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REPORT

ON

GEOCHEMICAL SURVEYS
AT
BANKS ISLAND, B. C.

1964

SKEENA

MINING DIVISION

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REPORT ON
THE GEOCHEMICAL SURVEYS AT BANKS ISLAND, B.C.
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INTRODUCTION

The soil sampling was done in conjunction with the self potential survey. Soil samples were collected at each self potential survey station and analysed at the base camp for total heavy metal content using the standard "Bloom" test - an ammonium citrate buffer, with dithizone in toluene as the metal sensitive indicator. Through soil sampling we hoped to eliminate anomalies due to graphite. To some extent it succeeded. However the pyritic horizons of the metasedimentary bands have a low though significant zinc content. But these sulphides are not gold bearing. Thus many areas with anomalous concentrations of heavy metals were detected that are not related to gold mineralization. The known gold bearing zones do have a distinct metal halo that can be detected by geochemical sampling and there was the possibility of locating a deposit of auriferous sulphides.

The surveys were conducted over a number of small discontinuous grids, each grid oriented to cover the strike of the sediments in that area. The areas were selected from the evidence of mineralization detected in the prospecting of the claims.

SUMMARY & CONCLUSIONS

1. Weak dispersions of sphalerite in the sediments and associated with pyrite near quartz veins in the intrusives produce distinct concentrations of heavy metal.
2. Gold bearing sulphides and barren sulphides produce similar anomalies.

3. The method is a useful adjunct to, but no substitute for, thorough prospecting and geological mapping.
4. The following areas merit additional investigation:
 - (a) Waller Lake-Arseno Lake Area - Map 6C/4C/64
The anomalous section near line 12E
 - (b) Cross Grid-India Grid - Map 6C/3B/64
The area east of the creek from line 1s to 4s
 - (c) Peninsula Grid - Map 6C/6A/64
The section extending northeast from the base line at line 11s
 - (d) Crossbreak Grid - Map CB-GC/4A/64
The anomalies similar to those caused by the known mineralization should be trenched.

RESUME OF THE RESULTS

Discovery Area - Near the camp at Hepler Lake - See Map GC.3A/64

Along the base line between line 2N and 4N, the geochemical anomaly outlines the polymetallic auriferous discovery zone. But anomalies of equal magnitude occur over the pyritic metasediments at the quartz monzonite quartz diorite contact between lines 1N and 6S.

Quartz Lode Hill Area - southeast of Discovery Zone - See Map G.C.3E/64

Sphalerite with pyrite, peripheral to the quartz veining in this area is the cause of the heavy metal concentration in Area II. Note, however, that the gold bearing pyrite in Meade Hepler's discovery on line 1E, lacking other minerals, was not detected by the soil sampling. The higher metal values associated with the silts in Area III are due to the higher absorbency of the fine silt and are not indicative of an anomalous concentration of metal.

Waller Lake-Arseno Lake Area - See Map G.C.4C/64

This grid covers the limestone and metasediments from the southeast end of Arseno Lake to Waller Lake, a distance of 6800 feet. Without geological mapping the anomalies outlined cannot be properly interpreted. The coincidence of the -100 mv self potential anomaly with an area requiring 15 ml of .001 w/v dithizone for titration at line 12E, near the baseline, warrants further investigation. No interpretation can be made of the other small areas with a metal concentration.

Cross Grid-India Grid - See Map G.C.3B/64

The survey covers the band of limestone that is parallel to one about 700 feet southwest of the Discovery Zone. Some reconnaissance geological mapping and sporadic prospecting has been done in this area. A weak concentration of metal coincides with a self potential anomaly east of the creek on lines 1S to 4S. A copper showing was detected near the base line on line 2S.

More detailed mapping and prospecting should be done to evaluate the anomalous areas in these sediments.

Peninsula Grid - See Map G.C./6A/64

The westward extension of the sedimentary band tested on the Cross Grid-India Grid was covered in this survey across the bay from the Hepler Lake Base Camp. A section nearly 400 feet long, extending northwest from the baseline at line 11S and a local concentration at 200E on line 12S warrant a geological evaluation.

Island Grid - See Map G.C./9A/64

Limestone and metasediments of the Discovery Zone band of

sediments underlie this island in Hepler Lake. Trenching in the vicinity of an anomalous heavy metal concentration located chalcopyrite and pyrrhotite in the metasediments. No gold was associated with the sulphides.

East Waller Lake Grid - See Map G.C./8A/64

A short grid was cut over the limestones and metasediments on the east shore of Waller Lake. The continuity of the geochemical anomalies suggest pyritic metasediments. Mapping should provide the information necessary for further exploration.

Hepler Lake-Gladys Lake Grid - See Map G.C./1A/64

Concentrations of metal in the soil coincide with the pyritic metasediments in this area.

Mickle Showing - See Map B.S.-G.C./5/64

The anomalous areas coincide with and possibly extend the known mineralization in the gold bearing zones.

Crossbreak Showing - See Map CB-G.C./4A/64

Two southeast trending anomalies similar to those generated by exposure of pyrite and sphalerite in graphitic metasediments, were detected 150 and 300 feet northwest of the known mineralization. These areas and a third near the base line will be examined in 1965.

Keecha Grid - See Map KL-G.C./10/64

Pyrite-Sphalerite mineralization near quartz veins caused local concentrations of metal in the soil. A strong anomaly in the sediments near the baseline is caused by stringers of pyrite and sphalerite in graphitic sediments.

SNC:MH
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