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EXAMINATION OF
MERCURY EXPLORATIONS' PROPERTIES
IN ENDAKO AREA, B. C.

N.T.S. 93-K
ATLAS EXPLORATIONS LIMITED

By: K.M. Dawson Nov. 1969

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K. M. DAWSON

ATLAS EXPLORATIONS LIMITED

November 25th, 1969

ATLAS EXPLORATIONS LIMITED

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

N.T.S. 93-K

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INTRODUCTION

On November 20th and 21st, 1969, the writer accompanied by Robert E. Chaplin of Mercury Explorations Ltd. (N.P.L.) visited several of Mercury's properties in the vicinity of Endako Mine. Rock outcroppings and overburden conditions were examined, and correlated with I.P. results. Two soil and four rock samples were taken south of the Count Claims. The objects of the examination were:

1. to determine priorities for additional work on the properties, based upon geophysical and geochemical responses, and geological environment;
2. to assess the nature and extent of additional work needed on the properties prior to diamond drilling;
3. to estimate the size and cost of a drilling program that will adequately test the properties.

SUMMARY

Priorities for additional work required on Mercury claims are:

1. Count
2. Fort
3. Tat
4. Chess
5. Bonus

4900 feet of vertical diamond drilling should be located on the basis of 45 line-miles of concurrent I.P. - magnetometer-soil sample surveys. Total cost estimate for the program is \$83,550.00.

CONCLUSIONS AND RECOMMENDATIONS

1. An I.P. anomaly on Count Claims is the number one priority area. Rock outcroppings south of the claims show the area to be a contact zone between Casey alaskite and Nithi quartz monzonite, with alteration and mineralization similar to that on Nithi Mountain to the north.

Fill-in I.P. and ground magnetometer lines should be run over the anomalous area, with N-S lines on 1000 ft. spacing and two E-W lines along the northern and southern sides of Counts Lakes. N-S lines should be extended to cover open ground to the south on which molybdenite mineralization was observed. Soil samples for Mo should be taken at 300 ft. intervals along N-S lines. About 14 line-miles each of I.P., magnetometer and soil sampling work are required. Overburden depths are estimated to be 150-200 ft. Four 400 ft. drill holes may be located on the basis of this work.

2. A coincident I.P. - geochem anomaly on the Fort claims is the second priority area. The anomalous area is underlain by Endako quartz monzonite and is adjacent to a major fault zone. The fault zone is intruded locally by andesite porphyry, rhyolite and basalt dykes. Sparse molybdenite mineralization and kaolinite alteration are intersected in drill core near MacDonald and Casy Lakes along the fault to the north.

Three N-S I.P. lines should be run to the west of the anomaly to test possible extensions and a soil Mo anomaly on the western portion of the Fort claims. Ground magnetometer should be run along I.P. lines crossing the anomaly, and soil samples for Mo should be taken at 300 ft. spacing along the same lines. About 10 line-miles each of soil sampling and magnetometer work are required, plus 3 line-miles of I.P. survey. The area is underlain by glaciolacustrine silts probably 50 to 150 ft. deep. Three 400 ft. diamond drill holes may be located on the basis of this work.

3. An I.P. anomaly on Tat claims west of Stern Lake is the third priority area. Rocks of Simon Bay diorite complex are overlain by Tertiary Endako Group lavas immediately north of the anomaly, and Casy alaskite crops out $1\frac{1}{2}$ miles to the west. The area may be a contact zone between alaskite and older diorite. A weak aeromagnetic spot high borders the I.P. anomaly on the north.

Fill-in I.P. lines on 1000 ft. spacing should be run N-S across the anomaly, and three E-W I.P. lines should bracket the anomalous area. A ground magnetometer survey should be run over these fill-in lines, and soil sampling for Mo at 300 ft. intervals should be done concurrently. About 12 line-miles each of I.P., magnetometer and soil sampling are required. The area occupies the broad drift-covered valley of Stern Creek, and overburden depths in excess of 150 ft. may be encountered. Apparent resistivities, however, indicate overburden depths may be less. Two 400 ft. diamond drill holes may be located on the basis of this follow-up work.

4. A weak I.P. anomaly on Chess claims is the fourth priority area. Carr (1965, p.118) notes a sheared

and altered outlier of Endako quartz monzonite occurs within Casey alaskite immediately north of Cheskwa Lake, at the NW end of Chess claims. Chaplin (1969 p.12) reports exposures of weakly sheared, slightly sericitized coarse-grained quartz monzonite along a pipeline right-of-way in the vicinity of the I.P. anomaly.

This locality was not visited by the writer, hence the type and significance of the hydrothermal alteration cannot be assessed. The claims cover a contact zone between Casey alaskite and Endako quartz monzonite, and may be an area of intersection between major NW and NE structural trends. These two geological factors are prime controls for molybdenite mineralization in Endako area.

The I.P. anomaly is defined by N-S lines 1 mile apart. Two or three fill-in N-S lines across the anomaly are needed, as well as one NW-SE line down the long axis of the anomaly. A ground magnetometer survey should be run concurrently. Soil sampling for Mo has not been done in the area, hence the existing soil grid to NE should be extended across the claims. About 6 line-miles each of I.P., magnetometer and soil sampling are required. Overburden depth in the area has not been estimated. Two 400 ft. diamond drill holes may be located on the basis of this work.

5. A strong I.P. anomaly on Bonus claims one mile west of Endako village constitutes the fifth priority area. Outcroppings of fresh Glenannan quartz monzonite occur to north and south of Bonus claims, a rock unit in which no molybdenite mineralization has been observed by the writer. The anomalous zone straddles Highway 16,

the C.N.R. right-of-way, a natural gas pipeline, and Endako River.

The anomalous area may be better defined by extending the present I.P. survey lines about 1 mile southward, and running a ground magnetometer survey over the area. About 3 line-miles each of I.P., and magnetometer work are required. Soil geochemistry for Mo may be misleading due to excessive depth of overburden. I.P. results indicate bedrock-overburden interface sloping upward to the north, but depths in excess of 200 ft. may be encountered beneath the anomaly. Ownership of surface rights in this area should be ascertained before additional work is started. One deep diamond drill hole, in the order of 500 ft., should adequately test the area.

6. Soil Mo anomalies on the western part of the Tat claims probably reflect mineralized glacial float transported from the vicinity of Owl Lake showings four miles to the west. No further work appears warranted in this area, nor on the North claims adjoining the K & S claims of United Buffadison on the east.

COST ESTIMATE

Cost of I.P. surveys are estimated to be \$250 per line-mile, with cost of concurrent ground magnetometer surveys and soil sampling estimated at \$50 per line-mile each.

Diamond drilling costs are estimated at \$10 per ft. based upon recent contracts with Endako Mines.

Costs of supervision and contingencies are based upon Chaplin's estimates:

1. Count Claims:		
14 line-miles of I.P.-Mag. Soil		\$ 5,000.00
1600 ft. of diamond drilling		16,000.00
Supervision		1,500.00
Contingencies		<u>5,000.00</u>
	Total	\$27,500.00
2. Fort Claims:		
10 line-miles of mag.-soils		\$ 1,000.00
3 line miles of I.P.		750.00
1200 ft. diamond drilling		12,000.00
Supervision		1,000.00
Contingencies		<u>4,000.00</u>
	Total	\$18,750.00
3. Tat Claims:		
12 line-miles of I.P.-Mag.-Soil		\$ 4,200.00
800 ft. diamond drilling		8,000.00
Supervision		1,000.00
Contingencies		<u>3,000.00</u>
	Total	\$16,200.00
4. Chess Claims:		
6 line-miles of I.P.-Mag.-Soil		\$ 2,100.00
800 ft. diamond drilling		8,000.00
Supervision		1,000.00
Contingencies		<u>2,000.00</u>
	Total	\$13,100.00
5. Bonus Claims:		
3 line-miles of I.P.-Mag.		\$1,000.00
500 ft. diamond drilling		5,000.00
Supervision		500.00
Contingencies		<u>1,500.00</u>
	Total	\$8,000.00
	GRANT TOTAL OF 5 PROJECTS	<u>\$83,550.00</u>

GEOLOGY

The reader is referred to enclosed papers by E. T. Kimura and A. D. Drummond on geology and alteration of Endako Mines (1969) for an up-to-date summary of mine geology. Regional geology of Endako area is covered by J. M. Carr (1965).

The Endako area is underlain by the predominately quartz monzonitic phases of Topley batholith, ranging in age from mid-Jurassic to Early Cretaceous. Molybdenite-pyrite-magnetite mineralization in these rocks is accompanied by K.-feldspar and quartz-sericite pyrite envelopes, and pervasive kaolinization. Minor occurrences of molybdenite abound, but major concentrations are controlled by intersections of two or more regional structural features.

REFERENCES

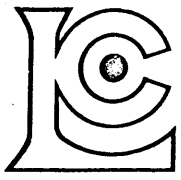
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Respectfully submitted,

K. M. Dawson,



November 25, 1969



CHEMEX LABS LTD.

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NORTH VANCOUVER, B.C.
CANADA
TELEPHONE: 988-6955

- CHEMISTS
- GEOCHEMISTS
- ANALYSTS
- ASSAYERS

CERTIFICATE OF ANALYSIS

NO. 7459

TO: Atlas Explorations Ltd.,
330 - 355 Burrard St.,
Vancouver, B. C.

INVOICE NO. 2438

DATE RECEIVED Nov. 27/69

DATE ANALYSED Dec- 1/69

ATTN: Mr. Ken Dawson

SAMPLE NO.:	PPM Copper	PPM Molybdenum	
Soil #1	10	3	Count
Soil #2	10	2	Count

Certified by