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# EVALUATION REPORT
# OF THE JIM GROUP OF CLAIMS
# WESTWOLD, B.C.

By

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## ABSTRACT

This paper summarizes briefly the geology of the Westwold Property, Westwold, B.C. in the immediate area of 2 pits or shafts. The lithological units and mineralization are discussed as well as the previous work done by 2 mining companies. Conclusions and recommendations are offered.

# INTRODUCTION

This report deals with the local geology and potentiality of a 35-claim molybdenite-scheelite property within a 1000 foot radius of 2 shafts or pits.

The claims were staked by Stanley Brewer of Vernon, B.C. A small amount of blasting of outcrops was done prior to option by Bralorne-Pioneer Mines Ltd. in 1965. Bralorne established a line grid and after a soil sampling survey and some bulldozer work dropped their option. No report was submitted to the prospectors.

Stanley and Alfred Brewer then opened up 2 pits both 7-9 feet deep revealing better molybdenite at depth (100 lb samples gave assays of 0.418 and 0.301 $MoS_2$). T-C Explorations optioned the property, re-established the line grid at closer intervals and repeated the geochemical survey. Their results proved to be inconclusive but because they were committed to assessment work they proceeded with a 6-hole percussion drill program based on the highest geochem values for Mo. The option was then dropped in the autumn of 1966. A report by A.F. Roberts P.Eng. is enclosed under separate cover.

This writer has spent 2 days on the property especially at night with an ultraviolet lamp. Twenty chip samples were taken of outcrops. This report is written to back up the writer's contention that previous work was almost valueless as far as determining the true value of the property. Previous work was of value only in delimiting the outer fringes of a potential ore body.

## LOCATION AND ACCESS

The Westwold Molybdenum Property, consisting of 34 Jim claims is located 6 miles south of the town of West-Wold, B.C. by way of the Salmon Lake or Douglas Lake road and then by a logging road to the main showing. Westwold is 35 miles east and south of Kamloops, B.C., on Highway 97. Railroad, high-pressure gas line and high-tension power is but 6 miles(at Westwold) from the property sight. Logging and mining roads traverse the property.

## TOPOGRAPHY AND CLIMATE

The claim area lies mostly on a 20-degree slope, the slope running generally east-west and extending down into the valley. The eastern part of the area is occupied by steep, almost vertical cliffs of Tertiary basalt. The basalt is the main contributor to the soil cover over the mineralized area. The soil is composed of a yellow clay of the immature type.

Trees, mainly jack pine and fir, dot the hillside in a park-like setting. Logging was done many years ago. underbrush is generally lacking.

The climate is semi-arid with very little rain-fall and up to one foot of snow on the ground in the winter. However, access to the main showingmay be had by a logging road only around the first week of April because although the snow on the slope has melted away, some deeper snow stays on shaded road road cuts.

## GEOLOGY

1. Lithologic Units- Outcrops indicate 6 major lithologic units of which three units are intrusive, one units extrusive, and the remaining two units metamorphic. They are:

A. Green Schist- green chloritic, massive, probably a metamorphosed sediment. Located near the bottom and smaller pit(see Assay Map, pocket) and near the margins of the intrusive granite. It is pre-mineral.

B. Gneiss(and/or quartzite)-foliated, quartzitic, steeply-dipping, probably a metamorphosed sandstone. Some gneiss appears to be a hybrid of quartzite and granite which intrudes it. The gneiss may be a large inclusion or xenolith.

C. Granite- medium-grained, biotitic, massive(locally fractured with fractures filled with molybdenite associated with biotite and quartz) which apparently underlies most of the area and intrudes the shcist and gneiss. Locally it has fresh-looking, pink feldspar crystals upto several inches in diameter. Four miles to the north a similarly-appearing granite intrudes a lime forming a pyrometasomatic or skarn molybdenum deposit of high grade but low tonnage. This property to the north was formerly called the Kenallan and Yokahama(presently a 200-claim group)and adjoins the Jim Group to the northwest. It is pre-mineral.

D. Quartz-Eye Rhyolite-cream-colored, massive, siliceous, microcrystalline with anhedral, fine-grained quartz eyes. It is located in outcrop near 38S, 6W(not

mapped) and also found as float in quantity in the immediate area of the outcrops and in the overburden along the proposed strike of the mineral body. Since it is sometimes found mineralized with molybdenite, it may be considered pre-ore. It is significant that similar types of dykes exist at the Boss Mountain molybdenum property.

2. Mineralization and Alteration

The main economic mineral is molybdenite($MoS_2$) which is associated with fractures in the green schist, gneiss, granite and quartz-eye rhyolite. Mineralizationin the fractures is of two types- barren, clear quartz, probably representing the first stage of mineralization, and a molybdenite-scheelite-quartz-biotite assemblage, probably representing the latter and final stage of mineralization. Pyrite, though present, was not identified in the fractures. The fractures are planar usually at angles of 60 or 120 degrees from one another.

Associated with molybdenite is scheelite which, when pure, fluoresces a blue color. Literature(Laboratory Manual for Mineralogy, by Stanley Reichert, Colorado School of Mines, Golden, Colo., 1950) claims that by the time the molybdenite molecule contains 0.34% Mo, the blue fluorescent color changes to white. Beyond 0.34%Mo the fluorescent color is yellow, and little or no difference can be detected between scheelite containing 0.5%Mo, 5,0%Mo or 20%Mo using the fluorescent light. Fluorescent material is called Powellite.

There are two pits in the area, both being about 7-8' deep which show remarkable yellow fluorescence as do all other outcrops in the area. However, on passing of an ultraviolet lamp over outcrops that have not been blasted open, which are usually lichen-covered, the lamp induces less fluorescence. Even in daylight the molybdenite is difficult to pick out unless the outcrop has been blasted open. Oxidation by the atmosphere together with the action of the scheelite sometimes corrode the molybdenite changing it to a white powdery powellite. Both pits as well as the blasted areas appear to have increasing mineralization with depth mainly indicated by the amount of fluorescence. Yellow staining of molybdic oxide was also seen especially in pyritic areas. Pyrite can be seen especially in the pit areas and in the outcrop areas

near percussion drill holes 6 and 7. Almost all of the pyrite has been oxidized to limonite, giving the rock a rusty color.

It is interesting to note that at other molybdenum properties in BC(notably Bralda Mines) the full extent of Mo values is not reached until about 30 feet.

3. Structure

Work done by the writer on the property was not sufficient to indicate the dip and strike of any one dominant set of fractures.containing the molybdenite mineralization. Quartz-filled fractures permeate the whole area over a wider width than the molybdenite-filled fractures with molybdenum values decreasing outward ie. east and west. Outcrops(see Assay Map, pocket) near holes J-6,7 at 3W and outcrops near hole J-2 near 11+50W assay in the 0.03% $MoS_2$ and 0.02% $MoS_2$ range respectively. The distance between the 2 areas is 950'of which the author considers 600'+ of this distance having outcrops of ore-grade material with the higher grade zone being located in the middle between 6W and 8W having grades of 0.3-0.4%$MoS_2$. The intruded rock such as gneiss and schist is also fractured containing molybdenite. This fracture system is open to the north-west for at least 1500'+ and to the south-east for 6000'+ because there are no outcrops in this direction and because float containing molybdenum in fractures is found in both these directions.

## DISCUSSION OF PREVIOUS WORK BY BRALORNE-PIONEER &T-C EXPLORATIONS

1. The geochemical survey according to A.F. Roberts gave inconclusive, "disappointing " results. It is in the author's opinion that T-C Explorations in conducting the survey were not aware of the basic fundamentals of collecting soil samples.

The soil is perhaps over 99% transported from the weathered Tertiary volcanics above and uphill. Very little molybdenum would be contributed to the soil cover by abrasion, but more by capillary action. A recent assay of the soil profile @ 8+50W, 36+50S, gave the following values:

| Depth(inches) | $MoS_2$(ppm) |
|---|---|
| 6---------- | 5 |
| 12---------- | 12 |
| 24---------- | 15 |
| 36----------- | 22 |
| 48---------- | 35 |
| 56---------- | 30 |
| Bedrock | |

The assays of the soil samples in this area show values of 2, 0.5, 0 ppm when sampled by A.F. Roberts(see Map, pocket of T-C Explorations Report). A.F. Roberts(see page 4, T-C Report) obviously samples the A-1 horizon which our assays show above to be of little value. Significant values do not show up until a depth of two feet is reached.

2. Bulldozer work was instrumental in building roads for access and for stripping overburden from outcrops. Both companies then failed to followup with a blasting and chip sampling program to evaluate the

showings but instead relied on eyeballing to discern molybdenite. No ultraviolet lamp was used to evaluate. As stated above the outcrops must be balsted, and even then newly-revealed molybdenite sometimes corrodes rapidly and the white powdery powellite is hard to see except with the ultraviolet lamp.The fundamental procedure for evaluating a property should be stripping , blasting and sampling.

3. As stated in his report, Roberts recommended a percussion drill program just to satisfy the promised assessment work and not for the purpose of evaluation. A 6-hole program was then designed to drill areas with the highest geochemical expression. In the author's opinion the geochemical program was of little value because of the soil sampling procedure and a drill program designed on its highest results was even ofless value. As it so happened, however, the percussion drilling did crudely delimit the east-west periphery of the mineral zone indicating an aureole of lower-grade Mo values. For example Hole J-7( see Assay Map , pocket) gave an average value of 0.034% $MoS_2$ over 145.0', but it was drilled east instead of west or away from the area with the highest values in outcrop. No hole was drilled in outcrop areas where assays indicate molybdenite of commercial value. Blue fluorescence indicate tungsten values should be present.

## CONCLUSIONS

1. Previous work done by the two companies, Bralorne and T-C Explorations, was of limited value as far as evaluating the property.

2. Initial assay results indicate a zone of commercial molybdenite approximately 600 feet wide east-west (from 4W to 10W, see Assay Map, pocket) and the mineral zone is open to the north and south because of lack of outcrops and the presence of mineralized float containing fractures with molybdenite over a distance of 7500'.

3. Molybdenite values are found, however, over a 1000' width with decreasing values outward and with a high-grade central core. This fracture zone because of its width and potential length may be of deepseated nature.

4. Assay values should increase with depth past the zone of oxidation.

5. For a truer evaluation of the molybdenite content the outcrops should be viewed at night under the ultraviolet lamp.

6. No evaluation of the scheelite content has been done.

## RECOMMENDATIONS

1. The author recommends that a full program of of sampling blasted areas should be initiated to confirm our assay results.

2. Outcrops should be viewed first at night with the ultraviolet lamp, then in the daytime in order to appreciate more fully the potentiality of the property.

3. A geochemical survey should be made with samples being taken at a minimum of 2 feet in depth. . The samples should be assayed for molybdenum and for mercury using the new Barringer Method.

4. The low amount of sulfides would not make IP feasible, but the new Ronka EM-16 utilizing the the primary fields generated by the new VLF stations established for marine communication may be of value in delimiting the orebody.

5. In view of the potentiality of the property because of the grade, width and possible length of the outcrops and its possible amenability to geochemical and geophysical methods, and its location and access, the author recommends the the property be examined with a view to option.

# REPORT ON GEOCHEMICAL SURVEY

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# PERCUSSION DRILLING

OF THE

JIM M. C. 1-35

WESTWOLD PROPERTY

Lat. 50° 24' N. Long. 119° 47' W.

CLAIM MAP SHEET 7 M

A. F. ROBERTS, P. Eng.

November 18th, 1966

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# SUMMARY.

Although $MoS_2$ is found through the area drilled, it is not sufficient quantity to constitute a commercial orebody.

Therefore it is recommended that no further work be done on this property.

# REPORT ON GEOCHEMICAL SURVEY

# &

# PERCUSSION DRILLING

# WESTWOLD PROPERTY

M. C. Jim 1-12, Jim 13-16,

Jim 17-35

Lat. 50° 24' N. Long. 119°- 47' W.

CLAIM MAP SHEET 7 M.

A. F. Roberts, P. Eng. November 18th, 1966

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## LOCATION & ACCESS:

The claims lie on the east side of the Salmon River Valley, about four miles south of Westwold.

Access is by gravel road from Highway 97, along The Douglas Lake Road for four miles, then by the Forestry Road that goes to Woods Lake.

## HISTORY:

The claims were staked by S. Brewer of Okanagan Falls. He did considerable work in trenching in two pits, to open up a small area to reveal molybdenite in fractures in the granite.

Bralorne-Pioneer took an option on the property in 1965, and did trenching, mapping and a soil survey. Their results were not encouraging enough to continue their option, and the property was dropped.

The present company, T. C. Explorations Ltd., considered there

was sufficient indication of mineralization to repeat some of the Bralorne-Pioneer work, and with three partners took a series of options on the property.

GENERAL GEOLOGY:

The main rock of the area is a medium grained granite cross cut by a few aplite dikes 1 inch to 4 inches wide, and containing in a few places, feldspar crystals up to 4 inches long.

There is also a considerable amount of quartzite which appears to be above the granite.

The whole area is overlain by vesicular basalts, which in places in contact with the granite have been altered to a soft chloritic mass.

The main fracturing of the granite is N. 17° E, Dips 80° to the east, and subsidiary fracturing at wide angles to the principal fractures dipping flatly to the north.

$MoS_2$ may occur in all fractures, some of which are so tight they are hard to find. Other mineralization is occasional flecks of chalcopyrite, and minor pyrites. The $MoS_2$ mineralization is heaviest where there are quartz veinlets.

TOPOGRAPHY:

The area of the claims, lying on the side of the mountain, is very steep to the west. Overburden is shallow above and next to the road, but gets deeper, and is cut by gulleys towards the bottom of the hill.

Vegitation is a light to heavy stand of yellow and jack pine, with some hemlock and fir.

GEOCHEMICAL SURVEY: 1)

The existing Bralorne lines were re-staked at 100 feet intervals from 32S to 68N. The humus was scraped off to collect a garden trowel full of the underlying soil. The soil was cleaned of any roots and stones before placing in a wet-proof paper bag. The bag was marked with the sample location, and the same information was entered in a field book.

The samples were assayed for $MoS_2$ by T. C. L. Labs. of Vancouver, using the hot HCL acid method.

The results, reported in P. P. M., were mapped on 400 scale.

Although results were very low, they did indicate an area containing $MoS_2$ in the soil, where the surrounding area is completely barren.

PERCUSSION DRILLING: 1)

Even though the soil sampling was discouraging, but because the Company was committed to do a year's assessment work on the property, it was decided to drill six percussion holes, on the six best soil sample locations.

Roads were cut to these locations, and a drill rented from Lornex Mining Co., to drill six holes at minus $45^{\circ}$ to 150 ft. Drill hole locations are shown on the enclosed map, and assays [2] are enclosed.

Not all holes reached their objective due to water, and it was impossible to drill using water at these locations due to the very long pumping distance.

1) Map enclosed - Back Cover

2) Assay Reports - Back Cover

CONCLUSION:

Although there is wide spread Mo mineralization in the rocks, it is not in sufficient quantities to make commercial ore. The gold, silver and copper content are not sufficient to bring the grade up to ore grade.

RECOMMENDATION:

That no further work be done on this property, and the options to be allowed to lapse.

That the owner, Mr. S. Brewer, be informed of this decision.

Respectfully submitted,

A. F. Roberts

A. F. Roberts, P. Eng.
Field Manager.

Box 218,
Vernon, BC,
July 21, 1967
Phone 604-542-8506

The Regional Manager,
Mr. Donald W. Tully,
Cyprus Exploration Corp., Ltd.,
822-510 West Hastings St.,
Vancouver 1, BC.

Dear Don:

Thank you for your letter of Mar. 15, 1967 and sorry I did'nt reply sooner. As per our telephone conversation, I am enclosing my report on our Westwold property which is located near Woods Lake and Adelphi Creek south of Westwold.

The Westwold property is easy to get at but in addition to viewing it during the day it should also be viewed at night to do the property justice. I am sure the results will surprise y ou as it did myself. This property has a fracture-filled molybdenite zone and this property should not be confused with the old Kenallan and Yokahama molybdenum properties which have skarn zones. This evaluation report supports my contention that an ore body of molybdenum of large dimensions exists on the property. In my estimation, the grade, width, potential length, type of mineralization, location and other economic factors make it an excellent exploration bet.

Please let me know when you want to see it, Don, and so until then, best regards.

Sincerely yours,
Paul
Paul Lafleur, P.Eng.