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PROJECTS UNIT

An Investigation of

THE RECOVERY OF IRON

from Savant Lake Project samples

submitted by

H.E. NEAL AND ASSOCIATES

Progress Report No. 1

Project No. L.R. 1971

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 Lakefield Research of Canada Limited.

LAKEFIELD RESEARCH OF CANADA LIMITED
Lakefield, Ontario
January 6, 1977

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I N D E X

I N T R O D U C T I O N

On October 27, 1976, Mr. H.E. Neal submitted 15 samples of iron ore from the Savant Lake Project for testwork.

The instructions received from Mr. Neal were as follows:

1) Prepare 3 composites from the following groupings.

   Composite 1 5114 to 5120 inclusive

   Composite 2 5121, 5122, 5127, 5128

   Composite 3 5123 to 5126 inclusive

2) Davis tube tests at 3 different grinds

3) Prepare overall composite of equal weights of Composites, 1, 2 and 3 for larger-scale grinding and magnetic separation tests.

4) Try elutriation and flotation to produce iron concentrate of less than 2 % silica.

LAKEFIELD RESEARCH OF CANADA LIMITED

A.G. Scobie, P. Eng.,
Manager

D.M. Wyslouzil, P. Eng.,
Chief Metallurgist

Investigation by: J. McCarthy

S U M M A R Y

1. Head Analyses

Sample No.	% Sol. Fe	% Mag. Fe (Satmagan)
5114	35.3	33.1
5115	24.6	22.7
5116	27.7	25.7
5117	32.7	29.9
5118	36.4	26.6
5119	31.2	29.0
5120	34.6	32.0
5121	33.1	25.4
5122	31.4	29.7
5123	34.4	28.9
5124	34.2	28.4
5125	30.8	21.4
5126	32.2	23.8
5127	35.3	32.9
5128	29.5	24.0

Composite No.	Calculated from Samples		Calculated from Davis Tube	
	% Sol. Fe	% Mag. Fe	% Sol. Fe	% Mag. Fe
1	31.8	28.4	31.9	29.4
2	32.3	28.0	32.5	30.0
3	32.9	25.6	32.7	26.5

Summary - Continued

2. Davis Tube Tests

Composite No.	Grinding Head Time min.	Grinding Head % Fe Sol.	Grinding Head % Fe Mag.	Concentrate Weight %	Concentrate Assay % Sol. Fe	Concentrate Assay % SiO_2	% Recovery Sol. Fe	Tailing Assay % Sol. Fe
1	18	31.9	29.4	42.1	68.5	4.17	90.4	5.3
	24			42.4	69.3	3.77	92.1	4.4
	32			41.9	70.0	3.17	92.8	3.9
2	18	32.5	30.0	42.8	69.0	3.19	90.9	5.2
	24			42.9	70.0	2.89	92.4	4.3
	32			42.1	70.5	2.42	91.0	5.0
3	18	32.7	26.5	37.8	68.5	3.77	79.2	10.9
	24			37.9	69.8	3.45	80.9	10.1
	32			37.2	70.0	2.76	79.9	10.4

3. Grinding Data

Composite No.	Grinding Time min.	% Passing 400 mesh	Surface Area $cm^2.g^{-1}$	Specific Gravity
1	18	95.0	3130	3.40
	24	96.0	3617	
	32	98.6	4301	
2	18	92.6	2877	3.44
	24	94.0	3381	
	32	96.8	4064	
3	18	95.6	3050	3.48
	24	95.0	3555	
	32	97.4	4266	

Summary - Continued

4. Chemical Analysis on Combined Davis Tube Concentrate

Total Fe (Fe)	69.9 %
Soluble Fe (Fe)	69.9 %
Silica (SiO_2)	3.23 %
Alumina (Al_2O_3)	0.15 %
Lime (CaO)	0.026 %
Magnesia (MgO)	0.037 %
Phosphorus (P)	0.017 %
Manganese (Mn)	0.020 %
Nickel (Ni)	0.007 %
Chromium (Cr)	0.005 %
Titanium (TiO_2)	0.010 %
Sulphur (S)	0.011 %
Soda (Na_2O)	0.024 %
Potash (K_2O)	0.052 %

5. Testwork on Composite Sample

5.1. Magnetic Separation

Two batches of 2 kg each were ground to 97 % minus 200 mesh and treated in the Jeffrey drum separator. The concentrate was reground to 94.3 % minus 400 mesh, and again treated in the Jeffrey separator.

Table 1 - Metallurgical Results Test 1

Product	Weight %	Assays, % Fe		% Distribution	
		Sol.	Mag.	Sol.	Mag.
Final Conc.	41.7	67.0	66.5	84.6	94.6
Regrind Tailing	7.0	14.7	8.0	3.1	1.9
Primary Tailing	51.3	7.9	2.0	12.3	3.5
Head (Calc.)	100.0	33.0	29.3	100.0	100.0
Primary Conc.	48.7	59.5	58.1	87.7	96.5

Summary - Continued

5. Testwork on Composite Sample

5.2. Flotation

Four flotation tests were performed on the final concentrate in an attempt to lower the SiO_2 content to less than 1.5 %.

One test was performed following a preliminary elutriation, two tests were performed under identical conditions to confirm the reproducibility and one test was performed without depressants.

Table 2 - Selected Products from Test 2, 3, 4, 5

Test No.	No. of SiO_2 Conc. Removed	Weight %	Assays, %		% Distribution		
					Ind.	Overall	
			Sol. Fe	SiO_2	Sol. Fe	Sol. Fe	Mag. Fe
2	4*	83.3	71.1	0.58	88.3	74.7	83.5
	3	89.3	70.2	1.68	93.3	79.0	88.3
3	4	76.0	71.3	0.37	81.5	68.9	77.1
	3**	87.0	70.5	1.19	92.3	78.1	87.3
	2	91.6	69.4	2.48	95.6	80.9	90.4
4	3	84.2	71.3	0.49	89.9	76.1	85.0
	2	88.3	70.8	0.97	93.7	79.3	88.6
	1	93.4	69.4	2.71	97.1	82.1	91.9
5	2	3.1	71.3	0.51	3.3	2.8	3.1
	1	36.6	71.3	0.61	39.1	33.1	37.1

* specific gravity 5.12, surface area 1334 cm^2/g

** specific gravity 5.06, surface area 1369 cm^2/g

The results indicated that under standard conditions with depressants, a high-grade iron concentrate could be produced at high recoveries. After elutriation, the froth was more effervescent and hence less stable. Omitting the depressants entirely yielded uncontrolled conditions, undoubtedly due to excess reagents. More work would be required to evaluate the flotation without depressants.

DETAILS OF TESTS

1. Sample Preparation

Fifteen samples were received on October 27, 1976 through Mr. H.E. Neal, and entered under our reference No. L.R. 7621148.

We were instructed to crush all samples to minus 10 mesh and analyse each sample for soluble iron and magnetic iron. Later three composite samples were prepared by combining equal weights of the following samples:

Composite 1 5114 to 5120 inclusive (3800 grams)
Composite 2 5121, 5122, 5127, 5128 (6100 grams)
Composite 3 5123 to 5126 inclusive (8100 grams)

From each of the three composites a 500 gram sample was removed and crushed to minus 20 mesh. Four 100 gram samples were prepared for Davis Tube testing after grinding for 18, 24 and 32 minutes in an Abbe porcelain pebble mill.

Finally, an overall composite was prepared from equal weights of the 3 composites. This overall composite was used for magnetic separation and flotation tests.

2. Test Results

2.1. Individual Analyses

Sample No.	% Sol. Fe	% Mag. Fe
5114	35.3	33.1
5115	24.6	22.7
5116	27.7	25.7
5117	32.7	29.9
5118	36.4	26.6
5119	31.2	29.0
5120	34.6	32.0
5121	33.1	25.4
5122	31.4	29.7
5123	34.4	28.9
5124	34.2	28.4
5125	30.8	21.4
5126	32.2	23.8
5127	35.3	32.9
5128	29.5	24.0

2. Test Results

2.2. Davis Tube Results

Conditions:

Grinding Time	18, 24, 32 minutes per 100 g
Flux Density	6500 gauss
Amperage	2 amperes
Water Flow	400 ml per minute
Oscillations	100 strokes per minute
Tube Angle	45°
Sample Weight	10 gauss

Comp. No.	S.G.	Grind min / 100g	Head % Sol. Fe	Head % Mag. Fe	Concentrate Weight %	Concentrate Assays, % Sol. Fe	Concentrate Assays, % SiO_2	Concentrate % Rec'y Sol. Fe	Tailing Assay % Sol. Fe	% -400 mesh	Surface Area $cm^2.g^{-1}$
1	3.40	18	31.9	28.8	42.1	68.5	4.17	90.4	5.3	95.0	3130
		24	31.9	29.4	42.4	69.3	3.77	92.1	4.4	96.0	3617
		32	31.6	29.3	41.9	70.0	3.17	92.8	3.9	98.6	4301
2	3.44	18	32.5	29.5	42.8	69.0	3.19	90.9	5.2	92.6	2877
		24	32.5	30.0	42.9	70.0	2.89	92.4	4.3	94.0	3331
		32	32.6	29.7	42.1	70.5	2.42	91.0	5.0	96.8	4064
3	3.48	18	32.7	25.9	37.8	68.5	3.77	79.2	10.9	95.6	3050
		24	32.7	26.5	37.9	69.8	3.45	80.9	10.1	95.0	3555
		32	32.6	26.0	37.2	70.0	2.76	79.9	10.4	97.4	4266

A composite concentrate sample was prepared from equal weights of the 24 minute grind concentrates of the 3 samples for chemical analysis. The results are shown on Page 4 in the Summary.

2. Test Results

2.3. Overall Composite Sample

Test No. 1

Purpose: To produce an iron concentrate with two stages of grinding and magnetic separation.

Method: Two 2 kg batches of minus 10 mesh ore were ground for 40 minutes each in a Denver ball mill. The pulp was passed through the Jeffrey drum separator at 2 amperes and the concentrate was re-passed at the same settings. The combined primary concentrate were reground for 40 minutes in the same mill and treated as before. The final concentrate was filtered, sampled for moisture and analysis. Primary and cleaner tailings were combined from each separation stage, dried, weighed and assayed.

Metallurgical Results

Product	Weight	Assays, %		% Distribution	
	%	Sol. Fe	Mag. Fe	Sol. Fe	Mag. Fe
Final Concentrate	41.7	67.0	66.5	84.6	94.6
Regrind Tailing	7.0	14.7	6.0	3.1	1.9
Primary Tailing	51.3	7.9	2.0	12.3	3.5
Head (Calc.)	100.0	33.0	29.3	100.0	100.0
Primary Conc.	48.7	59.5	58.1	87.7	96.5

Screen Analyses

	Primary Grind		Regrind	
Mesh Size (Tyler)	% Retained Individual	% Passing Cumulative	% Retained Individual	% Passing Cumulative
+ 100	0.1	99.9		
150	0.5	99.4		
200	2.3	97.1		
270	5.6	91.5	0.5	99.5
400	14.0	77.5	5.2	94.3
- 400	77.5	-	94.3	-
Total	100.0	-	100.0	-

Test No. 2

Purpose: A preliminary test consisting of elutriation followed by flotation to remove slimes and silica in order to produce a iron super-concentrate.

Procedure: Take ¼ of the wet magnetic concentrate from Test 1. Pulp with water in a 2 funnel elutriation tube and treat in two ½ hour stages, overflowing at the maximum rate of 700 ml per minute. Collect and reserve overflow. Transfer underflow to a D-1 cell for silica flotation.

Feed: About 470 grams wet magnetic concentrate from Test 1.

Grind: None

Conditions:

Stage	Reagents Added, pounds per ton					Time, minutes		pH
	NaOH	WW92	Arosurf MG83	AF65	MIBC	Cond.	Froth	
Weigh out ¼ of wet cake, magnetic concentrate								
Repulp and agitate using a Lighni mixer								
Transfer to 2 funnel Elutriation column								
Elutriation (at 700 ml overflow rate)						30	-	
						30	-	
Combine and filter Elutriation Overflow								
Silica Flotation								7.7
Condition	0.75	-	-	-	-	2	-	10.4
	-	2.5	-	-	-	5	-	10.2
SiO_2 Conc. 1	-	-	0.10	0.04	0.02	1	3	-
2	-	-	0.10	-	-	1	3	-
3	0.25	-	0.10	-	0.02	1	1	-
	-	-	0.10	0.02	-	1	3	-
4	-	-	0.20	0.02	0.02	1	3	-

Stage SiO_2 Rougher
Flotation Cell 500 g D-1
Speed: r.p.m. 1100

Comments: Froth were weak and effervescent in concentrates 1 to 3, but appeared to be selective for silica.

Flotation was much stronger and less selective after the 0.2 lb per ton addition of collector in Concentrate 4.

Test No. 2 - Continued

Metallurgical Results

Product	Weight %	Assays, %		% Distribution
		Sol. Fe	SiO_2	Sol. Fe
1. Flotation Tailing (Fe Concentrate)	83.25	71.1	0.58	88.3
2. SiO_2 Conc. 4	6.05	57.8	17.5	5.2
3. SiO_2 Conc. 3	2.76	55.0	19.4	2.3
4. SiO_2 Conc. 2	2.63	46.6	-	1.8
5. SiO_2 Conc. 1	1.92	52.3	-	1.5
6. Elutriation Overflow	3.39	18.3	-	0.9
Head (Calculated)	100.00	67.1	-	100.0

Calculated Grades and Recoveries

Products 1 and 2	89.30	70.2	1.68	93.5
Products 1 to 3	92.06	69.7	2.26	95.8
Products 1 to 4	94.69	69.1	-	97.6
Products 1 to 5	96.61	66.4	-	99.1

Test No. 3

Purpose: To repeat the silica flotations of Test 2 on magnetic concentrate from Test 1 without the elutriation stage, in order to determine if a super-concentrate product could be produced by flotation alone.

Procedure: One quarter of the magnetic iron concentrate from Test 1 was repulped with Lakefield tap water in a 500 gram Denver D-1 cell. The pulp was conditioned with sodium hydroxide and starch to retard the flotation of magnetite.

Feed: About 400 grams wet magnetic concentrate from Test 1.

Grind: None

Conditions:

Stage	Reagents Added, pounds per ton					Time, minutes		pH
	NaOH	WW92	Arosurf MG83	AF65	MIBC	Cond.	Froth	
Repulp ¼ of magnetic iron concentrate								
Silica Flotation								7.8
Condition	0.75	-	-	-	-	2	-	10.2
	-	2.5	-	-	-	5	-	10.0
SiO_2 Conc. 1	-	-	0.10	0.04	0.02	1	3	-
2	-	-	0.10	-	0.02	1	3	-
3	0.25	-	0.10	-	0.02	1	1	9.7
	-	-	0.10	0.02	-	1	3	-
4	-	-	0.20	0.02	0.02	1	3	-
5	-	0.5	-	-	-	3	-	-
	-	-	0.20	0.02	0.02	1	3	-

Stage: SiO_2 Rougher
Flotation Cell: 500 g D-1
Speed: r.p.m.: 1100

Comments: Froths were of a better texture, apparently due to the presence of large quantities of slime and silica in the feed.
Took off a 5th concentrate to be sure of obtaining a super-concentrate grade product, but this appeared to be unnecessary.

Test No. 3 - Continued

Metallurgical Results

Product	Weight %	Assays, %		% Distribution
		Sol. Fe	SiO_2	Sol. Fe
1. Flotation Tailing (Fe Conc.)	63.36	71.5	0.30	68.1
2. SiO_2 Conc. 5	12.65	70.5	0.71	13.4
3. SiO_2 Conc. 4	11.03	64.9	6.85	10.8
4. SiO_2 Conc. 3	4.55	48.9	27.2	3.3
5. SiO_2 Conc. 2	3.21	38.7	-	1.9
6. SiO_2 Conc. 1	5.20	32.3	-	2.5
Head (Calculated)	100.00	66.5	-	100.0

Calculated Grades and Recoveries

Products 1 and 2	76.01	71.3	0.37	81.5
Products 1 to 3	87.04	70.5	1.19	92.3
Products 1 to 4	91.59	69.4	2.48	95.6
Products 1 to 5	94.80	68.4	-	97.5

Test No. 4

Purpose: To repeat Test 3 conditions in order to study the reproducibility of the test procedure.

Procedure: As for Test 3, except that only three silica concentrates were removed and reserved.

Feed: 470 grams wet magnetic concentrate from Test 1.

Grind: None

Conditions:

Stage	Reagents Added, pounds per ton					Time, minutes		pH
	NaOH	WW92	Arosurf MG83	AF65	MIBC	Cond.	Froth	
Repulp ¾ of magnetic iron concentrate								
Silica Flotation								7.6
Condition 1	0.75	-	-	-	-	2	-	10.2
2	-	2.5	-	-	-	5	-	-
SiO_2 Conc. 1	-	-	0.10	0.04	0.02	1	3	-
2	-	-	0.10	-	0.02	1	3	-
3	0.25	-	0.10	-	0.02	1	1	9.8
	-	-	0.10	0.02	-	1	3	-

Stage: SiO_2 Rougher
Flotation Cell: 500 g D-1
Speed: r.p.m.: 1100

Comments: Silica floated very selectively in SiO_2 concentrates 1 and 2 as in Test 3. Additional SiO_2 floated in concentrate 3 but this product was much higher in iron and was black in colour.

Test No. 4 - Continued

Metallurgical Results

Product	Weight %	Assays, %		% Distribution
		Sol. Fe	SiO_2	Sol. Fe
1. Flotation Tailing (Fe Concentrate)	84.17	71.3	0.49	89.9
2. SiO_2 Conc. 3	4.13	61.3	10.7	3.8
3. SiO_2 Conc. 2	5.12	44.4	32.8	3.4
4. SiO_2 Conc. 1	6.59	29.5	-	2.9
Head (Calculated)	100.00	66.8	-	100.0

Calculated Grades and Recoveries

Products 1 and 2	88.30	70.8	0.97	93.7
Products 1 to 3	93.42	69.4	2.71	97.1

Test No. 5

Purpose: To study the effect of omitting the NaOH and WW92 additions on selectivity in silica flotation.

Procedure: The same collector additions were used as in Test 3, but all depressants were omitted.

Feed: About 470 grams wet magnetic concentrate from Test 1.

Grind: None.

Conditions:

Stage	Reagents Added, pounds per ton			Time, minutes		pH
	Arosurf MG83	AF65	MIBC	Cond.	Froth	
Repulp						
Silica Flotation						
SiO_2 Conc. 1	0.10	0.04	0.02	1	3	7.7
2	0.10	-	0.02	1	3	-
3	0.10	-	0.02	1	2	-
Recombined Conc. 3 with tailing for weight and assay						

Stage: SiO_2 Rougher
Flotation Cell: 500 g D-1
Speed: r.p.m.: 1100

Comments: Selectivity was poor throughout the test SiO_2 concentrate 1 was very heavy and unselective with more than half of the flotation feed being carried into the froth. SiO_2 concentrate two carried most of the remaining solids from the cell concentrate 3 was recombined with the tailing.

Test No. 5 - Continued

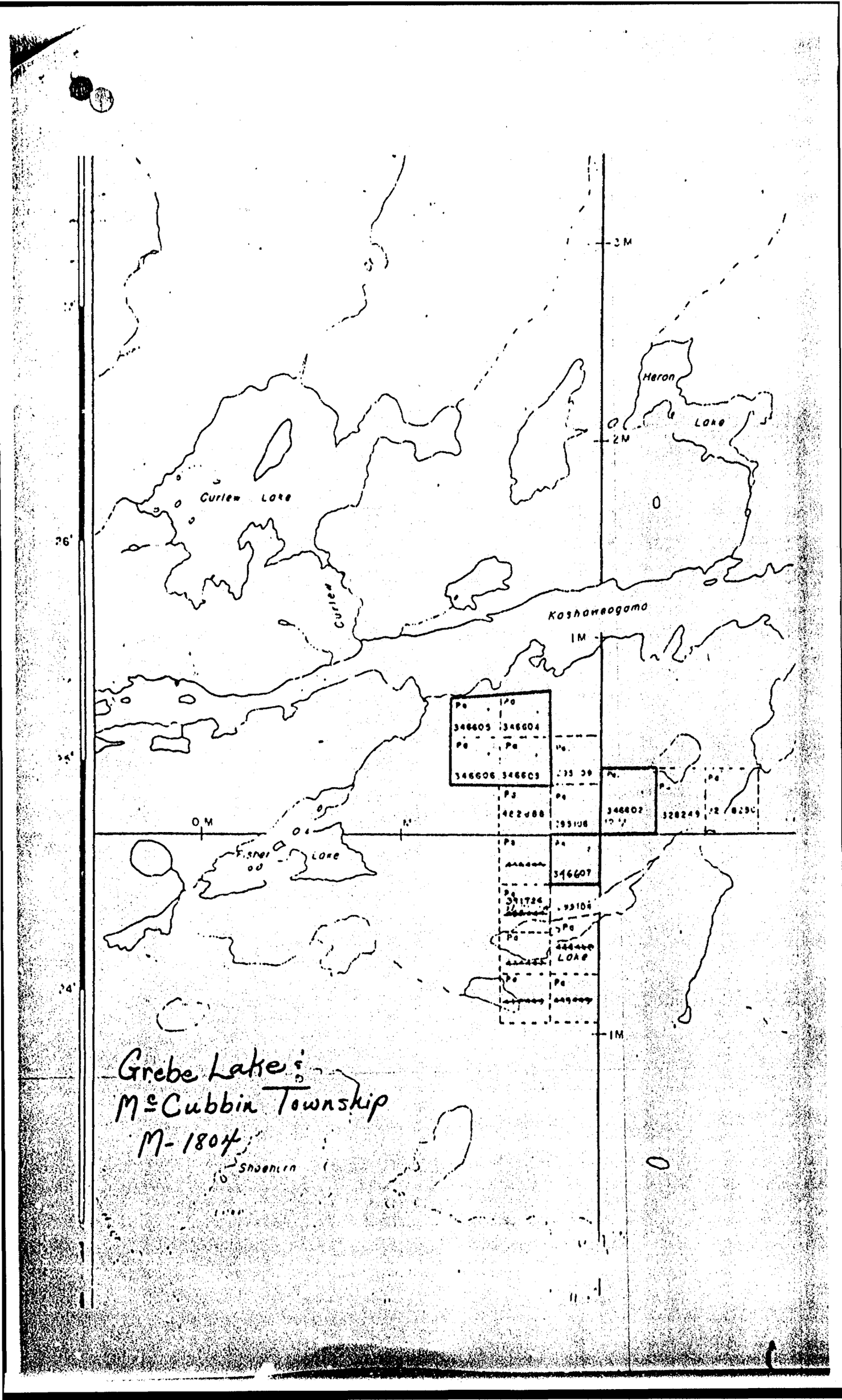
Metallurgical Results

Product	Weight	Assays, %		% Distribution
	%	Sol. Fe	SiO_2	Sol. Fe
1. Flotation Tailing (Fe Concentrate)	3.10	71.3	0.51	3.3
2. SiO_2 Conc. 2	33.49	71.3	0.62	35.8
3. SiO_2 Conc. 1	63.41	64.1	-	60.9
Head (Calculated)	100.00	66.7	-	100.0

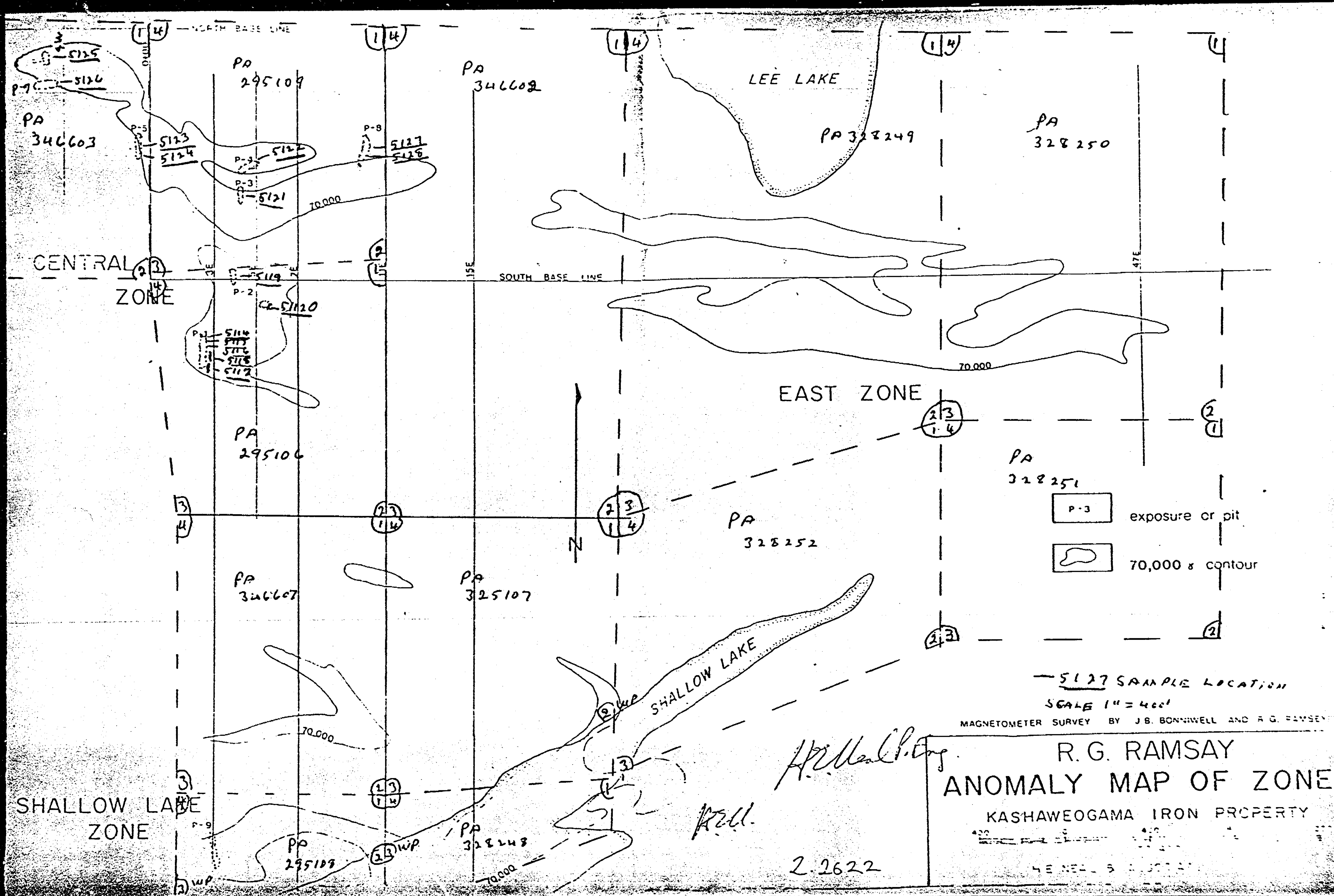
Calculated Grades and Recoveries

Products 1 and 2	36.59	71.3	0.61	39.1

LAKEFIELD RESEARCH OF CANADA LIMITED
Lakefield, Ontario
January 6, 1977



Grebe Lake
McCubbin Township
M-1804


NORTH BASE LINE
SOUTH BASE LINE
LEE LAKE
SHALLOW LAKE
CENTRAL ZONE
EAST ZONE
SHALLOW LAKE ZONE
PA 295109
PA 346602
PA 346603
PA 328249
PA 328250
PA 295106
PA 328251
PA 328252
PA 325107
PA 328248
PA 295108
70,000
P-3 exposure or pit
70,000 γ contour
5127 SAMPLE LOCATION
SCALE 1" = 400'
MAGNETOMETER SURVEY BY J.B. BONNIWELL AND R.G. RAMSEY
R. G. RAMSAY
ANOMALY MAP OF ZONES
KASHAWEOGAMA IRON PROPERTY
2.2622

52J/07NE
AREA OF GREBE LAKE
M-1804
SCALE: ONE INCH=40 CHAINS
40 CHAINS

Armit Lake

Curlew Lake

Curlew

Kashaweogamo Lake

M.C. Gravel Pit No. 1713

Fisher Lake

Snoehorn Lake

Hough Lake

Hough Cr.

Grebe Lake

CONANT TWP.
FOR STATUS REFER TO TOWNSHIP PLAN
(M.1682)

Marchington

Stounton Lake

Evans Lake - M.1774

50°22'30"
90°45'

52J07NE0025 52J07NE0041A1 GREBE LAKE

900

ONTARIO

THE MINING ACT REPORT OF WORK

A separate form is required for each type of work to be recorded.

78-21

To the Recorder of PATRICIA Mining Division

I, RAYMOND G. RAMSAY A.3.E.6.10
name of Recorded Holder Miner's Licence

10 COOK ST BARRIE ONT. L4M 1E9
Post Office Address

do hereby report the performance of 15.1 days of BENEFICIATION STUDIES
type of work

not before reported to be applied on the following contiguous claims

Claim No.	Days	Claim No.	Days	Claim No.	Days
PA. 346602	2.6				
346603	2.6				
346604	2.6				
346605	2.6				
346606	2.6				
346607	2.6				

Geological Branch ODM
ASSESSMENT FILES
RESEARCH OFFICE
JAN 30 1978
RECEIVED

All the work was performed on Mining Claim (s) PA. 295106, 295109, 346603.
(In the case of geological and/or geophysical survey (s) where more than 18 claims are involved attach a schedule)

READ CAREFULLY: THE FOLLOWING INFORMATION IS REQUIRED BY THE MINING RECORDER.

For Manual Work, Stripping or Opening up of Mines, Sinking Shafts or Other Actual Mining Operations – Names and addresses of the men who performed the work and the dates and hours of their employment.
For Diamond and other Core Drilling - Footage, No. and angle of holes and diameter of core. Name and address of owner or operator of drill. Dates when drilling was done. Signed core log and sketch in duplicate.
For Compressed Air or Other Power Driven or Mechanical Equipment
Type of drill or equipment. Names and addresses of men engaged in operating equipment and the dates and hours of their employment.
For Power Stripping - Type of equipment. Name and address of owner or operator. Amount expended. Dates on which work was done. Proof of actual cost must be submitted within 30 days of recording.
With each of the above types of work sketches are required to show the location and extent of the work in relation to the nearest claim post. In the case of diamond or other core drilling the sketch must be submitted in duplicate.
For Geological and Geophysical Survey - The names and addresses of men employed as well as dates. Type of instrument used in the case of geophysical survey. Reports and maps in duplicate must be filed with the Minister within 60 days of recording.
For Land Survey - the name and address of Ontario Land surveyor.

The Required Information is as Follows: (Attach a list if this space is insufficient)

BENEFICIATION STUDIES BY LAKEFIELD RESEARCH LTD
UNDER SUPERVISION OF H.E. NEAL AND ASSOCIATES
ON SAMPLES TAKEN AND SUBMITTED FOR ASSESMENT CREDITS
DEC. 3 1977 REPORT
REPORTS AND RECEIPTS WILL BE SUBMITTED TO THE
MINISTER WITHIN 60 DAYS

Date JAN. 19 1978 R.G. Ramsay
Signature of Recorded Holder or Agent

The Mining Act
Certificate Verifying Report of Work

I, RAYMOND G RAMSAY
10 COOK ST BARRIE ONTARIO
(Post Office Address)

hereby certify:

1. That I have a personal and intimate knowledge of the facts set forth in the report of work annexed hereto, having performed the work or witnessed same during and/or after its completion.

2. That the annexed report is true.

Dated JAN 19 1978 R.G. Ramsay
Signature

PATRICIA MINING DIV. RECEIVED JAN 24 1978 AM PM

THE PENALTY FOR MAKING A FALSE STATEMENT IN THIS REPORT AND/OR CERTIFICATE IS $500. OR SIX MONTHS IMPRISONMENT OR BOTH

Pa. 346602

Ministry of Natural Resources
Ontario

Technical Assessment Work Credits

File 2.2622

Recorded Holder: Raymond G. Ramsay

Township or Area: Grebe Lake and McCubbin Twp.

Type of survey and number of Assessment days credit per claim	BENEFICIATION STUDIES
Geophysical	
Electromagnetic _____ days	(15) Samples collected from (9) trenches
Magnetometer _____ days	Mining Claims Pa. 295106 - 09
Radiometric _____ days	346603
Induced polarization _____ days	Cost of the programme = $2,376.50
Section 86 (18) see across days	Total assessment days credit allowed = 158
Geological _____ days	The above three mining claims may be grouped under Section 85(6) of The Mining Act, for the purposes of recording the work credits of 158 days.
Geochemical _____ days	
Man days ☐ Airborne ☐	
Special provision ☐ Ground ☒	
☐ Credits have been reduced because of partial coverage of claims.	
☐ Credits have been reduced because of corrections to work dates and figures of applicant.	

Special credits under section 86 (15a) for the following mining claims

No credits have been allowed for the following mining claims

☐ not sufficiently covered by the survey ☐ Insufficient technical data filed

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical — 80; Geological — 40; Geochemical — 40; Section 86(18)-60.

928

Ontario

Ministry of Natural Resources

Notification of recording of assessment work credits

Lands Administration Branch
Mining Lands Section
Ministry of Natural Resources
Room 1617, Whitney Block
Queen's Park, Toronto
M7A 1W3

PROJECTS UNIT

Date of recording of work: January 24, 1978

Recorded holder: Raymond G. Ramsay

Address: 10 Cook Street, Barrie, Ontario L4M 4E9

Township or Area: Grebe Lake & McCubbin Township M-1804

Type of survey and number of Assessment days credit per claim	Mining claims
Geophysical	Pa. 346602-346605 incl. 346607
Electromagnetic ____ days	26 days recorded on each of the above claims
Magnetometer ____ days	
Radiometric ____ days	
Induced polarization ____ days	Pa. 346606
Section 86 (18) see across ____ days	28 days recorded on the above claim
Beneficiation Studies Geological ____ days	
Geochemical ____ days	
Man days ☐ Airborne ☐	Total days 152
Special provision ☐ Ground ☐	

Notice to recorded holder:

☒ Survey reports and maps in duplicate be submitted to the Lands Administration Branch, Toronto within 60 days from the date of recording of this work.

☐ Reports and maps are being forwarded to the Lands Administration Branch with this letter.

Harry L. Bruce
Mining recorder

c.c. Raymond G. Ramsay
10 Cook Street
Barrie, Ontario L4M 4E9

#78-2

march 14/78

792 (6/77)

LA. 065

Ministry of Natural Resources

Ontario

Your file:

Our file: 2.2622

1979 11 21

Mr. Albert Hanson
Mining Recorder
Ministry of Natural Resources
Box 669, Court House
Sioux Lookout, Ontario
P0V 2T0

Dear Sir:

Re: Mining Claims Pa. 295106 et al. Grebe Lake and McCubbin Township, File 2.2622

The assessment work credits for Beneficiation Studies under Section 86(18, 19 & 20) of The Mining Act, as shown on the attached statement have been approved as of the above date.

Please inform the recorded holder of these mining claims and so indicate on your records.

Yours very truly,

E.F. Anderson
Director
Lands Administration Branch

Whitney Block, Room 6450
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: 416/965-1316

DN:ie

cc: H.E. Neal & Associates Ltd.
Toronto, Ontario
Attn: Mr. H.E. Neal

Mr. Raymond G. Ramsay
Barrie, Ontario

Resident Geologist
Sioux Lookout, Ontario

MINISTRY OF NATURAL RESOURCES
RECEIVED
NOV 2 1979
RESIDENT GEOLOGIST'S OFFICE
SIOUX LOOKOUT

September 20 19 77

To R.G. Ramsay,

10 Cook Street,
Larrie, Ontario.
L4X 4N2

RECEIVED
MAR - 2 1978
PROJECTS UNIT

In account with H. E. NEAL & ASSOCIATES LTD.

124 Roxborough Drive, Toronto 5, Canada. Telephone 925-1584

re. Kashaweogama Iron Property

1.	Supervision of metallurgical testwork at Lakefield Research on samples collected by G.M. Hogg - to determine Magnetic Iron Content, liberation of Magnetite, grade of normal concentrate and preparation of super-concentrate by flotation; preparation of Summary Of Metallurgical Testwork of July 12, 1977. Professional services of H.E. Neal	$ 350	00
2.	Preparation of Memorandum and plan of Kashaweogama Iron Property for use by Mr. T. Jensen prepared by G.M. Hogg. Professional services of G.M. Hogg	75	00
3.	Lakefield Invoices paid by H.E. Neal & Associates Ltd at cost for testwork authorized by R.G. Ramsay and Progress Report No. 1. December 15, 1976 - $ 556.50 January 20, 1977 - 1,193.00 February 21, 1977 - 197.00	1,951	50
		$ 2,376	50

Paid in Full

* 100 received on Account Nov. 9/77
1376.00 Balance Dec 22/76.