

REPORT 020862

SALAL CREEK PROPERTY
NORPAX NICKEL MINES LTD.

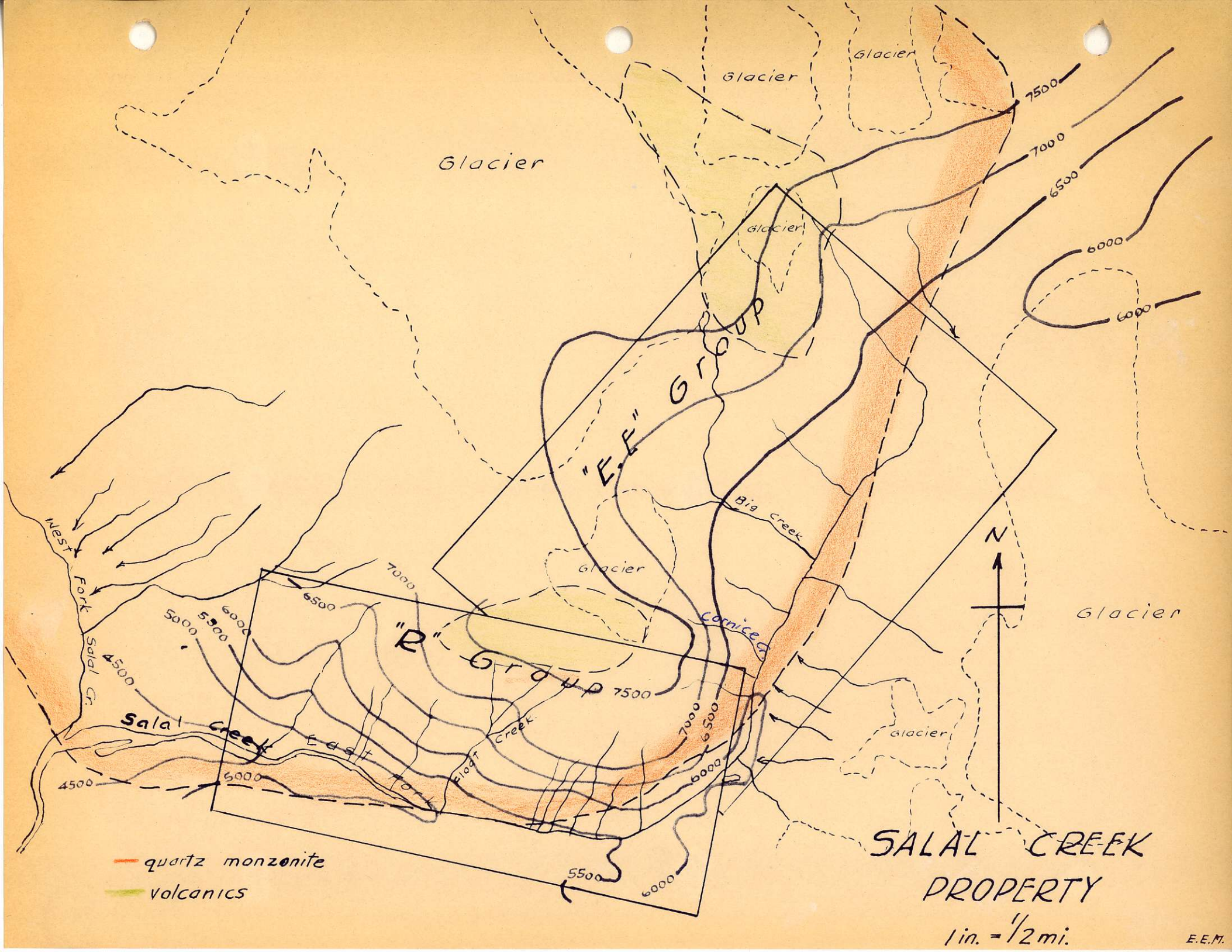
E. E. Mason

January 7, 1965.

REPORT, Salal Creek Property
Lillooet Mining Division
British Columbia,
for
Norpax Nickel Mines Ltd.

CONTENTS

Property Map	
Summary and Conclusions	Page 1
Property and Location	4
Geology	4
Mineral Showings	5
Preliminary Work	6
Diamond Drilling	6
Expenditures	8
Certificate	



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

VICTOR DOLMAGE
E. E. MASON
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SUMMARY AND CONCLUSIONS

The property covers a length of 5 miles of intrusive contact between a quartz monzonite plug and granodiorite of the Coast Range batholith. The monzonite has been extensively fractured in a densely distributed joint system, and mineralized with quartz, pyrite and some molybdenite. The mineralization occurs as fracture fillings in the joint system from hairline to an inch in thickness, and in quartz stringers and silicified zones up to 4 feet in width. Frequency of fracturing is from several feet to several inches apart. At least three concentrations suggest areas of economic possibility.

In the westerly 2-1/2 miles section of the property to Cornice creek, the monzonite outcrops in sheer cliffs up to 7000 feet in height. These cliffs are prominently stained with iron oxides derived from leaching of the fracture mineralization. North of Cornice creek the valley floor rises quickly, presenting relatively gentle valley walls at Big creek and beyond. Above the cliffs is a plateau covered with glacial ice, recent volcanic remnants and deposits of glacial gravel and outwash.

Investigation of the deposit thus is limited to these cliffs and their gentler equivalents in the Big creek area. The only access is the 17 shallow snow-slide gulleys that cross this structure, some more precarious than others. They confirm the widespread persistence of the mineralization. Much of the mineralization has been released by surface weathering leaving open fractures. It is chiefly in the bottom of these gulleys that fresh monzonite and mineralization can be observed where the ground is kept freshly scoured by slides and water courses. The three most important occurrences were found in Float creek, Big creek and Cornice creek.

The best is in Float creek at about 6500 feet elevation, where a 250 feet width of better molybdenite mineralization was observed. Sampling was difficult, but of 87 feet sampled an average of 0.125% MoS₂ was obtained. Dr. Campbell recommended diamond drilling as no alternative sampling procedure appeared feasible.

Summary and Conclusions
(cont'd):

- 2 -

Two holes were started, the first from inside the gulch, the second from the base of the cliffs at 1300 feet lower elevation. The first was abandoned because of rock-falls. The second was drilling 40 days in caving ground and against water flows up to 150 gpm at 160 psi. It reached 779 feet before work closed for the winter.

Costs of this hole were prohibitive. Servicing was entirely by helicopter based in Vancouver or Kamloops. Calls for equipment and labour replacements, additional tools and accessory equipment multiplied with the difficulties encountered in drilling. As mid-October approached also, the weather closed in and flying possibilities became very irregular entailing much stand-by time at a minimum of 3 hours per day.

The drilling programme was an improvisation commenced past mid-term of the exploration season. In this the fourth year of expansion in exploration activities in British Columbia, the resources of men, equipment and aircraft were strained severely. Staff also is in very short supply. The drill crews employed were insufficiently experienced to cope with the difficulties encountered both in drilling and planning. Further, flying conditions from mid-October can be expected to become uncertain. Operations for the season require to be planned in good time, early enough to be able to choose staff, skilled help and equipment.

Earliest work possibilities are in mid-June on the cliff areas. The site of the unfinished D.D. Hole 2-64 will remain covered with snow and ice to a later date, as will the Big creek area. The physical difficulties in the way of drilling the Float creek showing are great. They provide the most promising target and the earliest accessible. With proper planning and organization the difficulties can be ameliorated.

The narrow shoulders on each side of Float creek gulch are lightly wooded, hence do not experience slides. I would suggest these be investigated as early as possible in the company of a designated drill contractor, for one to two drill sites and possibly a camp site. Trails will need to be made and water led in. Length of holes necessary to reach under the showings will approximate 800 feet. From three to six holes will be required.

Big creek provides an easily accessible site for diamond drilling. The mineralization is not as spectacular as exposed in the scoured floor of Float creek. Big creek lacks a similar scour. The joint system is as intense, however, and the mineralization comparatively promising in such of the fractures as remain unleached.

Summary and Conclusions
(cont'd):

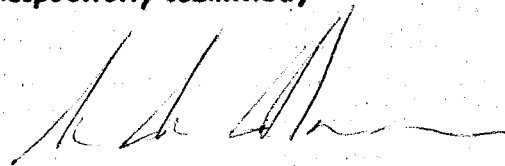
- 3 -

How deep the leaching may reach remains to be determined. The topography does not lend itself to the depth of weathering provided by the cliffs, however.

The property has all the earmarks of a major molybdenum ore deposit such as Climax or Endako. Sufficient evidence of the existence of economic values remains to be proved, however. There does not appear to be a practical alternative to initiating such an enquiry than by diamond drilling of the Float creek and Big creek showings. Cornice creek is very difficult of access, and the mineralization is no better than in Big creek.

It is recommended that plans be made to drill from eight to ten thousand feet divided between these areas. Early commitments should be made and an organization set up to obviate late entry into the 1965 labour and equipment market. Footages drilled at each site could be increased if necessary. Sufficient information should be gained to reach a decision on the next step.

Respectfully submitted,



E. E. Mason, P. Eng.

January 7, 1965.

PROPERTY AND LOCATION

The property consists of a group of 79 mineral claims, 32 of which are held under option from Pemberton Mining Syndicate. The remaining 47 claims were staked during the 1964 season by agents of Norpax Nickel Mines Ltd. and are jointly held on behalf of the optionors and optionees. Sufficient work has been recorded to maintain the property in good standing into the 1965 season.

These claims lie along the East Fork of Salal creek, a tributary at the headwaters of the Lillooet river. The terrain is extremely rugged, being located in the central mass of the Coast Range (latitude N50° 45' and 123° 25'E longitude) at elevations from 5000 feet above sea level to 8200 feet.

Present access is by helicopter a distance of 45 miles from Pemberton, a sawmill and farming community on the Pacific Great Eastern Railway. A good road connection also exists to Vancouver, a distance of 110 miles. A road could be constructed from Pemberton up the Lillooet valley to the property, a distance of 20 miles.

GEOLOGY

The property lies close to the eastern border of the Coast Range batholith. It is located on the southerly contact of a quartz monzonite plug intrusive into the granodiorite batholith. Dr. D. D. Campbell describes it as follows:

" At Salal Creek the monzonite plug is roughly square-shaped measuring about eight miles to the side. It underlies the southern half of a single mountain mass which is bounded on the north by the headwater valley of the Bridge River and on the south by the east and west forks of the headwaters of Salal Creek which drains southward into the Lillooet River. This mountain mass is steep and high walled but relatively flat topped, the central 3 square miles being covered by an ice field. The monzonite portion of the mountain is well exposed as a precipitous, high valley wall along the west and east forks of Salal Creek on the south but is largely covered on top by the ice field as well as by relict patches of lava flows and gravel deposits of Recent age and also by thick deposits of glacial outwash and moraine. The north contact of the monzonite crosses the top of the plateau and is largely covered by overburden. Thus the best exposures of fresh monzonite are along the south cliffs of the mountain where snowslide creeks have scoured long straight gulches down the mountain face. "

MINERAL SHOWINGS

The south side of the quartz monzonite plug appears as a wall of sharp precipitous cliffs rising sheer from 5000 feet to 7000 feet above sea level. These cliffs are much fractured and weathered, and heavily stained with iron and some molybdenum oxides. Access is limited to a few scattered shallow snowslide gulleys carved by ice and water courses. In the 5 miles length of monzonite contact covered by the property these number 17 only. All were examined though by no means completely traversed, but as much as was humanly possible.

The monzonite has been closely fractured by three sets of joints mineralized by quartz, pyrite and some molybdenite. Silicification up to 4 feet in width also occurs with attendant pyrite-molybdenite mineralization. Weathering has tended to leach the mineralization leaving mostly open joints, except in the freshly scoured creek beds. In these, molybdenite can be observed in association with the quartz-pyrite mineralization in hair-line fracture fillings up to an inch in thickness, and in irregular quartz stringers and silicifications. Frequency of the joint fracturing is from intervals of several feet to a few inches apart.

The best molybdenite mineralization accessible to examination is found in the upper reaches of Float creek, in a width of 250 feet about 6500 feet elevation above sea level. Lesser mineralization continues above this elevation and to a lesser extent down to the valley base. Surface sampling of the better area gave the following results.

<u>Sample No.</u>	<u>Length</u>	<u>% MoS₂</u>
80551	10'	0.200
2	7'	0.017
3	8'	0.150
4	11'	0.216
5	35'	0.133
6	16'	0.033

Continuity of the sampling was interrupted by cliffs between the first four samples, the remaining 62 feet being continuous. Average calculated for the first 71 feet is 0.146% MoS₂, 0.125% for the total 87 feet, and 0.122% for the last 62 continuous feet. These are encouraging figures for preliminary sampling of a mineral as sensitive to oxidation and leaching.

Mineral Showings (cont'd): - 6 -

At Big creek, elevation 6300 - 6500 feet, and 3-1/2 miles easterly, slopes are gentler and easily accessible. Most of the creek bed is filled with rock rubble and jointed rocks from which the joint cement has been leached. Persistent molybdenite mineralization can be observed, however, where unleached rock is exposed along this 1000 - 1200 feet slope length. Joint spacing here is in the general range of 8 - 12 inches apart.

PRELIMINARY WORK

A prospecting party of 9 men was organized by H. W. Agnew, the first two of which started work on the landing strip June 24. Working in three parties, the quartz monzonite contact was prospected as thoroughly as the terrain and the ice-field would allow, firstly on the south and south-east rim and finally on the west and north. On the basis of this work the EE 1 to 47 mineral claims were staked. Preparation of mineral exposures for examination was limited to that on Float creek, a roped trail being prepared with some drilling and blasting.

DIAMOND DRILLING

Dr. D. D. Campbell examined the property and reported August 21. Diamond drilling was recommended of the Float creek showings. Boyles Bros. crews were flown in August 29 and 7 tons of equipment assembled. Camps were set up at 5000 feet elevation and a trail constructed to the base of Float creek, a mile distant, at 5200 feet elevation. This trail was continued in a series of switchbacks drilled, blasted and roped off the cliffs to the drill site. It consisted of a timber platform and overhanging bulkhead bolted to the rock walls between the 5800 and 5900 feet contours.

D.D. Hole 1 - 64 commenced drilling September 14 and was abandoned September 16, following heavy fall rains in which rockfalls became persistent, rendering the drill site too dangerous. A total of 84 feet was drilled, of which 49 feet was cased. Target mineralization was expected to be entered at 300 to 400 feet.

Following a visit to the property September 20 by F. M. Fielder, W. P. Mackle and the writer, it was decided to drill a hole from the valley floor into the area under the Float creek showings. Such a hole would be 3000 feet in length, and was to serve as a base from which auxiliary holes could be wedged off at the 2000 feet mark or other appropriate distances. This D. D. Hole 2 - 64 was commenced September 28 with standard AXW equipment, working two 10 to 12 hour shifts daily. Direction was due North at plus 5 degrees.

Diamond Drilling (cont'd):

- 7 -

The hole encountered almost immediate difficulties in caving in the presence of heavy water flows and repeated open fracturing, much of which appeared to be sand and gravel filled. Drilling was stopped repeatedly to advance casing. The latter also was found to jam, requiring to be withdrawn and the hole re-reamed. October 2 Boyles Bros. agreed to convert to wire-line equipment, which was in very short supply. An additional 4.5 tons of equipment was flown in, including 1500 feet of wire-line drill rods. At this time the hole was at 340 feet and casing at 200 feet. October 15 the hole had reached 397 feet and the casing 394 feet.

Water flows increased to 100 gpm at 60 psi October 19 thence to 1500 gpm at 160 psi October 22 at 556 feet. Considerable damage having been sustained by the equipment, a request was made from the field at this point to abandon the hole. The wire-line equipment in particular was found unequal to withstand these water pressures, and a change to AXW standard was executed three times.

Mr. Ashley, manager of Boyles Bros. Contract Division spent the next 24 hours on the drill. With reversed circulation he extended the hole to 572 feet and reamed for casing to 543 feet. Almost immediately upon his departure the rods were stuck at 578 feet in gouge, the bit apparently burnt in. Five shifts were lost before drilling was resumed.

Drilling continued against those water pressures with some fluctuations recorded. Further delays were had with caving and mudding of the bit and rods about gouge filled fractures at 565 to 588 feet, 683 to 688 feet, 762 to 763 feet and 766 to 768 feet. November 6 Boyles Bros. requested the work be closed, as the combination of heavy water flows and winter temperatures made it difficult to retain labour. Cost of servicing in relation to helicopter stand-by time (3 hours per day) awaiting infrequent openings in the weather had become prohibitive in the past three weeks. Consequent delays awaiting tools and equipment were also reflected in drilling costs.

Diamond Drilling (cont'd):

- 8 -

Thus, D. D. Hole 2 - 64 was stopped November 6 at 779 feet. A Topari survey showed the hole at plus 14 degrees at end. Casing had reached 588 feet. The casing was left in the hole that it might be continued the following season.

The hole was in quartz monzonite throughout with intermittent fracture mineralization. Certain of this was found to be fine, almost powdered specularite associated with the quartz-pyrite-molybdenite mineralization. A certain amount of the mineralization was washed out. Little sludge was obtained and could not be considered representative. The core was split and sampled in 5 foot sections, one half being boxed and stored at the property. These were assayed from 0 - 380 feet. All assays were below 0.10 percent MoS₂. Of the remainder only six samples were considered sending for assay. Of these, 398 - 401 feet ran 0.36 percent MoS₂ and the remainder 0.005 to 0.02 percent MoS₂.

EXPENDITURES

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

Surface Exploration	\$ 6,133.74
Tools and Equipment	1,305.21
Staking and Recording	528.75
Diamond Drilling	17,126.50
Sampling and Assaying	479.15
Camps and Cookery	7,337.66
Air Transport	33,609.62
Other Travelling Expenses	898.56
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	\$ 67,419.19
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Respectfully submitted,



E. E. Mason, P. Eng.

January 7, 1965.

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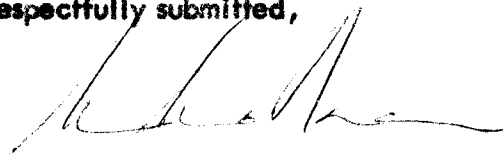
January 7, 1965.

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 or any securities that may be offered directly or indirectly.
3. My report is the result of personal visits to the property in September and October 1964.
4. Certain of the information was obtained from written reports of Dr. D. D. Campbell, P. Eng., and the Chief Geologist employed in charge of the work, H. W. Agnew, P. Eng.

Respectfully submitted,



E. E. Mason, P. Eng.

Vancouver, B. C.

January 7, 1965.

AMAX EXPLORATION, INC.

A SUBSIDIARY OF AMERICAN METAL CLIMAX, INC.

535 THURLOW STREET, VANCOUVER 5, B. C.

• PHONE 683-0474

May 10, 1966

Mr. W.P. Mackle,
Lakeside Beach,
Kenora, Ontario.

Dear Mr. Mackle:

In the course of a telephone conversation to Norpax in Toronto last week we were asked if we could supply you with a copy of a plan showing our drilling locations at Salal Creek. I enclose a plan giving the general outline of our program.

At the same time, you will understand that with the degree of knowledge we have on Salal we must be flexible in our approach. Much of the area remains to be mapped in detail and for this reason we have not defined our drill situation in the southern zone. Also we expect that further exploration might well define more attractive targets.

One factor which we cannot control will be the weather and access to some of our proposed sites may be delayed by snow conditions. We hope this will help you to understand our approach.

Yours truly,

AMAX EXPLORATION, INC.



D.K. Mustard

Enclosure
DKM/bd