NAGROM
the mineral processors

A.C.N. 008 868 335
A.B.N. 55 008 868 335

T: 08 9399 3934
F: 08 9497 1415

PO Box 66
Kelmscott WA 6991

49 Owen Road,
Kelmscott WA 6111

Nagrom Metallurgical Report

Red River Resources

Nagrom Test Batch: T144

Title: Magnetite, Hematite, Geothite and Tin Investigation

March 05 2009

MAGNETITE

GOETHITE

HEMATITE

CASSITERITE

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Nagrom Capabilities

Metallurgical Testing and Mineral Beneficiation
(Laboratory to Pilot scale)

- Crushing and grinding - jaw and rolls crushing, rod and ball milling
- Custom drying
- Size separation
- Gravity separation- Spiral, Tables, Jigs and Hydrosizer
- Dense Media cyclone and Cone
- Full tansmission x-ray ore sorting
- Magnetic Separation
- Electrostatic Separation
- Flotation Separation
- Gold Recovery and Leaching Program

Mineral Process Plant -Design, Fabriaction and Operation
Nagrom has in-house fabrication ability to assist with:

- Process circuit design, construction, deployment and operation.
- Custom mineral processing to specifications
- Sourcing, supplying and commisioning specified equipment
- Facilitate superintended export of blended final product

Mine site Services - Contract Staffing

- On site processing/consulting
- Short/Long term coverage of contract staff

Equipment Hire

- A range of Pilot scale equipment available for hire

Mineral Processing - Metallurgical Testing - Circuitry Design - Equipment Supply

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Nagrom Statement of Certification

Sample Preparation and Analysis:

The testwork is conducted by experienced personnel at Nagrom's Kelmscott metallurgical laboratory under the supervision of a senior metallurgist.

Process solids are assayed at Ultratrace Laboratories using fused bead/XRF methods where applicable otherwise acid/fusion dilution followed by ICP-MS methods are used.

Process solutions are assayed at Ultratrace Laboratories using ICP-MS techniques.

The reports will be signed on behalf of the General Manager and Executive Director of Nagrom (the Mineral Processors).

Dr Glen P. O'Malley

For further information, contact:
Glen O'Malley, Senior Metallurgist
Telephone: +61 8 9399 3934
Mobile: 0439 900 455

Information in the report relating to the metallurgical interpretation, analysis, mineral distribution and recommendations has been compiled and checked by the Senior Metallurgist of Nagrom. Dr Glen O'Malley has sufficient experience and expertise relevant to this type of test-work through his job experiences and education and he qualifies as a competent person in the field of metallurgy.

The Nagrom team including Glen O'Malley, Rick Murphy and Tony Wilkinson has a wide range of metallurgical experiences in comminution, gravity separation, flotation, leaching, SX, IX, precipitation, and settling from bench testing scale through to pilot plant scale for the development of flow-sheets or for solving process problems.

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Nagrom Report Summary

Reference: Nagrom Test Batch: T144 Dated: March 05 2009

Findings:

- Overall very interesting results and some positive outcomes.
- Sample 1 is indead a very good magnetite sample however still some way to meeting theortical maximum grade (69.95% Fe).
- Overall Fe grade and recovery of 67.2% and 92.9% respectively with the tin (64.7%) mainly recovered with the iron.
- Samples 2 and 3 were very similar in response but the iron grade (51.8 and 58.2% respectively) and and recovery (55.2 and 55.8% respectively) have fallen from sample 1.

- Sample 4 is very low in iron and only recovered 22.5% at a grade of 47.0%.
- With all these samples the tin recovery by gravity was very poor with most of the tin reported to tails.
- The tin loss could be due ot fine grain and being associated with the lighter silicate material.

Recommendations:

- Should conduct a size by assay determination on the LIMS and Saliant pole to determine as to what grind size is needed to meet stiochiometrical grade.
- Should conduct a davis tube recovery and assay to determine the theoritical maximum recovery and grade.
- Tin recovery by gravity means (wet table) appears to not work (most likely due to being associated with composite material) so flotation, falcon separator or Kelsey jig should be investigated.
- Mineralogical investigation should also be considered to investigate tin liberation and loss.

SAMPLE	Weight	Composition
	Kg	%

Sample 1- Magnetite Rich

Hole No	From	To	Fe (%)	Sn (%)
KNRC 007	26	27	54.5	-
KNRC 007	27	28	57.6	-
KNRC 007	30	31	59.2	-
KNRC 007	31	32	61.7	-
KNRC 007	35	36	58.9	-
			58.4	

Sample 2- Magnetite Tin

Hole No	From	To	Fe (%)	Sn (%)
KNRC 023	18	19	27.2	0.11
KNRC 023	19	20	25.3	0.21
KNRC 023	20	21	24.2	0.20
KNRC 023	21	22	35.7	0.15
KNRC 023	22	23	42.0	0.11
			30.9	**0.16**

Sample 3- Geotite Hematite Tin

Hole No	From	To	Fe (%)	Sn (%)
KNRC 021	1	2	30.5	0.24
KNRC 021	2	3	39.2	0.29
KNRC 021	9	10	40.7	0.23
KNRC 021	16	17	30.7	0.20
KNRC 021	17	18	26.4	0.20
			33.5	**0.23**

Sample 4- Tin

Hole No	From	To	Fe (%)	Sn (%)
KNRC 021	38	39	-	0.18
KNRC 021	42	43	-	0.18
KNRC 021	46	47	-	0.25
KNRC 021	47	48	-	0.21
KNRC 021	48	49	-	0.16
				0.20

SAMPLE	Weight	Fe	Sn	SiO_2	P	S	LOI	Deportment					
	kg	%	%	%	%	%	%	Mass	Fe	Sn	SiO2	P	S
Sample 1													
Crushed and ground to -250um.													
LIMS is 1,200 gauss on skin 800 gauss at 40mm.													
Saliant Pole is 9,000 gauss on skin and 6,000 gauss at 40 mm.													
Wet Table is a Wifley Table													
Feed Distribution													
Calc. Feed	10.17	57.17	0.03	8.85	0.00	0.00	-0.45	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
LIMS Mag	7.50	67.08	0.02	1.76	<0.01	0.00	-1.49	73.78%	86.57%	48.71%	14.67%	0.00%	35.78%
Saliant Mag	0.46	67.44	0.02	1.40	<0.01	0.00	-0.92	4.50%	5.30%	2.97%	0.71%	0.00%	3.27%
Wet Table Con (WTC)	0.01	24.03	0.50	28.72	0.01	0.04	0.25	0.11%	0.05%	1.63%	0.37%	0.25%	0.96%
Wet Table Mid (WTM)	0.30	19.12	0.13	33.76	0.01	0.01	0.94	2.99%	1.00%	11.41%	11.40%	10.90%	5.80%
Wet Table Tail (WTT)	1.89	21.74	0.07	34.63	0.02	0.01	3.58	18.62%	7.08%	35.28%	72.85%	88.84%	54.19%
LIMS Summary													
Calc. Feed	10.17	57.17	0.03	8.85	0.00	0.00	-0.45	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
LIMS Mag	7.50	67.08	0.02	1.76	<0.01	0.00	-1.49	73.78%	86.57%	48.71%	14.67%	0.00%	35.78%
LIMS Non Mag	2.67	29.29	0.07	28.81	0.01	0.01	2.49	26.22%	13.43%	51.29%	85.33%	100.00%	64.22%
Saliant Pole Summary													
Calc. Feed	2.67	29.29	0.07	28.81	0.01	0.01	2.49	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Saliant Mag	0.46	67.44	0.02	1.40	<0.01	0.00	-0.92	17.15%	39.48%	5.79%	0.83%	0.00%	5.09%
Saliant Non Mag	2.21	21.39	0.08	34.48	0.02	0.01	3.20	82.85%	60.52%	94.21%	99.17%	100.00%	94.91%
Wet Table Summary													
Calc. Feed	2.21	21.39	0.08	34.48	0.02	0.01	3.20	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
WTC	0.01	24.03	0.50	28.72	0.01	0.04	0.25	0.52%	0.58%	3.37%	0.43%	0.25%	1.58%
WTM	0.30	19.12	0.13	33.76	0.01	0.01	0.94	13.76%	12.30%	23.61%	13.47%	10.90%	9.51%
WTT	1.89	21.74	0.07	34.63	0.02	0.01	3.58	85.72%	87.12%	73.01%	86.10%	88.84%	88.91%

SAMPLE	Weight	Fe	Sn	SiO_2	P	S	LOI	Deportment					
	kg	%	%	%	%	%	%	Mass	Fe	Sn	SiO2	P	S
Sample 2													
Crushed and ground to -250um.													
LIMS is 1,200 gauss on skin 800 gauss at 40mm.													
Saliant Pole is 9,000 gauss on skin and 6,000 gauss at 40 mm.													
Wet Table is a Wifley Table													
Feed Distribution													
Calc. Feed	9.87	32.29	0.15	26.01	0.01	0.00	1.43	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
LIMS Mag	1.09	59.38	0.08	7.33	0.00	0.00	-0.33	11.07%	20.36%	5.97%	3.12%	3.64%	4.84%
Saliant Mag	2.30	48.28	0.10	14.62	0.00	0.00	0.75	23.30%	34.84%	16.54%	13.10%	11.47%	10.19%
Wet Table Con (WTC)	0.05	19.03	0.22	34.69	0.00	0.00	0.39	0.51%	0.30%	0.75%	0.68%	0.17%	0.33%
Wet Table Mid (WTM)	0.12	18.93	0.21	34.72	0.00	0.00	0.63	1.20%	0.70%	1.68%	1.60%	0.79%	0.79%
Wet Table Tail (WTT)	6.31	22.13	0.17	33.17	0.01	0.01	2.00	63.92%	43.80%	75.06%	81.51%	83.94%	83.85%
LIMS Summary													
Calc. Feed	9.87	32.29	0.15	26.01	0.01	0.00	1.43	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
LIMS Mag	1.09	59.38	0.08	7.33	0.00	0.00	-0.33	11.07%	20.36%	5.97%	3.12%	3.64%	4.84%
LIMS Non Mag	8.78	28.92	0.15	28.34	0.01	0.00	1.64	88.93%	79.64%	94.03%	96.88%	96.36%	95.16%
Saliant Pole Summary													
Calc. Feed	8.78	28.92	0.15	28.34	0.01	0.00	1.64	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Saliant Mag	2.30	48.28	0.10	14.62	0.00	0.00	0.75	26.20%	43.74%	17.60%	13.52%	11.91%	10.71%
Saliant Non Mag	6.48	22.05	0.17	33.21	0.01	0.01	1.96	73.80%	56.26%	82.40%	86.48%	88.09%	89.29%
Wet Table Summary													
Calc. Feed	6.48	22.05	0.17	33.21	0.01	0.01	1.96	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
WTC	0.05	19.03	0.22	34.69	0.00	0.00	0.39	0.77%	0.67%	0.97%	0.81%	0.20%	0.39%
WTM	0.12	18.93	0.21	34.72	0.00	0.00	0.63	1.82%	1.57%	2.16%	1.91%	0.93%	0.92%
WTT	6.31	22.13	0.17	33.17	0.01	0.01	2.00	97.40%	97.77%	96.87%	97.28%	98.88%	98.68%

SAMPLE	Weight	Fe	Sn	SiO_2	P	S	LOI	Deportment					
	kg	%	%	%	%	%	%	Mass	Fe	Sn	SiO2	P	S
Sample 3													
Crushed and ground to -250um.													
LIMS is 1,200 gauss on skin 800 gauss at 40mm.													
Saliant Pole is 9,000 gauss on skin and 6,000 gauss at 40 mm.													
Wet Table is a Wifley Table													
Feed Distribution													
Calc. Feed	9.90	36.24	0.17	25.06	0.02	0.01	3.61	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
LIMS Mag	1.62	63.81	0.11	3.37	0.01	0.00	0.48	16.39%	28.86%	10.36%	2.20%	8.08%	7.03%
Saliant Mag	1.75	53.08	0.12	11.82	0.01	0.01	1.28	17.70%	25.93%	12.41%	8.35%	9.46%	9.50%
Wet Table Con (WTC)	0.04	24.46	0.21	31.24	0.01	0.00	0.26	0.41%	0.28%	0.49%	0.51%	0.08%	0.13%
Wet Table Mid (WTM)	0.10	21.37	0.20	34.10	0.01	0.00	0.44	1.02%	0.60%	1.18%	1.39%	0.21%	0.33%
Wet Table Tail (WTT)	6.39	24.92	0.20	34.03	0.03	0.01	5.12	64.48%	44.34%	75.57%	87.55%	82.16%	83.01%
LIMS Summary													
Calc. Feed	9.90	36.24	0.17	25.06	0.02	0.01	3.61	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
LIMS Mag	1.62	63.81	0.11	3.37	0.01	0.00	0.48	16.39%	28.86%	10.36%	2.20%	8.08%	7.03%
LIMS Non Mag	8.28	30.84	0.19	29.31	0.03	0.01	4.23	83.61%	71.14%	89.64%	97.80%	91.92%	92.97%
Saliant Pole Summary													
Calc. Feed	8.28	30.84	0.19	29.31	0.03	0.01	4.23	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Saliant Mag	1.75	53.08	0.12	11.82	0.01	0.01	1.28	21.17%	36.44%	13.84%	8.54%	10.29%	10.21%
Saliant Non Mag	6.53	24.86	0.20	34.01	0.03	0.01	5.02	78.83%	63.56%	86.16%	91.46%	89.71%	89.79%
Wet Table Summary													
Calc. Feed	6.53	24.86	0.20	34.01	0.03	0.01	5.02	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
WTC	0.04	24.46	0.21	31.24	0.01	0.00	0.26	0.62%	0.61%	0.63%	0.57%	0.10%	0.16%
WTM	0.10	21.37	0.20	34.10	0.01	0.00	0.44	1.55%	1.33%	1.53%	1.56%	0.25%	0.39%
WTT	6.39	24.92	0.20	34.03	0.03	0.01	5.12	97.83%	98.06%	97.84%	97.87%	99.64%	99.45%

SAMPLE	Weight	Fe	Sn	SiO_2	P	S	LOI	Deportment					
	kg	%	%	%	%	%	%	Mass	Fe	Sn	SiO2	P	S
Sample 4													
Crushed and ground to -250um.													
LIMS is 1,200 gauss on skin 800 gauss at 40mm.													
Saliant Pole is 9,000 gauss on skin and 6,000 gauss at 40 mm.													
Wet Table is a Wifley Table													
Feed Distribution													
Calc. Feed	11.18	20.84	0.16	34.29	0.03	0.00	0.72	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
LIMS Mag	0.66	54.47	0.23	11.64	0.01	0.00	-0.53	5.94%	15.53%	8.28%	2.02%	1.85%	4.65%
Saliant Mag	0.45	36.11	0.18	23.94	0.01	0.00	0.09	4.04%	7.00%	4.45%	2.82%	2.05%	3.16%
Wet Table Con (WTC)	0.02	19.39	0.18	34.60	0.01	0.01	0.10	0.21%	0.20%	0.23%	0.21%	0.07%	0.28%
Wet Table Mid (WTM)	0.39	17.78	0.17	35.57	0.01	0.00	0.12	3.50%	2.99%	3.54%	3.63%	1.91%	1.83%
Wet Table Tail (WTT)	9.65	17.94	0.16	36.28	0.03	0.00	0.86	86.31%	74.29%	83.50%	91.32%	94.13%	90.08%
LIMS Summary													
Calc. Feed	11.18	20.84	0.16	34.29	0.03	0.00	0.72	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
LIMS Mag	0.66	54.47	0.23	11.64	0.01	0.00	-0.53	5.94%	15.53%	8.28%	2.02%	1.85%	4.65%
LIMS Non Mag	10.52	18.72	0.16	35.72	0.03	0.00	0.80	94.06%	84.47%	91.72%	97.98%	98.15%	95.35%
Saliant Pole Summary													
Calc. Feed	10.52	18.72	0.16	35.72	0.03	0.00	0.80	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Saliant Mag	0.45	36.11	0.18	23.94	0.01	0.00	0.09	4.30%	8.29%	4.85%	2.88%	2.09%	3.32%
Saliant Non Mag	10.07	17.94	0.16	36.25	0.03	0.00	0.83	95.70%	91.71%	95.15%	97.12%	97.91%	96.68%
Wet Table Summary													
Calc. Feed	10.07	17.94	0.16	36.25	0.03	0.00	0.83	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
WTC	0.02	19.39	0.18	34.60	0.01	0.01	0.10	0.23%	0.25%	0.27%	0.22%	0.07%	0.30%
WTM	0.39	17.78	0.17	35.57	0.01	0.00	0.12	3.89%	3.85%	4.05%	3.82%	1.99%	1.98%
WTT	9.65	17.94	0.16	36.28	0.03	0.00	0.86	95.88%	95.89%	95.68%	95.96%	97.95%	97.72%