

DIAMOND DRILLING REPORT

FOR

MR. RONALD ORR
MOLYBDATE MINES INC.

ON THE

LONNIE/PITCH CLAIMS
MANSON CREEK AREA

NORTH OF FORT ST. JAMES, B.C.
OMINECA MINING DIVISION

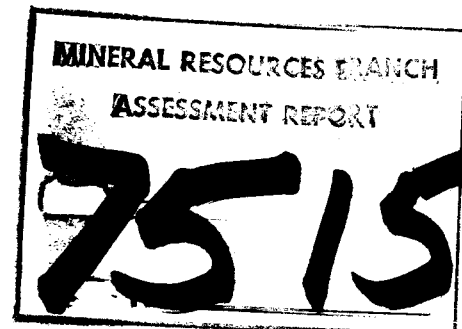
MAP 93N/9W
55° 41'N, 124° 23'W

BY

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GEOLOGIST.

and

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GEOLOGIST.



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MOLYMITTE MINES INC.

LONNIE/PITCH CLAIMS

MANSON CREEK AREA, B.C.

OMINECA MINING DIVISIONINTRODUCTION.

At the request of Mr. Ronald Orr, between June 29 and July 5, 1979, three Winkie AX holes were drilled in the Lonnie property, a Nb-Zr prospect.

The unsplit drill core is stored at the residence of Ronald Orr, President of Molybite Mines Inc., at 1490 Ford Avenue, Prince George, B.C. V2L 4M1, telephone 604-562-5283. The objective of the drill programme was to test at depth the possible extension and grade of the mineralized zone exposed on surface and in shallow trenches. Drilling was done by Drilcor Industries Ltd., and holes were logged by Mr. P. Vaillancourt, project geologist.

Location and Access. (See Fig. 1, 2)

The Lonnie claims and the Pitch claims lie adjacent; they are above Granite Creek near Manson Creek, 130 mi. NW of Prince George, B.C. at 55°41'N, 124°23'W on NTS map 93-N/9W. The upper trenches lie at 3750' elevation, the lowest showings in Granite Creek are below 3300'. The property is reached by dirt and gravel road from Fort St. James to near Manson Creek. 4.6 miles before Manson Creek and 0.3 miles before the Granite Creek bridge, an overgrown branch road leads to the right and reaches the property in 2.5 miles. A four-wheel drive vehicle is necessary to negotiate the tight switchbacks and steep grades on this track.

Claims

The property consists of the following claims:

<u>Claim Name</u>	<u>Units</u>	<u>Recorded Date</u>	<u>Record No.</u>	<u>Valid to</u>
PITCH	1	Sept. 7, 1976	415(9)	Sept. 7, 1989
LONNIE	1	July 20, 1976	353(7)	July 20, 1989

The claims were staked by C.S. Powney on August 16, 1976 and June 23, 1976 respectively. They are correctly shown in the Mining Recorder as owned by Clayton Powney, Box 189, FT. Fraser, B.C. The claims appear to be properly staked on the ground.

History of Property

1953 - Several surface samples sent for assay, returned values in Nb. Subsequently, U also reported in the property.

1954 - Property staked by Messrs. Floyd, Powney, Almond, and Kay. Claims bought in December by Northwestern Explorations, Ltd.

Whitehorse

(2)

YUKON

NORTHWEST TERRITORIES

ALBERTA

LONNIE PROPERTY

Finley Forks

DAM

PEACE R.

Prince Rupert

Ft. St. James

Prince George

Edmonton

Vancouver

UNITED STATES

MOLYBDATE MINES LTD.

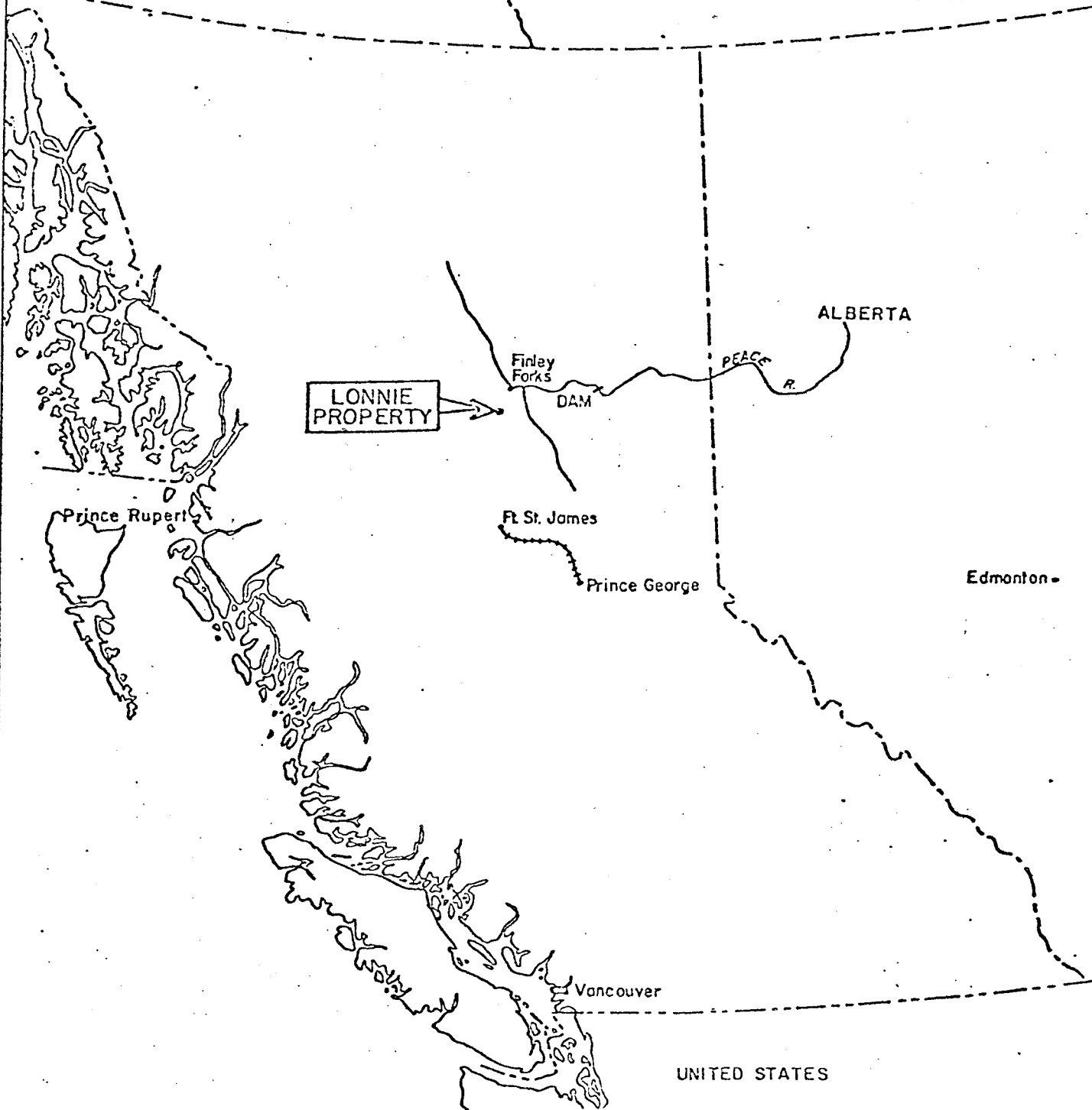
Stokes Exploration Management Co. Ltd.

LONNIE PROPERTY LOCATION MAP




SCALE: 1 inch = 120 miles

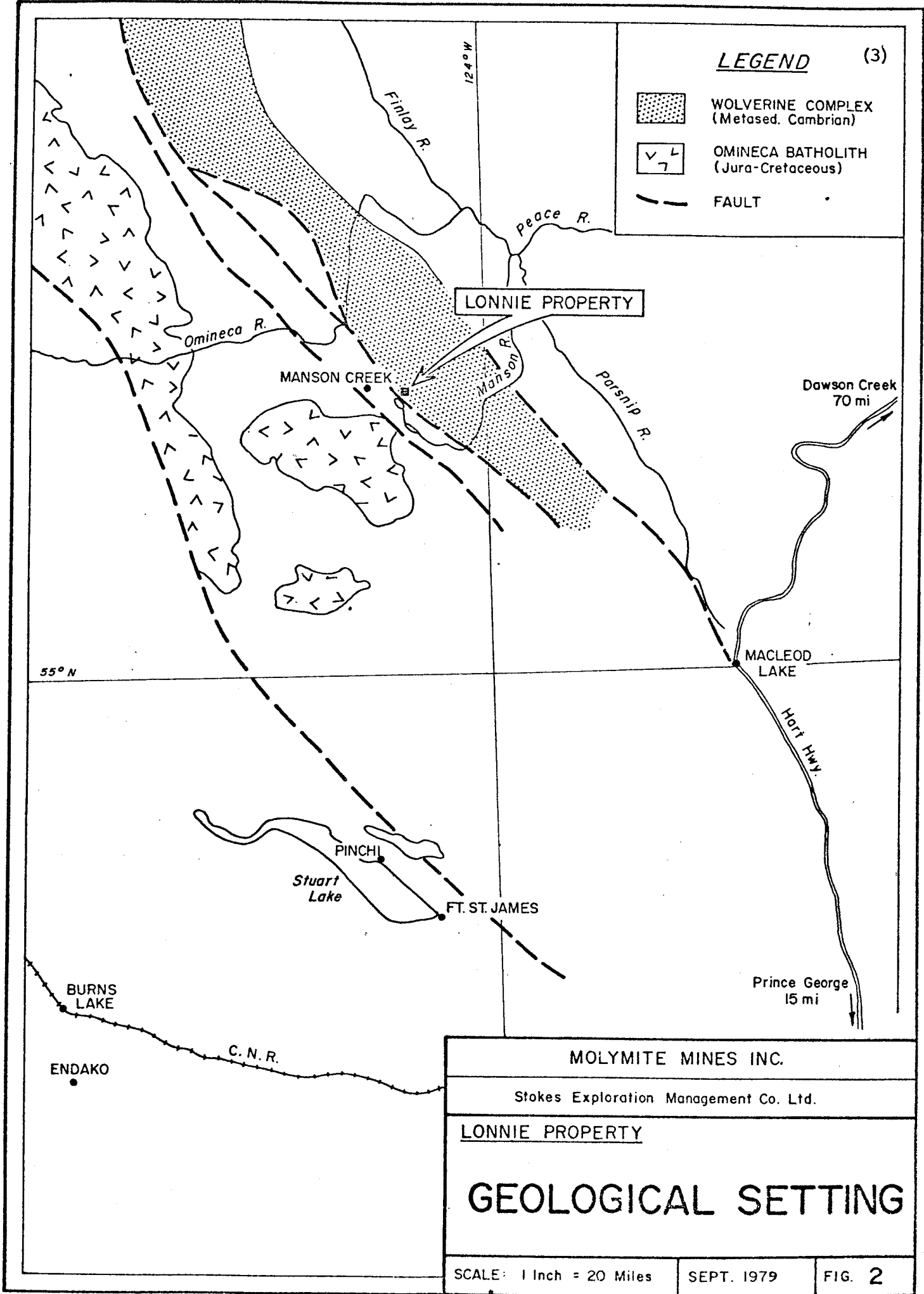
September 1979

FIG. 1



LEGEND (3)

-  WOLVERINE COMPLEX
(Metased. Cambrian)
-  OMINECA BATHOLITH
(Jura-Cretaceous)
-  FAULT



MOLYMITE MINES INC.		
Stokes Exploration Management Co. Ltd.		
LONNIE PROPERTY		
GEOLOGICAL SETTING		
SCALE: 1 Inch = 20 Miles	SEPT. 1979	FIG. 2

- 1955 - 28 trenches dug and samples assayed; values over a 1600' strike-length averaged 0.21% Nb_2O_5 across a width of 47' (acmite carbonatite averaged 0.16% Nb_2O_5 over an average width of 18', and syenite averaged 0.23% Nb_2O_5 over a width of 29'). A high-grade zone in the center of the property assayed 0.30% Nb_2O_5 across a width of 25' and length of 800'.
- 1969 - Westrim Mining Corp. cleaned and resampled 5 trenches in the center of the property. Three semiquantitative spectrographic analyses are available; they show the following values:
- Nb 0.1-0.15%; Zr 0.2-0.3%; Y 0.001-0.01%; Ti 0.2-0.7%;
Mn 0.2-0.3%; Cu 0.005%. Not detected were U, Th, La, Ce, and Ta.
- 1970 - 5 new trenches were dug at the southeast end of the property; the zone was shown to continue for at least an additional 500 feet of strike length with the following results of spectrographic analysis in a trench near the southeast end of the zone.
- Nb over 0.1%; Zr 0.1%; U, Ta not detected.
- 1976 - Claims restaked as Lonnie and Pitch by Mr. C. Powney.
- 1978 - Claims optioned by Moly Mite Mines Inc.

REGIONAL GEOLOGY (see Fig. 2)

The Lonnie-Pitch zone is in Late Proterozoic rocks near the western edge of the Wolverine Complex of amphibolite-facies metamorphic rocks. Country rocks are mainly quartz-hornblende schists and gneisses, probably derived from siltstones and mudstones.

A prominent regional metamorphic foliation trends 110-130° and dips 60°SW.

PROPERTY GEOLOGY

The Lonnie-Pitch zone is a mainly conformable, coarse grained carbonatite complex composed of discontinuous lenses of three main rock types as follows:

- 1) Leucocratic syenite, composed of oligoclase, microcline, and up to 25% calcite. Minor to accessory minerals include muscovite, zircon (locally up to 10%), ilmenorutile (in part containing Nb), and columbite ((Fe, Mn) $(\text{Nb}, \text{Ta})_2\text{O}_6$). At the north edge of the zone the syenite contains feldspars, biotite, calcite, and minor pyrite. Assays show the Nb content of the syenite to be higher than that in the carbonatite.
- 2) Acmite carbonatite, with major calcite, minor soda amphibole (crossite) and soda pyroxene (acmite), and accessory microcline, apatite, and uranian pyrochlore $(\text{Ca}, \text{Na}, \text{Y}, \text{Ce}, \text{Th}, \text{U}, \text{Ti}) (\text{Nb}, \text{Ta})_2\text{O}_6 (\text{O}, \text{F}, \text{OH})$.

- 3) Biotite carbonatite, with major calcite, and minor biotite and/or vermiculite, and accessory acmite, crossite, plagioclase, apatite and microcline.

Directly southwest of the carbonatite the country rock gneiss contains acmite and crossite; these minerals probably formed by soda-metasomatism along the border of the carbonatite. A few thin layers of marble (=carbonatite?) occur in the gneiss. A prominent metamorphic foliation trends 110-120° and dips about 60°SW. Drag folds in the foliation? were mapped in several trenches; their axes plunge 15-40°SE. Some carbonatite is very fine grained and some has a mylonitic? texture; these data suggest that the carbonatite may have been a locus of major shear deformation.

Detailed locations of samples and assays of the Northwestern Exploration survey are not available, so no further comments can be made on the distribution of metals within and between rock types, other than the average values stated above under the heading "History of Property".

DRILL DATA

The three holes were drilled over a strike length of 300 feet near the 3700-foot contour in the center of the property (see Figure 3). The holes intersect the regional foliation at a moderate to high angle (averaging 55°).

Hole No.	Length (ft)	Vertical component (ft)	Recovery (%)
1	165	117	72
2	119.5	85	83
3	117	83	55

Lithologic units in drill cores concur with the general descriptions in earlier reports; however, no syenite was recognized in the cores. The main variations in the carbonatite are in color (a green subunit with color ranging from aqua to medium olive green, and a white subunit), and in the hornblende-pyroxene to biotite-phlogopite ratio (high in green subunit, low in white subunit). The subunits form distinct major zones, but within each, lenses of the other variety are present, and some contact are gradational.

Drill results show a similar pattern of lithologies in all holes; this pattern correlates reasonably well with that on surface.

- 1) The hangingwall unit is a quartz-hornblende-pyroxene gneiss with coarser bands of these minerals in a fine grained greyish-green groundmass. The parent probably was a siltstone. Because of the proximity to the surface, the unit is moderately fractured and oxidized on fractures.

- 2) The gneiss is in sharp contact with green carbonatite, consisting of massive to banded, fine to coarse grained calcite with minor hornblende-pyroxene, biotite, and chlorite (probably secondary), and locally disseminated pyrite. Zircon, pyrochlore, and monazite are probable accessory minerals, but from visual examination of the cores positive identification could not be made. Quartz and hornblende-pyroxene stringers are common parallel to the foliation. The green carbonatite unit is 12' thick in Hole 2, 42' thick in Hole 3, and 50' thick in Hole 1. (Note: thicknesses are apparent, measured as footage of core, and are not corrected for inclination of core to foliation).
- 3) The green carbonatite grades sharply into white carbonatite which is similar in texture and mineralogy to the green variety except that biotite-phlogopite is more abundant in the white variety, and quartz stringers are less abundant. Chlorite forms a patchy alteration throughout the unit. Thicknesses are as follows: 55' in Hole 1, 57' in Hole 2, and at least 32' in Hole 3 (hole ends in carbonatite).

Because hand sample identification of minor and accessory minerals is difficult to impossible, and because some of them have economic significance, i.e., pyrochlore, columbite, monazite, zircon and ilmenorutile, systematic studies of thin sections and/or heavy mineral concentrates would be useful.

- 4) The footwall unit consists of quartz-hornblende - (pyroxene) gneiss similar to that in the hanging wall, but with much less fracturing and oxidation.

DISCUSSIONS AND CONCLUSIONS.

a) Origin of carbonatite.

The origin of carbonatites has caused much speculation, because of their unusual composition, variety of rare minerals, and common association with alkalic and mafic alkalic rocks in strongly zoned complexes. Rare elements commonly concentrated in carbonatites include Nb, Ta, Zr, Y, Rare Earths, Th, U and F.

The best hypotheses of origin of carbonatites are that they form by crystallization of a carbonatite magma, which was produced at depth from an alkalic basalt rock or magma by one of the following processes:

- 1) strong fractionation of the parent magma under unusual conditions.
- 2) partial melting of alkalic basalt under unusual conditions.
- 3) separation of an immiscible carbonate-rich magma from an alkalic basalt magma under certain conditions.

They are commonly emplaced along major deep-seated fractures which tap the source zone. Many form concentrically zoned intrusions, commonly associated with nepheline syenite and/or mafic alkalic rocks (e.g. Oka, Quebec, and Magnet Cove, Arkansas).

b) Lonnie Zone

1. Because of similarities in mineralogy and lithology to typical carbonatites, the Lonnie zone is considered to be a carbonatite rather than a sedimentary limestone.
2. The Lonnie zone is conformable to the regional trend; its recrystallized texture reflects the regional amphibolite facies metamorphism.
3. The original control of emplacement may have been a deep-seated fracture zone.
4. The continuity of the zone from surface to the level of drilling intersections has been established.
5. The presence of significant Nb and Zr in assays from trenches, and identification of pyrochlore, columbite, and zircon in surface samples (and probably in drill core) make the zone an exploration target.

RECOMMENDATIONS

1. The drill cores and surface geology should be studied in greater detail; this study should include the following:
 - i) thin section studies and/or heavy mineral concentrate studies from representative samples, with the purpose of identification of minor and accessory mineral assemblages. This might in turn indicate compositional zones in the carbonatite complex, which might be useful in predicting the distribution of subzones of greater or lesser economic interest.
 - ii) assays of carbonatite units in drill core for Nb and Zr.
2. Further drilling, trenching, and surface geology studies will depend on the results of the first recommendation.

CERTIFICATE OF ENGINEER.

I, John G. Payne, PhD, of North Vancouver, B.C. do hereby state:

1. I am a consulting Geological Engineer. I graduated from Queens University, Kingston, Ontario in 1961 with a BSc degree in Geological Engineering. I received a PhD degree in Geochemistry from McMaster University in 1966.
2. My address is 877 Lillooet Road, North Vancouver, B.C. V7J 2H6
3. I am under contract for this report to Stokes Exploration Management Co. Ltd., #713-744 West Hastings Street, Vancouver, B.C. V6C 1A5.

I have practiced Geology since graduation for 13 years, mainly in the North American Cordillera.

4. I compiled this report based on a preliminary drill report by Pierre Vaillancourt and my discussion of the property with him. I have examined specimens from the property but have not visited the property.
5. I have no direct or indirect interest in the Lonnie/Pitch property or in Moly Mite Mines Inc.
6. This report may be used by Mr. Ronald Orr and Moly Mite Mines Inc. in a Statement of Material Facts or Prospectus for public financing.

Dated at Vancouver, British Columbia, the 28th day of September, 1979.

STOKES EXPLORATION MANAGEMENT CO. LTD.

John Payne

John G. Payne, PhD
Consulting Geological Engineer.

APPENDIX 1 DRILL LOGS.

COMPANY: SEMCO FOR MOLYBDATE MINES PROPERTY: LONNIE HOLE NO. 1
 STARTED: 29/6/79 BEARING 30^o LOGGED BY: P. VAILLANCOURT
 COMPLETED: 1/7/79 ANGLE - 45^o
 DRILLER: D. FRYE/DRILCOR LENGTH: 165 Feet LOCATION: MANSON CREEK

INTERVAL	CORE RECOVERED	DESCRIPTION
FROM	TO	
0'	5.5'	Green, hornblende* argillite, gneissic in places poor recovery due to extensive fracturing, significant oxidation. Chloritized in parts.
5.5	6'	Milky quartz vein. Slightly oxidized.
6'	35'	Green argillite, gneissic appearance in places
0'	35'	18.75 54% Greater hornblende content describing bands varying from 0.5 cm - 1 cm. Hornblende is prismatic. Little oxidation.
35'	39'	Green argillite, more uniform appearance little gneissosity yet banding present in places. Minor pyrite. Small quartz veins.
39'	40'	Band of quartz, very fractured, iron stained.
40'	50'	Dull olive-aqua green marble. ** Vermiculite occurs in spots. Quartz present Anedral brown mica, possibly phlogopite. Faint longitudinal fractures with iron solution. Slight chloritization. Hblde is disseminated.
50'	64.5'	Light green marble. Higher quartz content, more pyrite. No banding but a general alignment of grains.
35	64.5	22 74 % Hornblende stringers.
64.5'	81'	Light green marble. Higher carbonate content, more calcite. Very uniform in composition and appearance. Almost granular texture, fairly soft and friable. Very few quartz or hornblende stringers.
81'	90'	Dark olive green marble grading into much lighter green gray rock with disseminated pyrite. Hornblende stringers prominent. Chloritization in parts.
64.5	92	22.8 83 %

* hornblende = hornblende-pyroxene, probably soda-rich.

** marble = textured term for coarsely crystalline rock dominated by calcite, no implication with respect to origin.

INTERVAL		CORE RECOVERED		DESCRIPTION
90'	92'			White marble. Hornblende present. Minor pyrite possible zircons. Pyrochlore might be present
92'	97'			Green gray marble. Choritized. Minor pyrite, granular texture. Minor vermiculite, poorly defined crystals. Fairly soft.
97'	109'			White marble. Tan-green bands which could contain pyrochlore. Hornblende stringers; pyroxene also present. Disseminated books of phlogopite.
109'	110.5'			White-green marble, chloritized. Minor pyrite. Fairly poor recovery. Fairly heavy fracturing.
110.5'	114'			White marble. High hornblende content.
92	120	22.3	79%	Minor pyrite. Poor mineralization
114	125'			White marble with a much lower amphibole content. Ferromagnesian minerals are more disseminated. Possible zircon.
125'	140.5'			White to green marble. Uniform appearance and composition. Stringers of a dark green mineral. Overall smooth texture very fine grain. Moderate quartz content.
140.5'	147'			White marble with disseminated amphibole (hornblende) crystals. Minor pyrite. Biotite present.
120'	149.5'	22.5	80	Isolated zircon crystals. Slight chloritization, good recovery.
149.5'	165'	10.4	67	
147'	165'			Green argillite, heavily fractured. Little oxidation. Gneissic appearance in places, the angle of bedding to the core is approximately 55°. Minerals are hornblende, quartz stringers and pyroxenes.
	(end)			
0	Summary 165'	118.7	72	

COMPANY: SEMCO FOR THE MOLYBDATE MINES

PROPERTY: LONNIE HOLE NO.2

STARTED: 2/7/79

BEARING: 30°

LOGGED BY: P. VAILLANCOURT

COMPLETED: 3/7/79

ANGLE: - 45°

DRILLER: DRILCOR

LENGTH: 119.5

INTERVAL		CORE RECOVERED		DESCRIPTION
FROM	TO			
0'	23'			Gray green argillite, gneissic in places. Banding at 55° to the core defined by quartz, amphibole stringers.
23'	27'			Dark aqua-green marble. Milky quartz stringers. Fairly granular texture yet rock is fine grained. Uniform appearance make mineralization difficult to discern.
0	27.5	23.1	84%	
27'	31.5			Light grey to green marble. Quite extensive chloritization. Hornblende stringers. Very minor pyrite. Olive-green mineralization in patches. No banding but there is a general alignment of minerals.
31.5	35			Dark olive-green marble containing quartz stringers. Minor chloritization. Rather fractured member, poor recovery.
35	44			White marble. Very slight oxidation in places. Mineralization consists of small crystals of quartz, pyroxenes and minor pyrite.
44'	53'			White marble which contains black and grey specks. Ilmeno-rutile needles are contained in the rock. Carbonate content is lower.
27.5	54.5	22.7	84%	
53'	71'			White marble, uniform appearance. The black mineralization is hard to define, does not appear to be hornblende. Biotite is contained in the rock.
71'	74'			White marble, great amphibole content. Some yellow and green coloring in the rock.
54.5	83.5	23.6	81%	
74'	89'			White marble. Black mineralization: tabular to booklike crystals (biotite). Vermiculite is

INTERVAL	CORE RECOVERED			DESCRIPTION
89'	91.5			Transitional marble-gneiss, grey to white in color. Minor pyritization. Banding is noticeable.
91.5'	94.5'			Hard, grey to green argillite - gneiss. Extremely thin banding. Chloritization; minor pyrite. Contains black mineralization.
94.5'	96'			White marble containing a high proportion of black mineralization providing very irregular banding.
96'	99'			Green gray hard, argillite gneiss slightly fractured. Crystal grains are fine.
99'	107'			Transitional member beginning with a white marble with black (amphibole?) stringers. Marble becomes increasingly black with black mineral stringers. Eventually grades to a grey green color as the carbonate content decreases.
83.5 107	119.5 119.5	29.5	82%	Grey green argillite, banding in places. Minor pyrite. Quartz stringers. Fine grained.
0	Summary 119.5	98.9	83%	

COMPANY: SEMCO FOR MOLYBDATE MINES

PROPERTY: LONNIE

HOLE NO. 3

STARTED: 3/7/79

BEARING: 30°

LOGGED BY: P. VAILLANCOURT

COMPLETED: 5/7/79

ANGLE: - 45°

DRILLER: DRILCOR

LENGTH: 117

INTERVAL		CORE RECOVERED		DESCRIPTION
FROM	TO			
0'	43'	18.5	43	Gray green argillite, show very little gneissity. Minerals generally show alignment. Quartz, amphibole stringers. Fine grained texture. Heavily fractured, poor recovery. Aqua green mineral occurring as "eyes" other times in more blocky, euhedral forms. No apparent pattern to fractures. Oxidation is fairly widespread.
43'	48.5'			Very light green marble with black stringers (presumably hornblende). Yet, high calcite content. No clearly identifiable minerals, but there are some green minerals which are aligned. Minor pyritization.
48.5	49'			Grey green argillite, very chloritized. Very little banding.
49'	62'			Aqua green marble containing black white and green mineralized stringers which define a "swirl" pattern. The minerals are quartz, hornblende and pyroxenes for the most part.
62'	81'			Dull green aqua-olive color marble, minor pyritization. Minor hornblende.
81'	85'			Aqua-olive green marble, more uniform in color and in mineralogy.
43	85.3	21.9	51	
85'	100'			White marble containing green, black stringers.
85'	117	23.4	73	
100'	117'			Predominantly white marble with green shades. Poor recovery. Minor chloritization.
0	117	63.8	55	

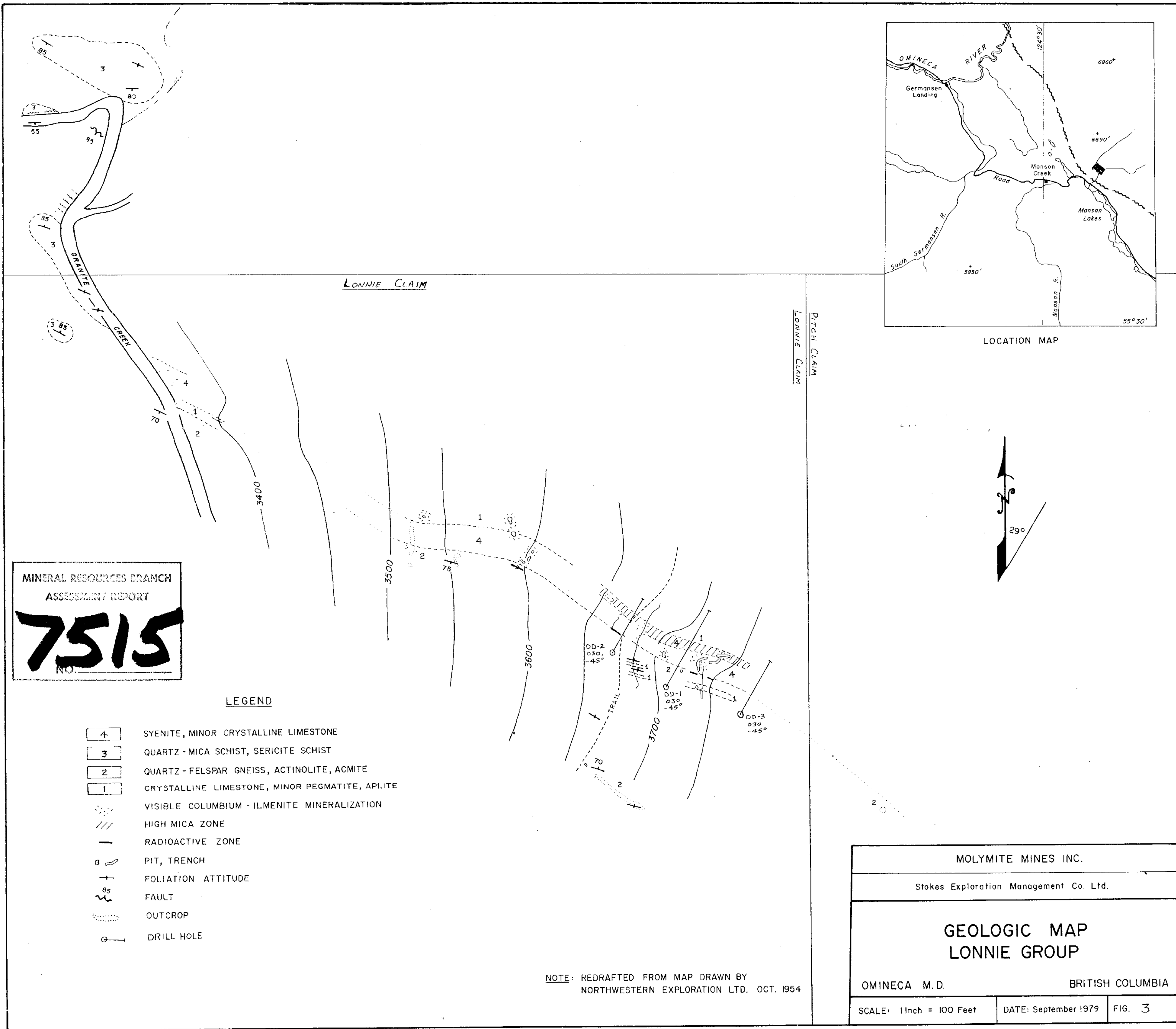
ITEMIZED COST STATEMENT

Pierre Vaillancourt, Geologist 9 days @ \$70; July 19 - 27/79	\$ 630.00
Robert L. Kemmy, P.Eng. Mining Consultant 1½ days \$200; July 13 - 14/79	250.00
Ronald B. Stokes, P.Eng., Mining Consultant 7½ days @ \$250; June 1 - 8/79	1875.00
2 1/3 days @ \$250; July 1 - 3/79	590.00
Car Rental; June 4 - 8/79 4 days	371.00
Instrument Rental; July 19 - 22/79 Spectrometer: 4 days @ \$30	120.00
Power Saw: 4 days @ \$15	60.00
Diamond Drilling; June 29 - July 5/79 Drilcor Industries Ltd. Hole 1: 165' AEX Size " 2: 119.5' " 3: 117' <u>401.5'</u>	
400' @ \$19.35 per foot : \$7740.00 1.5' @ \$16.50 " " : 24.75 Core Trays <u>107.12</u>	<u>7871.87</u>
Total Cost	<u>\$11,767.87</u>

STOKES EXPLORATION MANAGEMENT CO. LTD.



Ronald B. Stokes, P.Eng.



R. B. Stok