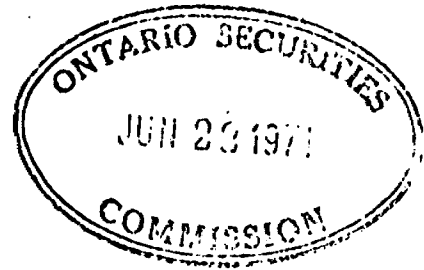


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REPORT
on the property of
SEAWAY COPPER MINES LIMITED
Langmuir Township, Porcupine Mining Division, Ontario

Timmins, Ontario,

May 7, 1971.

R. J. Bradshaw, P. Eng.,

Consulting Geologist.

SUMMARY

The property of Seaway Copper Mines Limited consists of six contiguous unpatented mining claims numbered P85845, P85848, P85851, P85852, P85792, and P85794. About 240 acres, the claim group is located in central Langmuir Township, 20 miles southeast of Timmins, Ontario. The property is accessible by float or ski-equipped aircraft to Nighthawk Lake or by road to within a mile of the north boundary.

The property is considered to be a nickel prospect. Although no rock exposures appear to be present on the claim group, previous drilling in four holes, indicates that the geology is very similar to that at the Noranda-Inco mine site, one mile north. At each location serpentinite sill-like bodies intrude northeasterly striking metasedimentary and metavolcanic rocks. An anticlinal axis midway between Noranda-Inco and Seaway indicates that the rocks may be equivalent stratigraphically.

At both the Noranda-Inco mine and McWatters property, one mile west, the nickel mineralization, as generally massive sulphides, is associated with the contact area of the serpentinite bodies. This zone merits special attention on the Seaway property.

Previous work on the property includes a magnetic-electromagnetic survey and four drill holes totalling 1769 feet. It is recommended that this work be restudied to determine the need for additional work of this type and whether or not uninvestigated geophysical anomalies are present. Subsequently an induced

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polarization survey is proposed to investigate the property for disseminated sulphides. A maximum of \$5000 should be allocated for this programme. A drill programme would be based on this preliminary work. It is suggested that initially, an amount of 5000 feet of drilling, at an overall cost of \$50,000, will be required. Finally an additional amount of \$100,000, should be allocated for development or exploration drilling and perhaps subsurface geophysics. This final stage of work should be considered tentative based on the results of the initial drilling.

No additional assessment work is required on the claim group. It is expected that a boundary survey of the property shall be underway shortly. This survey is to be submitted before December, 1971, to the Ontario Department of Mines to bring the claims to lease. The lease is for 21 years with annual rentals of \$1.00 per acre during the first year and 25 cents per acre annually thereafter. If the lease is for Mining Rights only, the second and subsequent years rental is at a rate of 10 cents per acre. Such a lease is renewable for succeeding 21 year terms.

INTRODUCTION

A group of six claims has been acquired by Seaway Copper Mines Limited in Langmuir Township, Ontario.

The geological environment of the property is similar to that present a mile north where Noranda is presently developing a new nickel mine. In the area of the mine site, a Noranda-Inco joint venture, a serpentized peridotite sill intrudes metasedimentary and metavolcanic rocks as is the case on the Seaway property. The Noranda-Inco mine is scheduled for production in the spring of 1972 at the rate of 700 tons per day.

This report is concerned with a description of the Seaway Property, its relation to the Noranda-Inco mine area, and an exploration programme to evaluate the mineral potential of the property.

Government reports, maps and files, and unpublished information gathered by the writer through personal correspondence, is the basis for this report. The writer has worked on a number of prospects in Langmuir Township and last visited the area in March 1971.

PROPERTY LOCATION AND ACCESS

The property consists of six contiguous unpatented mining claims designated P85845, P85848, P85851, P85852, P85792 and P85794. A boundary survey, which will be started in the very near future when the ice leaves Nighthawk Lake, is required by December 20, 1971, to bring the claims to lease.

The property, totalling about 240 acres, straddles Carman Bay on Nighthawk Lake, about the centre of Langmuir Township, approximately 20 miles southeast of Timmins, Ontario.

A recently built gravel road extends from South Porcupine to the Noranda-Inco mine site, a mile north of the property. At the present a pass is required to travel this road, about 16 miles long. Alternatively, float or ski equipped aircraft, available at South Porcupine, may be used to reach the claim group on Carman Bay.

PREVIOUS WORK

A report on a diamond drill programme, supervised by Filo Geophysics Limited, for Cantri Mines Limited, a previous holder of the claim group, has been filed for assessment work with the Ontario Department of Mines. It is based on a magnetic-electromagnetic survey carried out by Filo Geophysics, which is not on file with the O.D.M.

Four drill holes, totalling 1769 feet were drilled by Cantri Mines all on claim P85792 during April, 1966. A summary of the drilling is outlined as follows:

<u>Hole No.</u>	<u>Direction</u>	<u>Dip</u>	<u>Depth</u>	<u>Objective</u>
C1	east	50°	512'	5000 cps. crossover adjacent to magnetic high
C2 (failed to reach bedrock)	east	55°	150'	5000 cps. crossover on flank of magnetic high
C3	east	50°	604'	closed magnetic high
C4	east	50°	503'	embayment in peridotite

Along the dip of the holes, overburden ranged between 52 feet in hole C4 and 150 feet in hole C2, which was abandoned before reaching bedrock because of difficult overburden conditions. It is implied that the conductors investigated by the drilling were quite weak since they are only indicated on the high frequency unit (5000 cps.).

Peridotite, rhyolite porphyry and felsite were encountered in the drilling with minor pyrite mineralization. The highest assay obtained is 0.13% nickel in hole C1.

Although the geophysical report and maps are not available for examination, it is apparent that the surveys were carried out along east-west picket lines at 200 foot intervals. A McPhar 1000-5000 vertical loop electromagnetic unit was utilized for survey.

GEOLOGY

The geology of Langmuir Township is shown on Map P444 at a scale of one inch to 1320 feet based on field work in 1967 by the Ontario Department of Mines.

Regional Geology

Regionally the presence of ultramafic to mafic intrusive rocks, which form sill-like bodies within volcanics in the north-west sector of the Township, is the most significant geological feature of the area, since nickel mineralization is associated

with the intrusives. According to Map P444 these rocks form tight folds whose axes trend northeasterly and in turn are cut by north to northwest trending faults.

A granodiorite stock, about two miles in diameter, is present on the west boundary of the Township.

Nickel and asbestos mineralization is associated with the ultramafic to mafic intrusives, while copper, nickel, and gold occur with sulphide iron formation horizons.

Local Geology

As indicated on the accompanying plan a northeasterly striking serpentized peridotite sill underlies the north portion of the Seaway property. Adjacent to the sill, the volcanics, forming the east limb of an anticline, display a northeasterly foliation which dips steeply to the southeast. As can be seen on the plan the geology of the Noranda-Inco mine site is quite similar; in fact the ultramafic-volcanic assemblage is interpreted as forming the west limb of the anticline.

Economic Geology

It has been determined through personal communications with mine officials that the Noranda-Inco orebody forms a massive sulphide deposit up to 35 feet wide and several hundred feet long adjacent to an ultramafic intrusive and apparently associated with a

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sulphide iron formation. Moreover the sulphide body tops about 300 feet below surface, averages about 1.75% nickel and very minor copper. Sufficient ore has been outlined by surface drilling to mine at the rate of 700 tons per day for 7 years. The orebody was discovered by drilling a magnetic anomaly.

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axis is present midway between the area. The east contact of the serpentinite sill on the Seaway property merits special attention. If the contact dips east most of the claim block is potentially important, at least at depth, for nickel mineralization.

RECOMMENDATIONS

A three stage exploration programme is proposed for the property as follows:

1. It is recommended that an effort be made to acquire copies of the previous geophysical work. This work should be reviewed to determine whether or not additional geophysical targets are present meriting a drill investigation. More detailed magnetic or electromagnetic surveys may be indicated. Finally an induced polarization survey of the property is recommended in the search for disseminated sulphides. An amount of \$5000 should be allocated for this work.
2. Based on the above studies and survey work, up to 5000 feet of diamond drilling will probably be necessary to investigate the geophysical targets. Therefore an amount of \$50,000 to cover the cost of drilling, supervision, and assaying should be allocated for this stage.
3. Finally a more tentative stage of exploration or development might be expected, dependent, upon the results of stage 2. This might involve additional drilling, exploratory or

development type. Subsurface geophysics may be necessary utilizing drill holes. In any event an amount of up to \$100,000 may be necessary for this stage of exploration - development.

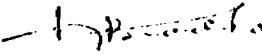
Therefore, it is recommended that an amount of \$155,000 be allocated for work on the property.

Respectfully submitted,

SHIELD GEOPHYSICS LIMITED,

Timmins, Ontario,

May 7, 1971.


R. J. Bradshaw, P. Eng.,

Consulting Geologist.

