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92B/5W BEAR CK AREA
MACSAN EXPL.

MINERAL AGREEMENT
NO. 11

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MACSAN EXPLORATIONS LTD. (N.P.L.)

C.P.O.G. 93B-100

MINERAL AGREEMENT NO. 11

GEOLOGICAL REPORT by D. C. MALCOLM

PROPERTY FILE

MAGSAN EXPLORATIONS LTD. (N.P.L.)

SCHEDULE OF EXPENDITURES MADE ON GROUND

LEASED FROM C.P.C.G. UNDER MINERAL AGREEMENT NO.11

TO MAY 31, 1965

Prospecting	\$ 5,146.44
Geological surveys	10,554.76
Soil sampling	2,598.01
Trenching	<u>605.74</u>
	\$ 18,904.95
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Q/M

EN. 103

MACSAN EXPLORATIONS LTD.

C.P.O.G. LAND

AGREEMENT NO. 11

SUMMARY

In 1964 the area was mapped on a scale of 1" = 500 feet, soil samples were taken along traverses and roads and prospecting was done. In general, the area has considerable overburden and Sooke sediments cover a good percentage of it. As a result the mineralization found was minor in extent. Geochemical work over the Sooke sediments outlines the conglomerates.

PROPERTY

The exploration rights cover 19,535 acres in blocks 832, 864, 977, 795, 796, 1027, 984, 980, 716, 70, 609, 174, 611, 69, 23 39 and 81 Malahat Land District, Vancouver Island.

LOCATION

Lat. 48°15' Long. 123°50'. The property is 3 to 10 miles northwest of Sooke and is reached by good logging roads off No. 16 highway.

TOPOGRAPHY

The area is a basin with three creeks, Kirby, Muir and Tugwell flowing south from relatively high rocky uplands to a constricted or narrow valley at the coast at Orveas Bay. The valley has been heavily timber covered but extensive logging has been done in it. To the southeast the Sooke River and DeMamiel Creek have cut canyons in the flanking hills.

GEOLOGY

General:

The property is part of a downfaulted block or graben of basalts, gabbros and serpentized flows typical of the initial stages of mountain building.

Granite plugs represent a later stage of the same Late Tertiary orogeny.

The rocks are extensively sheared and faulted. Socke sediments cover much of the basin and local glaciers scoured the higher parts and deposited thick beds of sand and gravel over the lower ground near the coast.

CLAIM GEOLOGY

The claims are underlain by thick flows of pillow and amygdaloidal basalts interbedded by fine grained black basaltic tuffs and agglomerates. The northern parts of the land lots are in massive serpentinitised pillow lavas. The rocks strike northwest and dip north.

These volcanics are cut by a series of northwest striking reticulating gabbro dike-like intrusions 100 to 5000 feet in thickness standing almost vertically.

Isolated outcrops of hornblende granite representing the tops of stocks or of a batholith occur along a northwest line. The volcanics and gabbro are extensively altered, fractured and contain irregular areas of a coarse hornblende and quartz feldspar pegmatitic alterations which are thought to be differentiates of the hornblende granite.

Sulphide mineralization is connected with both types of pegmatites and pyrite and pyrrhotite with minor chalcopyrite are found in the outcrop areas on the northern and eastern claim blocks. The largest portion of the land blocks are covered by Oligocene Socke sediments.

These are flat lying conglomerates and sandstones with narrow interbedded fossil layers. The conglomerate at the base contains rusty boulders and pebbles of basalt and gabbro and some of the cement is liscnite.

DETAILED DESCRIPTION

(a) Block 70

Block 70 covers Muir and Kirby Creek for four miles from their mouths. The block is underlain by Socke sandstones and thick beds of glacial gravel and sand. The thickness of this cover is unknown but windows in it show that the sediments are underlain unconformably by basalt intruded to the south by the Jordan River gabbro and in the north by the Socke gabbro. No mineralization was found on the block.

(b) Block 23

This block is at the mouth of Muir Creek and is gravel and sediment covered. No deposits were found on it.

(c) Block 81

Block 81 is also covered by gravel sediments and soil with no mineralized outcrops.

(d) Block 39

Block 39 is north of the Otter Creek road and is gravel covered.

(e) Block 69

Block 69 is underlain by black amygdaloidal basalts intruded by the Socke gabbro. The block was logged by a logging railway and is thickly covered with second growth. Prospecting is difficult and although the ground is well sheared and contains mineralization to the south east and northwest nothing was found on the land lot.

(f) Block 811

This lot lies north of Lot 69 at the east end of the exploration rights. It is underlain by extensively sheared amygdaloidal pillow lavas intruded by two irregular gabbro dikes. There are extensive areas of pyrite, pyrrhotite mineralization and chalcopyrite has been found by the prospectors at several locations. Further detailed prospecting is planned.

(g) Block 174

This lot is an extension northwest of the formations on Lot 811. It contains extensive outcrops of massive pillow lavas intruded by narrow gabbro dikes. Shearing and faulting is extensive and Tugwell Creek canyon is along a major north striking break. Major faults striking northwest extend from Socke across the land lot. Pyrite and pyrrhotite mineralization is widespread and chalcopyrite has been found at several locations. One isolated basalt outcrop showed five feet assaying 0.8% copper in an overburden covered area. This should be diamond drilled and the remainder of the block requires further detailed prospecting.

(h) Block 609

This is again on the northwest extension of the formation found on lots 174 and 811. It contains areas of pyrite mineralization in fractured basalt and some native copper in shear zones. It requires additional detailed prospecting.

(i) Block 716

This block occupies a rolling overburden covered area at the headwaters of Muir Creek. Outcrops are plentiful. It is underlain by amygdaloidal basalts with some gabbro but the area is intensely serpentized. The pillow lavas and intrusives weather a typical brown after serpentine and the rocks are difficult to distinguish one from another. In general, the area appears barren on the surface outcrops. Pyrite and manganese staining is widespread but pyrrhotite and chalcopyrite are found only in trace amounts.

(j) Block 864

Serpentinization is less intense but sulphide occurrences are lacking.

(k) Block 1027

This block is underlain by serpentized pillow lavas with minor sulphides.

(l) Block 785

The Metehosin pillow lavas and gabbros are serpentinized. Other than a small amount of harsh slip fibre asbestos nothing was found.

(m) Block 795

This block is serpentinized. Pyrite with a trace of chalcopyrite was found. It is of little interest.

(n) Block 796

This block is underlain by gabbro with granite plugs. It is heavily overburden covered and only one area showed pyrite with traces of chalcopyrite. No further prospecting is warranted.

(o) Block 977

This block is underlain by fragmental volcanics intruded by granite plugs. Several areas of sulphides have been found and additional detailed prospecting is warranted.

(p) Block 832

Block 832 is underlain by fragmental basalts (agglomerates and tuffs). Some float was found south of the block but the ground is well exposed and mineralization was, in general, scanty. The block is favourably located and warrants additional prospecting.

GEOCHEMICAL

Students were hired during the summer months and the roads and some traverses were tested. This work gives a general picture of the mineralization belts and further detailed follow up work is planned.

The basalt conglomerate and some sandstones in the Sooke sediments contain limonite and mineralized fragments. Samples of this bed assay from 0.02 to 0.05% copper and while this material is too low in grade to be mined it is sufficiently high to mask any mineralization below it.

CONCLUSIONS

The southern blocks may contain mineable deposits but these could only be found by extensive diamond drilling. The Sooks sediments mask the underlying rocks and render prospecting, geochemical surveys and geophysical surveys of doubtful value.

The northern blocks have been extensively serpentized and while the full import of this is not understood it has left the surface exposures relatively barren of copper mineralization and again prospecting by diamond drilling would be required to fully prospect the area.

The land blocks north of Young Lake numbers 811, 174 and 609 contain fracture plane sulphides and these blocks require additional prospecting.

Blocks 832 and 997^{917?} contain some mineralization. The geological conditions with the exception of a belt of agglomerates appear favourable. These blocks are of marginal value but warrant additional prospecting.

Report by

D. C. Malcolm, P. Eng.