

INTER OFFICE MEMO

CYPRUS EXPLORATION CORPORATION LTD.
VANCOUVER OFFICE

013362

Date: August 17, 1970

To: C. A. Mark
From: J.B.P. Sawyer
Subject: BOSWELL RIVER MINES

Ref. 501-CVL

I enclose a copy of a self-explanatory letter regarding Boswell River Mines' Swift River property.

It would appear that Brock has put himself in the position of advisor to Boswell, who quite sensibly have taken his advice as to staking, etc., thus placing themselves in a very strong position with regard to control of the ground.

Added to our previous observations and the fact that Boswell have as yet nothing very positive to offer, this would suggest Cyprus's best manoeuvre would be to await the results of the proposed surveys, as it is unlikely that the overall position we can gain would be markedly improved by making a move at this juncture. It is understood that Boswell have sufficient funds to carry out the proposed work on their own account. Definitive results on the proposed surveys would move the project out of the grass-root stage and give us a more favourable run for our money. There would obviously be a risk of other companies stepping in, but in the circumstances this would be worth taking.

It would appear from the last paragraph that we have until August 31st to formulate a suitable reply to Boswell River Mines.

JGS/jel

Encl.

File

INTER OFFICE MEMO

CYPRUS EXPLORATION CORPORATION LTD.
VANCOUVER OFFICE

Date: August 11, 1970

To: C. A. Mark
From: J. G. Simpson
Subject: Boswell River Mines - Yukon Territory

I enclose a summary report on the Boswell River Mines property together with a claims map and regional geology map of the general area, for your consideration.

As indicated in our conversation of August 10th, there does not appear to be a case for a joint venture agreement on this property.

JGS/re

Encl.

J. G. Simpson

JGS
18/8/70

BOSWELL RIVER MINES - INSPECTION REPORT

Introduction

On the 1st and 2nd of August, 1970, a visit was made to the Boswell River Mines property in the Wolf Lake district, Yukon Territory, accompanied by M. Hampton of Anvil Mines, and J. Brock of Atlas Explorations Ltd. (Dynasty). An inspection was made of the work being presently carried out by Boswell River Mines, including trenching and diamond drilling, and of all data pertaining to previous work in the area.

The Company owns a large number of claims centred on Crescent Lake situated some 12 miles north of the Alaska Highway just west of Rancheria. Of these claims only those on the northeastern side of the claim block are considered to be of any importance, previous work by Boswell River Mines indicating little or no interest in their other claim holdings. The area is covered by the Wolf Lake map of the geological survey of Canada. Copies of the relevant claim and geological maps showing the location of Boswell River Mines properties are enclosed.

Regional Geology

The claims of interest cover a belt some six miles long by two miles wide, and are located on a strip of Devonian to lower Mississippian sediments with lithological similarities to those found in the Anvil area, and comprising limestones, siliceous argillites, graphitic argillites, and highly siliceous banded rocks thought to be banded tuffs. This belt of sediments extends for some 30 miles striking northwest and is from 2 to 3 miles in width. It is flanked on the northeast and southwest by intrusive complexes of Jurassic to Cretaceous age. Initial interest in the area was provided by prospectors of the Hudson's Bay Company in the early fifties, when skarn-like contacts bearing sphalerite and galena were noted. A somewhat basic dioritic intrusive flanks the sediments immediately to the southwest and would appear to be responsible for most of the mineralization.

As the original interest in the area was created by Mr. Hampton's comparisons with Anvil some comments on this aspect are pertinent. Lithologically, the rock types are similar in both the Anvil and Boswell River Mines areas, however, the state of metamorphism is much higher in the Anvil area where staurolite schists replace an original argillitic formation. On the Boswell claims the metamorphic grade appears to be quite low; the most notable feature being silicification decreasing away from the dioritic intrusive on the southwest margin. Limestones have been converted to crystalline marble but apart from this, the only obvious metamorphic effects are contact skarns with grossular garnet, epidote, magnetite and the usual amphibole assemblage. The question of age is still in some doubt as it is understood that the Anvil

rocks were originally dated as Devonian to lower Mississippian and have now been categorized as Lower Cambrian.

As yet it is not clearly understood whether the metamorphic grade at Anvil is due to regional metamorphism or to modification by the nearby intrusive material and it is difficult to compare the two areas metamorphically. Structurally, the Boswell River area is fairly straight forward with a series of extremely tight upright to slightly overturned primary folds trending northeast with axial planes dipping steeply to the southwest. Secondary folding of all previous elements including bedding, schistosity and axial planes has taken place on the Boswell ground, but is apparently insufficient to affect the dominant trend of the primary folding.

Exploration to date

The sediment belt appears to reflect a magnetic high on the government airborne aeromagnetic sheets and together with the early reports of mineralized float served as a basis for the claims staked by Boswell River Mines. The main aspect of exploration to date has been the cutting of a grid from a northwest-southeast baseline roughly paralleling the strike of the country rocks. Ground magnetometer surveys have been carried out along this grid together with soil sampling and some trenching. Trenching was concentrated on magnetic highs and coincident geochemical anomalies. In addition to minor magnetic skarns this work has revealed two narrow lenses of pyrrhotite with minor chalcopyrite, which appear to be located in the noses of tight primary folds in silicious tuffs. The sulphide lenses are associated with epidotization of adjacent tuffs and appear to be structurally controlled, forming the cores of anticlinal folds in the sequence. The lenses are a few feet across and do not appear to extend for a great distance laterally. Intensive diamond drilling on one of these bodies has not revealed any depth extension.

The intent of Boswell River Mines Engineer would appear to be to follow out the magnetometer highs as far as possible, with continued trenching and possibly diamond drilling.

In general, the geochemical pattern is spotty and erratic as might be expected in this terrain, with irregular glacial overburden and permafrost for much of the year. It is suggested that geochemistry in this environment can only serve as a very preliminary indicator and not as an essential target finding mechanism.

Conclusions

From the evidence available to date, it would appear that the mineralization on the Boswell claims is of skarn-type, probably directly related to the dioritic

intrusive to the southwest. In this respect, it would appear to be unlike Anvil, where the mineralization does not obviously appear to be of this type. However, it should be noted that the genesis of the orebody at Anvil is at present little understood and there is a little or no data available on the detailed structure although it is fairly obvious that the orebody is structurally controlled, at least in its present form, the ore sheet probably representing a recumbent fold plunging to the southeast and a dipping to the southwest. The secondary folding noted at Boswell River Mines is also present in the Anvil orebody and country rocks.

The emphasis on magnetometer work by Boswell is understandable, but probably not entirely justified for comparison with Anvil in that pyrrhotite forms only a minor part of the Anvil orebodies which do not have very marked positive magnetic expressions. Work to date on the Boswell property indicates that the magnetic highs will follow either the pyrrhotite mineralization of the type seen in the trenched outcrops or magnetite associated with skarn-type deposits on the immediate margins of the intrusive. It is assumed that the target in this case is a high-grade orebody of the Anvil type, which is unlikely to be located by means of magnetometer surveys alone. It should also be noted that the structure at Boswell is not compatible with low dipping sheet-like orebodies as is the case at Anvil, and any orebodies present are likely to be narrow, steeply dipping and elongated along the axis of the primary folding. This in itself would not preclude the formation of a useful orebody but would almost certainly mean that conventional mining methods would have to be used for extraction.

The major problem facing exploration in this area would be the type of orebody indicated, i.e., a steeply dipping high-grade, lead-zinc deposit. Such deposits would not be easily located by airborne or even ground geophysical methods and the classical Anvil gravity surveys would not be applicable. Similarly, geochemistry is not readily applicable in this type of terrain.

Basically, the approach required would be that of a grass roots exploration of a fairly large area on which Boswell River Mines would have a lion's share of the claims. It is difficult to foresee that a program of this nature would be beneficial to Cyprus, particularly as this would be a joint venture involving three companies. The management and staff of Boswell River Mines would probably have little to add to any exploration program and its subsequent development.

Recommendations

Mr. Hampton's original observations on the Boswell River Mines property are well-founded and many lithological similarities exist between the sequence

here and at Anvil. However, there is certainly little positive gain from the work carried out by Boswell so far, although the parent company will probably not see their efforts quite in this light. The structural configuration in this area would appear to preclude flat lying to low dipping orebodies of the type amenable to open pit mining and the difficulties of prospecting for narrow, steeply dipping orebodies in poorly exposed terrain mitigates against involvement in a grass roots exploration program. Probably the most important factor is that, Cyprus could at most only expect to gain a 50% interest while paying out considerably more than this in costs.

As a result of the dual visit to both Anvil and Boswell River Mines two recommendations are made. The first of these concerns the relative complexity of structure and metamorphism at Anvil Mine, and it is respectfully suggested that a detailed study of these two aspects would lead to extensive information on the genesis of Faro orebody which would be of direct exploration benefit, both in the immediate vicinity of Anvil and in adjacent areas. Finally, there would seem to be only limited merit in the Boswell River ground and it is unlikely that Cyprus Mines Corporation would gain full value for exploration dollar by involvement in a three-way deal on such a preliminary exploration target. A joint venture with Boswell River Mines and Dynasty on this project, is not therefore recommended.