

GM 37408

REPORT ON THE LA BLACHE TITANIFEROUS MAGNETITE

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MINING GEOPHYSICS
PROPERTY EVALUATION
EXPLORATION MANAGEMENT

Ministère de l'Énergie et des Ressources
Gouvernement du Québec
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DATE: 12 NOV. 1981

No. G.M.: 37408

REPORT ON THE
LA BLACHE TITANIFEROUS MAGNETITE

Saguenay County - Quebec North Shore

INTRODUCTION

In June 1980, nine claims were staked in Township 745, covering four titaniferous magnetite occurrences 80 miles N.W. of Baie Comeau located on the north shore of the St. Lawrence River. Please refer to Appendix and claim sketch for location of claims.

The deposits were originally explored by Bersimis Mining Company, a subsidiary of Price Pulp and Paper. In 1975, Bersimis changed its name to Reed Mines Ltd.

The Lac La Blache anorthosite within which the deposits are found is approximately 20 miles by 10 miles and trends northeast - southwest.

The area was originally explored by Bersimis using airborne magnetic techniques. The first deposits located were 1/4-mile north of Lac Schmoo. From surface outcrops, magnetic surveys and drilling two zones were located, having a combined 109,000 tons per vertical foot. Subsequently, other deposits were located at Hervieux East, Hervieux West, as well as La Blache East. All are within a four-mile strike length. The Hervieux East contains over 100,000 tons per vertical foot. Including the lesser explored Hervieux West and Lac La Blache deposits, the total reserves were conservatively estimated by Bersimis in 1964 at 79 million tons, averaging 48% Fe and 20.5% TiO_2 . The ore contains minor chrome (0.19% Cr) and Vanadium (0.36% V_2O_5) values as well.

An average analysis of the ore, remarkable consistent from one deposit to another, is as follows:

<u>Fe</u>	<u>TiO₂</u>	<u>V₂O₅</u>	<u>SiO₂</u>	<u>Al₂O₃</u>	<u>CaO</u>	<u>MgO</u>	<u>Cr</u>	<u>P</u>	<u>S</u>
50.4	20.1	0.36	0.70	7.41	1.26	4.05	0.19	0.03	0.02

The deposits consist of bodies of massive medium to coarse grained magnetite with ilmenite inclusions and crystals within the magnetite in the form of exsolution laths. Ulvospinel (Fe_2TiO_4) contains most of the titanium and is also located within the magnetite in the form of very fine intergrowths.

EXPLORATION

The deposits were initially discovered in 1952 using aeromagnetic surveys. The La Blache anorthosite has a high magnetic susceptibility by virtue of its contained magnetite (5%). Airborne surveys were effective in locating the deposits because of their negative magnetic characteristics due to the ilmenite and ulvospinel content. In the Schmoo Lake area, the aeromagnetic contours go from -1200 gammas over the deposits to +3600 gammas over the adjacent anorthosites one mile away.

The Schmoo Lake deposit, as determined from outcrop, magnetic surveys and approximately 3 shallow drill holes, is made up of a zone 1600 feet long and 700 feet wide. The Hervieux East extension has a length of 1200 feet and a width of 400 feet. The bodies are tabular with a plunge to the east and a dip to the south.

The Hervieux East deposit is located two miles west of Schmoo Lake. Surface work; magnetic surveys and approximately 11 drill holes established three zones having the following dimensions -

1400 x 360, 600 x 320, 800 x 200.

The Hervieux West deposit is 1-1/2 miles to the southwest. Here, eight mineralized outcrops are located over a length of 3,700 feet and a width (average) of 500 feet. In addition to geological and geophysical surveys, six shallow holes were drilled in the 1964 program.

On the La Blache East claim, several mineralized outcrops were investigated. One has a dimension of 180 by 150 feet.

The assessment files pertaining to the exploration are GM-2209, 2671, 3107, 8681, 14463, 15078, 15642, 15667, 15992, 26833.

A Compilation is presently in preparation and will incorporate all of the assessment results reviewed to date. Suffice it to say that the main problem in an assessment of the Lac La Blache deposits is not exploration given the consistent grades and tonnage potential. Initial funds should be devoted primarily to solving the metallurgy of these deposits.

METALLURGY

Preliminary test work was performed at the Ministry of Natural Resources pilot plant in Québec City in 1953 (GM-15586). Although ilmenite intergrowths varied between three and three hundred microns, most of the mineral was found to be in the vicinity of 130 microns and with complete liberation at -100 mesh.

The ulvospinel (Fe_2TiO_4) however is extremely fine (size range of one to three microns) with liberation only at extremely fine grinds. This mineral contains approximately 80% of the contained TiO_2 with the ilmenite containing the remainder. Effective gangue liberation was achieved at -48 mesh.

It should be emphasized that these tests were of a preliminary nature. Given the high grade (i.e. 80%⁺ Fe, Ti, Cr, V oxides), some consideration could be given to direct treatment using open-arc electric smelting techniques similar to those employed by Q.I.T. or alternatively, plasma arc techniques developed at the University of Toronto in recent years. Another possibility is electro-chemical techniques.

We would recommend that the major expenditures in the evaluation of the Lac La Blache deposits be devoted to the beneficiation and/or metallurgical treatment of the ore.

CONCLUSIONS

The Lac La Blache titaniferous magnetite deposits represent a large source of titanium, iron and possibly chrome and vanadium. A minimum of 79 million tons of ore grading 48% Fe, 20.5% TiO_2 , 0.36% V_2O_5 and 0.19% Cr, have been identified in previous work. A large number of magnetic anomalies remain unexplored.

Although the titaniferous portion appears to be extremely fine grained, the high grade nature of the deposits introduces the possibility of direct metallurgical treatment. This becomes more and more feasible, given the increasing strategic importance of titanium and chrome in particular as well as the low cost (in relative terms) of electric power in Québec.

January 15, 1981.

/y

C. Salamis.

C. Salamis

A P P E N D I X

LA BLACHE PROJECT

HERVIEUX EAST

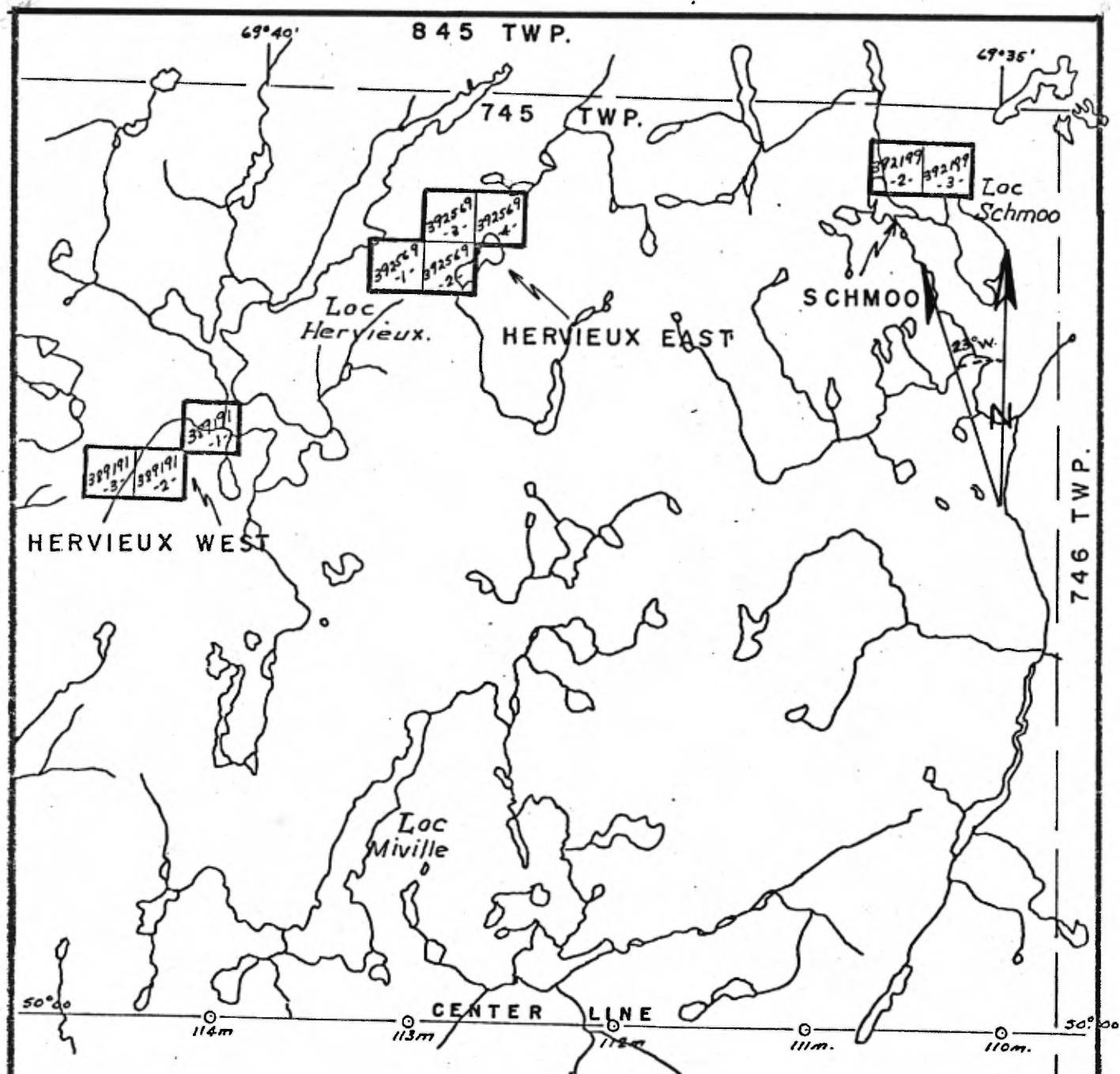
392569	1,2,3, & 4	64 hectares
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HERVIEUX WEST

389191	1,2,3	48 hectares
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SCHMOO

392199	2,3	32 hectares
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CAMCHIB RESOURCES INC.

9 CLAIMS IN TWP. 745

LA BLACHE PROJECT

DR BY: R.T.

SCALE: 1:50,000

DATE: JUNE, 81