

BOT MINERAL CLAIM GROUP

REPORT ON

GEOLOGICAL MAPPING OF CLAIMS

N.T.S. 105-G-10

K. M. Dawson

April, 1970

BOT MINERAL CLAIM GROUPREPORT ON GEOLOGICAL MAPPING OF CLAIMS

Watson Lake Mining District
Yukon Territory

Longitude 130°55'E

Latitude 61°40'N

N.T.S. 105-G-10

Field work done during period
August 1 - August 12, 1969.

By:

Kenneth M. Dawson

ATLAS EXPLORATIONS LIMITED

April 1970

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LIST OF CLAIMS

<u>Claim No.</u>	<u>Grant. No.</u>	<u>Date Recorded</u>
BOT 46-49	Y29348 - Y29351	August 6, 1969
BOT 50-57	Y29352 - Y29359	August 6, 1969
BOT 58-65	Y29360 - Y29367	August 6, 1969
BOT 66-69	Y29368 - Y29371	August 6, 1969

Total number of claims: 24

ATLAS EXPLORATIONS LIMITED

330 MARINE BUILDING
355 BURRARD STREET
VANCOUVER 1, B.C.

BOT MINERAL CLAIM GROUP REPORT ON GEOLOGICAL MAPPING OF CLAIMS

By

K.M. Dawson

INTRODUCTION

In July 1969, Stanley Reamsbottom and Peter Dean, geologist and prospector, respectively, with the Atlas Explorations' Tintina Project, discovered chrysotile asbestos in serpentine float on Big Campbell Creek, about 12 miles upstream from the bridge on Ross River-Watson Lake highway. Subsequent prospecting led to the discovery of five serpentine outcroppings containing fibre. Twenty-four BOT mineral claims were staked for Atlas Explorations in July, 1969, to cover the areas of asbestos mineralization.

Work done on the BOT group in 1969 includes geologic mapping, prospecting and sampling of the claims and adjacent area, line-cutting and ground magnetometer survey.

LOCATION AND ACCESS

The BOT Group is located on Big Campbell Creek about 12 miles upstream from Ross-River-Watson Lake highway bridge, and 6 miles

southwest of the highway where it skirts the south shore of Finlayson Lake. The nearest settlement, Ross River, Y.T., is 75 miles by road northwest of Finlayson Lake. The claims fall in the western part of claim sheet 105-G-10 and location is given on Key Map, Appendix I.

Access to the claims was attained by helicopter during 1969. A helicopter pad was constructed near the main asbestos occurrence. Proposed work for 1970 includes construction of a road suitable for tracked vehicles from the highway at Finlayson Lake.

REGIONAL GEOLOGY

The dominant structure in the region is the Tintina fault, located 20 miles southwest of BOT claims. Two distinctly different northwest-trending geologic terranes are separated by the fault: highly folded and thrust-faulted but relatively unmetamorphosed Paleozoic strata to the southwest, and metamorphic and granitic rocks to the northeast. Older metamorphic rocks in the region are predominantly quartz sericite schist, with lesser amounts of biotite schist and augen gneiss. These rocks are probably members of the Proterozoic Yukon Group. A thick sequence of Mississippian metasediments and volcanic rocks overlies the older metamorphic rocks, and includes the serpentine dykes that carry asbestos on the BOT claims.

Stocks of Jurassic granite containing minor disseminated pyrrhotite intrude Paleozoic and Proterozoic rocks south of BOT claims. Small diorite plugs and amphibolite dykes are mapped in vicinity of BOT claims.

The region encompasses four northwest-trending belts. From southwest to northeast these are:

- (1) folded and faulted Paleozoic rocks adjacent to Tintina Valley;
- (2) Tintina fault zone;
- (3) Proterozoic metamorphic rocks with open folding, and Mesozoic granitic rocks;
- (4) a northwest-trending zone of Mississippian volcanic and sedimentary rocks, and ultrabasic intrusions.

Regional geologic data is drawn, in part, from Geological Survey of Canada Map 8 - 1960.

GEOLOGY OF BOT CLAIMS

A geologic map of BOT claims, based upon mapping by Craig Fleming, is given in Appendix II. Survey control for geologic mapping was attained by a chained base line, Azimuth 108° , and grid lines spaced at 400 foot intervals normal to the base line. The grid was established during geologic mapping for a

TABLE OF GEOLOGIC FORMATIONS

Jurassic and/or Cretaceous

- 5. 5a - medium to coarse grained diorite stock
- 5b - amphibolite dykes

----- intrusive contact -----

Mississippian (?) or Earlier

- 4. Quartz-carbonate altered phyllite and
 greenschist
- 3. Peridotite, amphibolite and serpentized
 equivalents

----- intrusive contact -----

- 2. Greenschist, altered phyllite
- 1. Graphitic and chloritic phyllites,
 limestone lenses

Note:

Numbers of formations correspond to Geological Map, Bot Claims,
Appendix.

magnetometer survey. Geologic data was also gathered by Atlas geologists, Kenneth Dawson, Colin Godwin and Gordon Davis, and Atlas prospector, Peter Dean.

The most abundant rocks in vicinity of BOT claims are Mississippian graphitic and chloritic phyllites with interbedded limestone. Phyllites adjacent to basic intrusive rocks have been extensively altered to greenschist. Greenschist along contact zones of a 200 to 500-foot wide serpentinite dyke is completely altered to an orange-weathering quartz-carbonate rock. Chrysotile asbestos fibre is found in five localities within the serpentine dyke that strikes N70W and dips steeply northward. Inferred strike length of serpentinite dyke is 5000 feet.

The general northwest trend of phyllite and serpentinite in vicinity of BOT claims is disrupted by a series of N60E cross-faults. Bedding is dragged parallel to the faults, and sense of movement is right-lateral. Similar faults occur elsewhere along the Tintina trench, essentially normal to Tintina fault and apparently generated by late movements along the fault zone. Faulting here is obviously post-Mississippian in age, and probably post-Jurassic. The central, 2500-foot-long section of the serpentine dyke has been offset by two N60E faults. The offset portion does not crop out, but its location is indicated by ground magnetics (see Geophysical Report, BOT Mineral Claim Group).

Chrysotile fibres occur in veinlets 1/16 inch to 1/8 inch wide, with most fibrils 1/16 inch in length. Visual estimates of grade indicate that asbestos constitutes 1% to 3% by volume of the rock. To be economic in Yukon, at least 3% to 5% of rock should be fibre of 1/16 inch or longer, of which at least 25% should be 1/4 inch or longer. Asbestos exposed on BOT claims is of sub-economic grade. However, only a small portion of the serpentine dyke crops out, and economic mineralization may well occur in the area.

Chrysotile veinlets are mantled by 1/2 inch to 1 inch wide alteration envelopes of fine-grained magnetite. These alteration features provide an important exploration guide in the stronger magnetic response of mineralized serpentine.

The serpentinite rock may be described as a serpentinized pyroxene-rich peridotite. Light yellow-green bands in the rock are zones of total serpentinization. Remnant crystals of altered pyroxene are visible in the black serpentinite. The rock is very soft and has a greasy feel, indicating the presence of talc and carbonate (magnesite) in the rock mass. The presence of these alteration minerals and possibly brucite in association with chrysotile is indicated by the yellowish colour of some fibre and its tendency to break down to a powder upon rubbing between the fingers. Talc-carbonate alteration

in the fibre is deleterious to the strength quality of a final fibre product. Fibre from only one of the five occurrences shows alteration.

Other mineralization in the area includes quartz-pyrite and quartz-pyrite-minor chalcopyrite veins along Big Campbell Creek, southeast of asbestos showings, and quartz-stibnite veins in quartz-carbonate alteration on BOT #50. These veins and other geologic features of the area are given in Peter Dean's "Prospecting Map of Bot Claims" in Appendix III.

CONCLUSIONS

- 1) Chrysotile asbestos occurs in a 200- to 500-foot-wide serpentinite dyke over an inferred strike length of 5000 feet.
- 2) Mineralized rock is sub-economic in grade, on the basis of low volume and short length of fibre. The quality of some fibre may be reduced by alteration.
- 3) Only a small portion of the serpentinite dyke crops out, and fibre of economic grade may well occur in the area. Extensions of the dyke are indicated by ground magnetometer survey.
- 4) On the basis of geologic mapping and ground magnetometer survey, a program of bulldozer trenching on the BOT claims

is proposed for the summer of 1970.

Respectfully submitted,

Kenneth M. Dawson,
Geologist.

April 1970

APPENDIX IV

Summary of Costs of BOT Claims Group Geologic Mapping

Salaries and Wages	265.67
Report Preparation	120.00
Helicopter time 75 min. @ \$1.89	/ 141.75
Helicopter fuel	18.44
Camp support 6 man-days @ \$10.00	60.00
Expediting	66.23

	672.09
Head Office Administration 10%	67.20

TOTAL:	\$739.29
	=====

Supporting vouchers are given in Appendix

Total cost of geologic mapping to be applied as
representation work is \$739.29.

TELEPHONE 685-4331

ATLAS EXPLORATIONS LIMITED

330 MARINE BUILDING
355 BURRARD STREET
VANCOUVER 1, B.C.

AFFIDAVIT SUPPORTING SUMMARY OF COSTS

I, KENNETH M. DAWSON, Geologist, Atlas Explorations Limited, of Vancouver, British Columbia, do hereby state that, to the best of my knowledge and belief, the statement of cost presented in this report (BOT Mineral Claim Group - Report on Geological Mapping of Claims) is both correct and true.

K.M. Dawson

Commissioner of Oaths in
and for Yukon Territory

Date

APPENDIX VI

List of Personnel

BOT Geological Mapping

August 1 - August 12, 1969

K. Dawson	Geologist, Party Chief	Vancouver, B.C.
R.E.G. Davis	Geologist, Vice-President	Vancouver, B.C.
C. Godwin	Geologist	Vancouver, B.C.
C. Fleming	Geologist	Vancouver, B.C.
P. Fox	Linecutter, Geological Assistant	Ross River, Y.T.