

REPORT

020863

NORTHWEST GROUP

PURDEX MINERALS LTD.

E. E. Mason

January 12, 1965

**DOLMAGE, MASON AND STEWART LTD.**  
GEOLOGICAL AND MINING ENGINEERS  
314 MARINE BUILDING  
VANCOUVER 1, B. C.  
CANADA

VICTOR DOLMAGE  
E. E. MASON  
J. W. STEWART

REPORT, Northwest Group,  
Omineca Mining Division,  
British Columbia,  
for  
Purdex Minerals Ltd.

CONTENTS

Summary and Conclusions	Page	1
Property and Location		4
Geology		5
Ore Occurrences		5
General Work		6
Diamond Drilling		7
Expenditures		8
Certificate		

## SUMMARY AND CONCLUSIONS

Four ore discoveries have been made on the property:

- 1) No. 1 Zone, a length of 180 feet, 75 feet wide at south and 33 feet at north. Sampling returned an average of 2.4 per cent copper and 0.70 ozs. silver per ton. Across a feldspar porphyry intrusive 160 feet west assays from 2 to 4 per cent copper were obtained on a partial outcrop of a lower fragmental bed in the footwall of the porphyry.
- 2) D. D. Hole 1 - 64 intersected 55 feet of ore averaging 2.11 per cent copper and 0.45 ozs. silver per ton. The hole was drilled flat 100 - 150 feet under both ore outcrops of No. 1 Zone. It passed through a swell in the porphyry that underlay both ore outcrops, and entered ore in the hanging wall of the porphyry 60 - 80 feet east of No. 1 Zone. This ore does not outcrop.
- 3) No. 2 Zone, about 2500 feet southwesterly. A length of 360 feet of intermittent trenching has suggested a 2 per cent copper ore with 0.50 ozs. silver per ton for a probable width of 100 feet. The mineralization has been traced for 700 feet obliquely across the formation, and may find further extension.
- 4) Keeler Zone, 5000 feet northeasterly from No. 1 Zone, has yielded 1.55 per cent copper for 35 feet plus 0.89 per cent for 31 feet.

Systematic soil sampling has indicated six areas worthy of investigation. The first one to have work done on it has supplied the No. 2 Zone. The remaining five have had no work done on them.

The ore found in D. D. Hole 1 - 64 is probably related to the No. 1 Zone. The relationship remains obscure, however. Two additional holes were drilled to investigate the situation and gain extension to the ore. Both were stopped before they reached the porphyry, and were lost in attempting extensions. It will require at least 2000 - 3000 feet of diamond drilling to clarify the structure.

**Summary and Conclusions ( cont'd): - 2 -**

Exposure of the No. 2 Zone requires amplification. The overburden is relatively deep, and trenching by hand slow and difficult. The existing trenches can be described as occupying high points in the rock, close to the surface of the overburden. The use of a bulldozer will have to await construction of some sort of a road to the site. Alternatively, the occurrence can be sampled by shallow diamond drilling. From 1500 to 2000 feet of diamond drilling would be involved. It seems probable the trace of the occurrence can be extended beyond present limits.

The trenching on the Keeler Zone requires to be deepened and re-sampled, and further trenching done if feasible. It would seem likely that an additional 1500 - 2000 feet of preliminary diamond drilling will be required on this zone.

The property lies on steep, heavily forested slopes rising into alpine meadows. Access is from the end of a good logging road at 800 feet elevation, thence by 3 miles of trail to the No. 1 Zone at 4200 feet elevation. The writer has been given to understand that a jeep road could be constructed between these points with about 4 weeks work with a D8 bulldozer. Length of road would be 4-1/2 miles with little rock work. Cost is estimated at about \$10,000.

The writer recommends:

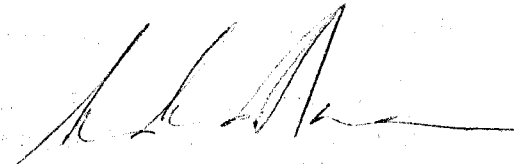
- 1) A photogrammetric topographic map of the property be obtained.
- 2) The possibility of constructing a jeep road as described be investigated, including an examination of the B. C. Telephone Company's right-of-way plans. Construction could commence late May or early June.
- 3) Firm commitments for technical staff and prospectors be made as early as possible.
- 4) Firm commitments for diamond drilling from 5000 - 7000 feet be made as early as possible with a satisfactory contractor, to commence as early as possible.
- 5) An understanding be reached with a helicopter company to provide estimated services.
- 6) Radio-telephone service be installed.

Summary and Conclusions ( cont'd ): - 3 -

The general extent of the working season at the elevations of the property is considered to be from late June or early July to mid-October. Snow-falls are very heavy, and the breakup varies yearly. There is a tendency for cloud formations to mass on the mountain about the 4000 feet elevation making flying access problematical throughout the year. In the fall cloud frequency is greater, and strong winds with high gusts tend to prevail, conditions becoming more extreme in late November and December. Flying services incline to suffer major interruptions. However, sufficient service may be maintained to supply an existing operation though with added costs for lost and stand-by time. Initiating a job of work is a good deal more difficult, and would entail numerous delays and lost time. Winter operation in these mountains is not practical based on air communications solely.

Work for the 1965 season should be completely planned, and the arrangement made to implement same at earliest date. The work recommended should be completed September at latest to allow of necessary expansions that might develop. These latter developments should not require major movement of equipment by air past mid-October. The fall may prove favourable, it may not. Construction of a jeep road would assure better access to the property into December.

Respectfully submitted,



E. E. Mason, P. Eng.

January 12, 1965.

## PROPERTY AND LOCATION

The property consists of a group of 50 mineral claims. Of these, 40 are held under option from L. Belliveau and associates. The remaining 10 claims were staked during the 1964 season by agents of Purdex Minerals Ltd. Sufficient work has been recorded where necessary to maintain the property in good standing into the 1965 season.

These claims lie on the south and southwest slopes of Treasure Mountain between elevations 2500 and 5200 feet above sea level, about 24 air miles east of Terrace, B. C. Treasure Mountain is located within the sharp bend made by the Zymoetz river, roughly 20 miles east of its junction with the Skeena river, as it reaches north from its westerly course towards its headwaters. It forms a 5600-foot peak on the flank of the Bulkley Range, much of which reaches 7000 to 8000 feet elevation. The Skeena river here is at about 500 foot elevation.

Terrace is a town of 7200 inhabitants located on the Canadian National Railways transcontinental line 90 miles east of its terminus at Prince Rupert. Highway 16 passes through it from Prince George to Prince Rupert, and connects with the interprovincial system at Prince George. It is also served by Canadian Pacific Airlines with scheduled flights daily to Vancouver.

Access into the Zymoetz river valley is from Copper river, a small village at the junction of the Zymoetz and Skeena rivers 5 miles east of Terrace on Highway 16. The Columbia Cellulose logging road 24 miles in length reaches the lower slopes of Treasure Mountain to about elevation 800 feet. B. C. Telephone is understood to have in mind the extension of this road to a proposed microwave station at the top of the mountain within the next few years. They would be prepared to expedite construction as a joint venture.

The mountain sides are steep and heavily wooded with numerous rock bluffs. A trail 3 miles in length was re-opened from the end of the road to the initial ore discovery at 4200 feet elevation, and requires at least 3 hours to climb. Work access to date, therefore, has been by helicopter from Terrace or the end of the road.

- 5 -

## GEOLOGY

The property lies a few miles east of the east flank of the Coast Range batholith. It appears to be underlain almost entirely with volcanic rocks of the Hazelton group of Jurassic age. These form a series of andesitic to basaltic flows and fragmentals occurring in beds ranging from 25 to 100 feet thickness. They strike from north to northeast and dip 35 to 60 degrees easterly. Intrusive into these rocks is a pink to grey feldspar porphyry in sill-like and irregular forms.

## ORE OCCURRENCES

Original discovery was of copper mineralization on a rock bluff at elevation 4200 feet on the Northwest 2 and 3 mineral claims. It consisted chiefly of finely disseminated bornite and chalcocite across a width of 75 feet in a volcanic fragmental. Trenching done by the Cariboo Gold Quartz Mining Co. Ltd. in the fall of 1962 outlined a wedge-shaped area 180 feet long, 75 feet wide at the south and tapering to 33 feet at its north, averaging 2.4 per cent copper and 0.70 ozs. silver per ton. The mineralization obviously pinched to the north, and was lost to the south in deep overburden at the base of the bluff.

Immediately to the west lay a body of intrusive feldspar porphyry, apparently sill-like on occasion and of irregular outline on others. West of the porphyry about 160 feet from the first ore occurrence, partial outcrop of a second and lower fragmental bed sampled from 2 to 4 per cent copper. Lying between the two ore occurrences is the porphyry as noted and various aphanitic flow beds. Diamond drill results of 8 short holes drilled under the first orebody became available from B. M. Snyder of Los Angeles, California. These failed to provide simple ore continuities below the outcrop, certain of the holes being blank. This work was mapped by Dr. A. G. Pentland of Vancouver, B. C. in 1956.

Bralome Pioneer Mines Ltd. acquired a controlling interest in the Cariboo Gold Quartz option in 1963. Following a season of prospecting, some mapping and minor trenching chiefly about No. 1 Zone, they dropped their options. Dr. D. D. Campbell examined the property for Purdex Minerals Ltd. and re-logged the core in mid-August 1964. He emphasized the localization of the copper mineralization in two agglomerate beds dipping easterly, and found these to have been cut off down dip by a steep north-trending fault across which the beds had been displaced. Thus, the ore-bearing 1956 holes are presumed to have intersected the ore in the upper agglomerate bed west of the fault. In the barren holes this bed has been displaced.

Ore Occurrences ( cont'd ):            - 6 -

Subsequently, a flat hole ( D.D.H. 1 - 64 ) drilled easterly 468 feet to intersect both fragmental beds, and pass from 100 - 150 feet below the ore outcrops, remained with two short exceptions in porphyry until it entered ore at 402 feet. The ore assayed 2.11 per cent copper and 0.45 ozs. silver from 400 - 455 feet. The core was logged by Dr. R. Morrison, resident geologist. He noted no fault, and observed the ore occurred in a fine grained volcanic with occasional fragments in the hanging wall of the presumed fault. Three more drill holes were started to develop this discovery, but none were completed.

Prospecting and soil sampling in September found a second mineralized zone ( No. 2 Zone ) about 2500 feet southwesterly from the initial or No. 1 Zone, and at 900 feet lower elevation. This mineralization was traced for 700 feet at an oblique angle to the formation, and trenched at intermittent outcroppings for 360 feet. Fine grained bornite-chalcocite mineralization is found distributed through volcanic flows, fragmentals and tuffs. The trench exposures indicate ore approximating 2 per cent copper and 0.5 ozs. per ton. Probable width would appear to be about 100 feet. Snow came before more work could be done.

A third surface occurrence, the Keeler Zone, was discovered by Bralome about 5000 feet northeast of the No. 1 Zone at 5200 feet elevation. Shallow trenching yielded 1.55 per cent copper for 35 feet and 0.89 per cent copper for 31 feet. The mineralization is similar in type and degree to the other two ore zones. It is believed the values reported will be up-graded if the trenches are deepened to fresh faces and re-sampled.

GENERAL WORK

A prospecting party of 9 men was organized by H. W. Agnew, and flown into the property August 14. A north-south base line 7500 feet length was cut through the centre of the group, and east-west lines cut at 500 feet intervals. Prospecting and soil sampling was carried out on this grid, and considerable reconnaissance prospecting beyond the limits of the grid.

Soil samples were taken at 100 foot intervals along the grid lines, a total of 19.6 line-miles being completed. A number of copper anomalies were found, many of which have been discounted as reflections of known mineral occurrences.



General Work ( cont'd ):

- 7 -

Five or six, however, are considered worth investigation. The No. 2 Zone was discovered relative one of these anomalies, against which copper stained bluffs were found also. Trenching was done on this anomaly and the trenches on the No. 1 Zone were freshened by blasting.

DIAMOND DRILLING

Diamond drilling of No. 1 Zone was authorized September 2. The known drilling companies being fully employed, a contract was let locally to the Prosperity Drilling Company, the owner of one drill available immediately. Contract was for 1000 feet at drilling time cost plus 15 per cent. The drill was moved on to the property September 14. Drilling did not commence until September 29, however, the intervening time being spent in re-conditioning the drill. Drilling went forward intermittently with never more than 1 driller available, and help usually acquired from the prospecting crews. The hole was completed October 21 at 468 feet. As noted, ore was reported from 400 to 455 feet. It appeared ore was being re-entered at 466 feet. No more rods were available, however.

Hole 2 - 64 was collared October 28 and required 26 feet of casing. Direction was N70°W dip 45 degrees. October 30, 4 feet of snow fell and the water supply froze. A man got out to Terrace November 2 to report, there being no other communication with the property. New crews were assembled in Terrace November 6 and 7 with material and equipment to winterize the camps. These drill crews were supplied by the Mutch Diamond Drilling Company Ltd., having become available as jobs shut down for the winter elsewhere. It was hoped to be able to continue work to December 15.

Drilling recommenced November 18 and was stopped November 25 at 263.5 feet to await instructions, no mineralization having been intersected. On Mr. Agnew's return to the property he found the casing pulled and no extension to the hole possible. The drill was moved 126 feet northerly and a vertical hole 3 - 64 commenced December 1. This hole was stopped for cementing at 332 and 342 feet December 7 and 8 respectively. At 348 feet the rods were stuck. C. Mutch, the contractor, was requested to examine the situation. Due to weather delays his report was made December 13 by phone. He recovered 140 feet of rods and reported the drill as too far worn to perform satisfactorily.

Diamond Drilling ( cont'd ):

- 8 -

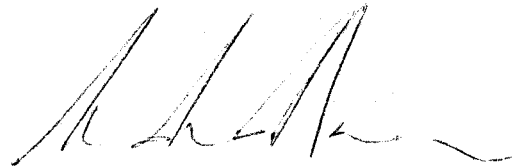
A fourth hole was started from the same set up December 14, bearing N 75°W at -60 degrees. Drill equipment was assembled at Terrace to replace the Prosperity equipment. However, December 21 the drill crews quit. Due to high winds 30 - 60 mph they had been without communication with Terrace since December 14. Unseasonable cold weather -30°F to -50°F together with the high winds had rendered the camp untenable. Being without bits, they had drilled only 19 feet. The camp was evacuated December 24.

EXPENDITURES

The following is a summary of expenditures for the 1964 season:

Surface Exploration	\$ 7,987.56
Tools and Equipment	734.03
Staking and Recording	1,197.00
Diamond Drilling	19,802.20
Sampling and Assaying	515.29
Camps and Cookery	10,388.36
Air Transport	7,838.64
Other Travelling Expenses	2,798.95
	<hr/>
	\$ 51,262.03
	<hr/>

Respectfully submitted,



E. E. Mason, P. Eng.

January 12, 1965.

**DOLMAGE, MASON AND STEWART LTD.**

**GEOLOGICAL AND MINING ENGINEERS**

**314 MARINE BUILDING**

**VANCOUVER 1, B. C.  
CANADA**

VICTOR DOLMAGE  
E. E. MASON  
J. W. STEWART

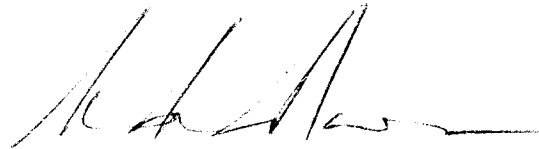
**January 12, 1965.**

**CERTIFICATE**

**I, E. E. Mason with a business address as a Consulting Mining Engineer at 314 Marine Building, Vancouver, B. C., do hereby certify:**

- 1. I am registered as a Professional Engineer in Mining for British Columbia.**
- 2. I have no interest in the property reported upon nor any securities that may be offered directly or indirectly as to it.**
- 3. My report is based on knowledge of the property gained since the fall of 1962 and on a visit made October 3.**
- 4. Certain of the information was obtained from written and verbal reports of D. D. Campbell, P. Eng., PhD., and the Chief Engineer employed in charge of the work, H. W. Agnew, P. Eng., MSc.**

**Respectfully submitted,**



**E. E. Mason, P. Eng.**

**Vancouver, B. C.**

**January 12, 1965.**