1	19270	1566	595	19270	Centre	1090.4	Batch 1
225	3200	0407-134	301891	197	198	1	9839	1280	272	9839	Centre	1117.6	Batch 1
226	3200	0407-135	202345	305	306	1	10059	1321	372	10059	Centre	1087.7	Batch 1
227	3212.5	0407-154	419636	271	272	1	12541	518	574	12541	Centre	1353.2	Batch 1
228	3300	0407-150	368961	237	237.57	0.57	13697	758	453	7807.29	East	470	Batch 1
229	3350	0407-133	301672	194	195	1	23370	843	619	23370	East	925.3	Batch 1
230	3375	0407-138	301462	99	100	1	16113	1245	599	16113	East	1271.1	Batch 1
231	3375	0407-140	209787	171	172	1	9659	2871	280	9659	East	1064.8	Batch 1

Appendix B – Grindability Test Results

SGS Minerals Services

Standard Bond Rod Mill Grindability Test

Project No.:	11366-002 Product: Minus 1/2 inch Date: Jan 30 2008	
Sample.:	Master Comp	
Purpose:	To determine the rod mill grindability of the sample in terms of a Bond work index number.	
Procedure:	The equipment and procedure duplicate the Bond method for determining rod mill work indices.	
Test Conditions:	Mesh of grind:	14 mesh
	Test feed weight (1250 mL):	2171 grams
	Weight % of the undersize material in the rod mill feed:	15.9 %
	Weight of undersize product for 100% circulating load:	1086 grams
Results:	Average for Last Three Stages = **7.93g.**	**105%** Circulation load

CALCULATION OF A BOND WORK INDEX

$$RWI = \frac{62}{P1^{0.23} \times Grp^{0.625} \times \left\{\frac{10}{\sqrt{P}} - \frac{10}{\sqrt{F}}\right\}}$$

P1 = 100% passing size of the product	1180 microns
Grp = Grams per revolution	7.93 grams
P80 = 80% passing size of product	909 microns
F80 = 80% passing size of the feed	9499 microns

RWI = **14.6** kWh/ton (imperial)

RWI = **16.1** kWh/ton (metric)

Grindability Test Data   Project No.: 11366-002   Test No.: Master Comp

Stage No.	Revs	New Feed (grams)	Undersize In Feed (grams)	Undersize To Be Ground (grams)	U'Size In Product (grams)	Undersize Product Total (grams)	Undersize Product Per Mill Rev (grams)
1	50	2,171	345	741	584	239	4.78
2	80	584	93	993	648	555	6.94
3	120	648	103	983	1,005	902	7.52
4	123	1,005	160	926	1,346	1,186	9.65
5	100	1,346	214	872	998	784	7.84
6	118	998	159	927	1099	940	7.97
7	114	1,099	175	911	1083	908	7.97

Average for Last Three Stages = 1060g. 7.93g.

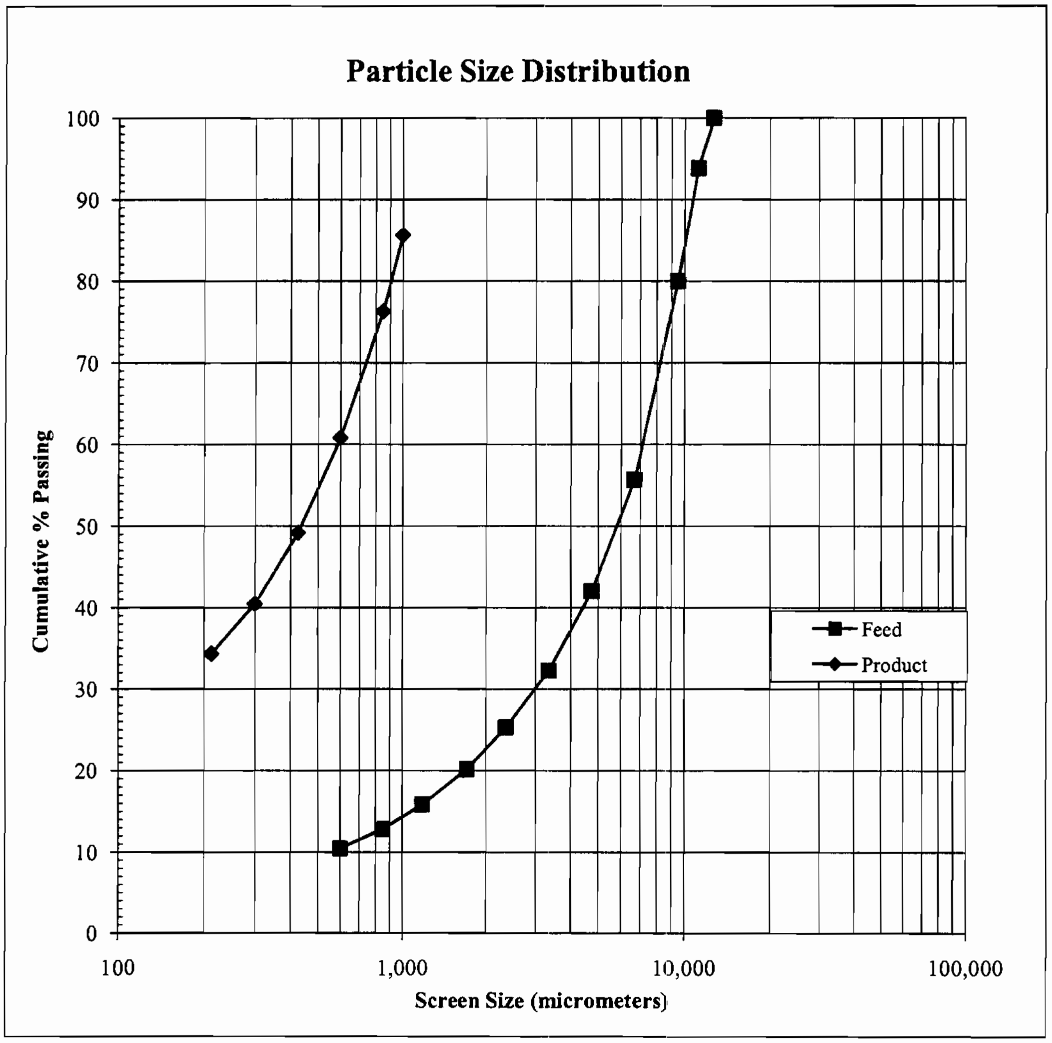
Feed K80

Size Mesh	Size µm	Weight grams	% Retained Individual	% Retained Cumulative	% Passing Cumulative
1/2	12,700	0.0	0.0	0.0	100.0
7/16	11,200	81.7	6.2	6.2	93.8
3/8	9,500	182.7	13.8	20.0	80.0
3	6,700	321.8	24.3	44.3	55.7
4	4,750	180.8	13.7	58.0	42.0
6	3,350	128.6	9.7	67.7	32.3
8	2,360	92.3	7.0	74.7	25.3
10	1,700	68.0	5.1	79.8	20.2
14	1,180	56.7	4.3	84.1	15.9
20	850	39.8	3.0	87.1	12.9
28	600	31.8	2.4	89.5	10.5
Pan	-600	138.5	10.5	100.0	0.0
Total	-	**1322.7**	100.0	-	-
K80	**9,499**				

Product K80

Size Mesh	Size µm	Weight grams	% Retained Individual	% Retained Cumulative	% Passing Cumulative
18	1,000	51.8	14.4	14.4	85.6
20	850	33.6	9.3	23.7	76.3
28	600	55.8	15.5	39.2	60.8
35	425	42.0	11.7	50.8	49.2
48	300	31.4	8.7	59.5	40.5
65	212	22.1	6.1	65.7	34.3
100	150	15.2	4.2	69.9	30.1
Pan	-150	108.6	30.1	100.0	0.0
Total	-	**360.5**	**100.0**	-	-
K80	**909**				

Project No.: 11366-002 Test No.: Master Comp



SGS Minerals Services

STANDARD BOND ABRASION TEST

Project No.: 11366-002 Test : Abrasion Date:

Sample: Master Comp

Purpose: To determine the Abrasion Index of the sample

Procedure: The equipment and procedure duplicate the Bond method for determining an abrasion index.

Feed: 1600 grams minus 3/4 inch plus 1/2 inch fraction

Results:	Original paddle weight, grams:	94.4450
	Final paddle weight, grams:	94.2642
	Abrasion Index, Ai:	**0.1808**

Predicted Wear Rates:

		lb/kwh	kg/kwh
Wet rod mill, rods:	0.35*(Ai-0.020)^0.20	0.24	0.11
Wet rod mill, liners:	0.035*(Ai-0.015)^0.30	0.020	0.009
Wet ball mill, balls: (1)	0.35*(Ai-0.015)^0.33	0.19	0.088
Wet ball mill, liners: (1)	0.026*(Ai-0.015)^0.30	0.015	0.0069
Dry ball mill, balls: (2)	0.05*(Ai)^0.5	0.021	0.010
Dry ball mill, liners: (2)	0.005*(Ai)^0.5	0.0021	0.0010
Crusher, liners: (3)	(Ai+0.22)/11	0.036	0.017
Roll crusher, shells:	(Ai/10)^0.67	0.068	0.031

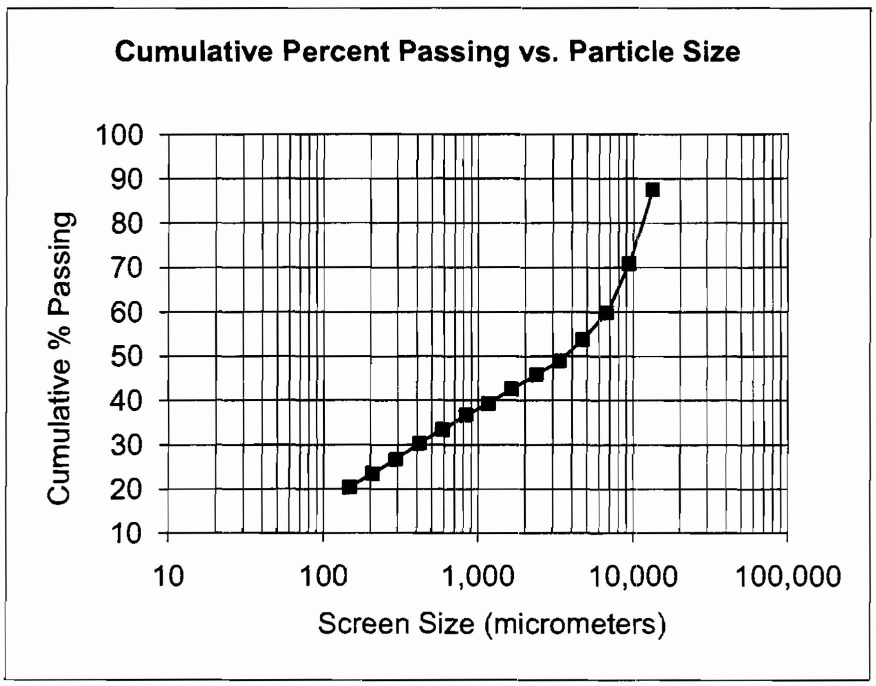
(1) overflow and grate discharge types
(2) grate discharge type
(3) gyratory, jaw, cone

STANDARD BOND ABRASION TEST

Final Product Test : Abrasion

Sample: Master Comp

Microns	Mesh	Weight Grams	% Weight Ind.	% Weight Cum.	% Weight Passing
13,330	1/2 in	90.5	12.4	12.4	87.6
9,423	3/8 in	121.1	16.6	29.1	70.9
6,680	3	79.9	11.0	40.1	59.9
4,699	4	44.8	6.2	46.2	53.8
3,327	6	34.6	4.8	51.0	49.0
2,362	8	22.7	3.1	54.1	45.9
1,651	10	23.8	3.3	57.4	42.6
1,168	14	23.5	3.2	60.6	39.4
833	20	19.1	2.6	63.2	36.8
589	28	23.8	3.3	66.5	33.5
417	35	22.6	3.1	69.6	30.4
295	48	25.9	3.6	73.2	26.8
208	65	23.9	3.3	76.5	23.5
147	100	22.7	3.1	79.6	20.4
-147	-100	148.5	20.4	100.0	-
	Total	727.4	100.0	-	-



SGS Minerals Services

Standard Bond Ball Mill Grindability Test

Project No.:	11366-002 Product: Minus 6 Mesh Date: Jan 29 2008		
Sample.:	Master Comp		
Purpose:	To determine the ball mill grindability of the sample in terms of a Bond work index number.		
Procedure:	The equipment and procedure duplicate the Bond method for determining ball mill work indices.		
Test Conditions:	Mesh of grind:	100	mesh
	Test feed weight (700 mL):	1297	grams
	Equivalent to : 1853 kg/m^3 at Minus 6 mesh		
	Weight % of the undersize material in the ball mill feed:	16.7	%
	Weight of undersize product for 250% circulating load:	371	grams
Results:	Average for Last Three Stages = **2.16g.**	**251%**	Circulation load

CALCULATION OF A BOND WORK INDEX

$$BWI = \frac{44.5}{P1^{0.23} \times Grp^{0.82} \times \left\{ \frac{10}{\sqrt{P}} - \frac{10}{\sqrt{F}} \right\}}$$

P1 = 100% passing size of the product	150	microns
Grp = Grams per revolution	2.16	grams
P80 = 80% passing size of product	111	microns
F80 = 80% passing size of the feed	2075	microns

BWI = **10.2** (imperial)

BWI = **11.3** (metric)

Grindability Test Data — Project No.: 11366-002 — Test No.: Master Comp

Stage No.	Revs	New Feed (grams)	Undersize In Feed (grams)	Undersize To Be Ground (grams)	U'Size In Product (grams)	Undersize Product Total (grams)	Undersize Product Per Mill Rev (grams)
1	100	1,297	217	154	436	219	2.19
2	136	436	73	298	357	284	2.09
3	149	357	60	311	372	312	2.10
4	147	372	62	308	383	321	2.18
5	140	383	64	307	367	303	2.16
6	143	367	61	309	369	308	2.15
7	144	369	62	309	372	310	2.16

Average for Last Three Stages = 369g. 2.16g.

Feed K80

Size Mesh	Size µm	Weight grams	% Retained Individual	% Retained Cumulative	% Passing Cumulative
6	3,360	0.0	0.0	0.0	100.0
7	2,800	27.6	4.5	4.5	95.5
8	2,360	45.1	7.4	11.9	88.1
10	1,700	110.4	18.1	30.0	70.0
14	1,180	102.4	16.8	46.7	53.3
20	850	64.5	10.6	57.3	42.7
28	600	53.1	8.7	66.0	34.0
35	425	36.1	5.9	71.9	28.1
48	300	29.8	4.9	76.7	23.3
65	212	22.5	3.7	80.4	19.6
100	150	17.6	2.9	83.3	16.7
Pan	-150	102.1	16.7	100.0	0.0
Total	-	**611.2**	**100.0**	-	-

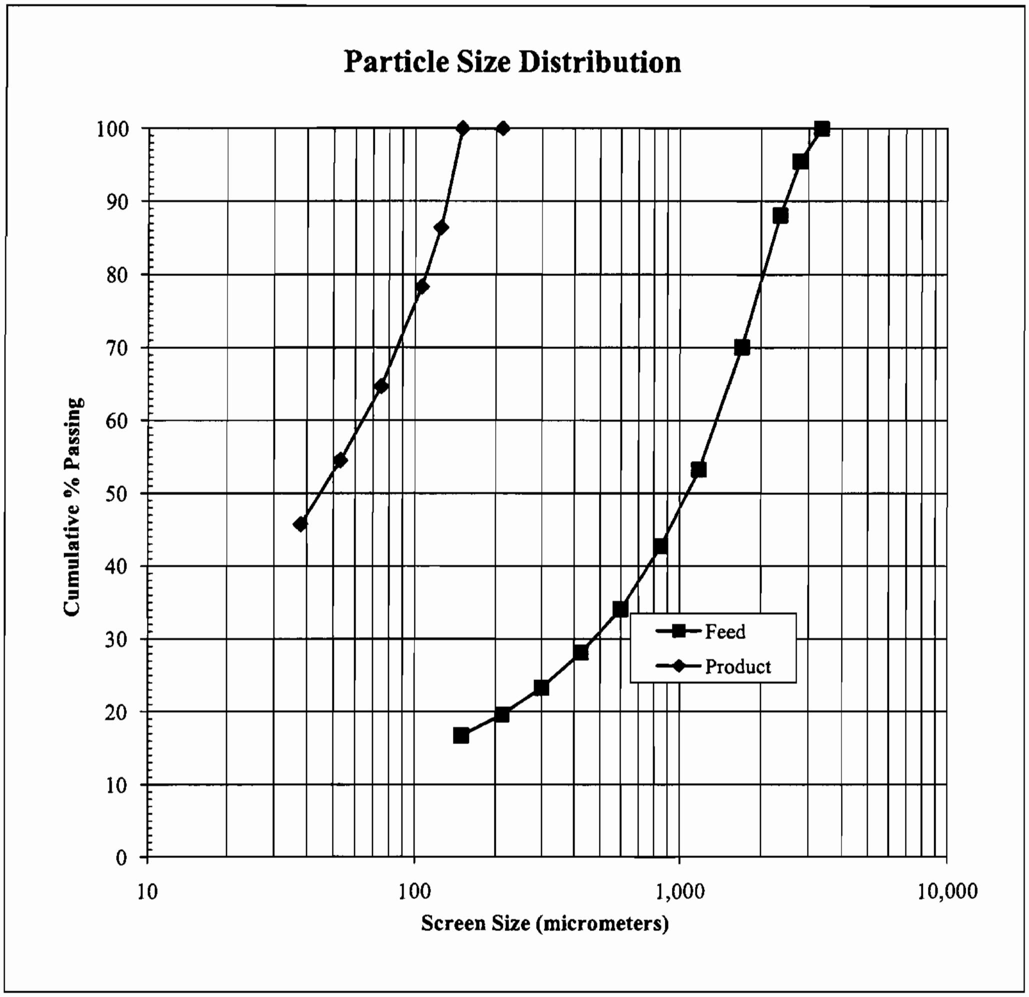
K80 **2,075**

Product K80

Size Mesh	Size µm	Weight grams	% Retained Individual	% Retained Cumulative	% Passing Cumulative
65	212	0.0	0.0	0.0	100.0
100	150	0.0	0.0	0.0	100.0
115	125	22.0	13.6	13.6	86.4
150	106	13.0	8.1	21.7	78.3
200	75	22.0	13.6	35.3	64.7
270	53	16.4	10.2	45.5	54.5
400	38	14.2	8.8	54.3	45.7
Pan	-38	73.8	45.7	100.0	0.0
Total	-	161.4	**100.0**	-	-

K80 **111**

Project No.: 11366-002 Test No.: Master Comp



SGS Minerals Services

Standard Bond Ball Mill Grindability Test

Project No.:	11366-002 Product: Minus 6 Mesh Date: Jan 29 2008		
Sample.:	Batch 2		
Purpose:	To determine the ball mill grindability of the sample in terms of a Bond work index number.		
Procedure:	The equipment and procedure duplicate the Bond method for determining ball mill work indices.		
Test Conditions:	Mesh of grind:	100	mesh
	Test feed weight (700 mL):	1293	grams
	Equivalent to : 1847 kg/m³ at Minus 6 mesh		
	Weight % of the undersize material in the ball mill feed:	18.1	%
	Weight of undersize product for 250% circulating load:	369	grams
Results:	Average for Last Three Stages = **2.15g.**	**249%**	Circulation load

CALCULATION OF A BOND WORK INDEX

$$BWI = \frac{44.5}{P1^{0.23} \times Grp^{0.82} \times \left\{\frac{10}{\sqrt{P}} - \frac{10}{\sqrt{F}}\right\}}$$

P1 = 100% passing size of the product	150	microns
Grp = Grams per revolution	2.15	grams
P80 = 80% passing size of product	114	microns
F80 = 80% passing size of the feed	1952	microns

BWI = **10.5** (imperial)

BWI = **11.6** (metric)

Grindability Test Data   Project No.: 11366-002   Test No.: Batch 2

Stage No.	Revs	New Feed (grams)	Undersize In Feed (grams)	Undersize To Be Ground (grams)	U'Size In Product (grams)	Undersize Product Total (grams)	Undersize Product Per Mill Rev (grams)
1	100	1,293	233	136	447	214	2.14
2	135	447	81	289	359	278	2.06
3	148	359	65	305	393	328	2.22
4	135	393	71	298	364	293	2.17
5	140	364	66	304	362	296	2.12
6	144	362	65	304	378	313	2.17
7	139	378	68	301	370	302	2.17
		Average for Last Three Stages =			370g.		2.15g.

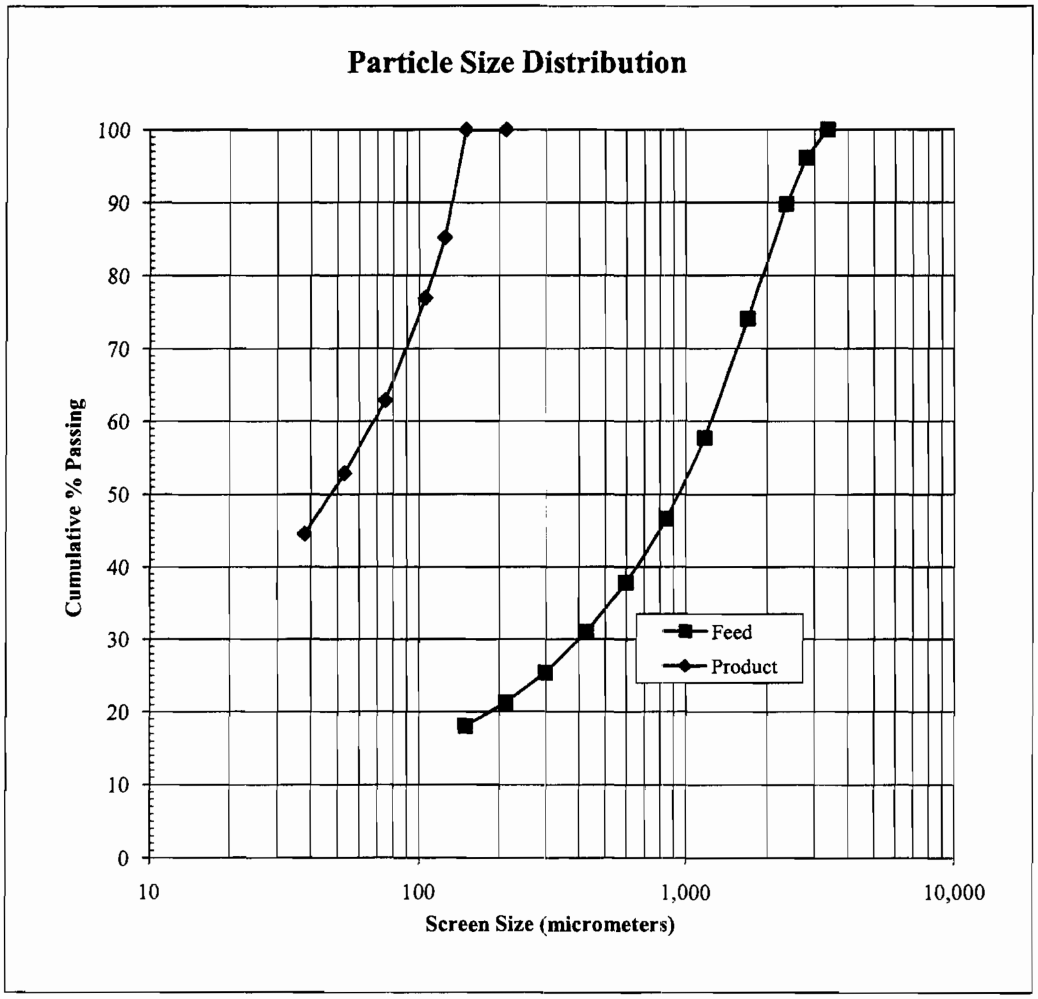
Feed K80

Size Mesh	Size µm	Weight grams	% Retained Individual	% Retained Cumulative	% Passing Cumulative
6	3,360	0.0	0.0	0.0	100.0
7	2,800	19.7	3.8	3.8	96.2
8	2,360	32.6	6.4	10.2	89.8
10	1,700	80.6	15.7	26.0	74.0
14	1,180	83.6	16.3	42.3	57.7
20	850	56.8	11.1	53.4	46.6
28	600	45.1	8.8	62.2	37.8
35	425	35.0	6.8	69.0	31.0
48	300	28.4	5.5	74.6	25.4
65	212	21.3	4.2	78.7	21.3
100	150	16.4	3.2	81.9	18.1
Pan	-150	92.4	18.1	100.0	0.0
Total	-	**511.9**	**100.0**	-	-
K80	**1,952**				

Product K80

Size Mesh	Size µm	Weight grams	% Retained Individual	% Retained Cumulative	% Passing Cumulative
65	212	0.0	0.0	0.0	100.0
100	150	0.0	0.0	0.0	100.0
115	125	22.8	14.8	14.8	85.2
150	106	12.7	8.3	23.1	76.9
200	75	21.6	14.0	37.1	62.9
270	53	15.4	10.0	47.1	52.9
400	38	12.8	8.3	55.5	44.5
Pan	-38	68.5	44.5	100.0	0.0
Total	-	153.8	**100.0**	-	-
K80	**114**				

Project No.: 11366-002 Test No.: Batch 2



SGS Minerals Services

Standard Bond Ball Mill Grindability Test

Project No.:	11366-002 Product: Minus 6 Mesh Date: Jan 29 2008	
Sample.:	Batch 3	
Purpose:	To determine the ball mill grindability of the sample in terms of a Bond work index number.	
Procedure:	The equipment and procedure duplicate the Bond method for determining ball mill work indices.	
Test Conditions:	Mesh of grind:	100 mesh
	Test feed weight (700 mL):	1323 grams
	Equivalent to : 1890 kg/m^3 at Minus 6 mesh	
	Weight % of the undersize material in the ball mill feed:	17.7 %
	Weight of undersize product for 250% circulating load:	378 grams
Results:	Average for Last Three Stages = **2.30g.**	**248%** Circulation load

CALCULATION OF A BOND WORK INDEX

$$BWI = \frac{44.5}{P1^{0.23} \times Grp^{0.82} \times \left\{ \frac{10}{\sqrt{P}} - \frac{10}{\sqrt{F}} \right\}}$$

P1 = 100% passing size of the product	150 microns
Grp = Grams per revolution	2.30 grams
P80 = 80% passing size of product	108 microns
F80 = 80% passing size of the feed	2003 microns

BWI = **9.6** (imperial)

BWI = **10.6** (metric)

Grindability Test Data   Project No.: 11366-002   Test No.: Batch 3

Stage No.	Revs	New Feed (grams)	Undersize In Feed (grams)	Undersize To Be Ground (grams)	U'Size In Product (grams)	Undersize Product Total (grams)	Undersize Product Per Mill Rev (grams)
1	100	1,323	235	143	464	229	2.29
2	129	464	82	296	374	292	2.26
3	138	374	66	312	386	320	2.32
4	134	386	68	310	372	304	2.27
5	138	372	66	312	380	314	2.28
6	136	380	67	311	383	316	2.32
7	134	383	68	310	376	308	2.30

Average for Last Three Stages = 380g. 2.30g.

Feed K80

Size Mesh	Size µm	Weight grams	% Retained Individual	% Retained Cumulative	% Passing Cumulative
6	3,360	0.0	0.0	0.0	100.0
7	2,800	26.0	4.6	4.6	95.4
8	2,360	35.8	6.3	10.8	89.2
10	1,700	95.4	16.7	27.6	72.4
14	1,180	91.3	16.0	43.6	56.4
20	850	61.7	10.8	54.4	45.6
28	600	52.4	9.2	63.6	36.4
35	425	35.9	6.3	69.9	30.1
48	300	29.9	5.2	75.2	24.8
65	212	22.4	3.9	79.1	20.9
100	150	18.0	3.2	82.3	17.7
Pan	-150	101.0	17.7	100.0	0.0
Total	-	**569.8**	**100.0**	-	-

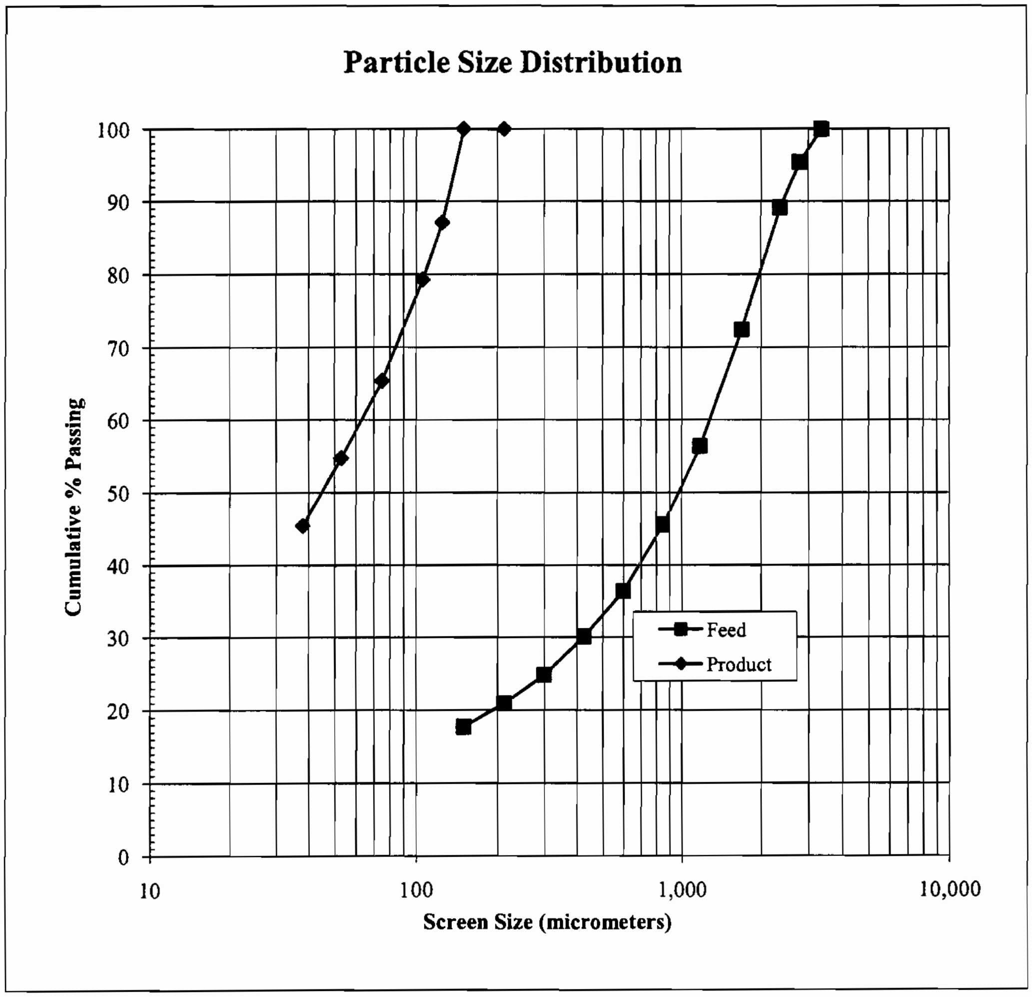
K80 **2,003**

Product K80

Size Mesh	Size µm	Weight grams	% Retained Individual	% Retained Cumulative	% Passing Cumulative
65	212	0.0	0.0	0.0	100.0
100	150	0.0	0.0	0.0	100.0
115	125	21.5	12.9	12.9	87.1
150	106	13.1	7.9	20.8	79.2
200	75	23.1	13.9	34.6	65.4
270	53	17.7	10.6	45.3	54.7
400	38	15.5	9.3	54.6	45.4
Pan	-38	75.7	45.4	100.0	0.0
Total	-	166.6	**100.0**	-	-

K80 **108**

Project No.: 11366-002 Test No.: Batch 3



SGS Minerals Services

Standard Bond Ball Mill Grindability Test

Project No.:	11366-002 Product: Minus 6 Mesh Date: Jan 29 2008	
Sample.:	Batch 4	
Purpose:	To determine the ball mill grindability of the sample in terms of a Bond work index number.	
Procedure:	The equipment and procedure duplicate the Bond method for determining ball mill work indices.	
Test Conditions:	Mesh of grind:	100 mesh
	Test feed weight (700 mL):	1361 grams
	Equivalent to : 1944 kg/m^3 at Minus 6 mesh	
	Weight % of the undersize material in the ball mill feed:	18.5 %
	Weight of undersize product for 250% circulating load:	389 grams
Results:	Average for Last Three Stages = **2.16g.**	**247%** Circulation load

CALCULATION OF A BOND WORK INDEX

$$BWI = \frac{44.5}{P1^{0.23} \times Grp^{0.82} \times \left\{\frac{10}{\sqrt{P}} - \frac{10}{\sqrt{F}}\right\}}$$

P1 = 100% passing size of the product	150 microns
Grp = Grams per revolution	2.16 grams
P80 = 80% passing size of product	108 microns
F80 = 80% passing size of the feed	1944 microns

BWI = **10.2** (imperial)

BWI = **11.2** (metric)

Grindability Test Data Project No.: 11366-002 Test No.: Batch 4

Stage No.	Revs	New Feed (grams)	Undersize In Feed (grams)	Undersize To Be Ground (grams)	U'Size In Product (grams)	Undersize Product Total (grams)	Undersize Product Per Mill Rev (grams)
1	100	1,361	252	137	463	211	2.11
2	144	463	86	303	396	310	2.16
3	146	396	73	316	385	312	2.14
4	149	385	71	318	387	316	2.12
5	150	387	72	317	396	324	2.16
6	146	396	73	316	389	316	2.16
7	147	389	72	317	390	318	2.16

Average for Last Three Stages = 392g. 2.16g.

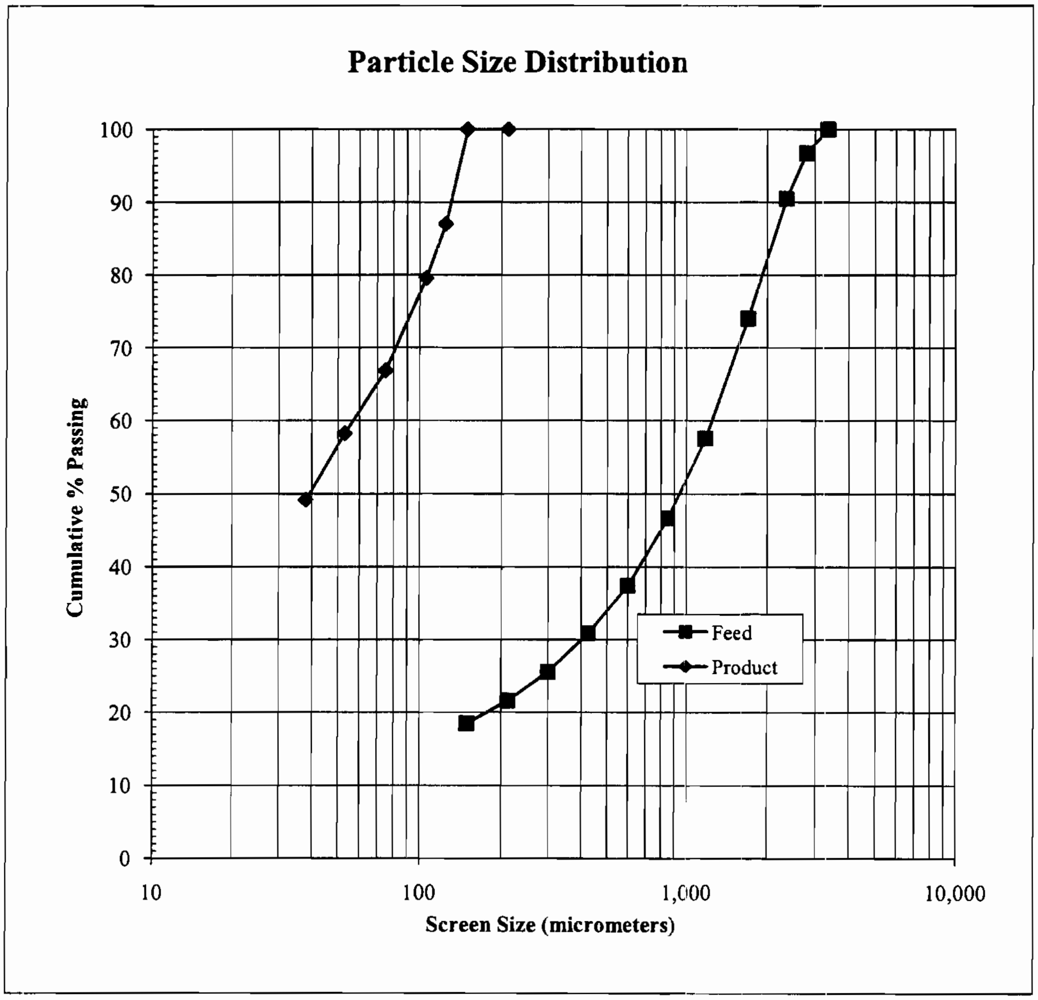
Feed K80

Size Mesh	Size µm	Weight grams	% Retained Individual	% Retained Cumulative	% Passing Cumulative
6	3,360	0.0	0.0	0.0	100.0
7	2,800	17.8	3.3	3.3	96.7
8	2,360	33.3	6.2	9.5	90.5
10	1,700	89.0	16.5	25.9	74.1
14	1,180	89.2	16.5	42.4	57.6
20	850	58.8	10.9	53.3	46.7
28	600	50.0	9.3	62.6	37.4
35	425	35.3	6.5	69.1	30.9
48	300	28.8	5.3	74.5	25.5
65	212	21.2	3.9	78.4	21.6
100	150	16.9	3.1	81.5	18.5
Pan	-150	99.9	18.5	100.0	0.0
Total	-	**540.2**	**100.0**	-	-
K80	**1,944**				

Product K80

Size Mesh	Size µm	Weight grams	% Retained Individual	% Retained Cumulative	% Passing Cumulative
65	212	0.0	0.0	0.0	100.0
100	150	0.0	0.0	0.0	100.0
115	125	21.4	13.0	13.0	87.0
150	106	12.3	7.5	20.4	79.6
200	75	20.9	12.7	33.1	66.9
270	53	14.2	8.6	41.7	58.3
400	38	15.0	9.1	50.8	49.2
Pan	-38	81.0	49.2	100.0	0.0
Total	-	164.8	**100.0**	-	-
K80	**108**				

Project No.: 11366-002 Test No.: Batch 4



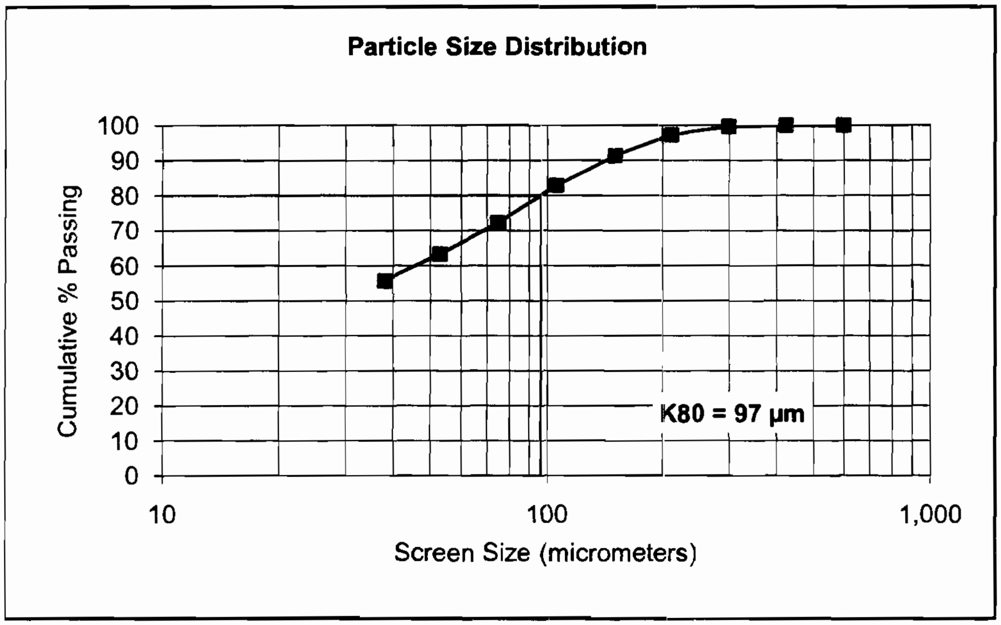
Appendix C – Mill Calibration

SGS Minerals Services
Size Distribution Analysis

Project No. **11366-002**

Sample: **Grind 18min** Test No.:

Size		Weight	% Retained		% Passing
Mesh	µm	grams	Individual	Cumulative	Cumulative
28	600	0.0	0.0	0.0	100.0
35	425	0.0	0.0	0.0	100.0
48	300	0.7	0.4	0.4	99.6
65	212	4.0	2.2	2.6	97.4
100	150	10.9	6.0	8.6	91.4
150	106	15.3	8.4	17.0	83.0
200	75	19.3	10.7	27.7	72.3
270	53	16.2	8.9	36.6	63.4
400	38	13.9	7.7	44.3	55.7
Pan	-38	100.8	55.7	100.0	0.0
Total	-	**181.1**	100.0	-	-
K80	**97**				

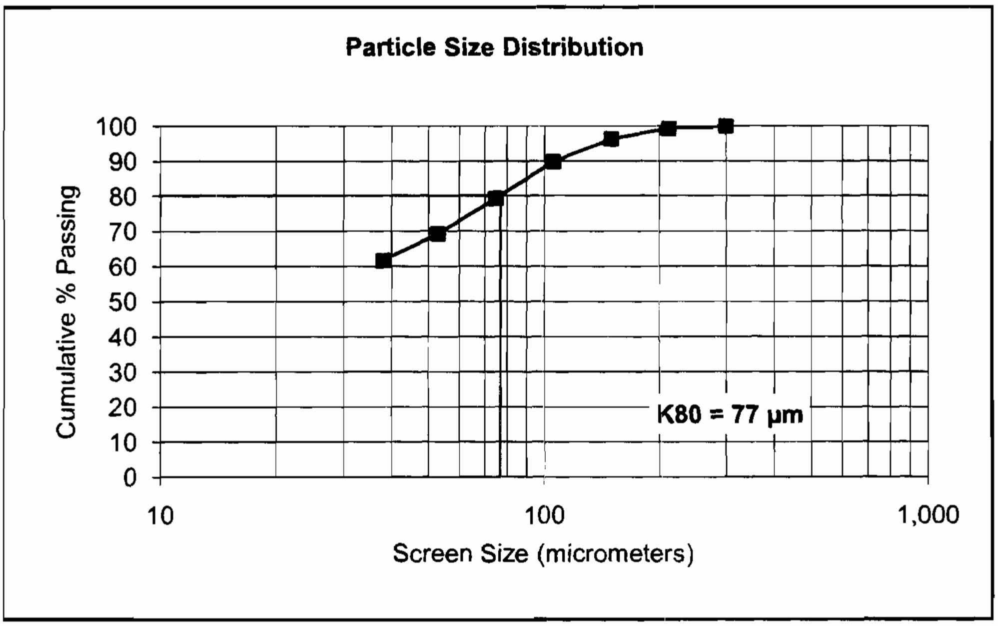


SGS Minerals Services
Size Distribution Analysis

Project No. **11366-002**

Sample: **Grind 25 min** Test No.:

Size		Weight	% Retained		% Passing
Mesh	µm	grams	Individual	Cumulative	Cumulative
48	300	0.1	0.1	0.1	99.9
65	212	1.2	0.6	0.7	99.3
100	150	6.2	3.1	3.8	96.2
150	106	12.7	6.4	10.1	89.9
200	75	21.3	10.7	20.8	79.2
270	53	20.0	10.0	30.8	69.2
400	38	15.1	7.6	38.4	61.6
Pan	-38	123.0	61.6	100.0	0.0
Total	-	**199.6**	100.0	-	-
K80	**77**				



Appendix D – Mass Balances

Test No: F1 **Project No.**: 11366-002 **Operator**: KS **Date**: Feb 7, 2008

Purpose: To establish rougher kinetics as a function of grind size

Procedure: As outlined below.
Feed: 2 kg of minus 10 mesh VW Zone Master Composite
Grind: 14 minutes @ 65% Solids in new mill K_{80} = 110 microns
Notes:

Conditions:

Stage	Reagents (g/t)				Time (minutes)			pH
	SIBX	DF250	PAX	CMC	Grind	Cond.	Froth	
Grind	5				14			
Rougher 1		10		20		2	1	9.0
Rougher 2	10			30		2	1	9.0
Rougher 3		5	20			2	2	8.8
Rougher 4		2.5	20			2	4	8.6
Rougher 5		2.5	20			2	4	8.5
Total	**10**	**20**	**60**	**50**	**14**	**10**	**12**	

Stage	Roughers
Flotation Cell	1000 g
Speed: rpm	1800

Metallurgical Balance

Product	Weight		Assays, %				% Distribution			
	g	%	Ni	Cu	Co	S	Ni	Cu	Co	S
Ro Conc 1	*60.0*	3.06	*10.1*	*1.61*	*0.22*	*14.9*	53.1	69.8	25.9	23.8
Ro Conc 2	*46.2*	2.36	*4.24*	*0.37*	*0.26*	*20.4*	17.2	12.3	23.6	25.1
Ro Conc 3	*67.2*	3.43	*1.67*	*0.12*	*0.098*	*15.1*	9.84	5.82	12.9	27.1
Ro Conc 4	*57.2*	2.92	*0.75*	*0.063*	*0.030*	*7.10*	3.76	2.60	3.37	10.8
Ro Conc 5	*32.7*	1.67	*0.44*	*0.038*	*0.015*	*3.63*	1.26	0.90	0.96	3.17
Rougher Tails	*1694.5*	86.6	*0.10*	*0.01*	<0.01	*0.22*	14.9	8.57	33.3	9.94
Head (calc.)	1957.8	100.0	0.58	0.071	0.026	1.91	100.0	100.00	100.00	100.0
(direct)	2000.0		*0.61*	*0.072*	*0.021*	*1.97*				
Call Factor	98%		*96%*	*98%*	*124%*	*97%*				

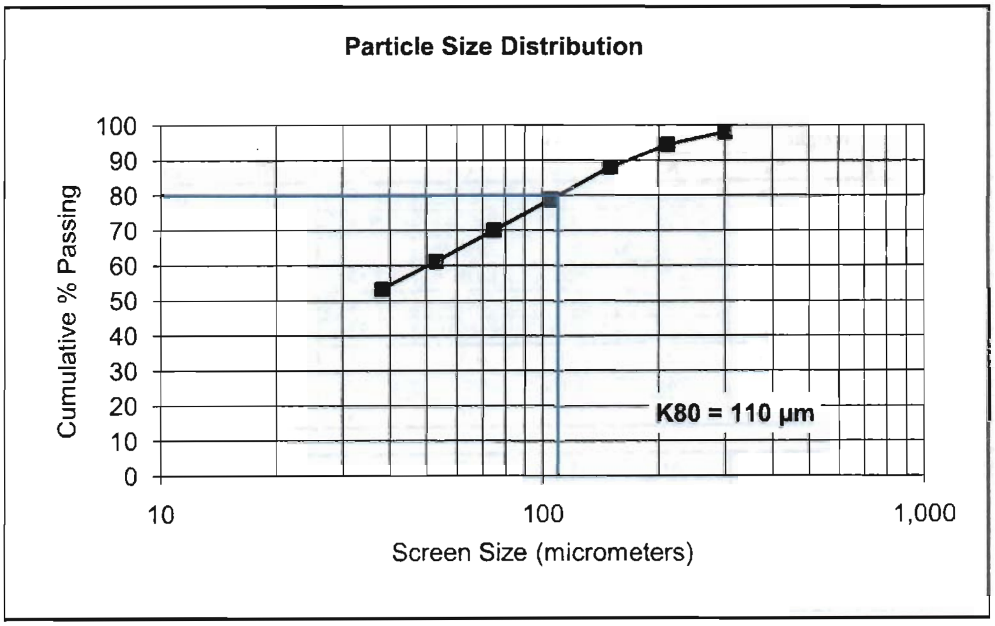
Combined Products	Wt%	Ni	Cu	Co	S	Ni	Cu	Co	S
Ro Conc 1	3.06	10.1	1.61	0.22	14.9	53.1	69.8	25.9	23.8
Ro Conc 1 + 2	5.42	7.55	1.07	0.24	17.3	70.3	82.1	49.5	49.0
Ro Conc 1 - 3	8.86	5.27	0.70	0.18	16.4	80.1	87.9	62.4	76.1
Ro Conc 1 - 4	11.78	4.15	0.54	0.15	14.1	83.9	90.5	65.8	86.9
Ro Conc 1 - 5	13.45	3.69	0.48	0.13	12.8	85.1	91.4	66.7	90.1

SGS Minerals Services
Size Distribution Analysis

Project No. **11366-002**

Sample: **Sec Ro Tl** Test No.: **F1**

Size		Weight	% Retained		% Passing
Mesh	µm	grams	Individual	Cumulative	Cumulative
48	300	1.9	1.9	1.9	98.1
65	212	3.6	3.6	5.5	94.5
100	150	6.4	6.4	11.9	88.1
150	106	9.1	9.1	21.0	79.0
200	75	9.0	9.0	30.0	70.0
270	53	8.9	8.9	38.9	61.1
400	38	7.8	7.8	46.7	53.3
Pan	-38	53.3	53.3	100.0	0.0
Total	-	**100.0**	100.0	-	-
K80	**110**				



Test No: F2 **Project No.**: 11366-002 **Operator**: KS **Date**: Feb 7, 2008

Purpose: To establish rougher kinetics as a function of grind size

Procedure: As outlined below.
Feed: 2 kg of minus 10 mesh VW Zone Master Composite
Grind: 18 minutes @ 65% Solids in new mill K_{80} = 86 microns
Notes:

Conditions:

Stage	Reagents (g/t)				Time (minutes)			pH
	SIBX	DF250	PAX	CMC	Grind	Cond.	Froth	
Grind	5				18			
Rougher 1		10		70		2	1	9.0
Rougher 2	10			20		2	1	8.8
Rougher 3		5	20			2	2	8.8
Rougher 4			20			2	4	8.7
Rougher 5			20			2	4	8.6
Total	**10**	**15**	**60**	**90**	**18**	**10**	**12**	

Stage	Roughers
Flotation Cell	1000 g
Speed: rpm	1800

Metallurgical Balance

Product	Weight		Assays, %				% Distribution			
	g	%	Ni	Cu	Co	S	Ni	Cu	Co	S
Ro Conc 1	67.1	3.39	9.82	1.56	0.22	13.0	56.7	76.3	29.2	24.5
Ro Conc 2	52.9	2.68	3.90	0.24	0.22	16.5	17.8	9.25	23.0	24.5
Ro Conc 3	63.2	3.20	1.40	0.11	0.086	12.9	7.61	5.07	10.8	22.9
Ro Conc 4	49.3	2.49	0.70	0.061	0.025	8.29	2.97	2.19	2.44	11.5
Ro Conc 5	54.1	2.74	0.40	0.027	0.010	5.39	1.86	1.06	1.07	8.18
Rougher Tails	1689.9	85.5	0.09	0.005	<0.01	0.18	13.1	6.16	33.5	8.53
Head (calc.)	1976.5	100.0	0.59	0.069	0.026	1.80	100.0	100.00	100.00	100.0
(direct)	2000.0		0.61	0.072	0.021	1.97				
Call Factor	99%		96%	96%	122%	92%				

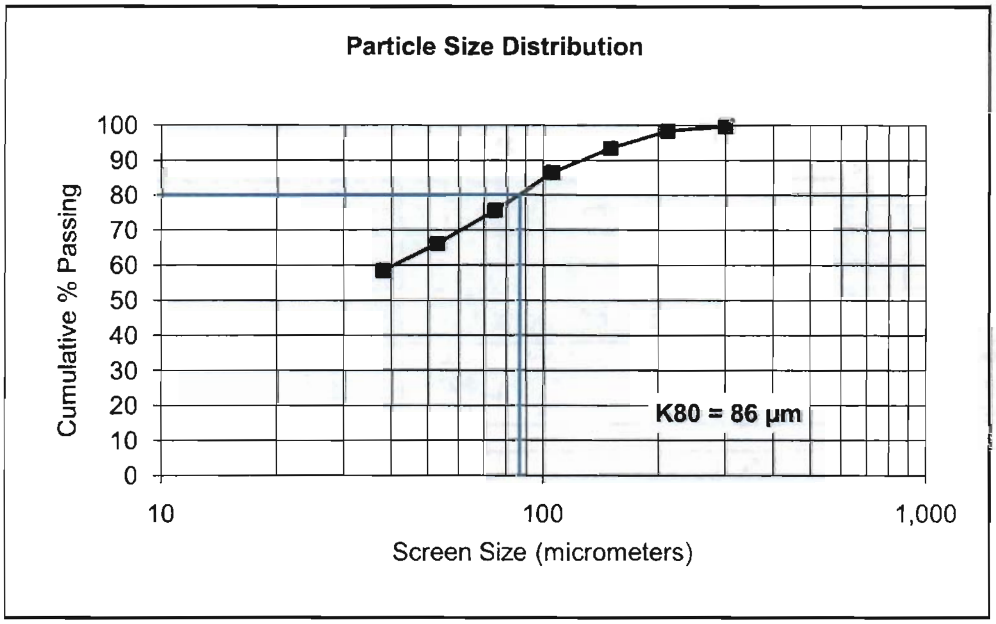
Combined Products	Wt%	Ni	Cu	Co	S	Ni	Cu	Co	S
Ro Conc 1	3.39	9.82	1.56	0.22	13.0	56.7	76.3	29.2	24.5
Ro Conc 1 + 2	6.07	7.21	0.98	0.22	14.5	74.5	85.5	52.3	49.0
Ro Conc 1 - 3	9.27	5.21	0.68	0.17	14.0	82.1	90.6	63.0	71.8
Ro Conc 1 - 4	11.76	4.25	0.55	0.14	12.8	85.0	92.8	65.5	83.3
Ro Conc 1 - 5	14.50	3.52	0.45	0.12	11.4	86.9	93.8	66.5	91.5

SGS Minerals Services
Size Distribution Analysis

Project No. **11366-002**

Sample: **Sec Ro Tl** Test No.: **F2**

Size		Weight	% Retained		% Passing
Mesh	µm	grams	Individual	Cumulative	Cumulative
48	300	0.3	0.3	0.3	99.7
65	212	1.3	1.3	1.6	98.4
100	150	4.9	4.9	6.5	93.5
150	106	6.9	6.9	13.4	86.6
200	75	10.9	10.9	24.3	75.7
270	53	9.5	9.5	33.8	66.2
400	38	7.8	7.8	41.6	58.4
Pan	-38	58.4	58.4	100.0	0.0
Total	-	**100.0**	100.0	-	-
K80	**86**				



Test No: F3 **Project No.:** 11366-002 **Operator:** KS **Date:** Feb 7, 2008

Purpose: To establish rougher kinetics as a function of grind size

Procedure: As outlined below.
Feed: 2 kg of minus 10 mesh VW Zone Master Composite
Grind: 23 minutes @ 65% Solids in new mill K_{80} = 62 microns
Notes:

Conditions:

Stage	Reagents (g/t)				Time (minutes)			pH
	SIBX	DF250	PAX	CMC	Grind	Cond.	Froth	
Grind	5				23			
Rougher 1		10		70		2	1	9.2
Rougher 2	10			30		2	1	8.8
Rougher 3		5	20			2	2	8.8
Rougher 4			20			2	4	8.7
Rougher 5			20			2	4	8.6
Total	10	15	60	100	23	10	12	

Stage	Roughers
Flotation Cell	1000 g
Speed: rpm	1800

Metallurgical Balance

Product	Weight		Assays, %				% Distribution			
	g	%	Ni	Cu	Co	S	Ni	Cu	Co	S
Ro Conc 1	70.6	3.56	10.4	1.59	0.23	14.9	62.4	80.3	31.5	28.0
Ro Conc 2	44.4	2.24	3.51	0.23	0.24	17.3	13.2	7.30	20.7	20.5
Ro Conc 3	68.7	3.46	1.24	0.091	0.087	11.7	7.24	4.47	11.6	21.4
Ro Conc 4	60.7	3.06	0.63	0.046	0.018	8.55	3.25	2.00	2.12	13.8
Ro Conc 5	29.6	1.49	0.48	0.049	0.015	7.29	1.21	1.04	0.86	5.75
Rougher Tails	1710.3	86.2	0.09	0.004	<0.01	0.23	12.6	4.89	33.2	10.5
Head (calc.)	1984.3	100.0	0.59	0.070	0.026	1.89	100.0	100.00	100.00	100.0
(direct)	2000.0		0.61	0.072	0.021	1.97				
Call Factor	99%		97%	98%	124%	96%				

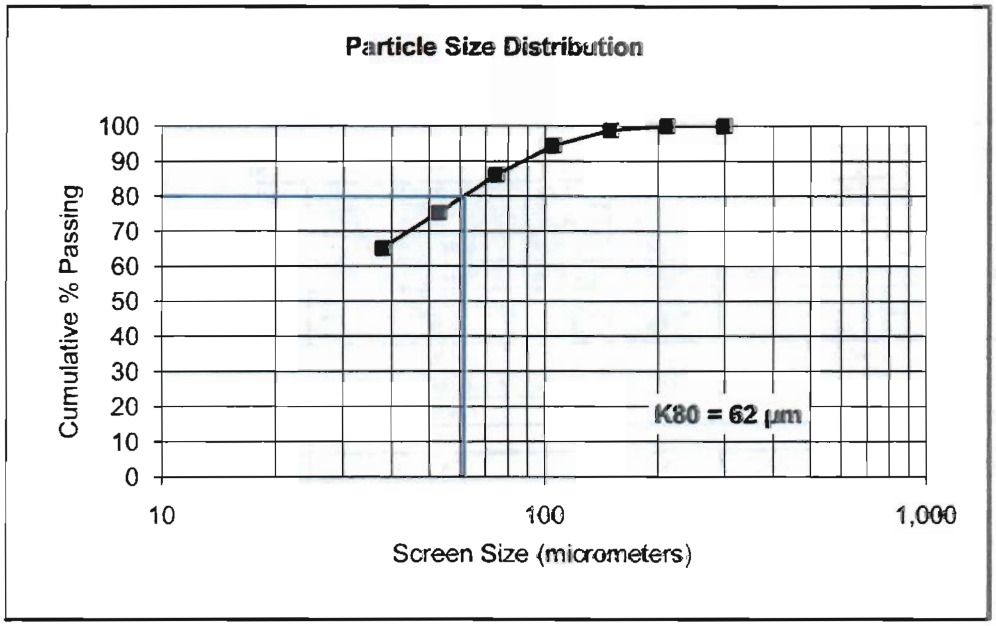
Combined Products	Wt%	Ni	Cu	Co	S	Ni	Cu	Co	S
Ro Conc 1	3.56	10.4	1.59	0.23	14.9	62.4	80.3	31.5	28.0
Ro Conc 1 + 2	5.80	7.74	1.06	0.23	15.8	75.7	87.6	52.2	48.5
Ro Conc 1 - 3	9.26	5.31	0.70	0.18	14.3	82.9	92.1	63.8	69.9
Ro Conc 1 - 4	12.32	4.15	0.54	0.14	12.9	86.1	94.1	65.9	83.8
Ro Conc 1 - 5	13.81	3.75	0.49	0.13	12.3	87.4	95.1	66.8	89.5

SGS Minerals Services
Size Distribution Analysis

Project No. **11366-002**

Sample: **Sec Ro Tl** Test No.: **F3**

Size		Weight	% Retained		% Passing
Mesh	µm	grams	Individual	Cumulative	Cumulative
48	300	0.0	0.0	0.0	100.0
65	212	0.0	0.0	0.0	100.0
100	150	1.1	1.1	1.1	98.9
150	106	4.4	4.4	5.5	94.5
200	75	8.4	8.4	13.9	86.1
270	53	10.8	10.8	24.7	75.3
400	38	10.1	10.1	34.8	65.2
Pan	-38	65.2	65.2	100.0	0.0
Total	-	**100.0**	100.0	-	-
K80	**62**				



Test No: F4 **Project No.**: 11366-002 **Operator**: KS **Date**: Feb 7, 2008

Purpose: To establish rougher kinetics as a function of grind size

Procedure: As outlined below.
Feed: 2 kg of minus 10 mesh VW Zone Master Composite
Grind: 30 minutes @ 65% Solids in new mill K_{80} = 54 microns
Notes:

Conditions:

Stage	Reagents (g/t)				Time (minutes)			pH
	SIBX	DF250	PAX	CMC	Grind	Cond.	Froth	
Grind	5				30			
Rougher 1		10		100		2	1	9.2
Rougher 2	10			30		2	1	9.0
Rougher 3		5	20			2	2	8.8
Rougher 4			20			2	4	8.7
Rougher 5			20			2	4	8.6
Total	**10**	**15**	**60**	**130**	**30**	**10**	**12**	

Stage	Roughers
Flotation Cell	1000 g
Speed: rpm	1800

Metallurgical Balance

Product	Weight		Assays, %				% Distribution			
	g	%	Ni	Cu	Co	S	Ni	Cu	Co	S
Ro Conc 1	64.7	3.26	11.7	1.72	0.25	15.8	64.9	79.1	31.6	27.3
Ro Conc 2	40.2	2.03	3.43	0.25	0.23	17.2	11.8	7.14	18.1	18.5
Ro Conc 3	68.7	3.46	0.97	0.079	0.093	11.4	5.72	3.86	12.5	20.9
Ro Conc 4	62.1	3.13	0.56	0.050	0.026	7.20	2.98	2.21	3.16	11.9
Ro Conc 5	48.0	2.42	0.38	0.048	0.014	6.45	1.56	1.64	1.31	8.26
Rougher Tails	1701.4	85.7	0.089	0.005	<0.01	0.29	13.0	6.05	33.3	13.2
Head (calc.)	1985.1	100.0	0.59	0.071	0.026	1.89	100.0	100.00	100.00	100.0
(direct)	2000.0		0.61	0.072	0.021	1.97				
Call Factor	99%		96%	98%	123%	96%				

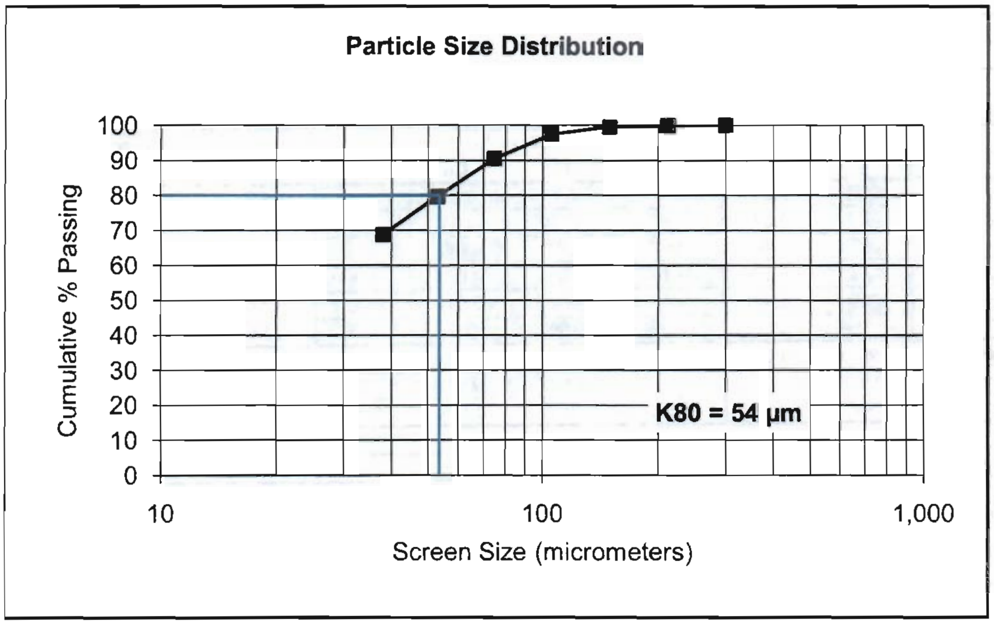
Combined Products	Wt%	Ni	Cu	Co	S	Ni	Cu	Co	S
Ro Conc 1	3.26	11.7	1.72	0.25	15.8	64.9	79.1	31.6	27.3
Ro Conc 1 + 2	5.28	8.53	1.16	0.24	16.3	76.8	86.2	49.7	45.7
Ro Conc 1 - 3	8.75	5.54	0.73	0.18	14.4	82.5	90.1	62.2	66.6
Ro Conc 1 - 4	11.9	4.23	0.55	0.14	12.5	85.4	92.3	65.4	78.6
Ro Conc 1 - 5	14.3	3.58	0.47	0.12	11.5	87.0	94.0	66.7	86.8

SGS Minerals Services
Size Distribution Analysis

Project No. **11366-002**

Sample: **Sec Ro Tl** Test No.: **F4**

Size		Weight	% Retained		% Passing
Mesh	µm	grams	Individual	Cumulative	Cumulative
48	300	0.0	0.0	0.0	100.0
65	212	0.1	0.1	0.1	99.9
100	150	0.3	0.3	0.4	99.6
150	106	2.1	2.1	2.5	97.5
200	75	7.0	7.0	9.5	90.5
270	53	10.8	10.8	20.3	79.7
400	38	10.9	10.9	31.2	68.8
Pan	-38	68.8	68.8	100.0	0.0
Total	-	**100.0**	100.0	-	-
K80	**54**				



Test No: F5 **Project No.**: 11366-002 **Operator**: KS **Date**: Feb19/08

Purpose: To establish rougher kinetics as a function of grind size

Procedure: As outlined below.
Feed: 2 kg of minus 10 mesh VW Zone Master Composite
Grind: 30 minutes @ 65% Solids in new ball K_{80} = 54 microns
Notes:

Conditions:

Stage	Reagents (g/t)				Time (minutes)			pH
	SIBX	MIBC	PAX	CMC	Grind	Cond.	Froth	
Grind	5				30			8.7
Rougher 1		10		100		2	1	9.2
Rougher 2	10					2	1	9.0
Rougher 3			20	25		2	2	8.8
Rougher 4		10	20			2	4	8.5
Rougher 5		10	20			2	4	8.5
Total	**15**	**30**	**60**	**125**	**30**	**10**	**12**	

Stage	Roughers	1stClnr and Scav.	2nd Cleaner
Flotation Cell	1000 g	N/A	N/A
Speed: rpm	1800	N/A	N/A

Metallurgical Balance

Product	Weight		Assays, %				% Distribution			
	g	%	Ni	Cu	Co	S	Ni	Cu	Co	S
Ro Conc 1	23.9	1.20	18.9	3.63	0.44	26.5	39.4	52.0	20.0	17.3
Ro Conc 2	42.3	2.13	9.02	0.62	0.42	25.2	33.3	15.7	33.7	29.2
Ro Conc 3	60.2	3.03	1.40	0.12	0.080	12.0	7.35	4.33	9.14	19.8
Ro Conc 4	153.0	7.70	0.39	0.035	0.015	4.90	5.20	3.21	4.36	20.5
Ro Conc 5	26.6	1.34	0.38	0.037	0.018	4.23	0.88	0.59	0.91	3.08
Rougher Tails	1680.4	84.6	0.095	0.024	<0.01	0.22	13.9	24.2	31.9	10.1
Head (calc.)	1986.4	100.0	0.58	0.08	0.03	1.84	100.0	100.00	100.0	100.0
(direct)	2000.0		*0.61*	*0.072*	*0.021*	*1.97*				
Cail Factor	99%		*95%*	*117%*	*126%*	*93%*				

Combined Products	Wt %	Ni	Cu	Co	S	Ni	Cu	Co	S
Ro Conc 1	1.20	18.9	3.63	0.44	26.5	39.4	52.0	20.0	17.3
Ro Conc 1 + 2	3.33	12.6	1.71	0.43	25.7	72.6	67.7	53.7	46.5
Ro Conc 1 - 3	6.36	7.26	0.95	0.26	19.2	80.0	72.0	62.8	66.3
Ro Conc 1 - 4	14.1	3.50	0.45	0.13	11.4	85.2	75.2	67.2	86.8
Ro Conc 1 - 5	15.4	3.53	0.45	0.13	11.8	86.1	75.8	68.1	89.9

Test No: F6 **Project No.**: 11366-002 **Operator**: KS **Date**: Feb 25, 2008

Purpose: Perform a batch cleaner test to evaluate the performance of the cleaning circuit

Procedure: As outlined below.
Feed: 2 kg of minus 10 mesh VW Zone Master Composite
Grind: 30 minutes @ 65% Solids in new ball K_{80} = ~54 microns
Regrind: 10 minutes @ 65 % solids in pepple mill - SECONDARY ROUGHER CONCENTRATE ONLY
Notes:

Conditions:

Stage	Reagents (g/t)					Time (minutes)			pH
	SIBX	MIBC	PAX	CMC	Lime	Grind	Cond.	Froth	
Grind	5					30			9.0
Primary Rougher		10		200			2	2	9.0
Secondary Rougher	10						2	1	8.8
			20	25			2	2	8.8
		10	20				2	4	8.8
		10	20				2	4	8.8
Regrind						10			
Sec Ro Clnr 1	5			10	150			1	10.2
Sec Ro Clnr 2	10	5			50			2	10.2
Sec Ro Clnr 3			10		50			3	9.5
Total	**30**	**35**	**70**	**235**	**250**	**30**	**10**	**19**	

Comments: Sec Clnr could benefit from larger CMC dosage

Stage	Roughers	1stClnr and Scav.	2nd Cleaner
Flotation Cell	1000 g	500g	N/A
Speed: rpm	1800	1200	N/A

Metallurgical Balance

Product	Weight		Assays, %				% Distribution			
	g	%	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro	37.4	1.88	19.2	2.87	0.42	25.8	60.6	76.0	28.5	25.4
Sec Ro Conc 1	14.8	0.75	9.57	1.02	0.83	29.1	11.9	10.7	22.3	11.3
Sec Ro Conc 2	48.6	2.45	1.68	0.10	0.110	14.4	6.89	3.44	9.69	18.4
Sec Ro Conc 3	24.4	1.23	1.25	0.072	0.091	12.8	2.57	1.24	4.03	8.23
Sec Ro Clnr Tail	90.5	4.56	0.56	0.036	0.021	9.49	4.28	2.31	3.45	22.6
Sec Ro Tail	1768.5	89.1	0.092	0.005	<0.01	0.3	13.7	6.26	32.1	14.0
Head (calc.)	1984.2	100.0	0.60	0.071	0.03	1.91	100.0	100.00	100.0	100.0
(direct)	2000.0		*0.61*	*0.072*	*0.021*	*1.97*				
Call Factor	99%		*98%*	*99%*	*132%*	*97%*				

Combined Products	Wt %	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro Conc	1.88	19.2	2.87	0.42	25.8	60.6	76.0	28.5	25.4
Pri Ro Conc & Sec Ro (	2.63	16.5	2.35	0.54	26.7	72.5	86.7	50.8	36.8
Pri Ro Conc & Sec Ro Conc 1+2	5.08	9.34	1.26	0.33	20.8	79.4	90.2	60.5	55.2
Pri Ro Conc & Sec Ro Conc 1-3	6.31	7.76	1.03	0.28	19.2	82.0	91.4	64.5	63.4
Pr Ro Conc & Sec Ro Conc	10.9	4.74	0.61	0.17	15.1	86.3	93.7	67.9	86.0

Test No: F7 **Project No.**: 11366-002 **Operator**: KS **Date:** March 4/08

Purpose: Perform a batch cleaner test to evaluate the performance of the cleaning crircuit

Procedure: As outlined below.
Feed: 2 kg of minus 10 mesh VW Zone Master Composite
Grind: 23 minutes @ 65% Solids in new ball K_{80} = 76 um
Regrind: 10 minutes @ 65 % solids in pepple mill K_{80} = 16 um
Notes: Regrind Secondary Rougher Concentrate only

Conditions:

Stage	Reagents (g/t)					Time (minutes)			pH
	SIBX	MIBC	PAX	CMC	Lime	Grind	Cond.	Froth	
Grind	5					23			9.0
Primary Rougher		10		200			2	2	9.0
Secondary Rougher	10						2	1	9.0
			20	25			2	2	9.0
		10	20				2	4	9.0
		10	20				2	4	9.0
Regrind						10			
									8.7
Sec Ro Clnr 1	5			50	100			1	10.1
Sec Ro Clnr 2	10	5						2	10.0
Sec Ro Clnr 3			10					3	9.5
Total	**30**	**35**	**70**	**275**	**100**	**23**	**10**	**19**	

Comments:

Stage	Roughers	1stClnr and Scav.	2nd Cleaner
Flotation Cell	1000 g	500g	N/A
Speed: rpm	1800	1200	N/A

Metallurgical Balance

Product	Weight		Assays, %				% Distribution			
	g	%	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro	43.1	2.17	16.0	2.57	0.37	22.2	59.0	75.0	29.6	25.6
Sec Ro Conc 1	17.4	0.88	6.43	1.02	0.40	25.4	9.58	12.0	12.9	11.8
Sec Ro Conc 2	27.0	1.36	3.29	0.17	0.310	21.3	7.60	3.11	15.5	15.4
Sec Ro Conc 3	34.1	1.72	1.35	0.063	0.08	11.0	3.94	1.45	5.07	10.0
Sec Ro Clnr Tail	100	5.03	0.38	0.019	0.022	4.95	3.25	1.29	4.09	13.2
Sec Ro Tail	1764.5	88.8	0.11	0.006	<0.01	0.51	16.6	7.17	32.8	24.0
Head (calc.)	1986.1	100.0	0.59	0.074	0.03	1.89	100.0	100.00	100.0	100.0
(direct)	2000.0		*0.61*	*0.072*	*0.021*	*1.97*				
Call Factor	99%		*96%*	*103%*	*129%*	*96%*				

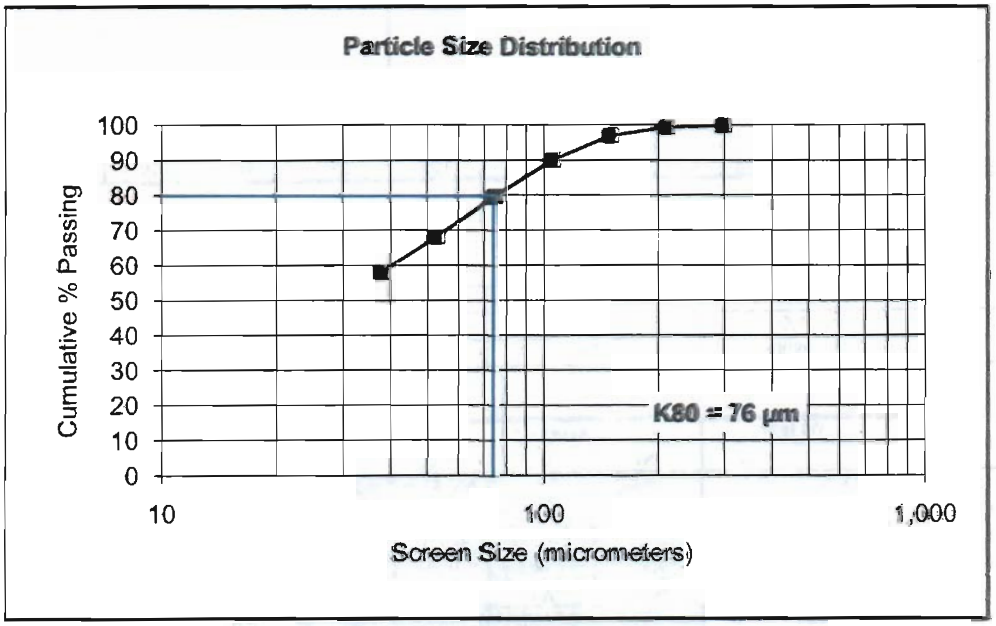
Combined Products	Wt %	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro Conc	2.17	16.0	2.57	0.37	22.2	59.0	75.0	29.6	25.6
Pri Ro Conc & Sec Ro C	3.05	13.2	2.12	0.38	23.1	68.6	87.0	42.5	37.4
Pri Ro Conc & Sec Ro Conc 1+2	4.41	10.2	1.52	0.36	22.6	76.2	90.1	58.1	52.7
Pri Ro Conc & Sec Ro Conc 1-3	6.12	7.70	1.11	0.28	19.3	80.1	91.5	63.1	62.7
Pr Ro Conc & Sec Ro Conc	11.2	4.40	0.62	0.16	12.8	83.4	92.8	67.2	76.0

SGS Minerals Services
Size Distribution Analysis

Project No. **11366-002**

Sample: **Sec Ro Tls** Test No.: **F7**

Size		Weight	% Retained		% Passing
Mesh	µm	grams	Individual	Cumulative	Cumulative
48	300	0.1	0.1	0.1	99.9
65	212	0.7	0.4	0.5	99.5
100	150	4.0	2.5	3.0	97.0
150	106	11.2	7.0	9.9	90.1
200	75	16.7	10.4	20.3	79.7
270	53	18.5	11.5	31.8	68.2
400	38	16.3	10.1	41.9	58.1
Pan	-38	93.6	58.1	100.0	0.0
Total	-	**161.1**	100.0	-	-
K80	**76**				

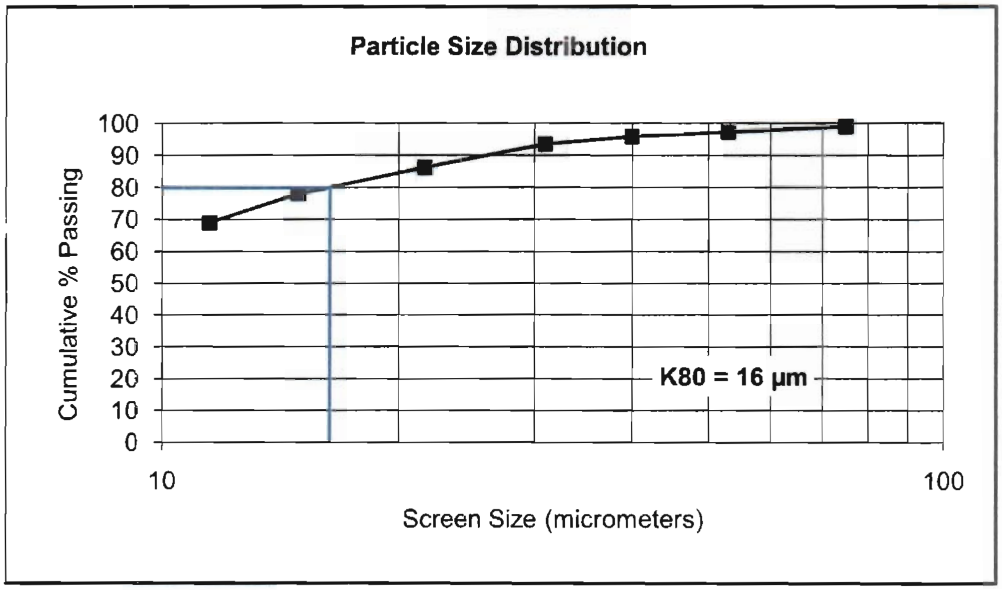


SGS Minerals Services
Size Distribution Analysis

Project No. **11366-002**

Sample: **Comb Prod** Test No.: **F7**

Dry Solids S.G.=		**3.16**	Water Temperature =		**6.00 C°**
Size		Weight	% Retained		% Passing
Mesh	µm	grams	Individual	Cumulative	Cumulative
200	75	0.5	1.0	1.0	99.0
270	53	0.8	1.7	2.6	97.4
	40	0.7	1.4	4.0	96.0
	31	1.2	2.4	6.5	93.5
	22	3.6	7.3	13.7	86.3
	15	4.1	8.3	22.0	78.0
	11	4.5	9.1	31.1	68.9
	-11	34.2	68.9	100.0	0.0
Total	-	**49.6**	100.0	-	-
K80	**16**				



Test No: F8 **Project No.:** 11366-002 **Operator:** KS **Date:** March 4/08

Purpose: Perform a batch cleaner test to evaluate the performance of the cleaning circruit

Procedure: As outlined below.
Feed: 2 kg of minus 10 mesh VW Zone Master Composite
Grind: 30 minutes @ 65% Solids in new ball K_{80} = 57 um
Regrind: 15 minutes @ 65 % solids in pepple mill K_{80} = 13 um
Notes: Regrind Secondary Rougher Concentrate only

Conditions:

Stage	Reagents (g/t)					Time (minutes)			pH
	SIBX	MIBC	PAX	CMC	Lime	Grind	Cond.	Froth	
Grind	5					30			9.1
Primary Rougher		10		200			2	2	9.0
Secondary Rougher	10						2	1	9.0
			20	25			2	2	9.0
		10	20				2	4	9.0
		10	20				2	4	9.0
Regrind						15			
									9.0
Sec Ro Clnr 1	5			50	100			1	10.2
Sec Ro Clnr 2	10	5						2	10.0
Sec Ro Clnr 3			10					3	9.5
Total	**30**	**35**	**70**	**275**	**100**	**30**	**10**	**19**	

Comments: Prim Ro - very brittle effervecent froth
Sec Ro 1- OK. Sec Ro 3 - scummy talc froth very little sulfides

Stage	Roughers	1stClnr and Scav.	2nd Cleaner
Flotation Cell	1000 g	500g	N/A
Speed: rpm	1800	1200	N/A

Metallurgical Balance

Product	Weight		Assays, %				% Distribution			
	g	%	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro	51.0	2.55	13.9	2.16	0.33	20.4	62.1	77.4	31.4	25.8
Sec Ro Conc 1	23.7	1.19	4.39	0.54	0.39	26.1	9.11	8.99	17.3	15.3
Sec Ro Conc 2	26.3	1.32	2.35	0.13	0.190	17.0	5.41	2.40	9.33	11.1
Sec Ro Conc 3	23.7	1.19	1.46	0.088	0.094	11.9	3.03	1.46	4.16	6.98
Sec Ro Clnr Tail	119.9	6.01	0.33	0.014	0.023	4.27	3.47	1.18	5.15	12.7
Sec Ro Tail	1751.9	87.7	0.11	0.007	<0.01	0.65	16.9	8.61	32.7	28.2
Head (calc.)	1996.5	100.0	0.57	0.071	0.027	2.02	100.0	100.00	100.0	100.0
(direct)	2000.0		*0.61*	*0.072*	*0.021*	*1.97*				
Call Factor	100%		*94%*	*99%*	*128%*	*103%*				

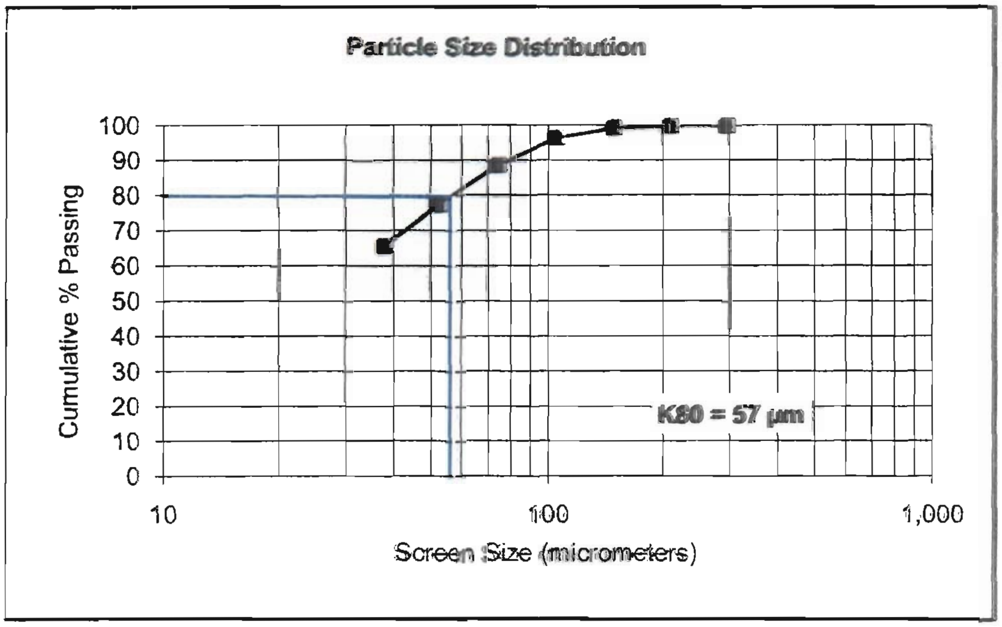
Combined Products	Wt %	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro Conc	2.55	13.9	2.16	0.33	20.4	62.1	77.4	31.4	25.8
Pri Ro Conc & Sec Ro (	3.74	10.9	1.65	0.35	22.2	71.2	86.3	48.7	41.1
Pri Ro Conc & Sec Ro Conc 1+2	5.06	8.66	1.25	0.31	20.9	76.6	88.7	58.0	52.1
Pri Ro Conc & Sec Ro Conc 1-3	6.25	7.29	1.03	0.27	19.2	79.7	90.2	62.2	59.1
Pr Ro Conc & Sec Ro Conc	12.3	3.88	0.53	0.15	11.9	83.1	91.4	67.3	71.8

SGS Minerals Services
Size Distribution Analysis

Project No. **11366-002**

Sample: **Sec Ro Tls** Test No.: **F8**

Size		Weight	% Retained		% Passing
Mesh	µm	grams	Individual	Cumulative	Cumulative
48	300	0.0	0.0	0.0	100.0
65	212	0.1	0.1	0.1	99.9
100	150	1.2	0.7	0.7	99.3
150	106	5.0	2.8	3.6	96.4
200	75	13.6	7.7	11.2	88.8
270	53	19.8	11.2	22.4	77.6
400	38	21.2	12.0	34.4	65.6
Pan	-38	116.2	65.6	100.0	0.0
Total	-	**177.1**	100.0	-	-
K80	**57**				

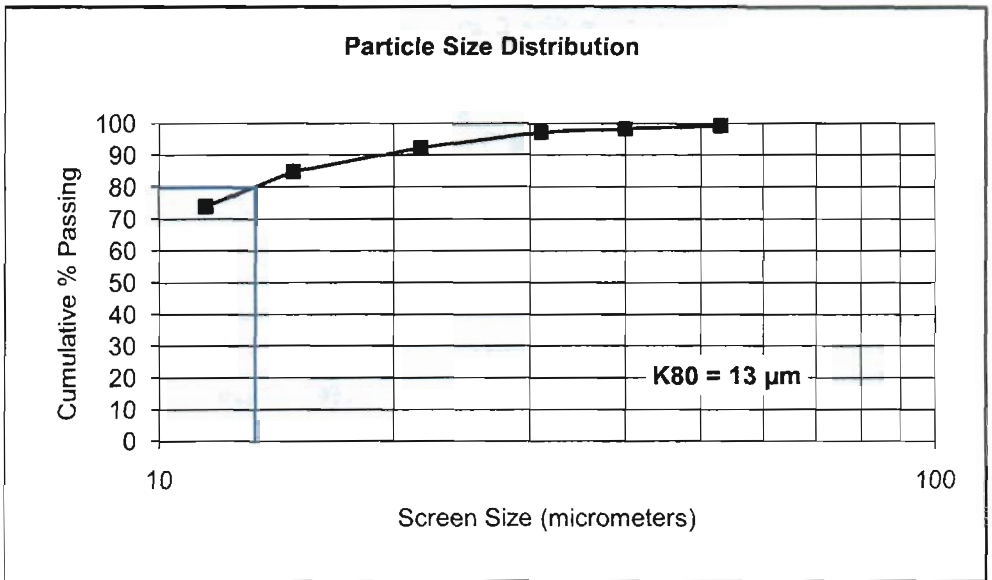


SGS Minerals Services
Size Distribution Analysis

Project No. **11366-002**

Sample: **Comb Prod** Test No.: **F8**

Dry Solids S.G.=		3.15	Water Temperature =		6.00 C°
Size		Weight	% Retained		% Passing
Mesh	µm	grams	Individual	Cumulative	Cumulative
270	53	0.4	0.8	0.8	99.2
	40	0.4	0.8	1.6	98.4
	31	0.6	1.2	2.8	97.2
	22	2.4	4.9	7.7	92.3
	15	3.7	7.5	15.2	84.8
	12	5.4	10.9	26.1	73.9
	-12	36.5	73.9	100.0	0.0
Total	-	**49.3**	100.0	-	-
K80	**13**				



Test No: F9 **Project No.**: 11366-002 **Operator**: KS **Date**: April 1, 2008

Purpose: Perform a batch cleaner test to evaluate the performance of the cleaning crircuit

Procedure: As outlined below.
Feed: 2 kg of minus 10 mesh VW Zone Master Composite
Grind: 30 minutes @ 65% Solids in new ball K_{80} = 57 um
Regrind: 7 minutes @ 65 % solids in pepple mill K_{80} = 19 um
Notes: Regrind Secondary Rougher Concentrate only

Conditions:

Stage	Reagents (g/t)					Time (minutes)			pH	Eh
	SIBX	MIBC	PAX	CMC	Lime	Grind	Cond.	Froth		
Grind	5					30			8.8	0.0
Primary Rougher		10		200			2	2	8.8	0.0
Secondary Rougher	10						2	1	8.8	-20.0
			20	25			2	2	8.8	-20.0
		10	20				2	4	8.7	-10.0
		10	20				2	4	8.6	-10.0
Regrind						7				
Sec Ro Clnr 1				50	100			1	10.0	-10.0
Sec Ro Clnr 2		5			25			2	10.0	-20.0
Sec Ro Clnr 3			10					3	9.5	-20.0
Total	**15**	**35**	**70**	**275**	**125**	**37**	**10**	**19**		

Comments: Sec Clnr could benefit from larger CMC dosage

Stage	Roughers	1stClnr and Scav.	2nd Cleaner
Flotation Cell	1000 g	500g	N/A
Speed: rpm	1800	1200	N/A

Metallurgical Balance

Product	Weight		Assays, %				% Distribution			
	g	%	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro	58.4	2.93	13.8	2.03	0.32	20.3	70.3	83.3	36.1	30.6
Sec Ro Conc 1	14.6	0.73	3.35	0.41	0.51	33.2	4.27	4.21	14.4	12.5
Sec Ro Conc 2	17.8	0.89	3.50	0.24	0.29	20.6	5.44	3.00	9.96	9.46
Sec Ro Conc 3	22.1	1.11	1.42	0.10	0.071	9.50	2.74	1.55	3.03	5.41
Sec Ro Clnr Tail	169.1	8.49	0.38	0.016	0.011	7.22	5.61	1.90	3.59	31.5
Sec Ro Tail	1709.2	85.8	0.078	0.005	<0.01	0.24	11.6	6.01	33.0	10.6
Head (calc.)	1991.2	100.0	0.58	0.071	0.026	1.95	100.0	100.00	100.0	100.0
(direct)	2000.0		*0.61*	*0.072*	*0.021*	*1.97*				
Call Factor	100%		*94%*	*99%*	*124%*	*99%*				

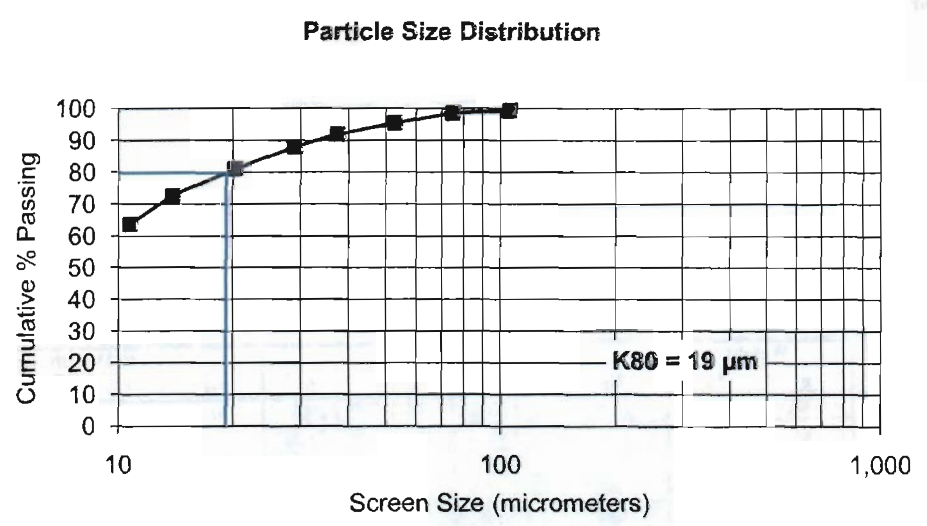
Combined Products	**Wt %**	**Ni**	**Cu**	**Co**	**S**	**Ni**	**Cu**	**Co**	**S**
Pri Ro Conc	2.93	13.8	2.03	0.32	20.3	70.3	83.3	36.1	30.6
Pri Ro Conc & Sec Ro C	3.67	11.7	1.71	0.36	22.9	74.6	87.5	50.4	43.1
Pri Ro Conc & Sec Ro Conc 1+2	4.56	10.1	1.42	0.34	22.4	80.0	90.5	60.4	52.5
Pri Ro Conc & Sec Ro Conc 1-3	5.67	8.40	1.16	0.29	19.9	82.8	92.1	63.4	57.9
Pr Ro Conc & Sec Ro Conc	14.2	3.59	0.47	0.12	12.3	88.4	94.0	67.0	89.4

SGS Minerals Services
Size Distribution Analysis

Project No. **11366-002**

Sample: **Comb Prod** Test No.: **F9**

Dry Solids S.G.=		**3.13**	Water Temperature =		**11.00 C°**
Size		Weight	% Retained		% Passing
Mesh	µm	grams	Individual	Cumulative	Cumulative
150	106	0.4	0.6	0.6	99.4
200	75	0.5	0.7	1.3	98.7
270	53	2.3	3.2	4.5	95.5
	37	2.5	3.5	8.0	92.0
	29	2.8	4.0	12.0	88.0
	20	4.9	6.9	18.9	81.1
	14	6.0	8.4	27.3	72.7
	11	6.3	9.0	36.3	63.7
	-11	45.1	63.7	100.0	0.0
Total	-	**70.7**	100.0	-	-
K80	**19**				



Test No: F10 **Project No.**: 11366-002 **Operator**: KS **Date**: April 1, 2008

Purpose: Perform a batch cleaner test to evaluate the performance of the cleaning crircuit

Procedure: As outlined below.
Feed: 2 kg of minus 10 mesh VW Zone Master Composite
Grind: 30 minutes @ 65% Solids in new ball K_{80} = 57 um
Regrind: 10 minutes @ 65 % solids in pepple mill - SECONDARY ROUGHER CONCENTRATE ONLY
Notes:

Conditions:

Stage	Reagents (g/t)					Time (minutes)			pH	Eh
	SIBX	MIBC	PAX	CMC	Lime	Grind	Cond.	Froth		
Grind	5					30			8.9	10
Primary Rougher		10		200			2	2	8.9	10
Secondary Rougher	10						2	1	8.9	10
			20	25			2	2	8.9	10
		10	20				2	4	8.6	10
		10	20				2	4	8.5	10
Regrind						7				
1st Cleaner				50	100			3	10.1	-50
1st Cleaner Sav			10		80			3	9.5	
2nd Cleaner				25	50			2	10.5	-10
3 rd Cleaner								2	10.6	10
Total	**15**	**30**	**70**	**300**	**230**	**30**	**10**	**23**		

Comments: Sec Clnr could benefit from larger CMC dosage

Stage	Roughers	1stClnr and Scav.	2nd Cleaner
Flotation Cell	1000 g	500g	250g
Speed: rpm	1800	1200	1200

Metallurgical Balance

Product	Weight		Assays, %				% Distribution			
	g	%	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro conc	69.7	3.50	11.0	1.71	0.23	13.8	67.2	77.0	32.1	27.3
Sec 3rd Clnr Conc	2.6	0.13	7.67	1.51	0.64	37.4	1.75	2.54	3.34	2.76
Sec 3rd Clnr Tail	3.3	0.17	3.93	0.30	0.54	30.9	1.14	0.64	3.57	2.89
Sec 2nd Clnr Tail	26.6	1.33	3.11	0.18	0.25	17.5	7.25	3.09	13.3	13.2
Sec 1st Clnr Scav Conc	22.1	1.11	1.97	0.10	0.19	14.3	3.81	1.43	8.42	8.97
Sec 1st Clnr Scav Tail	145	7.28	0.43	0.021	0.016	6.15	5.46	1.97	4.65	25.3
Sec Ro Tail	1723.8	86.5	0.089	0.012	< 0.01	0.4	13.4	13.4	34.6	19.6
Head (calc.)	1993.1	100.0	0.57	0.078	0.025	1.77	100.0	100.00	100.0	100.0
(direct)	2000.0		*0.61*	*0.072*	*0.021*	*1.97*				
Call Factor	100%		*94%*	*108%*	*119%*	*90%*				

Combined Products	Wt %	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro Conc	3.50	11.0	1.71	0.23	13.8	67.2	77.0	32.1	27.3
Pri Ro Conc & Sec 3rd Clnr Conc	3.63	10.9	1.70	0.24	14.6	68.9	79.5	35.5	30.1
Pri Ro Conc & Sec 2nd Clnr Conc	3.79	10.6	1.64	0.26	15.4	70.0	80.2	39.0	32.9
Pri Ro Conc & Sec 1st Clnr Conc	5.13	8.63	1.26	0.26	15.9	77.3	83.2	52.4	46.2
Pr Ro Conc & Sec Ro Conc	13.5	3.67	0.50	0.12	10.5	86.6	86.6	65.4	80.4

Test No: F11 **Project No.**: 11366-002 **Operator**: KS **Date**: April 7, 2008

Purpose: Perform a batch cleaner test to evaluate the performance of the cleaning circuit

Procedure: As outlined below.
Feed: 2 kg of minus 10 mesh VW Zone Master Composite
Grind: 30 minutes @ 65% Solids in new ball K_{80} = 64 um
Regrind: 7 minutes @ 65 % solids in pepple mill - SECONDARY ROUGHER CONCENTRATE ONLY
Notes:

Conditions:

Stage	Reagents (g/t)					Time (minutes)			pH	Eh
	SIBX	MIBC	PAX	CMC	Lime	Grind	Cond.	Froth		
Grind	5					30			9.0	-100.0
Primary Rougher		10		500			2	2	9.0	-100.0
Secondary Rougher	10						2	1	8.9	-60.0
			20	100			2	2	8.9	-70.0
		10	20				2	4	8.7	-70.0
		10	20				2	4	8.6	-80.0
Regrind						7				
1st Cleaner				100	200			3	10.2	-50.0
1st Cleaner Sav			10					3	9.8	-50.0
2nd Cleaner				50	25			2.5	10.2	10.0
3rd Cleaner					25			2	10.1	10.0
Total	**15**	**30**	**70**	**750**	**250**	**30**	**10**	**24**		

Comments:

Stage	Roughers	1stClnr and Scav.	2nd Cleaner
Flotation Cell	1000 g	500g	250g
Speed: rpm	1800	1200	1200

Metallurgical Balance

Product	Weight		Assays, %				% Distribution			
	g	%	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro Conc	52.6	2.64	14.2	2.11	0.37	21.3	65.3	82.3	35.8	31.5
Sec 3rd Clnr Conc	11.3	0.57	5.15	0.46	0.51	32.2	5.09	3.85	10.6	10.2
Sec 3rd Clnr Tail	7.5	0.38	2.93	0.23	0.24	18.2	1.92	1.28	3.31	3.84
Sec 2nd Clnr Tail	19.1	0.96	1.68	0.13	0.11	10.2	2.81	1.84	3.86	5.49
Sec 1st Clnr Scav Conc	30.5	1.53	2.03	0.11	0.13	13.8	5.41	2.49	7.29	11.9
Sec 1st Clnr Scav Tail	127.2	6.38	0.43	0.019	0.03	5.53	4.78	1.79	7.02	19.8
Sec Ro Tail	1747.0	87.6	0.096	0.005	0.01	0.35	14.7	6.48	32.1	17.2
Head (calc.)	1995.2	100.0	0.57	0.068	0.027	1.78	100.0	100.00	100.0	100.0
(direct)	2000.0		*0.61*	*0.072*	*0.021*	*1.97*				
Call Factor	100%		*94%*	*94%*	*130%*	*90%*				

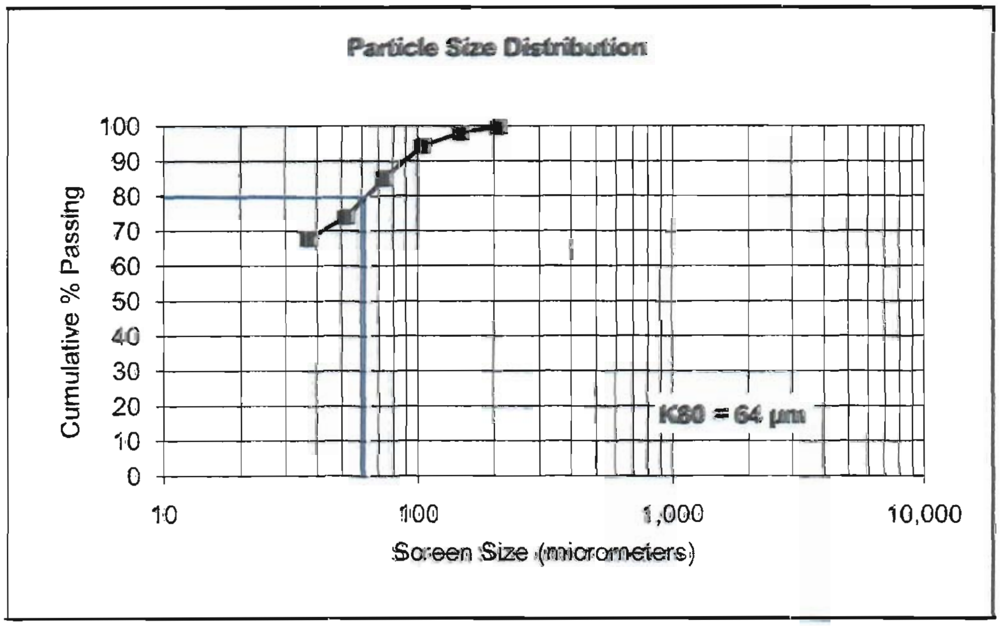
Combined Products	Wt %	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro Conc	2.64	14.2	2.11	0.37	21.3	65.3	82.3	35.8	31.5
Pri Ro Conc & Sec 3rd Clnr Conc	3.20	12.6	1.82	0.39	23.2	70.4	86.1	46.4	41.8
Pri Ro Conc & Sec 2nd Clnr Conc	3.58	11.6	1.65	0.38	22.7	72.3	87.4	49.7	45.6
Pri Ro Conc & Sec 1st Clnr Conc	4.54	9.49	1.33	0.32	20.1	75.1	89.2	53.6	51.1
Pr Ro Conc & Sec Ro Conc	12.4	3.93	0.51	0.15	11.8	85.3	93.5	67.9	82.8

SGS Minerals Services
Size Distribution Analysis

Project No. **11366-002**

Sample: **Sec Ro Tail** Test No.: **F11**

Size		Weight	% Retained		% Passing
Mesh	µm	grams	Individual	Cumulative	Cumulative
65	212	0.5	0.3	0.3	99.7
100	150	2.6	1.5	1.8	98.2
150	106	6.7	3.9	5.7	94.3
200	75	15.6	9.0	14.7	85.3
270	53	19.3	11.2	25.8	74.2
400	38	10.6	6.1	32.0	68.0
Pan	-38	117.7	68.0	100.0	0.0
Total	-	**173.0**	100.0	-	-
K80	**64**				



Test No: F12 **Project No.**: 11366-002 **Operator**: KS **Date**: April 21, 2008

Purpose: Perform a batch cleaner test to evaluate the performance of the cleaning cricuit

Procedure: As outlined below.
Feed: 2 kg of minus 10 mesh VW Zone Master Composite
Grind: 30 minutes @ 65% Solids in new ball K_{80} = 57 um
Regrind: 7 minutes @ 65 % solids in pepple mill - SECONDARY ROUGHER CONCENTRATE ONLY
Notes:

Conditions:

Stage	Reagents (g/t)					Time (minutes)			pH	Eh
	SIBX	MIBC	PAX	CMC	Lime	Grind	Cond.	Froth		
Grind	5					30			8.5	-90.0
Primary Rougher		10		500			1	1	8.5	-90.0
				500			1	1		
Secondary Rougher			20	250			2	2	8.4	-50.0
		10	20				2	4	8.4	-50.0
		10	20				2	4	8.3	-40.0
Regrind						7				
1st Cleaner				100	300			3	10.2	-10.0
1st Cleaner Sav			10					3	10.0	0.0
2nd Cleaner				50	50			2.5	1.2	0.0
3rd Cleaner					50			2	10.2	0.0
Total	**5**	**30**	**70**	**1400**	**400**	**30**	**8**	**23**		

Comments:

Stage	Roughers	1stClnr and Scav.	2nd Cleaner
Flotation Cell	1000 g	500g	250g
Speed: rpm	1800	1200	1200

Metallurgical Balance

Product	Weight		Assays, %				% Distribution			
	g	%	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro Conc	42.3	2.17	15.0	2.41	0.45	29.0	58.3	77.6	37.9	33.2
Sec 3rd Clnr Conc	4.7	0.24	8.67	0.98	0.58	38.5	3.74	3.50	5.42	4.90
Sec 3rd Clnr Tail	1.5	0.08	6.20	0.47	0.41	31.9	0.85	0.54	1.22	1.30
Sec 2nd Clnr Tail	2.9	0.15	4.42	0.30	0.22	19.8	1.18	0.66	1.27	1.55
Sec 1st Clnr Scav Conc	7.7	0.40	6.35	0.36	0.28	25.3	4.49	2.11	4.29	5.28
Sec 1st Clnr Scav Tail	72.6	3.73	1.96	0.058	0.096	14.6	13.1	3.20	13.9	28.7
Sec Ro Tail	1814.4	93.2	0.11	0.009	0.01	0.51	18.3	12.4	36.1	25.1
Head (calc.)	1946.1	100.0	0.56	0.068	0.026	1.90	100.0	100.00	100.0	100.0
(direct)	2000.0		*0.61*	*0.072*	*0.021*	*1.97*				
Call Factor	97%		*92%*	*94%*	*123%*	*96%*				

Combined Products	Wt %	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro Conc	2.17	15.0	2.41	0.45	29.0	58.3	77.6	37.9	33.2
Pri Ro Conc & Sec 3rd Clnr Conc	2.42	14.4	2.27	0.46	30.0	62.1	81.1	43.3	38.1
Pri Ro Conc & Sec 2nd Clnr Conc	2.49	14.1	2.21	0.46	30.0	62.9	81.6	44.5	39.4
Pri Ro Conc & Sec 1st Clnr Conc	2.64	13.6	2.10	0.45	29.4	64.1	82.3	45.8	41.0
Pr Ro Conc & Sec Ro Conc	6.77	6.75	0.87	0.24	21.0	81.7	87.6	63.9	74.9

Test No: F13 **Project No.**: 11366-002 **Operator**: KS **Date**: April 21, 2008

Purpose: Perform a batch cleaner test to evaluate the performance of the cleaning crircuit

Procedure: As outlined below.
Feed: 2 kg of minus 10 mesh VW Zone Master Composite
Grind: 30 minutes @ 65% Solids in new ball K_{80} = 57 um
Regrind: 7 minutes @ 65 % solids in pepple mill - SECONDARY ROUGHER CONCENTRATE ONLY
Notes:

Conditions:

Stage	Reagents (g/t)					Time (minutes)			pH	Eh
	SIBX	MIBC	PAX	CMC	Lime	Grind	Cond.	Froth		
Grind	5					30			9.0	-120.0
Primary Rougher		10		500			2	1	9.0	-120.0
Secondary Rougher			20	250			2	2	9.0	-130.0
		10	20				2	4	9.0	-80.0
		10	20				2	4	9.0	-50.0
Regrind						7			10.2	-10.0
1st Cleaner		5		100	200			3	10.2	-10.0
1st Cleaner Sav			10					3	10.0	-10.0
2nd Cleaner				50	50			2.5	10.2	-10.0
3rd Cleaner					50			2	10.2	-10.0
Total	**5**	**35**	**70**	**900**	**300**	**30**	**8**	**22**		

Comments:

Stage	Roughers	1stClnr and Scav.	2nd Cleaner
Flotation Cell	1000 g	500g	250g
Speed: rpm	1800	1200	1200

Metallurgical Balance

Product	Weight		Assays, %				% Distribution			
	g	%	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro Conc	28.3	1.43	16.2	3.15	0.36	22.6	42.7	68.7	21.1	17.6
Sec 3rd Clnr Conc	4.80	0.24	14.7	1.53	0.62	34.7	6.57	5.66	6.15	4.58
Sec 3rd Clnr Tail	3.00	0.15	8.80	0.58	0.49	28.5	2.46	1.34	3.04	2.35
Sec 2nd Clnr Tail	5.80	0.29	4.69	0.30	0.25	16.1	2.53	1.34	3.00	2.57
Sec 1st Clnr Scav Conc	16.2	0.82	7.06	0.41	0.38	24.1	10.7	5.12	12.7	10.7
Sec 1st Clnr Scav Tail	68.4	3.45	1.97	0.067	0.11	7.46	12.6	3.53	15.6	14.0
Sec Ro Tail	1858.9	93.6	0.13	0.010	0.01	0.94	22.5	14.3	38.4	48.1
Head (calc.)	1985.4	100.0	0.54	0.065	0.024	1.83	100.0	100.00	100.0	100.0
(direct)	2000.0		*0.61*	*0.072*	*0.021*	*1.97*				
Call Factor	99%		*89%*	*91%*	*116%*	*93%*				

Combined Products	Wt %	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro Conc	1.43	16.2	3.15	0.36	22.6	42.7	68.7	21.1	17.6
Pri Ro Conc & Sec 3rd Clnr Conc	1.67	16.0	2.92	0.40	24.4	49.3	74.3	27.2	22.2
Pri Ro Conc & Sec 2nd Clnr Conc	1.82	15.4	2.72	0.41	24.7	51.7	75.7	30.3	24.5
Pri Ro Conc & Sec 1st Clnr Conc	2.11	13.9	2.39	0.38	23.5	54.3	77.0	33.3	27.1
Pr Ro Conc & Sec Ro Conc	6.37	6.58	0.88	0.24	14.9	77.5	85.7	61.6	51.9

Test No: F14 **Project No.**: 11366-002 **Operator**: KS **Date**: May1/08

Purpose: Perform a batch cleaner test to evaluate the performance of the cleaning cricruit
Similar as F10, but longer primary grind, collector addition in cleaners, pH in cleaner as in F13
Procedure: As outlined below.
Feed: 2 kg of minus 10 mesh VW Zone Master Composite
Grind: 40 minutes @ 65% Solids in new ball K_{80} = 45 um
Regrind: 4 minutes @ 65 % solids in pepple mill - SECONDARY RO CONCENTRATE ONLY K_{80} = 13 um
Notes:

Conditions:

Stage	Reagents (g/t)					Time (minutes)			pH	Eh
	SIBX	MIBC	PAX	CMC	Lime	Grind	Cond.	Froth		
Grind	5					40			9.0	-90
Primary Rougher		10		500			2	2	9.0	-60
Secondary Rougher		2.5	20	25			2	2	8.9	-50
		10	20				2	4	8.8	-40
		10	20				2	4	8.6	-20
Regrind						4			8.5	100
1st Cleaner	5	5		50				3	10.2	80
1st Cleaner Sav			10					3	9.1	-10
2nd Cleaner	2.5	2.5		25				2	10.2	-10
3 rd Cleaner		2.5						2	10.2	-10
Total	**13**	**43**	**70**	**600**	**0**	**44**	**8**	**22**		

Comments: Sec Clnr could benefit from larger CMC dosage

Stage	Roughers	1stClnr and Scav.	2nd Cleaner
Flotation Cell	1000 g	500g	250g
Speed: rpm	1800	1200	1200

Metallurgical Balance

Product	Weight		Assays, %				% Distribution			
	g	%	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro conc	45.7	2.31	16.4	2.27	0.43	25.4	67.9	81.0	38.2	31.6
Sec 3rd Clnr Conc	12.7	0.64	5.17	0.71	0.61	39.5	5.95	7.04	15.1	13.7
Sec 3rd Clnr Tail	3.5	0.18	4.47	0.31	0.27	21.5	1.42	0.85	1.84	2.05
Sec 2nd Clnr Tail	16.7	0.84	2.18	0.12	0.11	11.5	3.30	1.56	3.57	5.23
Sec 1st Clnr Scav Conc	14.9	0.75	1.69	0.13	0.089	11.4	2.28	1.51	2.58	4.63
Sec 1st Clnr Scav Tail	66.1	3.34	0.44	0.018	0.027	6.20	2.64	0.93	3.47	11.2
Sec Ro Tail	1817.3	91.9	0.10	0.005	<0.01	0.64	16.5	7.10	35.3	31.7
Head (calc.)	1976.9	100.0	0.56	0.065	0.026	1.86	100.0	100.00	100.0	100.0
(direct)	2000.0		0.61	0.072	0.021	1.97				
Call Factor	99%		91%	90%	124%	94%				

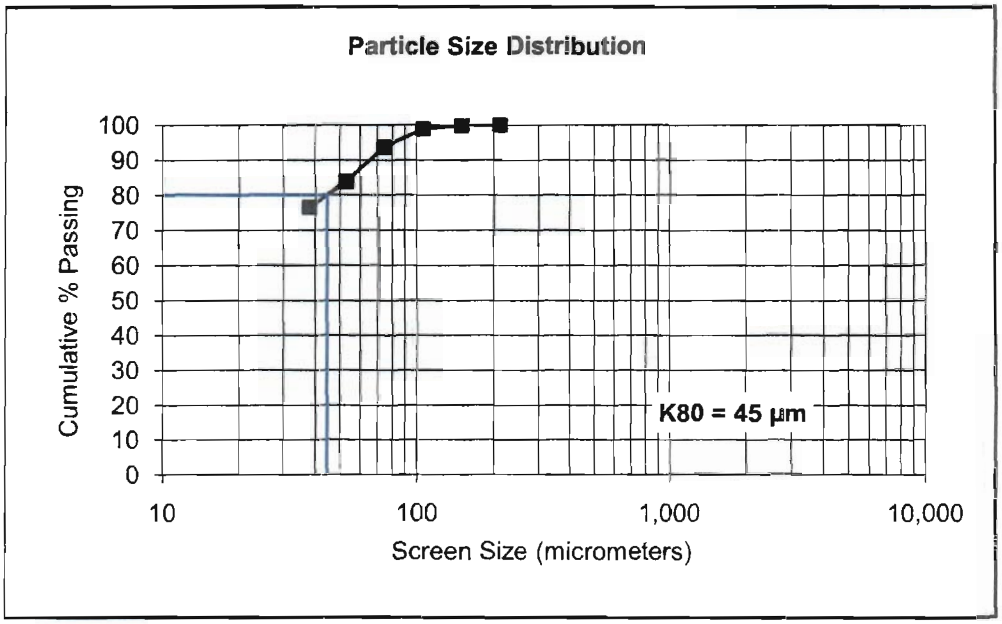
Combined Products	Wt %	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro Conc	2.31	16.4	2.27	0.43	25.4	67.9	81.0	38.2	31.6
Pri Ro Conc & Sec 3rd Clnr Conc	2.95	14.0	1.93	0.47	28.5	73.9	88.1	53.2	45.3
Pri Ro Conc & Sec 2nd Clnr Conc	3.13	13.4	1.84	0.46	28.1	75.3	88.9	55.1	47.3
Pri Ro Conc & Sec 1st Clnr Conc	3.98	11.0	1.47	0.38	24.6	78.6	90.5	58.6	52.5
Pr Ro Conc & Sec Ro Conc	8.07	5.77	0.75	0.21	15.7	83.5	92.9	64.7	68.3

SGS Minerals Services
Size Distribution Analysis

Project No. **11366-002**

Sample: **Sec Ro Tail** Test No.: **F14**

Size		Weight	% Retained		% Passing
Mesh	µm	grams	Individual	Cumulative	Cumulative
65	212	0.0	0.0	0.0	100.0
100	150	0.1	0.0	0.1	99.9
150	106	1.8	1.1	1.1	98.9
200	75	8.8	5.1	6.3	93.7
270	53	16.9	9.9	16.1	83.9
400	38	12.5	7.3	23.5	76.5
Pan	-38	130.9	76.5	100.0	0.0
Total	-	**171.0**	100.0	-	-
K80	**45**				



Test No: F15 **Project No.**: 11366-002 **Operator**: KS **Date**: May 14, 2008

Purpose: Perform a batch cleaner test to evaluate the performance of the cleaning crircuit
Same as F14, but a 10 minute longer primary grind
Procedure: As outlined below.
Feed: 2 kg of minus 10 mesh VW Zone Master Composite
Grind: 50 minutes @ 65% Solids in new ball K_{80} = 38 um
Regrind: 4 minutes @ 65 % solids in pepple mill - SEC ROUGHER CONCENTRATE ONLY K_{80} = 12 um
Notes:

Conditions:

Stage	Reagents (g/t)					Time (minutes)			pH	Eh
	SIBX	MIBC	PAX	CMC	Lime	Grind	Cond.	Froth		
Grind	5					50				
Primary Rougher		10		500			2	2		
Secondary Rougher		2.5	20	25			2	2		
		10	20				2	4		
		10	20				2	4		
Regrind						4				
1st Cleaner	5	5		50				3	10.2	
1st Cleaner Sav			10					3	9.1	
2nd Cleaner	2.5	2.5		50				2	10.2	
3 rd Cleaner		2.5						2	10.2	
Total	13	43	70	625	0	54	8	22		

Comments: Sec Clnr could benefit from larger CMC dosage

Stage	Roughers	1stClnr and Scav.	2nd Cleaner
Flotation Cell	1000 g	500g	250g
Speed: rpm	1800	1200	1200

Metallurgical Balance

Product	Weight		Assays, %				% Distribution			
	g	%	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro conc	56.3	2.84	12.3	1.73	0.34	18.7	62.8	66.7	36.5	28.6
Sec 3rd Clnr Conc	16.5	0.83	5.99	1.62	0.53	37.4	8.96	18.3	16.7	16.7
Sec 3rd Clnr Tail	6.6	0.33	4.22	0.49	0.170	17.3	2.52	2.21	2.14	3.10
Sec 2nd Clnr Tail	12.5	0.63	1.38	0.16	0.054	6.16	1.56	1.37	1.29	2.09
Sec 1st Clnr Scav Conc	19.6	0.99	2.20	0.15	0.092	15.9	3.91	2.01	3.44	8.46
Sec 1st Clnr Scav Tail	105.6	5.33	0.45	0.03	0.031	4.80	4.31	2.17	6.25	13.8
Sec Ro Tail	1764.8	89.0	0.10	0.006	0.01	0.57	16.0	7.25	33.7	27.3
Head (calc.)	1981.9	100.0	0.56	0.074	0.026	1.86	100.0	100.00	100.0	100.0
(direct)	2000.0		*0.61*	*0.072*	*0.021*	*1.97*				
Call Factor	99%		*91%*	*102%*	*126%*	*94%*				

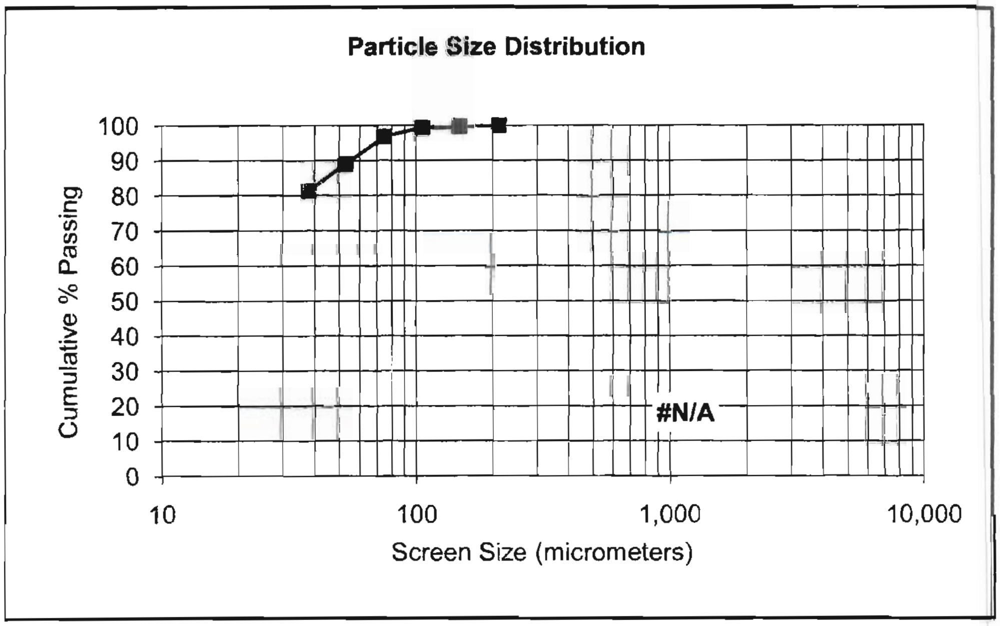
Combined Products	Wt %	*Ni*	*Cu*	*Co*	*S*	*Ni*	*Cu*	*Co*	*S*
Pri Ro Conc	2.84	12.3	1.73	0.34	18.7	62.8	66.7	36.5	28.6
Pri Ro Conc & Sec 3rd Clnr Conc	3.67	10.9	1.71	0.38	22.9	71.7	85.0	53.2	45.3
Pri Ro Conc & Sec 2nd Clnr Conc	4.01	10.3	1.60	0.37	22.5	74.2	87.2	55.4	48.4
Pri Ro Conc & Sec 1st Clnr Conc	4.64	9.10	1.41	0.32	20.3	75.8	88.6	56.6	50.5
Pr Ro Conc & Sec Ro Conc	10.95	4.27	0.62	0.16	12.3	84.0	92.8	66.3	72.7

SGS Minerals Services
Size Distribution Analysis

Project No.
11366-002

Sample: **Sec Ro Tail** Test No.: **F15**

Size		Weight	% Retained		% Passing
Mesh	µm	grams	Individual	Cumulative	Cumulative
65	212	0.0	0.0	0.0	100.0
100	150	0.2	0.1	0.1	99.9
150	106	0.9	0.5	0.6	99.4
200	75	4.6	2.6	3.3	96.7
270	53	13.7	7.8	11.1	88.9
400	38	13.2	7.6	18.7	81.3
Pan	-38	142.1	81.3	100.0	0.0
Total	-	**174.7**	100.0	-	-
K80	**#N/A**				



Test No: F16 **Project No.**: 11366-002 **Operator**: KS **Date**: May 30, 2008

Purpose: Perform a batch cleaner test to evaluate the performance of the cleaning crircuit
Rougher conditions as F9 with 45 microns primary grind, cleaner conditions of F14
Procedure: As outlined below.
Feed: 2 kg of minus 10 mesh VW Zone Master Composite
Grind: 40 minutes @ 65% Solids in new ball K_{80} = 45 um
Regrind: 7 minutes @ 65 % solids in pepple mill - SEC ROUGHER CONCENTRATE ONLY K_{80} = 13 um

Conditions:

Stage	Reagents (g/t)					Time (minutes)			pH	Eh
	SIBX	MIBC	PAX	CMC	Lime	Grind	Cond.	Froth		
Grind	5					40				
Primary Rougher		10		200			2	2		
Secondary Rougher	10						2	1		
			20	25			2	2		
		10	20				2	4		
		10	20				2	4		
Regrind						4				
1st Cleaner	5	5		50				3	10.2	
1st Cleaner Sav			10					3	9.1	
2nd Cleaner	2.5	2.5		25				2	10.2	
3 rd Cleaner		2.5						2	10.2	
Total	**23**	**40**	**70**	**300**	**0**	**44**	**10**	**23**		

Comments: Sec Clnr could benefit from larger CMC dosage

Stage	Roughers	1stClnr and Scav.	2nd Cleaner
Flotation Cell	1000 g	500g	N/A
Speed: rpm	1800	1200	N/A

Metallurgical Balance

Product	Weight		Assays, %				% Distribution			
	g	%	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro conc	72.8	3.69	10.4	1.50	0.25	15.7	67.1	82.4	35.3	30.0
Sec 3rd Clnr Conc	16.9	0.86	4.51	0.49	0.57	40.4	6.75	6.25	18.7	17.9
Sec 3rd Clnr Tail	4.4	0.22	2.42	0.17	0.13	11.5	0.94	0.56	1.11	1.33
Sec 2nd Clnr Tail	21.9	1.11	1.43	0.092	0.057	5.96	2.78	1.52	2.42	3.42
Sec 1st Clnr Scav Conc	38.3	1.94	1.28	0.082	0.045	7.49	4.34	2.37	3.34	7.52
Sec 1st Clnr Scav Tail	224.9	11.39	0.29	0.012	0.019	3.71	5.78	2.04	8.28	21.9
Sec Ro Tail	1596.0	80.8	0.09	0.004	<0.01	0.43	12.3	4.82	30.9	18.0
Head (calc.)	1975.2	100.0	0.57	0.067	0.026	1.93	100.0	100.00	100.0	100.0
(direct)	2000.0		*0.61*	*0.072*	*0.021*	*1.97*				
Call Factor	99%		*94%*	*93%*	*124%*	*98%*				

Combined Products	Wt %	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro Conc	3.69	10.4	1.50	0.25	15.7	67.1	82.4	35.3	30.0
Pri Ro Conc & Sec 3rd Clnr Conc	4.54	9.29	1.31	0.31	20.4	73.9	88.7	53.9	47.9
Pri Ro Conc & Sec 2nd Clnr Conc	4.76	8.97	1.26	0.30	19.9	74.8	89.3	55.0	49.2
Pri Ro Conc & Sec 1st Clnr Conc	5.87	7.55	1.04	0.26	17.3	77.6	90.8	57.5	52.6
Pr Ro Conc & Sec Ro Conc	19.2	2.61	0.33	0.09	8.25	87.7	95.2	69.1	82.0

Test No: F17 **Project No.**: 11366-002 **Operator**: KS **Date**: June 2, 2008

Purpose: To establish rougher kinetics using NaHS in the grind

Procedure: As outlined below.
Feed: 2 kg of minus 10 mesh VW Zone Master Composite
Grind: 40 minutes @ 65% Solids in new ball K_{80} = 53 um
Notes:

Conditions:

Stage	Reagents (g/t)					Time (minutes)			pH
	SIBX	MIBC	PAX	CMC	NaHS	Grind	Cond.	Froth	
Grind	5				125	40			9.2
Rougher 1		10		200			2	2	
Rougher 2	10						2	1	
Rougher 3			20	25			2	2	9.0
Rougher 4		10	20				2	4	
Rougher 5		10	20				2	4	
Rougher 6		10	20				2	5	
Rougher 7		10	20				2	5	8.6
MagSep								1	
Ro Tails									
Total	15	30	60	225	125	40	14	24	

Stage	Roughers	1stClnr and Scav.	2nd Cleaner
Flotation Cell	1000 g	N/A	N/A
Speed: rpm	1800	N/A	N/A

Notes: Ro 1: Orange/Red thin froth at start
Ro 2: Orange/Red brassy froth
Ro 3,4: Brassy thicker froth
Ro 5,6: thin grey watery froth
MagSep: Brown mag - Po?

Metallurgical Balance

Product	Weight		Assays, %				% Distribution			
	g	%	Ni	Cu	Co	S	Ni	Cu	Co	S
Ro Conc 1	38.8	1.95	0.96	2.14	0.054	3.75	3.19	59.2	3.77	3.78
Ro Conc 2	44.0	2.21	15.2	0.66	0.30	17.5	57.2	20.7	23.8	20.0
Ro Conc 3	77.8	3.91	2.70	0.16	0.24	15.4	18.0	8.87	33.6	31.1
Ro Conc 4	91.6	4.61	0.61	0.057	0.032	4.37	4.78	3.72	5.28	10.4
Ro Conc 5	86.9	4.37	0.33	0.018	0.016	3.65	2.45	1.11	2.50	8.24
Ro Conc 6	56.3	2.83	0.26	0.015	0.014	3.78	1.25	0.60	1.42	5.53
Ro Conc 7	61.7	3.10	0.22	0.022	0.012	3.51	1.16	0.97	1.33	5.63
Mags	16.4	0.82	0.66	0.047	0.036	26.6	0.93	0.55	1.06	11.3
Rougher Tails	1514.9	76.2	0.085	0.004	<0.01	0.10	11.0	4.32	27.3	3.94
Head (calc.)	1988.4	100.0	0.59	0.071	0.028	1.94	100.0	100.00	100.0	100.0
(direct)	2000.0		*0.61*	*0.072*	*0.021*	*1.97*				
Call Factor	99%		*96%*	*98%*	*133%*	*98%*				

Combined Products	Wt %	Ni	Cu	Co	S	Ni	Cu	Co	S
Ro Conc 1	1.95	0.96	2.14	0.05	3.75	3.19	59.2	3.77	3.78
Ro Conc 1 + 2	4.16	8.53	1.35	0.18	11.1	60.4	79.9	27.5	23.8
Ro Conc 1 - 3	8.08	5.70	0.78	0.21	13.2	78.4	88.7	61.1	54.9
Ro Conc 1 - 4	12.7	3.85	0.51	0.15	10.0	83.2	92.4	66.4	65.3
Ro Conc 1 - 5	17.1	2.95	0.39	0.11	8.35	85.6	93.6	68.9	73.6
Ro Conc 1 - 6	19.9	2.57	0.33	0.10	7.70	86.9	94.2	70.3	79.1
Ro Conc 1 - 7	23.0	2.25	0.29	0.09	7.13	88.1	95.1	71.7	84.7
Ro Conc 1-7 + Mags	23.8	2.20	0.28	0.09	7.81	89.0	95.7	72.7	96.1

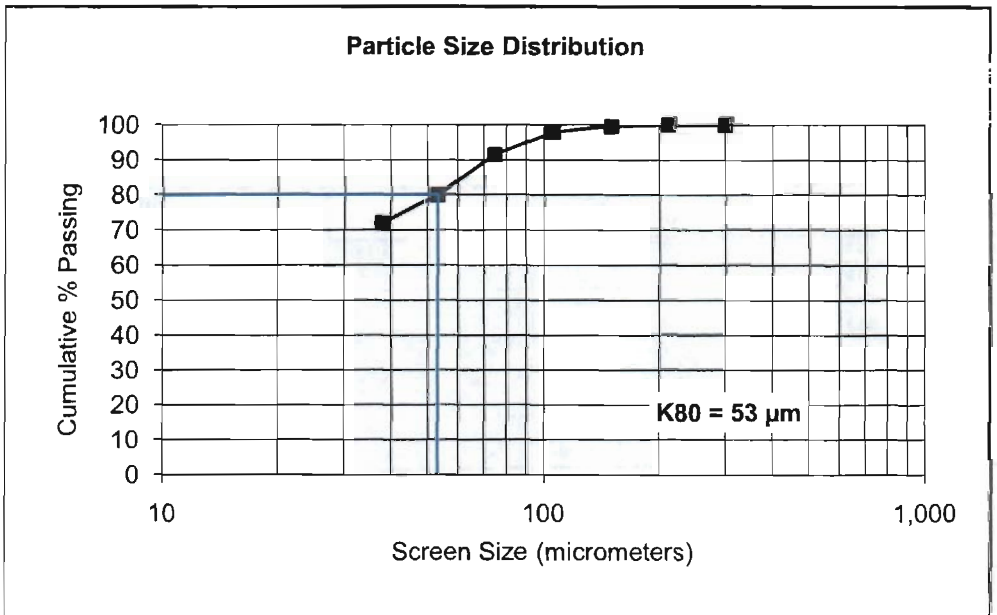
Combined Products	Wt %	Ni	Cu	Co	S	Ni	Cu	Co	S
Ro Conc 2	2.21	15.2	0.66	0.30	17.5	57.2	20.7	23.8	20.0
Ro Conc 2 - 3	6.13	7.22	0.34	0.26	16.2	75.2	29.6	57.4	51.1
Ro Conc 2 - 4	10.7	4.38	0.22	0.16	11.1	80.0	33.3	62.6	61.5
Ro Conc 2 - 5	15.1	3.21	0.16	0.12	8.94	82.5	34.4	65.1	69.8
Ro Conc 2 - 6	17.9	2.74	0.14	0.10	8.13	83.7	35.0	66.6	75.3
Ro Conc 2 - 7	21.0	2.37	0.12	0.09	7.45	84.9	36.0	67.9	80.9
Ro Conc 2-7 + Mags	21.9	2.31	0.12	0.09	8.17	85.8	36.5	69.0	92.3

SGS Minerals Services
Size Distribution Analysis

Project No. **11366-002**

Sample: **Ro Tail** Test No.: **F17**

Size		Weight	% Retained		% Passing
Mesh	µm	grams	Individual	Cumulative	Cumulative
48	300	0.0	0.0	0.0	100.0
65	212	0.0	0.0	0.0	100.0
100	150	0.6	0.3	0.3	99.7
150	106	3.3	1.7	2.0	98.0
200	75	12.4	6.4	8.4	91.6
270	53	22.5	11.6	20.1	79.9
400	38	15.5	8.0	28.1	71.9
Pan	-38	139.2	71.9	100.0	0.0
Total	-	**193.5**	100.0	-	-
K80	**53**				



Test No: F18 **Project No.**: 11366-002 **Operator**: KS **Date**: July 3 2008

Purpose: Perform a batch cleaner test with LCT-1 conditions to assess if additional SIBX in the priamry rougher promotes pentlandite flotation despite the presence of the unidentified red mineral.

Procedure: As outlined below.

Feed: 2 kg of minus 10 mesh VW Zone Master Composite

Grind: 30 minutes @ 65% Solids in new ball K_{80} = 60 microns

Regrind: 7 minutes @ 65 % solids in pepple mill - SEC ROUGHER CONCENTRATE ONLY K_{80} = 36 micorns

Conditions:

Stage	Reagents (g/t) SIBX	MIBC	PAX	CMC	Lime	Time (minutes) Grind	Cond.	Froth	pH	Eh
Grind	5					30			8.3	50.0
Primary Rougher 1	5	10		200			2	1	8.3	
Primary Rougher 2	2.5						2	1		
Secondary Rougher		2.5	20	25			2	2	8.3	20.0
		10	20				2	4		
		10	20				2	4		
Regrind						7			8.6	60.0
1st Cleaner	5	5		25	100			3	10.2	30.0
1st Cleaner Sav			10					3	9.2	30.0
2nd Cleaner	2.5	2.5		25	50			2	10.2	20.0
Total	**20**	**40**	**70**	**275**	**156**	**37**	**10**	**20**		

Comments: Sec Clnr could benefit from larger CMC dosage

Stage	Roughers	1stClnr and Scav.	2nd Cleaner
Flotation Cell	1000 g	500g	N/A
Speed: rpm	1800	1200	N/A

Metallurgical Balance

Product	Weight g	%	Assays, % Ni	Cu	Co	S	% Distribution Ni	Cu	Co	S
Pri Ro Conc 1	54.4	2.74	13.1	1.89	0.42	27.2	64.1	77.3	44.3	38.7
Pri Ro Conc 2	37.2	1.88	2.97	0.24	0.16	11.9	9.94	6.71	11.5	11.6
Sec 2nd Clnr Conc	8.1	0.41	4.25	0.74	0.23	18.1	3.10	4.50	3.61	3.83
Sec 2nd Clnr Tail	36.4	1.83	0.93	0.07	0.039	5.72	3.04	1.91	2.75	5.44
Sec 1st Clnr Scav Conc	27.6	1.39	0.78	0.048	0.032	6.33	1.94	1.00	1.71	4.57
Sec 1st Clnr Scav Tail	77.7	3.92	0.32	0.013	0.015	5.11	2.24	0.76	2.26	10.4
Sec Ro Tail	1742.5	87.8	0.10	0.006	<0.01	0.56	15.7	7.86	33.8	25.5
Head (calc.)	1983.9	100.0	0.56	0.067	0.026	1.93	100	100	100	100
(direct)	2000.0		*0.61*	*0.072*	*0.021*	*1.97*				
Call Factor	99%		*92%*	*93%*	*124%*	*98%*				

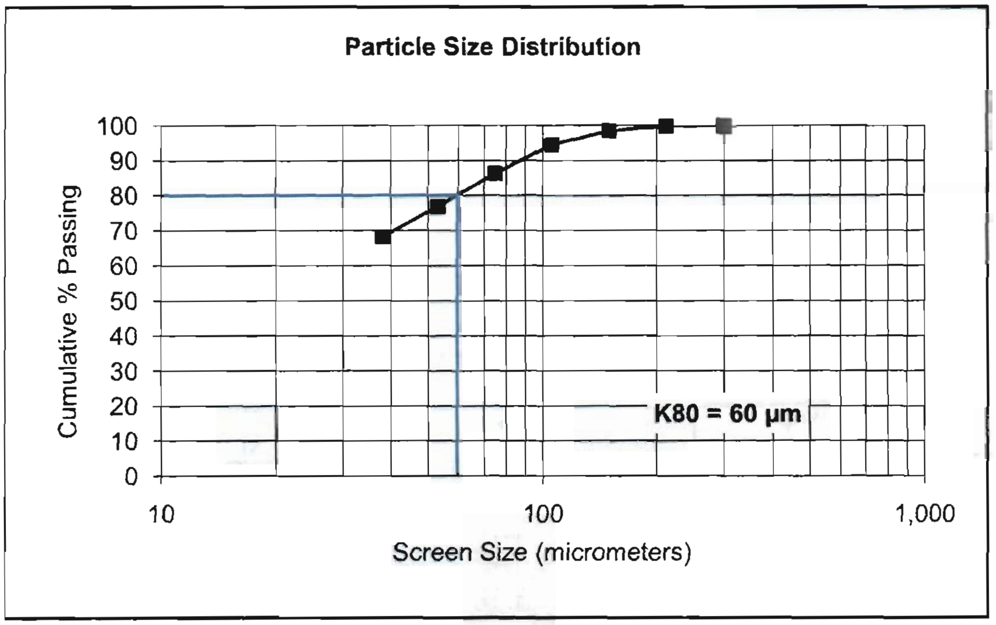
Combined Products	Wt %	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro Conc	2.74	13.1	1.89	0.42	27.2	64.1	77.3	44.3	38.7
Pri Ro Conc 1 + 2	4.62	8.99	1.22	0.31	21.0	74.0	84.0	55.9	50.3
Pri Ro Conc & Sec 2nd Clnr Conc	5.03	8.60	1.18	0.31	20.8	77.1	88.5	59.5	54.1
Pri Ro Conc & Sec 1st Clnr Conc	6.86	6.55	0.88	0.24	16.7	80.2	90.4	62.2	59.5
Pr Ro Conc & Sec Ro Conc	12.2	3.88	0.51	0.14	11.8	84.3	92.1	66.2	74.5

SGS Minerals Services
Size Distribution Analysis

Project No. **11366-002**

Sample: **Sec Ro Tail** Test No.: **F18**

Size		Weight	% Retained		% Passing
Mesh	µm	grams	Individual	Cumulative	Cumulative
48	300	0.0	0.0	0.0	100.0
65	212	0.2	0.1	0.1	99.9
100	150	2.0	1.3	1.5	98.5
150	106	5.9	4.0	5.5	94.5
200	75	12.3	8.3	13.7	86.3
270	53	14.1	9.5	23.2	76.8
400	38	12.7	8.5	31.8	68.2
Pan	-38	101.4	68.2	100.0	0.0
Total	-	**148.6**	100.0	-	-
K80	**60**				

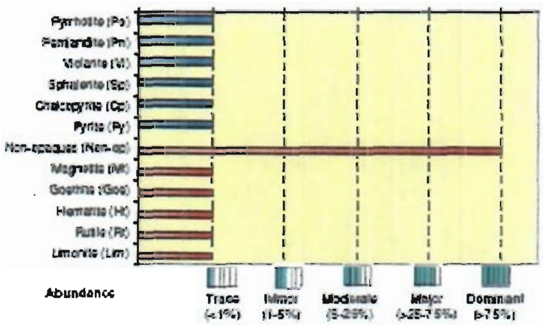


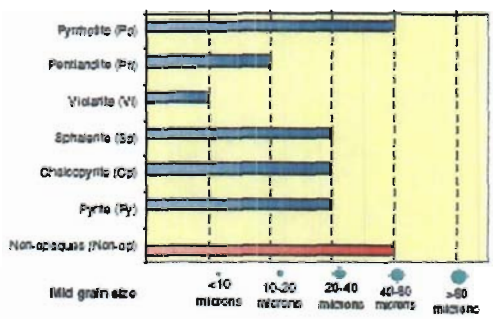
Appendix E – RMS Scan F14 Secondary Rougher Tails

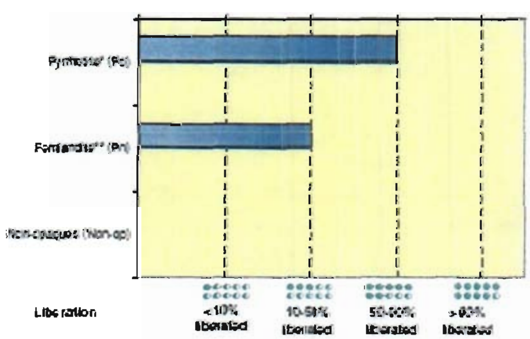
RAPID MINERAL SCAN
DATA REPORT

Sample:	F14 Sec Ro Tails	Project number:	CALR-11366-002
Date:	6-Jun-08	Client:	Landore Resources Ltd.
Mineralogist:	AC	Property:	Junior Lake VW Zone
Size Range:	80% passing 45 µm	LIMS:	MI5000-JUN08

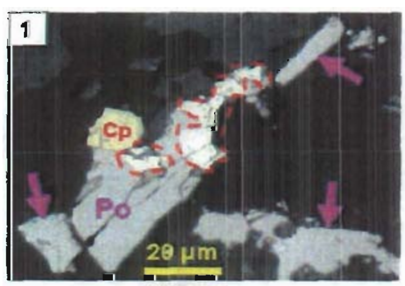
Petrographic and XRD examination:



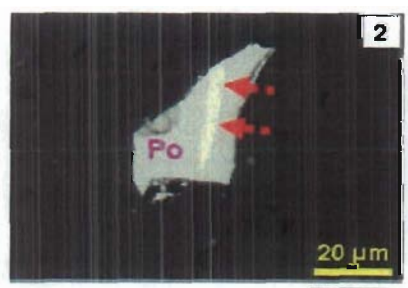




Mineral	Association
Pyrrhotite (Po)	Po>Pn>Sp>Cp>Py
Pentlandite (Pn)	Po>Pn
Violarite (Vi)	Po>Pn>Vi
Sphalerite (Sp)	Sp>Po>Cp
Chalcopyrite (Cp)	Cp>Po>Sp
Pyrite (Py)	Py>Po>Cp>Sp



20 microns



20 microns

Notes: Photomicrographs of the polished section showing general appearance of different phases under reflected light:
Plate 1 showing composite grains of pentlandite - chalcopyrite - pyrrhotite (broken red lines, Cp and Po respectively), also showing disseminated pyrrhotite (pink arrow), X500
Plate 2 showing flame-like pentlandite within pyrrhotite (broken red arrow and Po respectively), X500

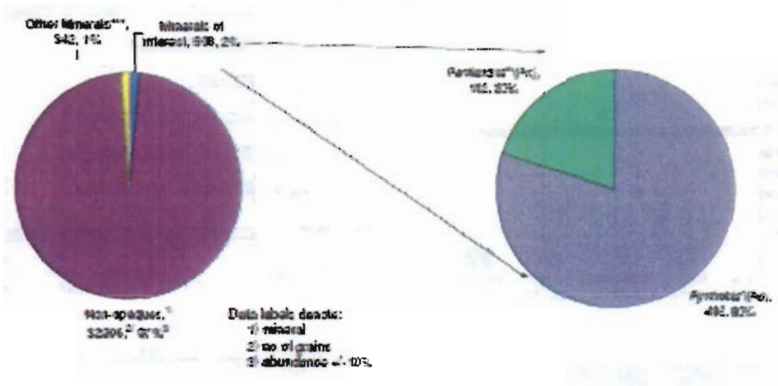
SGS Minerals Services

RAPID MINERAL SCAN
DATA REPORT

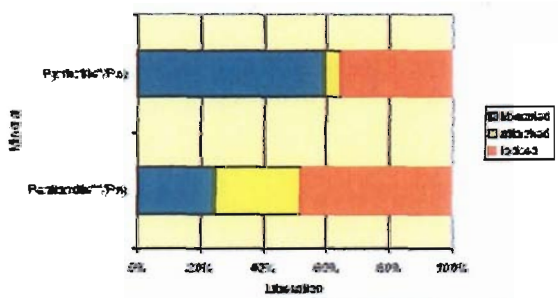
Sample:	F14 Sec Ro Tails	Project number:	CALR-11366-002
Date:	6-Jun-08	Client:	Landore Resources Ltd.
Mineralogist:	AC	Property:	Junior Lake VW Zone
Size Range:	60% passing 45 µm	LIMS:	MI5040-JUN08

Pointcounting of principal minerals:
Manual

Total Mineral Abundance: **Specific Mineral Abundance:**



Liberation of Specific Minerals:



Mineral	No. of analyses	liberated	attached	locked
Pyrrhotite*(Po)	406	59%	6%	35%
Pentlandite** (Pn)	102	25%	27%	48%
Total	508			

*including Sp, Cp and Py & fine inclusions of Pn
**including violarite
***including Mt, Goe, Ht and Rt

Disclaimer:

The reader should be aware that this semi-qualitative study is designed to provide merely a broad picture of the mineralogy of the studied sample. Any numerical approximations should be treated as approximations only. Like any such study, its accuracy is subject to the representativity of the sample selected and limited by the particle statistics inherent in such a study.

Aparup Chattopadhyay	Roch Marion	Helen Dry
Senior Mineralogist & Project Manager	Group Leader	Report Prep Specialist

RAPID MINERAL SCAN
DATA REPORT

Sample:	F14 Sec Ro Tails	Project number:	CALR-11366-002
Date:	6-Jun-08	Client:	Landore Resources Ltd.
Mineralogist:	AC	Property:	Junior Lake VW Zone
Size Range:	80% passing 45 µm	LIMS:	MI5000-JUN08

Summary of Qualitative X-ray Diffraction Results:

Sample	Crystalline Mineral Assemblage (relative proportions based on peak height)			
	Major	Moderate	Minor	Trace
F14 Sec Ro Tails	amphibole	chlorite, quartz, mica, plagioclase	talc, dolomite	*chalcopyrite, *pyrite, *pyrrhotite, *calcite, *sphalerite

*Tentative identification due to low concentrations, diffraction line overlap or poor crystallinity

Instrument:	Siemens D5000 diffractometer
Scan Conditions:	Co radiation, graphite monochromator, 40 kV, 30 mA, Step: 0.02 o, Step time:1 s
Interpretations:	JCPDS / ICDD powder diffraction files. Siemens Search / Match software.
Detection Limit:	0.5-2%. Strongly dependent on crystallinity.

Interpretations do not reflect the presence of non-crystalline / amorphous compounds. Mineral proportions are based on relative peak heights and may be strongly influenced by crystallinity, structural group or preferred orientations. Interpretations and relative proportions should be accompanied by supporting petrographic and geochemical data (WRA, ICP-OES).

Mineral	Composition
Amphibole	$(Ca,Na)_2(Mg,Fe)_5(Si,Al)_8O_{22}(OH)_2$
Calcite	$CaCO_3$
Chalcopyrite	$CuFeS_2$
Chlorite	$(Fe,(Mg,Mn)_5,Al)(Si_3Al)O_{10}(OH)_8$
Dolomite	$CaMg(CO_3)_2$
Mica	$K(Mg,Fe)Al_2Si_3AlO_{10}(OH)_2$
Plagioclase	$(NaSi,CaAl)AlSi_2O_8$
Pyrite	FeS_2
Pyrrhotite	$Fe_{(1-x)}S$
Quartz	SiO_2
Sphalerite	ZnS
Talc	$Mg_3Si_4O_{10}(OH)_2$

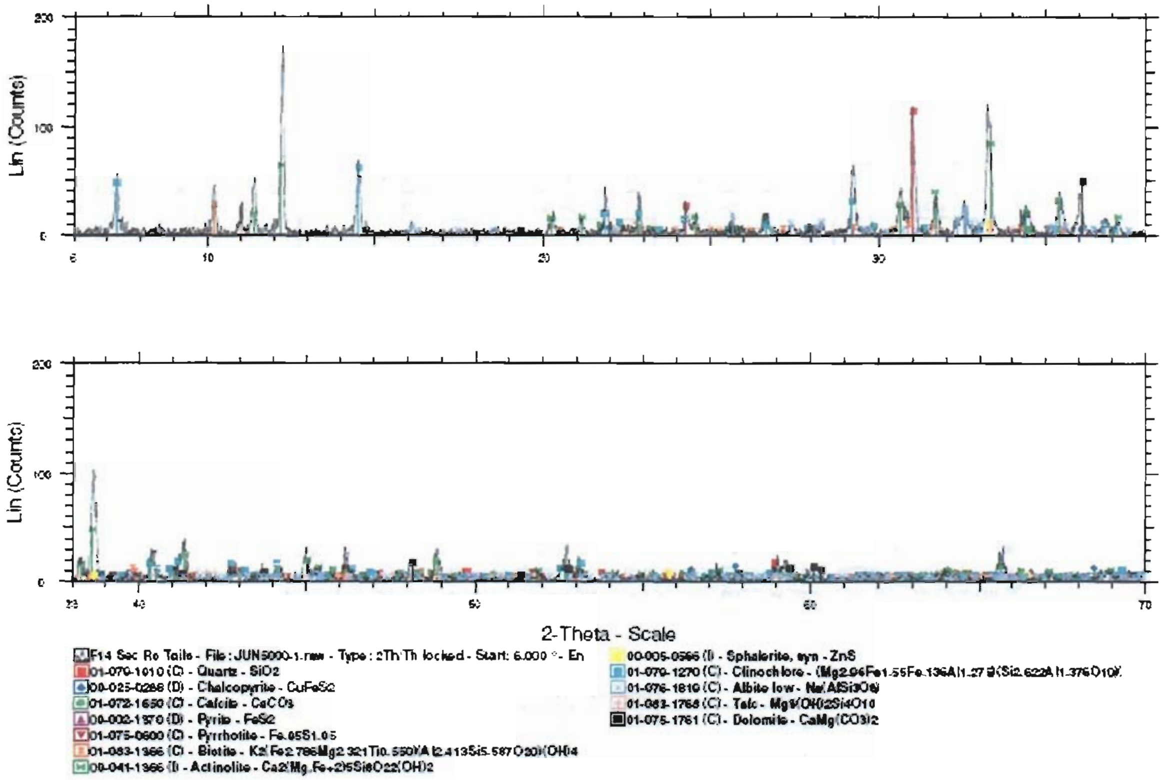
Note:

N/A

Jennifer LeBelle-Brown
XRD Technologist

Aparup Chattopadhyay, Ph.D., P.Geo
Senior Mineralogist

F14 Sec Ro Tails



Appendix F – Locked Cycle Test Results

Test No: LCT-1 **Project No.:** 11366-002 **Operator:** KS **Date:** June 12, 2008

Purpose: Perform a locked cycle test on the VW master composite to simulate continuous cicuit operation

Pri Ro Conc	= 29	microns
Sec Ro 2nd Clnr Co	= 41	microns
Sec Ro 1st Clnr Sca	= 20	microns
Sec Ro Tail	= 57	microns

Procedure: As outlined below.
Feed: 6 x 2 kg of minus 10 mesh VW Zone Master Composite
Grind: 30 minutes @ 65% Solids in new ball
Regrind: 7 minutes @ 65 % solids in pepple mill - SECONDARY ROUGHER CONCENTRATE ONLY

Conditions:

Stage	Reagents (g/t)					Time (minutes)			Cycle A		Cycle B		Cycle C		Cycle D		Cycle E		Cycle F	
	SIBX	MIBC	PAX	CMC	Lime	Grind	Cond.	Froth	pH	Eh	pH	Eh	pH	Eh	pH	Eh	pH	Eh	pH	Eh
Grind	5					30														
Primary Rougher		10		200			2	2	8.7	150.0	8.8	100.0	8.8	80.0	8.8	90.0	8.8	90.0	8.8	100.0
Secondary Rougher		2.5	20	25			2	2	8.7	50.0	8.7	60.0	8.7	0.0	8.7	0.0	8.7	10.0	8.7	10.0
		10	20				2	4												
		10	20				2	4												
Regrind						7														
1st Cleaner	5	5		25				3	10.2	80.0	10.2	10.0	10.2	40.0	10.2	50.0	10.2	50.0	10.2	80.0
1st Cleaner Sav			10					3	9.2	40.0	9.3	100.0	9.3	0.0	9.3	40.0	9.3	10.0	9.3	10.0
2nd Cleaner	2.5	2.5		25				2	10.2	-10.0	10.2	10.0	10.2	0.0	10.2	0.0	10.2	-10.0	10.2	-10.0
Total	13	40	70	275	0	37	8	20												

Stage	Roughers	1stClnr and Scav.	2nd Cleaner
Flotation Cell	1000 g	500g	250g
Speed: rpm	1800	1200	1100

Metallurgical Projection - Cycles E to F

Product	Weight		Assay, %				Distribution, %			
	g	%	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro Conc	320.7	2.56	2.97	1.30	0.09	5.55	13.4	51.2	8.52	6.71
Sec 2nd Cl Conc	245.7	1.96	14.5	1.18	0.56	33.9	50.1	35.4	39.7	31.4
Sec 1st Cl Scav Tail	1752.9	14.0	0.89	0.03	0.04	5.86	21.9	5.70	20.3	38.7
Sec Ro Tail	10203	81.5	0.10	0.01	0.01	0.61	14.6	7.63	31.5	23.3
	12522.3	100	0.57	0.07	0.03	2.12	100	100	100	100.0

Metallurgical Balance

Product	Weight		Assay, %				Distribution, %			
	g	%	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro Conc A	29.1	0.24	2.03	1.36	0.06	4.05	0.73	4.38	0.43	0.46
Pri Ro Conc B	51.0	0.41	4.07	1.32	0.10	6.44	2.56	7.45	1.39	1.27
Pri Ro Conc C	41.9	0.34	4.02	1.88	0.11	7.31	2.08	8.71	1.25	1.19
Pri Ro Conc D	54.9	0.45	2.67	1.18	0.08	4.83	1.81	7.17	1.21	1.03
Pri Ro Conc E	58.3	0.47	3.99	1.35	0.11	6.48	2.87	8.71	1.74	1.46
Pri Ro Conc F	48.6	0.39	1.63	1.20	0.07	4.23	0.98	6.45	0.88	0.80
Sec 2nd Cl Conc A	73.9	0.60	10.0	1.21	0.39	32.0	9.12	9.89	7.83	9.15
Sec 2nd Cl Conc B	52.3	0.42	12.1	1.10	0.47	32.0	7.81	6.36	6.68	6.48
Sec 2nd Cl Conc C	42.8	0.35	13.9	0.95	0.53	30.5	7.34	4.50	6.16	5.05
Sec 2nd Cl Conc D	41.1	0.33	15.3	1.35	0.53	32.1	7.76	6.14	5.92	5.10
Sec 2nd Cl Conc E	41.5	0.34	12.9	0.89	0.56	33.9	6.60	4.09	6.31	5.44
Sec 2nd Cl Conc F	40.4	0.33	15.7	1.43	0.54	32.7	7.82	6.39	5.93	5.11
Sec 2nd Cl Tail F	214.5	1.74	5.99	0.18	0.21	13.1	15.85	4.27	12.24	10.9
Sec 1st Cl Scav Conc F	43.4	0.35	6.12	0.17	0.22	16.1	3.28	0.82	2.59	2.70
Sec 1st Cl Scav Tail A	108.3	0.88	0.44	0.022	0.022	2.17	0.59	0.26	0.65	0.91
Sec 1st Cl Scav Tail B	192.2	1.56	0.45	0.022	0.02	4.67	1.07	0.47	1.04	3.47
Sec 1st Cl Scav Tail C	222.7	1.81	0.55	0.017	0.023	6.28	1.51	0.42	1.39	5.41
Sec 1st Cl Scav Tail D	224.8	1.83	0.61	0.015	0.034	5.88	1.69	0.37	2.08	5.11
Sec 1st Cl Scav Tail E	190.7	1.55	0.76	0.018	0.03	5.57	1.79	0.38	1.55	4.11
Sec 1st Cl Scav Tail F	393.6	3.20	0.93	0.03	0.044	5.85	4.52	1.31	4.70	8.91
Sec Ro Tail A	1713.8	13.9	0.10	0.021	< 0.01	0.18	2.11	3.98	4.66	1.19
Sec Ro Tail B	1658.9	13.5	0.093	0.005	< 0.01	0.26	1.90	0.92	4.51	1.67
Sec Ro Tail C	1700.9	13.8	0.10	0.019	< 0.01	0.40	2.10	3.58	4.62	2.63
Sec Ro Tail D	1669.2	13.6	0.094	0.004	< 0.01	0.41	1.94	0.74	4.53	2.65
Sec Ro Tail E	1707.5	13.9	0.10	0.006	< 0.01	0.56	2.11	1.13	4.64	3.70
Sec Ro Tail F	1693.5	13.8	0.10	0.006	0.011	0.63	2.09	1.12	5.06	4.13
	12309.8	100	0.66	0.07	0.030	2.10	100	100	100	100

Combined Products (Average 6 Cycles)

Product	Weight		Assay, %				Distribution, %			
	g	%	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro Conc	283.8	2.31	3.15	1.37	0.09	5.64	11.0	42.9	6.91	6.19
Sec 2nd Cl Conc	292	2.37	12.9	1.16	0.49	32.2	46.4	37.4	38.8	36.3
Sec 2nd Cl Tail	214.5	1.74	5.99	0.18	0.21	13.1	15.8	4.27	12.2	10.9
Sec 1st Cl Scav Conc	43.4	0.35	6.12	0.17	0.22	16.1	3.28	0.82	2.59	2.70
Sec 1st Cl Scav Tail	1332.3	10.8	0.68	0.02	0.03	5.42	11.2	3.21	11.4	27.9
Sec Ro Tail	10143.8	82.4	0.10	0.01	0.01	0.41	12.2	11.5	28.0	16.0
	12309.8	100	0.66	0.07	0.03	2.10	100	100	100	100

Stability Analysis

Cycle	Wt%	Ni	Cu	Co	S
A	93.83	75.28	111.1	81.40	70.25
B	95.26	80.02	91.18	81.68	77.32
C	97.89	78.15	103.2	80.56	85.67
D	97.00	79.15	86.50	82.42	83.35
E	97.39	80.20	85.83	85.49	88.28
F	106.07	92.43	91.64	99.46	113.7
Average C to F	99.58	82.49	91.80	86.98	92.74
Average D to F	100.15	83.93	87.99	89.12	95.10
Average E to F	101.73	86.32	88.74	92.47	100.97

MASTERSIZER 2000

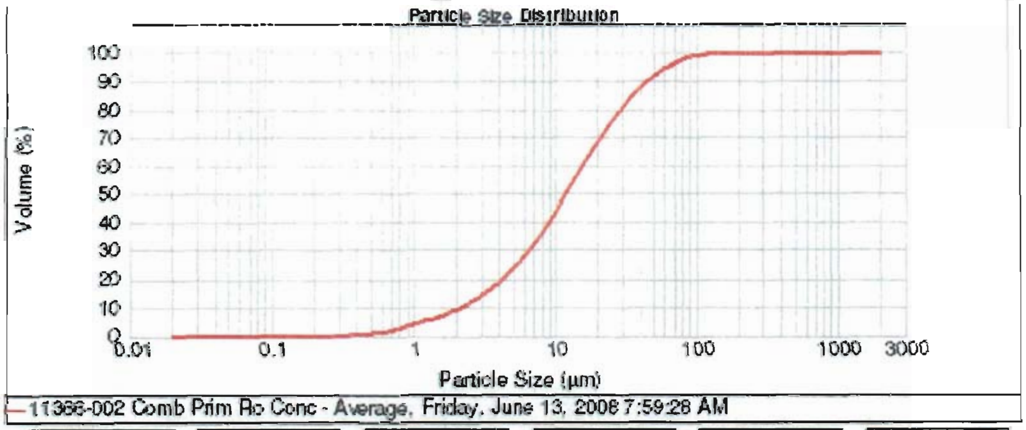
Result Analysis Report

Sample Name: 11366-002 Comb Prim Ro Conc - Average	**SOP Name:** default	**Measured:** Friday, June 13, 2008 7:59:28 AM
Sample Source & type: Factory – LCT1	**Measured by:** lr_hydro1	**Analysed:** Friday, June 13, 2008 7:59:30 AM
Sample bulk lot ref: ai	**Result Source:** Averaged	

Particle Name: Default	**Accessory Name:** Hydro 2000G (A)	**Analysis model:** General purpose	**Sensitivity:** Enhanced
Particle RI: 1.520	**Absorption:** 0.1	**Size range:** 0.020 to 2000.000 um	**Obscuration:** 17.88 %
Dispersant Name: Water	**Dispersant RI:** 1.330	**Weighted Residual:** 1.239 %	**Result Emulation:** Off

Concentration: 0.0151 %Vol	**Span :** 3.617	**Uniformity:** 1.13	**Result units:** Volume
Specific Surface Area: 1.18 m²/g	**Surface Weighted Mean D[3,2]:** 5.090 um	**Vol. Weighted Mean D[4,3]:** 18.998 um	

d(0.1): 2.182 um   d(0.5): 11.865 um   D(0.80) : 29.13 µm



Size (µm)	Vol Under %	Size (µm)	Vol Under %	Size (µm)	Vol Under %	Size (µm)	Vol Under %	Size (µm)	Vol Under %	Size (µm)	Vol Under %
0.010	0.00	0.105	0.00	1.096	4.59	11.482	48.82	120.226	99.55	1258.925	100.00
0.011	0.00	0.120	0.00	1.259	5.47	13.183	53.93	138.038	99.84	1445.440	100.00
0.013	0.00	0.138	0.00	1.445	6.40	15.136	58.70	158.489	99.98	1659.587	100.00
0.015	0.00	0.158	0.00	1.660	7.45	17.378	63.69	181.970	100.00	1905.461	100.00
0.017	0.00	0.182	0.00	1.905	8.64	19.953	68.43	208.930	100.00	2187.762	100.00
0.020	0.00	0.209	0.00	2.188	10.03	22.909	72.93	239.883	100.00	2511.886	100.00
0.023	0.00	0.240	0.00	2.512	11.63	26.303	77.12	275.423	100.00	2884.032	100.00
0.026	0.00	0.275	0.00	2.884	13.47	30.200	80.97	316.228	100.00	3311.311	100.00
0.030	0.00	0.316	0.00	3.311	15.57	34.674	84.45	363.078	100.00	3801.894	100.00
0.035	0.00	0.363	0.00	3.802	17.95	39.811	87.54	416.869	100.00	4365.158	100.00
0.040	0.00	0.417	0.09	4.365	20.64	45.709	90.25	478.630	100.00	5011.872	100.00
0.046	0.00	0.479	0.36	5.012	23.66	52.481	92.57	549.541	100.00	5754.399	100.00
0.052	0.00	0.550	0.82	5.754	27.04	60.256	94.53	630.957	100.00	6606.934	100.00
0.060	0.00	0.631	1.42	6.607	30.77	69.183	96.14	724.436	100.00	7585.776	100.00
0.069	0.00	0.724	2.14	7.586	34.86	79.433	97.43	831.764	100.00	8709.636	100.00
0.079	0.00	0.832	2.92	8.710	39.27	91.201	98.40	954.993	100.00	10000.000	100.00
0.091	0.00	0.955	3.74	10.000	43.95	104.713	99.10	1096.478	100.00		

Operator notes:

MASTERSIZER 2000

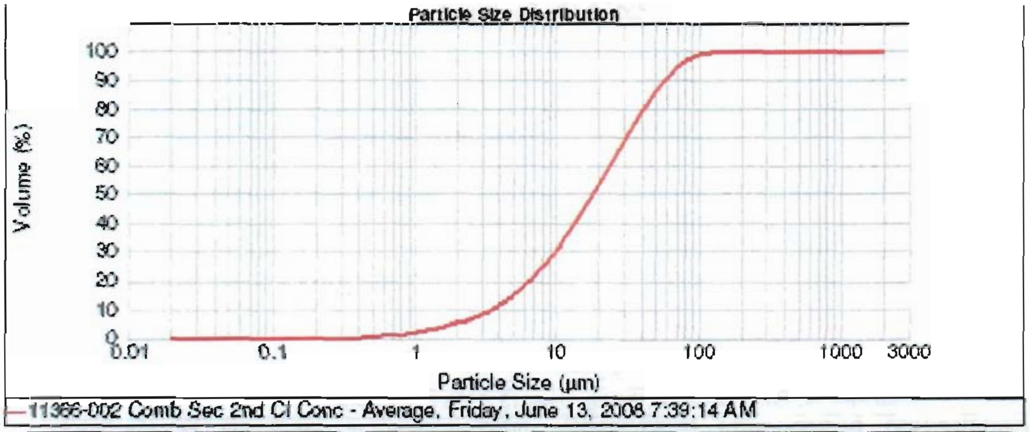
Result Analysis Report

Sample Name: 11366-002 Comb Sec 2nd Cl Conc -	**SOP Name:** default	**Measured:** Friday, June 13, 2008 7:39:14 AM
Sample Source & type: Factory - LCT1	**Measured by:** h_hydro1	**Analysed:** Friday, June 13, 2008 7:39:15 AM
Sample bulk lot ref: ar	**Result Source:** Averaged	

Particle Name: Default	**Accessory Name:** Hydro 2000G (A)	**Analysis model:** General purpose	**Sensitivity:** Enhanced
Particle RI: 1.520	**Absorption:** 0.1	**Size range:** 0.020 to 2000.000 um	**Obscuration:** 17.84 %
Dispersant Name: Water	**Dispersant RI:** 1.330	**Weighted Residual:** 0.757 %	**Result Emulation:** Off

Concentration: 0.0216 %Vol	**Span :** 2.082	**Uniformity:** 0.932	**Result units:** Volume
Specific Surface Area: 0.791 m²/g	**Surface Weighted Mean D[3,2]:** 7.584 um	**Vol. Weighted Mean D[4,3]:** 25.740 um	

d(0.1): 3.543 um d(0.5): 18.404 um **D(0.80) : 41.47 µm**



Size (µm)	Vol Under %	Size (µm)	Vol Under %	Size (µm)	Vol Under %	Size (µm)	Vol Under %	Size (µm)	Vol Under %	Size (µm)	Vol Under %
0.010	0.00	0.105	0.00	1.096	2.39	11.482	34.30	120.226	99.48	1258.925	100.00
0.011	0.00	0.120	0.00	1.259	2.87	13.183	38.59	138.038	99.89	1445.440	100.00
0.013	0.00	0.138	0.00	1.445	3.40	15.136	43.16	158.489	100.00	1659.587	100.00
0.015	0.00	0.158	0.00	1.660	4.02	17.378	47.95	181.970	100.00	1905.461	100.00
0.017	0.00	0.182	0.00	1.905	4.74	19.953	52.95	208.930	100.00	2187.762	100.00
0.020	0.00	0.209	0.00	2.188	5.61	22.909	58.10	239.883	100.00	2511.886	100.00
0.023	0.00	0.240	0.00	2.512	6.63	26.303	63.34	275.423	100.00	2884.032	100.00
0.026	0.00	0.275	0.00	2.884	7.83	30.200	68.56	316.228	100.00	3311.311	100.00
0.030	0.00	0.316	0.00	3.311	9.23	34.674	73.71	363.078	100.00	3801.894	100.00
0.035	0.00	0.363	0.00	3.802	10.86	39.811	78.61	416.869	100.00	4365.158	100.00
0.040	0.00	0.417	0.00	4.365	12.74	45.709	83.16	478.630	100.00	5011.872	100.00
0.046	0.00	0.479	0.15	5.012	14.89	52.481	87.22	549.541	100.00	5754.399	100.00
0.052	0.00	0.550	0.39	5.754	17.34	60.256	90.73	630.957	100.00	6606.934	100.00
0.060	0.00	0.631	0.72	6.607	20.10	69.183	93.63	724.436	100.00	7585.776	100.00
0.069	0.00	0.724	1.09	7.586	23.17	79.433	95.91	831.764	100.00	8709.636	100.00
0.079	0.00	0.832	1.50	8.710	26.58	91.201	97.60	954.993	100.00	10000.000	100.00
0.091	0.00	0.955	1.93	10.000	30.29	104.713	98.77	1096.478	100.00		

Operator notes:

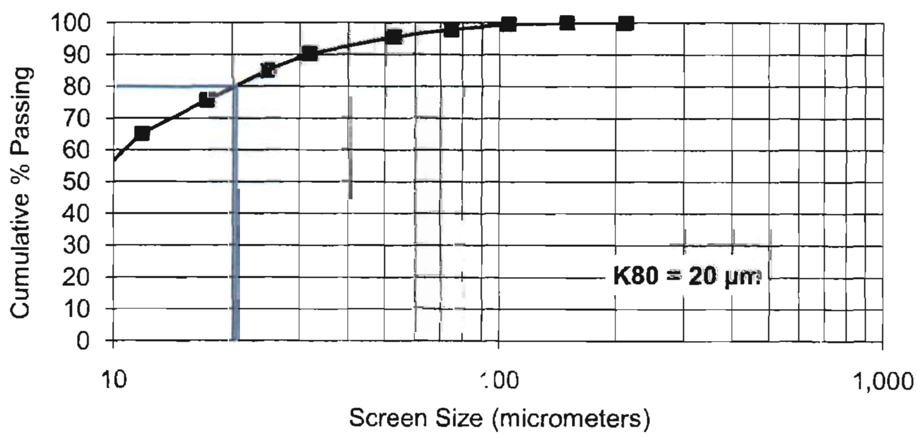
SGS Minerals Services
Size Distribution Analysis

Project No. **11366-002**

Sample: **Comb 1ST CL SC TLS** Test No.: **LCT 1**

Dry Solids S.G.=		**3.10**	Water Temperature =		**24.00 C°**
Size		Weight	% Retained		% Passing
Mesh	µm	grams	Individual	Cumulative	Cumulative
65	212	0.0	0.0	0.0	100.0
100	150	0.0	0.0	0.0	100.0
150	106	0.2	0.4	0.4	99.6
200	75	0.8	1.6	2.0	98.0
270	53	1.2	2.4	4.3	95.7
	32	2.7	5.3	9.7	90.3
	25	2.6	5.1	14.8	85.2
	17	4.7	9.4	24.3	75.7
	12	5.2	10.5	34.8	65.2
	9	6.4	12.8	47.6	52.4
	-9	26.2	52.4	100.0	0.0
Total	-	**50.0**	100.0	-	-
K80	**20**				

Particle Size Distribution

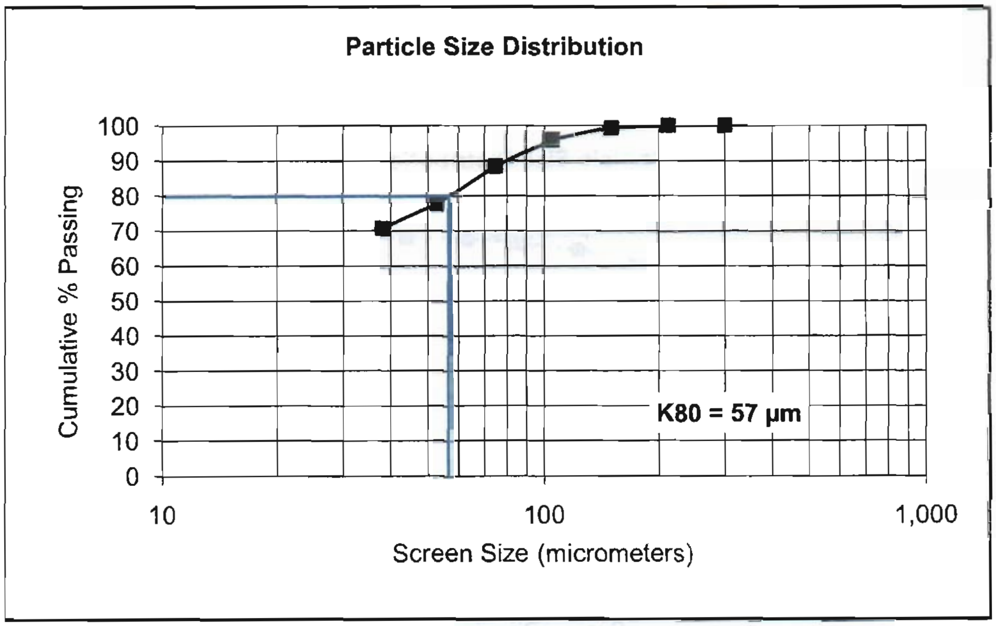


SGS Minerals Services
Size Distribution Analysis

Project No. **11366-002**

Sample: **Comb Prod** Test No.: **LCT1**

Size		Weight	% Retained		% Passing
Mesh	µm	grams	Individual	Cumulative	Cumulative
48	300	0.0	0.0	0.0	100.0
65	212	0.0	0.0	0.0	100.0
100	150	0.5	0.5	0.5	99.5
150	106	3.2	3.2	3.7	96.3
200	75	7.8	7.8	11.5	88.5
270	53	10.7	10.7	22.2	77.8
400	38	7.0	7.0	29.2	70.8
Pan	-38	70.8	70.8	100.0	0.0
Total	-	**100.0**	100.0	-	-
K80	**57**				



Appendix G – Mineralogical Analysis of Primary Rougher Concentrate

The Mineralogical Investigation of

PRIMARY ROUGHER CONCENTRATE SAMPLE

prepared for

LANDORE RESOURCES

LR 11366-001 - Report No. 1
July 11, 2008

SGS

NOTE:
This report refers to the samples as received.

The practice of this Company in issuing reports of this nature is to require the recipient not to publish the report or any part thereof without the written consent of SGS Minerals Services.

Introduction

One sample, identified as LCT-1 Primary Rougher Concentrate was submitted by Landore Resources for general mineralogical examination.

Polished section was prepared from the sample was systematically scanned under the optical microscope to determine the mineralogy. X-ray powder diffraction analysis was also carried out.

SGS LAKEFIELD RESEARCH LIMITED

Aparup Chattopadhyay, Ph.D., P. Geo.
Senior Mineralogist

Roch Marion, B.Sc., C.Chem.
Manager, Advanced Mineralogy Facility

Experimental Work by: Anita Coppaway – Sample Logging
Ryan Pippy – Polished Section Preparation
Aparup Chattopadhyay – Optical Microscopy & Photomicrographs

*Report Preparation by: A*parup Chattopadhyay

Testwork Summary

1. Sample Preparation

Representative portion was split from the as-received sample for polished section preparation and for XRD analysis.

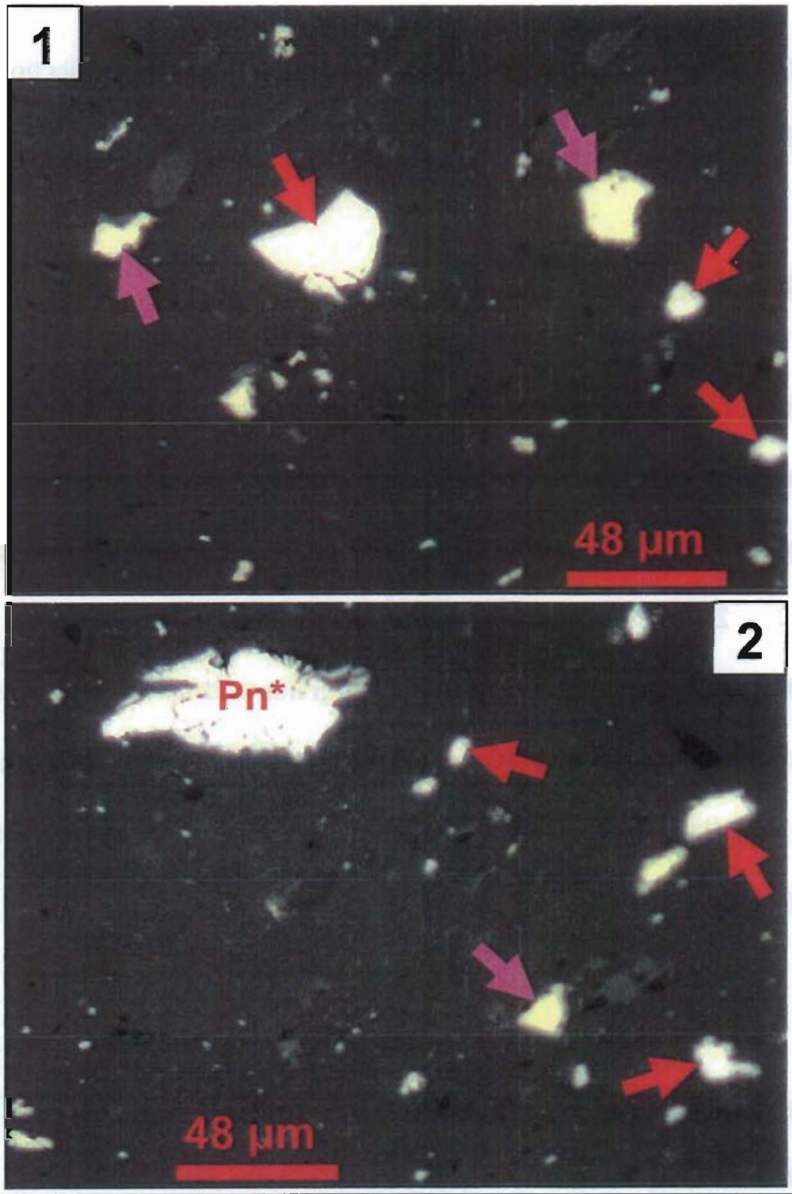
2. General Mineralogy

The sample was mainly composed of mainly composed of non-opaques with minor amounts of pentlandite (including violarite), chalcopyrite and pyrrhotite and traces of pyrite, sphalerite, bornite and covellite. The major sulfides (pentlandite and chalcopyrite), in general, were liberated (Plates 1 – 2). In general, most of the pentlandite and chalcopyrite occurred as liberated (70 - 80%) irregular elongated/sub-rounded grains with an average grain-size (10 - 30μm). A few medium/coarse grained (40 -60 μm) liberated/composite pentlandite, pyrrhotite and chalcopyrite and flame-like pentlandite within pyrrhotite were noted (Plates 3 – 6). Alteration of pentlandite to violarite was also noted in some places.

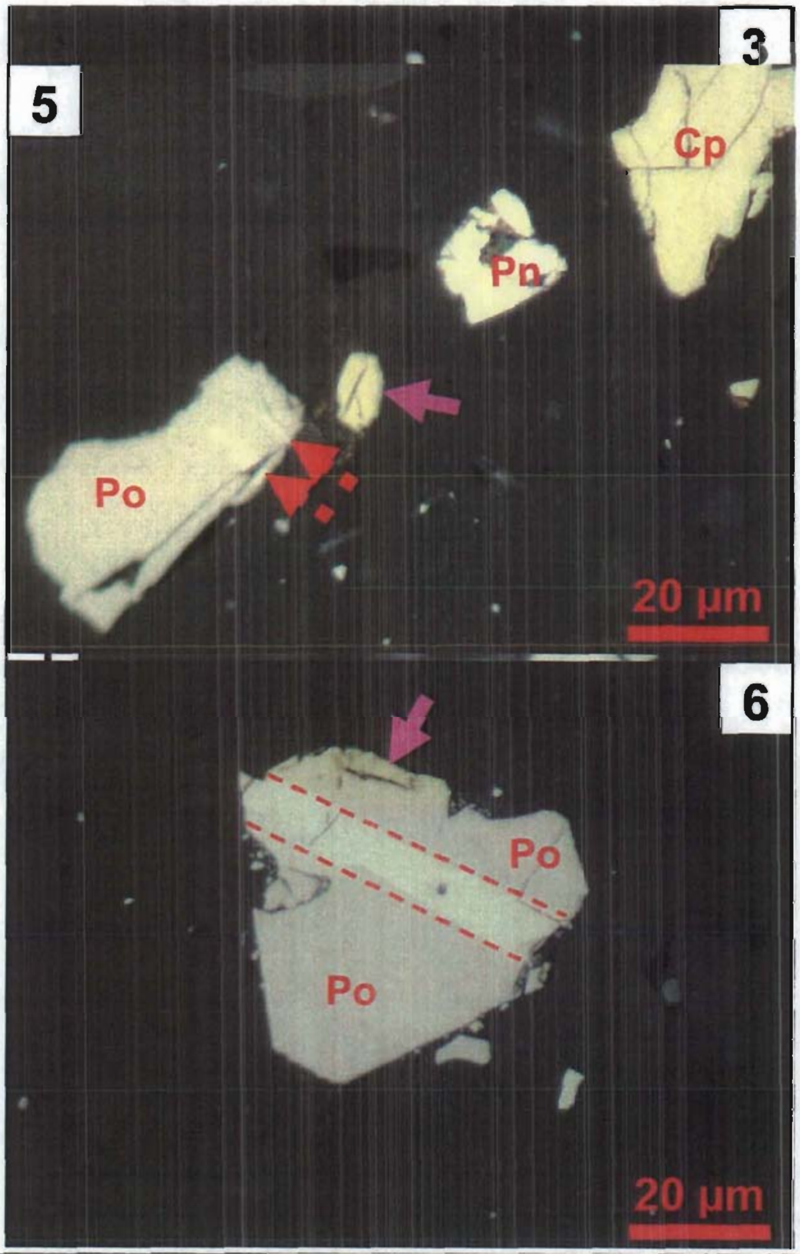
3. Comments

1. Pentlandite, chalcopyrite and pyrrhotite were the main sulfide phases in this sample.
2. In general, most of the sulfides were liberated.
3. A few tiny orange materials were noted during the optical microscopic study. These materials seem to be contaminants/agglomerates with high amount of Fe, Ba, S, Si, Cl and O.

Photomicrographs

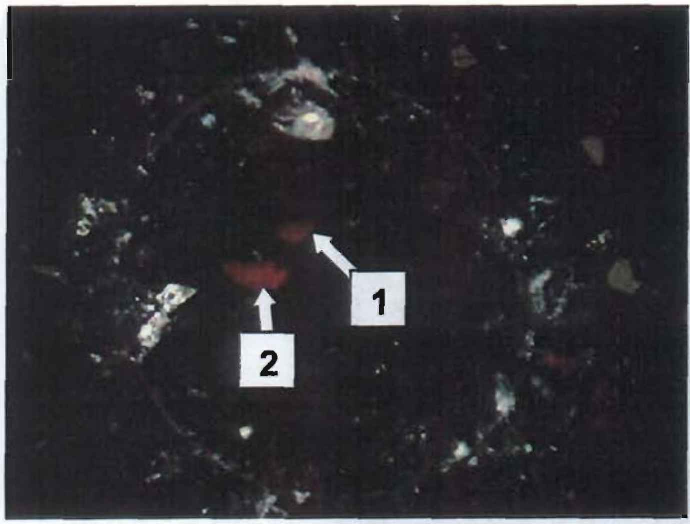


Photomicrographs of the polished section showing general appearance different phases under reflected light:
Plate 1 showing liberated pentlandite (indicated by red arrow) and chalcopyrite (indicated by pink arrow), X200
Plate 2 showing liberated altered pentlandite -violarite (indicated by Pn*), pentlandite (indicated by red arrow) and chalcopyrite (indicated by pink arrow), X200

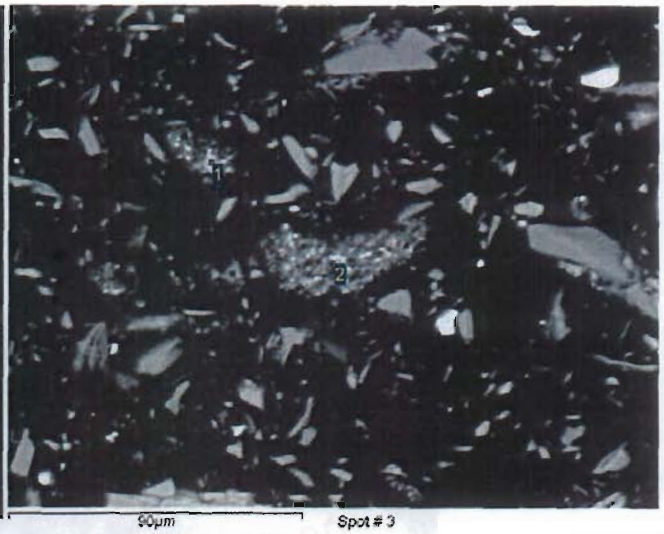


Photomicrographs of the polished section showing general appearance different phases under reflected light:
Plate 5 showing liberated pentlandite (indicated by Pn), chalcopyrite (indicated by Cp and pink arrow) and flame-like pentlandite within pyrrhotite (indicated by Po and broken red arrow respectively), X500
Plate 6 showing complex pyrrhotite-pentlandite-chalcopyrite (indicated by Po, broken red lines and pink arrow respectively), X500

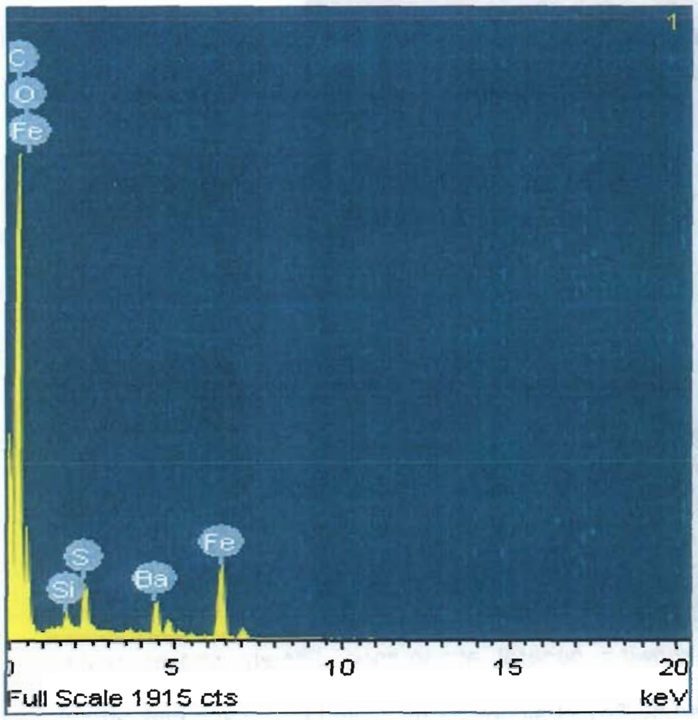
SEM-EDS Study

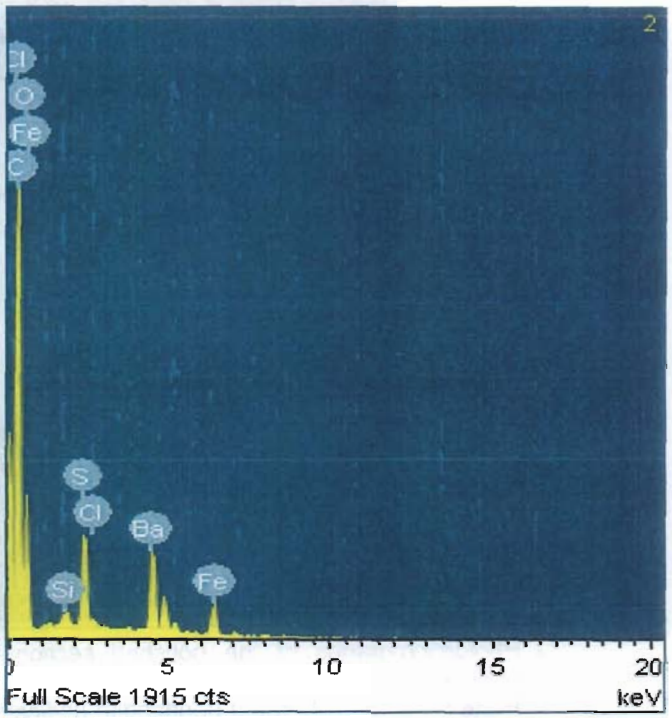


Optical Microscopic photomicrograph



Back Scattered Electron Image





Appendix H – Variability Test Results

Test No: V1 **Project No.:** 11366-002 **Operator:** KS **Date:** July 8, 2008

Purpose: Perform a batch cleaner test with LCT-1 conditions using the Batch 1 composite

Procedure: As outlined below.
Feed: 2 kg of minus 10 mesh Batch 1 Composite
Grind: 30 minutes @ 65% Solids in new ball — K_{80} = 45 microns
Regrind: *7 minutes @ 65 % solids in pepple mill - SEC ROUGHER CONCENTRATE ONLY* — K_{80} = 26 microns

Conditions:

Stage	Reagents (g/t)					Time (minutes)			pH	Eh
	SIBX	MIBC	PAX	CMC	Lime	Grind	Cond.	Froth		
Grind	5					30			8.1	-100.0
Primary Rougher		10		200			2	2	8.1	40.0
Secondary Rougher		5	20	25			2	2	8.0	90.0
		5	20				2	4	8.0	90.0
			20				2	4	8.0	90.0
Regrind						7			8.2	20.0
1st Cleaner	5			25	150			3	10.2	40
1st Cleaner Sav		2.5	10					3	9.0	90
2nd Cleaner	2.5	2.5		25	100			2	10.2	40
Total	13	25	70	275	250	37	8	20		

Comments: Grind pasty thick discharge, Prim rougher gangue floating very little sulfides, Sec rougher sulfides started to float

Stage	Roughers	1stClnr and Scav.	2nd Cleaner
Flotation Cell	1000 g	500g	N/A
Speed: rpm	1800	1200	N/A

Metallurgical Balance

Product	Weight		Assays, %				% Distribution			
	g	%	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro conc	56.3	2.84	0.73	0.38	0.02	1.46	1.69	8.57	1.32	1.18
Sec 2nd Clnr Conc	64.8	3.27	21.2	2.88	0.50	34.8	56.4	74.8	34.4	32.4
Sec 2nd Clnr Tail	65.9	3.32	6.67	0.21	0.20	15.4	18.1	5.54	14.0	14.6
Sec 1st Clnr Scav Conc	70.1	3.53	3.06	0.12	0.14	17.1	8.81	3.37	10.4	17.2
Sec 1st Clnr Scav Tail	113.5	5.72	0.81	0.028	0.05	5.28	3.78	1.27	5.55	8.61
Sec Ro Tail	1613.7	81.3	0.17	0.010	0.02	1.12	11.3	6.47	34.3	26.0
Head (calc.)	1984.3	100.0	1.23	0.126	0.047	3.51	100.0	100.00	100.0	100.0
(direct)	2000.0		*1.32*	*0.120*	*0.039*	*3.49*				
Call Factor	99%		*93%*	*105%*	*122%*	*100%*				

Combined Products	Wt %	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro Conc	2.84	0.73	0.38	0.02	1.46	1.69	8.57	1.32	1.18
Sec 2nd Clnr Conc	3.27	21.2	2.88	0.50	34.8	56.4	74.8	34.4	32.4
Sec 1st Clnr Conc	6.59	13.9	1.53	0.35	25.0	74.5	80.3	48.4	47.0
Sec 1st Clnr Conc & Sec 1st Clnr Scav Conc	10.1	10.1	1.04	0.28	22.3	83.3	83.7	58.8	64.2

Combined Products	Wt %	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro Conc	2.84	0.73	0.38	0.02	1.46	1.69	8.57	1.32	1.18
Pri Ro Conc & Sec 2nd Clnr Conc	6.10	11.7	1.72	0.28	19.3	58.1	83.3	35.7	33.6
Pri Ro Conc & Sec 1st Clnr Conc	9.42	9.92	1.19	0.25	17.9	76.2	88.9	49.7	48.2
Pri Ro Conc & Sec 1st Clnr Conc & Sec 1st Clnr Scav Conc	13.0	8.05	0.90	0.22	17.7	85.0	92.3	60.2	65.4

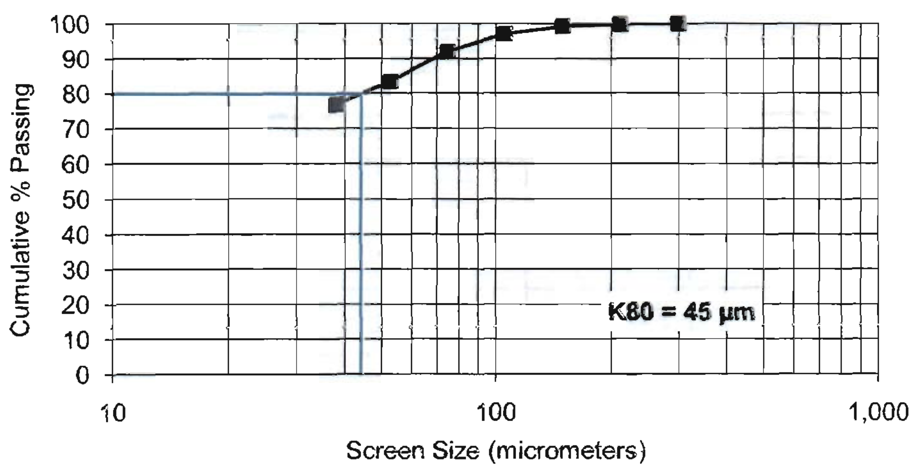
SGS Minerals Services
Size Distribution Analysis

Project No. **11366-002**

Sample: **Sec Ro Tail** Test No.: **V1**

Size		Weight	% Retained		% Passing
Mesh	µm	grams	Individual	Cumulative	Cumulative
48	300	0.0	0.0	0.0	100.0
65	212	0.2	0.1	0.1	99.9
100	150	1.0	0.5	0.7	99.3
150	106	4.0	2.2	2.8	97.2
200	75	9.2	5.0	7.9	92.1
270	53	15.8	8.7	16.5	83.5
400	38	12.1	6.6	23.2	76.8
Pan	-38	140.2	76.8	100.0	0.0
Total	-	**182.5**	100.0	-	-
K80	**45**				

Particle Size Distribution

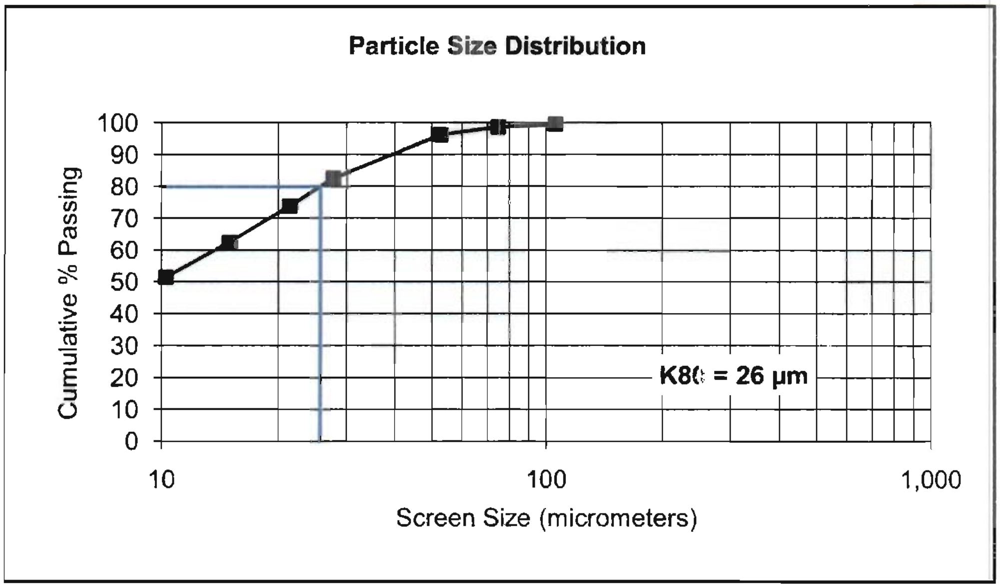


SGS Minerals Services
Size Distribution Analysis

Project No. **11366-002**

Sample: **Comb prod** Test No.: **V1**

Dry Solids S.G.=		**3.58**	Water Temperature =		**27.00 C°**
Size		Weight	% Retained		% Passing
Mesh	µm	grams	Individual	Cumulative	Cumulative
150	106	0.2	0.5	0.5	99.5
200	75	0.4	0.8	1.3	98.7
270	53	1.2	2.4	3.7	96.3
	28	6.8	13.7	17.5	82.5
	21	4.3	8.7	26.1	73.9
	15	5.6	11.3	37.5	62.5
	10	5.5	11.1	48.6	51.4
	8	5.6	11.3	59.9	40.1
	-8	19.9	40.1	100.0	0.0
Total	-	**49.6**	100.0	-	-
K80	**26**				



Test No: V2 **Project No.:** 11366-002 **Operator:** KS **Date:** July 11, 2008

Purpose: Perform a batch cleaner test with LCT-1 conditions using the Batch 2 composite

Procedure: As outlined below.
Feed: 2 kg of minus 10 mesh Batch 2 Composite
Grind: 30 minutes @ 65% Solids in new ball K_{80} = 37 microns
Regrind: 7 minutes @ 65 % solids in pepple mill - SEC ROUGHER CONCENTRATE ONLY K_{80} = 27 microns

Conditions:

Stage	Reagents (g/t)					Time (minutes)			pH	Eh
	SIBX	MIBC	PAX	CMC	Lime	Grind	Cond.	Froth		
Grind	5					30			8.8	-160.0
Primary Rougher		10		200			2	2	8.8	-160.0
Secondary Rougher		2.5	20	25			2	2	8.8	-110.0
		5	20				2	4	8.7	-100.0
		10	20				2	4	8.5	-100.0
Regrind						7			8.6	-80.0
1st Cleaner	5	5		25	75			3	10.2	
1st Cleaner Sav			10					3	9.4	-50
2nd Cleaner	2.5	2.5		25	25			2	10.2	-50
Total	13	35	70	275	100	37	8	20		

Comments: Sec Clnr could benefit from larger CMC dosage

Stage	Roughers	1stClnr and Scav.	2nd Cleaner
Flotation Cell	1000 g	500g	N/A
Speed: rpm	1800	1200	N/A

Metallurgical Balance

Product	Weight		Assays, %				% Distribution			
	g	%	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro conc	46.3	2.33	1.02	0.33	0.04	2.22	3.34	9.21	3.02	2.51
Sec 2nd Clnr Conc	53.1	2.67	15.9	2.33	0.52	34.0	59.7	74.5	47.4	44.1
Sec 2nd Clnr Tail	29.1	1.46	4.01	0.19	0.10	8.38	8.26	3.33	4.99	5.96
Sec 1st Clnr Scav Conc	63.2	3.18	2.12	0.09	0.10	8.79	9.48	3.43	10.8	13.6
Sec 1st Clnr Scav Tail	115.4	5.81	0.60	0.02	0.025	4.56	4.90	1.39	4.95	12.9
Sec Ro Tail	1680.2	84.5	0.12	0.008	<0.01	0.51	14.3	8.10	28.8	20.9
Head (calc.)	1987.3	100.0	0.71	0.084	0.029	2.06	100	100	100	100
(direct)	2000.0		*0.74*	*0.090*	*0.026*	*1.94*				
Call Factor	99%		*96%*	*93%*	*113%*	*106%*				

Combined Products	Wt %	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro Conc	2.33	1.02	0.33	0.04	2.22	3.34	9.21	3.02	2.51
Sec 2nd Clnr Conc	2.67	15.9	2.33	0.52	34.0	59.7	74.5	47.4	44.1
Sec 1st Clnr Conc	4.14	11.7	1.57	0.37	24.9	68.0	77.9	52.4	50.1
Sec 1st Clnr Conc & Sec 1st Clnr Scav Conc	13.1	4.46	0.53	0.15	12.0	82.4	82.7	68.2	76.5

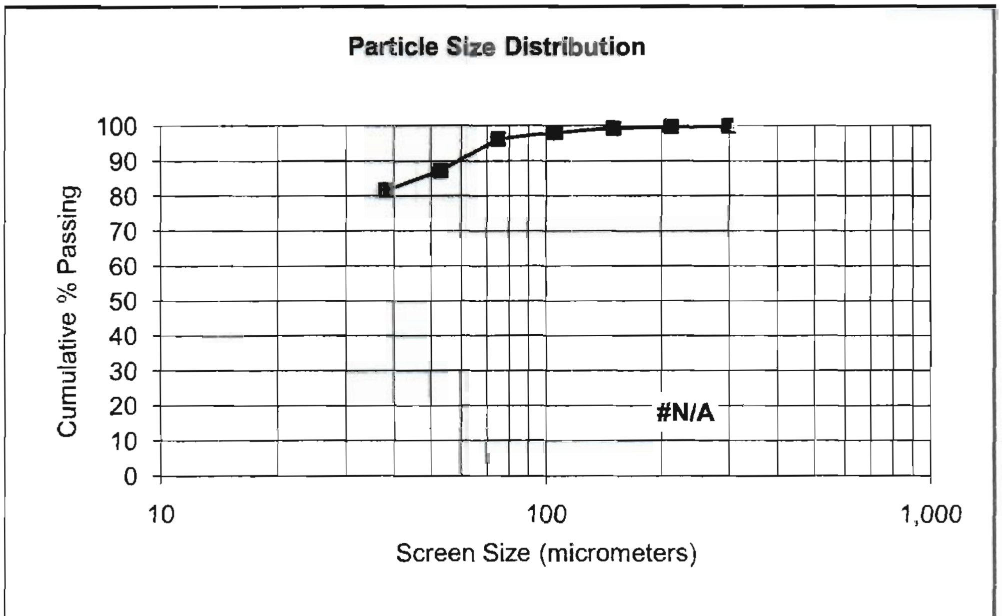
Combined Products	Wt %	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro Conc	2.33	1.02	0.33	0.04	2.22	3.34	9.21	3.02	2.51
Pri Ro Conc & Sec 2nd Clnr Conc	5.00	8.97	1.40	0.30	19.2	63.1	83.8	50.4	46.6
Pri Ro Conc & Sec 1st Clnr Conc	6.47	7.85	1.12	0.25	16.7	71.3	87.1	55.4	52.6
Pri Ro Conc & Sec 1st Clnr Conc & Sec 1st Clnr Scav Conc	9.6	5.96	0.78	0.20	14.1	80.8	90.5	66.2	66.2

SGS Minerals Services
Size Distribution Analysis

Project No. **11366-002**

Sample: **Sec Ro Tail** Test No.: **V-2**

Size		Weight	% Retained		% Passing
Mesh	µm	grams	Individual	Cumulative	Cumulative
48	300	0.1	0.1	0.1	99.9
65	212	0.3	0.2	0.3	99.7
100	150	0.6	0.4	0.7	99.3
150	106	1.8	1.2	1.9	98.1
200	75	2.6	1.8	3.7	96.3
270	53	13.1	9.1	12.8	87.2
400	38	8.0	5.5	18.3	81.7
Pan	-38	118.0	81.7	100.0	0.0
Total	-	**144.5**	100.0	-	-
K80	**#N/A**				

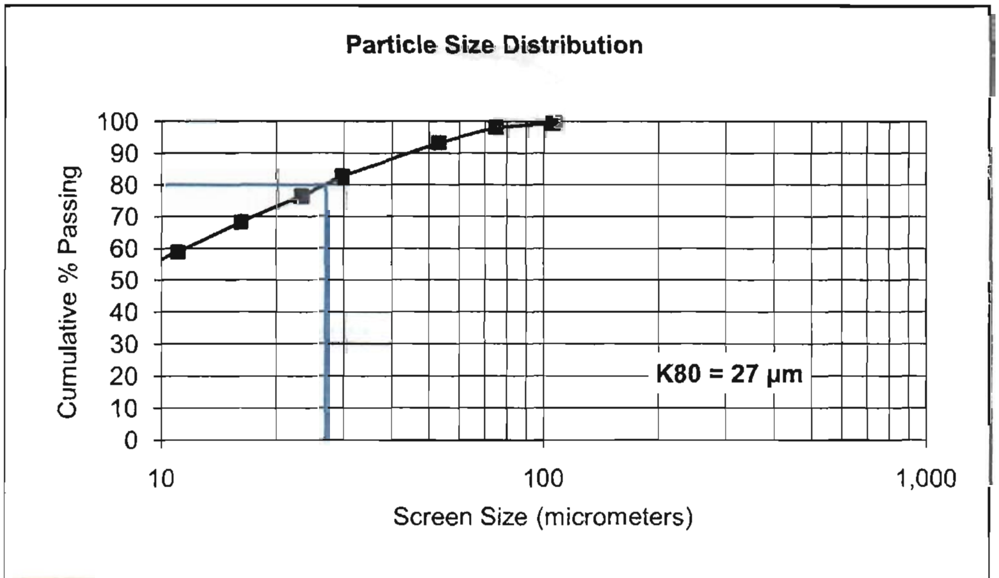


SGS Minerals Services
Size Distribution Analysis

Project No. **11366-002**

Sample: **Comb Prod** Test No.: **V2**

Dry Solids S.G.=		3.34	Water Temperature =		25.00 C°
Size		Weight	% Retained		% Passing
Mesh	µm	grams	Individual	Cumulative	Cumulative
150	106	0.3	0.6	0.6	99.4
200	75	0.6	1.2	1.8	98.2
270	53	2.4	4.9	6.7	93.3
	30	5.3	10.6	17.3	82.7
	23	3.2	6.3	23.6	76.4
	16	4.0	8.0	31.7	68.3
	11	4.7	9.5	41.1	58.9
	9	2.9	5.8	46.9	53.1
	-9	26.5	53.1	100.0	0.0
Total	-	**49.9**	100.0	-	-
K80	**27**				



Test No: V3 **Project No.:** 11366-002 **Operator:** KS **Date:** July 14, 2008

Purpose:	Perform a batch cleaner test with LCT-1 conditions using the Batch 3 composite
Procedure:	As outlined below.
Feed:	2 kg of minus 10 mesh Batch 3 Composite
Grind:	30 minutes @ 65% Solids in new ball — K_{80} = 56 microns
Regrind:	7 minutes @ 65 % solids in pepple mill - SEC ROUGHER CONCENTRATE ONLY — K_{80} = 27 microns

Conditions:

Stage	Reagents (g/t)					Time (minutes)			pH	Eh
	SIBX	MIBC	PAX	CMC	Lime	Grind	Cond.	Froth		
Grind	5					30			8.5	-160.0
Primary Rougher		10		200			2	2	8.5	-160.0
Secondary Rougher		2.5	20	25			2	2	8.5	20.0
		5	20				2	4	8.3	40.0
		10	20				2	4	8.3	40.0
Regrind						7			8.2	80.0
1st Cleaner	5	5		25	150			3	10.2	20
1st Cleaner Sav			10					3	9.5	20
2nd Cleaner	2.5	2.5		25	25			2	10.2	0
Total	13	35	70	275	175	37	8	20		

Comments: Sec Clnr could benefit from larger CMC dosage

Stage	Roughers	1stClnr and Scav.	2nd Cleaner
Flotation Cell	1000 g	500g	N/A
Speed: rpm	1800	1200	N/A

Metallurgical Balance

Product	Weight		Assays, %				% Distribution			
	g	%	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro conc	74.8	3.77	2.09	0.50	0.05	2.90	14.5	28.2	7.19	5.72
Sec 2nd Clnr Conc	38.1	1.92	12.8	1.83	0.51	36.8	45.3	52.6	38.1	37.0
Sec 2nd Clnr Tail	27.2	1.37	4.38	0.21	0.18	24.9	11.1	4.31	9.61	17.9
Sec 1st Clnr Scav Conc	21.9	1.10	2.72	0.16	0.12	18.4	5.53	2.64	5.16	10.6
Sec 1st Clnr Scav Tail	133.8	6.75	0.69	0.045	0.026	6.15	8.57	4.54	6.82	21.7
Sec Ro Tail	1687.4	85.1	0.10	0.006	<0.01	0.16	15.0	7.64	33.1	7.12
Head (calc.)	1983.2	100.0	0.54	0.067	0.026	1.91	100.0	100.00	100.0	100.0
(direct)	2000.0		0.57	0.063	0.016	1.98				
Call Factor	99%		95%	106%	161%	97%				

Combined Products	Wt %	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro Conc	3.77	2.09	0.50	0.05	2.90	14.5	28.2	7.19	5.72
Sec 2nd Clnr Conc	1.92	12.8	1.83	0.51	36.8	45.3	52.6	38.1	37.0
Sec 1st Clnr Conc	3.29	9.29	1.16	0.37	31.8	56.3	56.9	47.7	54.8
Sec 1st Clnr Conc & Sec 1st Clnr Scav Conc	11.1	3.43	0.38	0.14	15.0	70.4	64.1	59.7	87.2

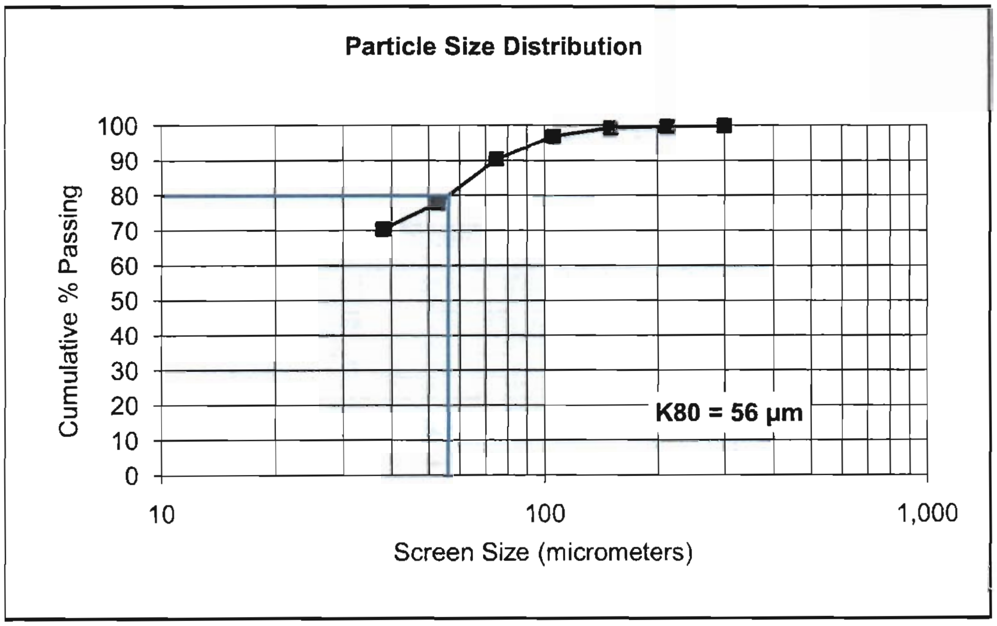
Combined Products	Wt %	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro Conc	3.77	2.09	0.50	0.05	2.90	14.5	28.2	7.19	5.72
Pri Ro Conc & Sec 2nd Clnr Conc	5.69	5.70	0.95	0.20	14.3	59.8	80.9	45.3	42.7
Pri Ro Conc & Sec 1st Clnr Conc	7.06	5.45	0.81	0.20	16.4	70.9	85.2	54.9	60.6
Pri Ro Conc & Sec 1st Clnr Conc & Sec 1st Clnr Scav Conc	8.17	5.08	0.72	0.19	16.7	76.4	87.8	60.1	71.2

SGS Minerals Services
Size Distribution Analysis

Project No. **11366-002**

Sample: **Sec Ro Tail** Test No.: **V3**

Size		Weight	% Retained		% Passing
Mesh	µm	grams	Individual	Cumulative	Cumulative
48	300	0.2	0.1	0.1	99.9
65	212	0.2	0.1	0.2	99.8
100	150	0.7	0.4	0.7	99.3
150	106	4.0	2.4	3.0	97.0
200	75	11.1	6.6	9.6	90.4
270	53	21.2	12.6	22.2	77.8
400	38	12.5	7.4	29.6	70.4
Pan	-38	118.8	70.4	100.0	0.0
Total	-	**168.7**	100.0	-	-
K80	**56**				

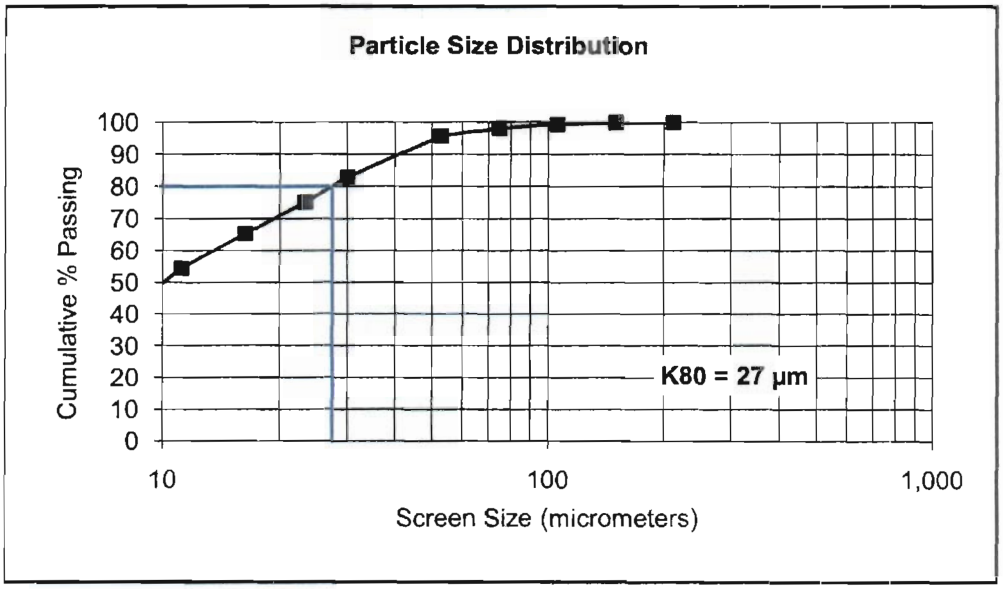


SGS Minerals Services
Size Distribution Analysis

Project No. **11366-002**

Sample: **Comb Prod** Test No.: **V3**

Dry Solids S.G.=		3.40	Water Temperature =		23.00 C°
Size		Weight	% Retained		% Passing
Mesh	µm	grams	Individual	Cumulative	Cumulative
65	212	0.0	0.0	0.0	100.0
100	150	0.1	0.1	0.1	99.9
150	106	0.2	0.4	0.5	99.5
200	75	0.7	1.3	1.8	98.2
270	53	1.2	2.4	4.2	95.8
	30	6.4	12.9	17.1	82.9
	23	3.9	7.9	25.0	75.0
	16	4.9	9.8	34.8	65.2
	11	5.3	10.7	45.4	54.6
	9	5.6	11.2	56.7	43.3
	-9	21.5	43.3	100.0	0.0
Total	-	**49.6**	100.0	-	-
K80	**27**				



Test No: V4 **Project No.:** 11366-002 **Operator:** KS **Date:** July 14, 2008

Purpose: Perform a batch cleaner test with LCT-1 conditions using the Batch 4 composite

Procedure: As outlined below.
Feed: 2 kg of minus 10 mesh Batch 4 Composite
Grind: 30 minutes @ 65% Solids in new ball K_{80} = 56 microns
Regrind: 7 minutes @ 65 % solids in pepple mill - SEC ROUGHER CONCENTRATE ONLY K_{80} = 21 microns

Conditions:

Stage	Reagents (g/t)					Time (minutes)			pH	Eh
	SIBX	MIBC	PAX	CMC	Lime	Grind	Cond.	Froth		
Grind	5					30			8.9	50.0
Primary Rougher		10		200			2	2	8.9	50.0
Secondary Rougher		10	20	25			2	2	8.9	20.0
			20				2	4	8.8	10.0
			20				2	4	8.7	10.0
Regrind						7			8.5	30.0
1st Cleaner	5	7.5		25	200			3	10.2	-20
1st Cleaner Sav			10					3	9.5	20
2nd Cleaner	2.5	5		25	25			2	10.2	20
Total	13	33	70	275	225	37	8	20		

Comments: Sec Clnr could benefit from larger CMC dosage

Stage	Roughers	1stClnr and Scav.	2nd Cleaner
Flotation Cell	1000 g	500g	N/A
Speed: rpm	1800	1200	N/A

Metallurgical Balance

Product	Weight		Assays, %				% Distribution			
	g	%	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro conc	21.7	1.09	5.18	2.74	0.15	9.85	15.5	51.7	7.86	6.70
Sec 2nd Clnr Conc	28.2	1.42	11.1	1.09	0.50	31.6	43.3	26.7	34.0	27.9
Sec 2nd Clnr Tail	16.8	0.84	2.45	0.097	0.094	8.81	5.69	1.42	3.81	4.64
Sec 1st Clnr Scav Conc	16.6	0.83	2.47	0.10	0.100	10.8	5.67	1.44	4.01	5.62
Sec 1st Clnr Scav Tail	92.8	4.67	0.59	0.017	0.029	4.48	7.57	1.37	6.50	13.0
Sec Ro Tail	1812.8	91.1	0.09	0.011	<0.01	0.74	22.3	17.3	43.8	42.1
Head (calc.)	1988.9	100.0	0.36	0.058	0.021	1.60	100.0	100.00	100.0	100.0
(direct)	2000.0		*0.38*	*0.068*	*0.015*	*1.81*				
Call Factor	99%		*96%*	*85%*	*139%*	*89%*				

Combined Products	Wt %	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro Conc	1.09	5.18	2.74	0.15	9.85	15.5	51.7	7.86	6.70
Sec 2nd Clnr Conc	1.42	11.1	1.09	0.50	31.6	43.3	26.7	34.0	27.9
Sec 1st Clnr Conc	2.26	7.87	0.72	0.35	23.1	48.9	28.1	37.9	32.6
Sec 1st Clnr Conc & Sec 1st Clnr Scav Conc	7.76	2.91	0.23	0.13	10.6	62.2	31.0	48.4	51.2

Combined Products	Wt %	Ni	Cu	Co	S	Ni	Cu	Co	S
Pri Ro Conc	1.09	5.18	2.74	0.15	9.85	15.5	51.7	7.86	6.70
Pri Ro Conc & Sec 2nd Clnr Conc	2.51	8.53	1.81	0.35	22.1	58.8	78.4	41.9	34.6
Pri Ro Conc & Sec 1st Clnr Conc	3.35	7.00	1.38	0.28	18.8	64.5	79.8	45.7	39.3
Pri Ro Conc & Sec 1st Clnr Conc & Sec 1st Clnr Scav Conc	4.19	6.09	1.12	0.25	17.2	70.1	81.3	49.7	44.9

SGS Minerals Services
Size Distribution Analysis

Project No. **11366-002**

Sample: **Sec Ro Tail** Test No.: **V4**

Size		Weight	% Retained		% Passing
Mesh	µm	grams	Individual	Cumulative	Cumulative
48	300	0.0	0.0	0.0	100.0
65	212	0.5	0.3	0.3	99.7
100	150	1.0	0.7	1.0	99.0
150	106	3.8	2.5	3.5	96.5
200	75	11.7	7.7	11.3	88.7
270	53	15.2	10.1	21.3	78.7
400	38	17.2	11.4	32.7	67.3
Pan	-38	101.6	67.3	100.0	0.0
Total	-	**151.0**	100.0	-	-
K80	**56**