

Date: Feb. 22, 1988

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Subject: Reconnaissance Program: Metchosin Ophiolite Complex, Vancouver Island

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1. Introduction

Prior to Harold Gibson's departure from the company, he suggested that we evaluate the volcanogenic massive sulphide potential of the Metchosin Ophiolite complex. It is located on the southern coast of Vancouver Island to the east of Victoria (Figure 1). The area is readily accessible via a network of logging roads.

2. Geology

a) Cyprus-type Massive Sulphide Deposits.

The ore-bodies located on the island of Cyprus occur within a remnant of ^{basaltic} oceanic crust which has been uplifted. They occur at the top of a pillowed lava sequence and appear to be controlled by fault-related bathymetric depressions on the sea floor. The deposits ^{which} range in size from 50,000 tonnes to 20 million tonnes are typically copper-rich with copper grades ranging from 0.5% to 4.5%. Massive ore is underlain by an extensive stockwork zone consisting of quartz-sulphide veins and chloritic alteration. Quartz-sulphide veins are also present in the underlying sheeted dike

complex. Figure 2a is a schematic stratigraphic section of the Cyprus ophiolite showing the relative position of the volcanogenic massive sulphide deposits and stringer-type mineralization. Since the documentation of the Cyprus ore bodies in the early 1970's, many other massive sulphide deposits have been recognized ^{to occur} in ophiolite terrains. In Canada, these types of deposits have been found in Newfoundland and the Eastern Townships.

b) Metchosin Ophiolite.

The Metchosin volcanics, which occur in a 60 km by 15 km east-west trending belt have been interpreted to be an ophiolite complex by Muller (1977) and Massey (1986). Massey has subdivided the sequence into 3 units - a gabbroic stock ^{complex} overlain by a sheeted dike sequence and submarine and subaerial mafic volcanics (Figure 2b). Initial review of data from the area indicates that there are a number of copper showings associated with shear zones within the gabbroic intrusions. ^(Figure 1) This includes the Jordan River Mine where 1.3 million tonnes of ore grading 0.67g/TAu, 1.7 g/T Ag and 1.03% Cu were mined between 1962 and 1978. To date, ~~no sulphide deposits have been recognized in the overlying pillowed sequence.~~ The mineralization in these shear has

been dated at 45 m.y. which is coeval with the ^{volcanic rocks of the} Metchosin complex. To date, no sulphide deposits have been recognized in the overlying pillowed sequence. (3)

? C. Leech River Area

Spectacular gold mineralization occurs in quartz veins in the Leech River schists located north of the Metchosin complex in the Valentine Mountain area. This mineralization is believed to be Tertiary in age.

3. Property Status

Most of the ground east of the Jordan River Mine is open. Crown grants are present around the mine and several large claims have been staked in the western part of the Metchosin complex.

4. Target

The target for the following proposed reconnaissance program is a Cypress-type volcanogenic massive sulphide deposit. Although the sulphides will be copper-rich, they may also be gold-enriched if they are in close proximity to gold-bearing Tertiary structures.

5. Proposed Reconnaissance Program.

A two week field program is proposed to evaluate the volcanogenic massive sulphide potential of the Metchosin volcanics. A 3- to 4-man crew will examine all of the known showings, sample drainage areas for heavy minerals and conduct lithochemical and geological traverse across the Metchosin complex. This program is tentatively planned for late June or early July. Its estimated cost will be \$21,340 and these funds will be taken out of the B.C. general budget. A more detailed breakdown of the costs is presented in Table 1.

Table 1: Proposed Budget - Metchasin Complex.

	\$
1. data compilation prior to field work 1 week GSW/P.B. maps, field equipment etc.	1250 200
2. Field work - 2 weeks (14 days). salaries : GSW, P.B., M.F + 1 junior 6600 food/accommodation - 56 man-days X \$40/day 2240 2 trucks (including gas) 1300 analyses 50 heavy minerals X \$50/sample 2500 250 litho samples X \$20/sample 5000	6600 2240 1300 2500 5000
3. Report - analysis of data 1 week GSW drafting, typing etc.	1250 1000
total.	<hr/> \$21,340

Budget Spread sheet.

Geology	
Salaries	7100
field expenses (1 truck + misc).	850
	<hr/> 7950
Geochemistry	
Salaries	3000
field expenses (1 truck)	650
analyses.	7500
	<hr/> 11,150
Hotels and Meals.	2240
	<hr/> total: 21,340