

CANADIAN JAUELIN LTD. (1963)

Report CONCERNING the 1963 BULK

Sample Project Julianne LAKE

Deposit

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Report Concerning the 1963 Bulk Sample ProjectJulienne Lake DepositIntroduction

A 162 ton bulk sample was obtained from the Julienne Lake deposit in the fall of 1963. The sample was taken for metallurgical tests that have yet to be conducted. Mr. Wm. Blakeman supervised the procurement of the sample, but subsequently he became involved in other matters and was unable to finalize his report. This report has been prepared from his draft and field notes.

Purpose and Significance

The 1962 stripping project revealed the layered nature of the deposit as expressed by the distribution of the several different mineralogic varieties. These varieties reflect different stratigraphic units and undoubtedly they have different metallurgical characteristics. The stripped area presents a fairly reasonable geologic cross section of the deposit, metallurgical investigations based upon a complete sample of the stripped area would be significantly representative.

The stripped area is over 2200 feet long, however, and even a shallow, narrow continuous trench of this length would have generated so much material that it would have been impractical to handle and transport it long distances for testing. Accordingly,

it was decided to collect material of each mineralogic variety from individual test pits distributed across the stripped area. These were proportioned by weight so as to approximate the bulk character of the deposit as estimated from surface and subsurface evidence.

The sample is really useful only as a means to permit a good first look at metallurgical behavior and beneficiation problems. Once the metallurgical behavior of each variety is known, which will not necessarily be completely determined by tests on the existing sample, certain criteria will probably become apparent that will lead to the recognition of the relationships between geology, mineralogic varieties, and metallurgical behavior. When this stage of understanding is reached, then reliable estimates of bulk metallurgical character and deviations from the norm can be made.

#### Procurement

The project began in October and was completed by November 10, 1963, under the direction of W. Blakeman, assisted by Y. Vincent and I. Adams. They drilled off the sites with a Cobra drill using 2 and 4 foot steel at approximately  $2\frac{1}{2}$  foot intervals. Each pit was roughly 4 x 9 x 12 feet, but after blasting with 40% Forcite, the pits are quite irregular.

Control samples of 25-35 pounds were collected after blasting and sent out for assay to Lerch Bros., Seven Islands, P.Q.

Bagging of the sample was done after receipt of the assay returns, with the weight balance specified by W. Roxburgh. The material was placed in burlap bags, weighed, tied, and tagged with strips of colored cloth for identification. Bagging, transportation of the sample to Wabush, and loading of the 3 railway cars was done under contract by Real Ste. Marie. The sample was shipped to Seven Islands, thence to Lakefield, Ontario. Approximately 150 tons of sample were collected from 12 test pits, plus a 12 ton composite sample.

#### Sample Details

After considerable discussion concerning the size and make-up of the sample, it was decided that 12 widely distributed test pits were sufficient to serve the immediate purposes of the test. The weight proportions of material from pits located on the various varieties were to be approximately the same as the linear proportions of the varieties as exposed along the stripped area. General locations for the pits were recommended on this basis to Mr. Blakeman; he made the final site selection. The recommended and actual composition of the sample by mineralogic varieties follows:

Leached, quartz-spec-silicite	R 10%	A 9.4%
Quartz specular hematite	24	26.7
Quartz-specular-granular	40	38.3
Quartz-granular hematite	14	13.6
Hard, fine grained, cherty hem.	3	4
Ferruginous qte., lean I. F.	6	5
Manganiferous material	3	3
	100%	100%

Details concerning the pits and sample are presented in Table I. Assay results on the control samples are presented in Table II where they are arranged by variety for comparison.

#### Summary and Conclusions

A bulk sample of the Julienne deposit is available for metallurgical investigations. The sample consists of about 150 tons of material proportioned between 12 test pits, plus 12 tons of composite sample. A control sample suggests a content of around 33% Iron.

The metallurgical behavior of the material is unknown and the tests should be conducted in such a manner so as to investigate the recovery characteristics of each mineralogic variety so as to ascertain the relationships between geology and metallurgy. Recovery of iron will not be proportionately related to iron assay because of the variable amounts of non-recoverable limonite, red hematite, and goethite contained in the material which contributes to the assay. This is particularly true of pits 1 through 7 where introduced and oxidized material forms a significant portion of the material.

A metallurgical map of the deposit is needed. The sample provides the means of a first step towards this goal. It remains to be established whether or not all significantly different metallurgical types have been included in the bulk sample.

D. M. Knowles  
May 1, 1967

Canadian Javelin Limited

TABLE I

PHYSICAL DATA

<u>Pit No.</u>	<u>Location</u>	<u>Tons</u>	<u>% of 150</u>	<u>Code</u>	<u>Descriptive Remarks</u>
1	2+90x15E	14.0	9.4	Brown	Red, brown, oxidized, fine to medium grained qtz-spec-gran, some introduced variety.
2	4+30x20E	20.5	13.6	Blue	Red, brown, oxidized, quartz-granular and introduced variety.
3	5+85x25E	14.0	9.4	Yellow	Red, brown, oxidized, quartz-spec-granular and introduced variety.
4	8+50x65E	12.0	8.0	Pink	Reddish brown, fine to medium grained quartz-specular-hematite, some oxidized material.
5	10+80x35E	13.5	9.0	White	Red-brown, oxidized, mostly quartz-granular and introduced variety.
6	11+90x10E	7.5	5.0	Red	White-brown, lean I. F., some granular hematite.
7	13+90x10E	16.0	10.5	Green	Red, brown, medium grained qtz-spec-gran, some introduced variety, some blocky spec.
8	15+50x30E	4.5	3.0	Black	Black, hard, fine grained cherty manganiferous hematite.
9	17+65x10W	15.0	10.0	Gray	Clean, hard, medium grained, massive to banded quartz-specular hematite.
10	18+90x20E	13.0	8.7	Beige	Clean, friable, medium to coarse grained, quartz-specular hematite.
11	20+30x10W	14.0	9.4	Red stripe	Limonitic, friable, leached quartz-spec-silicate.
12	9950Nx10960E	6.0	4.0	Wine	Hard, blocky, fine grained cherty hematite.
Composite		12		Blue stripe	One ton each from above pits.

TABLE II

Central Sample Assay Results, 25-35 lbs. each pit arranged by mineralogic varieties

Pit	Variety	Tons	% Fe	Silica	Mn	Phos	S	TiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	CaO	MgO	Fe wgt %
11	Spec-sil	14	32.00	52.28	.09	.009	.002	nil	.20	<.002	.009	448.00
10	soft spec	13	36.77	44.54	.35	.009	.002	nil	.14	.002	.022	478.01
9	hard spec	15	34.11	49.40	.07	.007	.004	nil	.30	<.002	.016	511.65
4	hard spec	12	30.47	54.23	.05	.027	.004	nil	.20	<.002	.009	365.64
7	spec-gran	16	40.09	40.28	.11	.028	.003	nil	.15	<.002	.002	641.44
3	spec-gran	14	30.95	53.25	.11	.032	.004	nil	.20	.002	.016	433.30
5	spec-gran	13.5	42.59	36.74	.14	.024	.009	nil	.15	<.002	.010	574.96
1	spec-gran	14	31.68	51.93	.07	.006	.008	nil	.13	.030	.045	443.52
2	gran	20.5	31.60	51.98	.09	.031	.008	nil	.19	.002	.012	647.80
12	cherty hem.	6	29.50	54.18	.16	.009	.002	nil	.11	<.002	.005	177.00
6	Fe qte	7.5	18.35	71.19	.09	.033	.004	nil	.30	.002	.013	137.62
8	Manganif's	4.5	29.66	27.94	15.74	.026	.001	nil	.31	.120	.082	133.47
Average		150	33.28	estimated average of 150 ton bulk sample								4992.41
		12	32.31	average of 12 ton composite sample, 1 ton each pit								