

# Work Proposal Exploration



Property or Account FISH LAKE (Supplementary) Estimated Expenditure \$68,000

District or Office Western District Period Oct. 1, 1981 To Dec. 31, 1981 Date 30 September 1981

Statement of Proposal: To provide funds for a continuation of the metallurgical tests and to do further assay work on the old Quintana core.

Summary of Proposal: To-date metallurgical test work on the Fish Lake deposit has been done by both Bethlehem Copper and more recently by Cominco. This work has indicated Cu and Au recoveries of about 88 and 65 percent respectively, but it is possible we may improve the Au recovery by dropping the copper grade of the concentrate and/by recovering Au from a pyrite concentrate. Kimberley is currently doing this work, under the authorization of O.E. Owens, and this should be done shortly.

In addition to the above work, further assaying of the 1973/74 Quintana core (35% of drilling on the deposit) is required. Unfortunately, they only did Cu and Au assays and it is apparent from the 1981 Bethlehem drilling that Mo may be present, in the peripheral parts of the deposit, in economically interesting amounts (0.005 - 0.012%). At present the data are insufficient to determine tonnage and grade of the Mo zone.

It is therefore proposed to continue with the metallurgical work in an attempt to improve Au recoveries and to assay part of the Quintana core for Mo as only half of the rejects exist. Also to bring the data base up to the Bethlehem level we should also do Ag assays on all samples plus some Cu and Au checks.

Tenure: Cominco may acquire an 80% interest in the property by incurring cumulative optional expenditures totalling \$360,000 by Nov. 30, 1983 (already satisfied); by purchasing 10,000 shares of Taseko Mines by Nov. 30, 1981 and an additional 10,000 shares by Nov. 30, 1982 at a cost of 75¢ and \$1.00, respectively and by notifying Taseko before Nov. 30, 1984 of its intention to bring the property into production.

Estimated Expenditures:

1. <u>Expenditures approved to Dec. 31, 1981</u>		\$1,400,000
2. <u>Proposed Further Expenditures</u>		
Truck (1 for ½ month)	\$ 700	
Temporary Salaries (2 men for ½ month)	5,000	
Geology miscellaneous	1,350	
Assays (1,600 pulps for Mo, Ag; 160 Cu and Au)	23,000	
Metallurgical (estimated)	30,000	
Domicile (2 men for ½ month)	1,750	
Administration	6,200	\$ 68,000
		<u>\$1,468,000</u>

Previous Expenditures - Bethlehem, Cominco 1981 - \$1,400,000 (estimated to year-end).

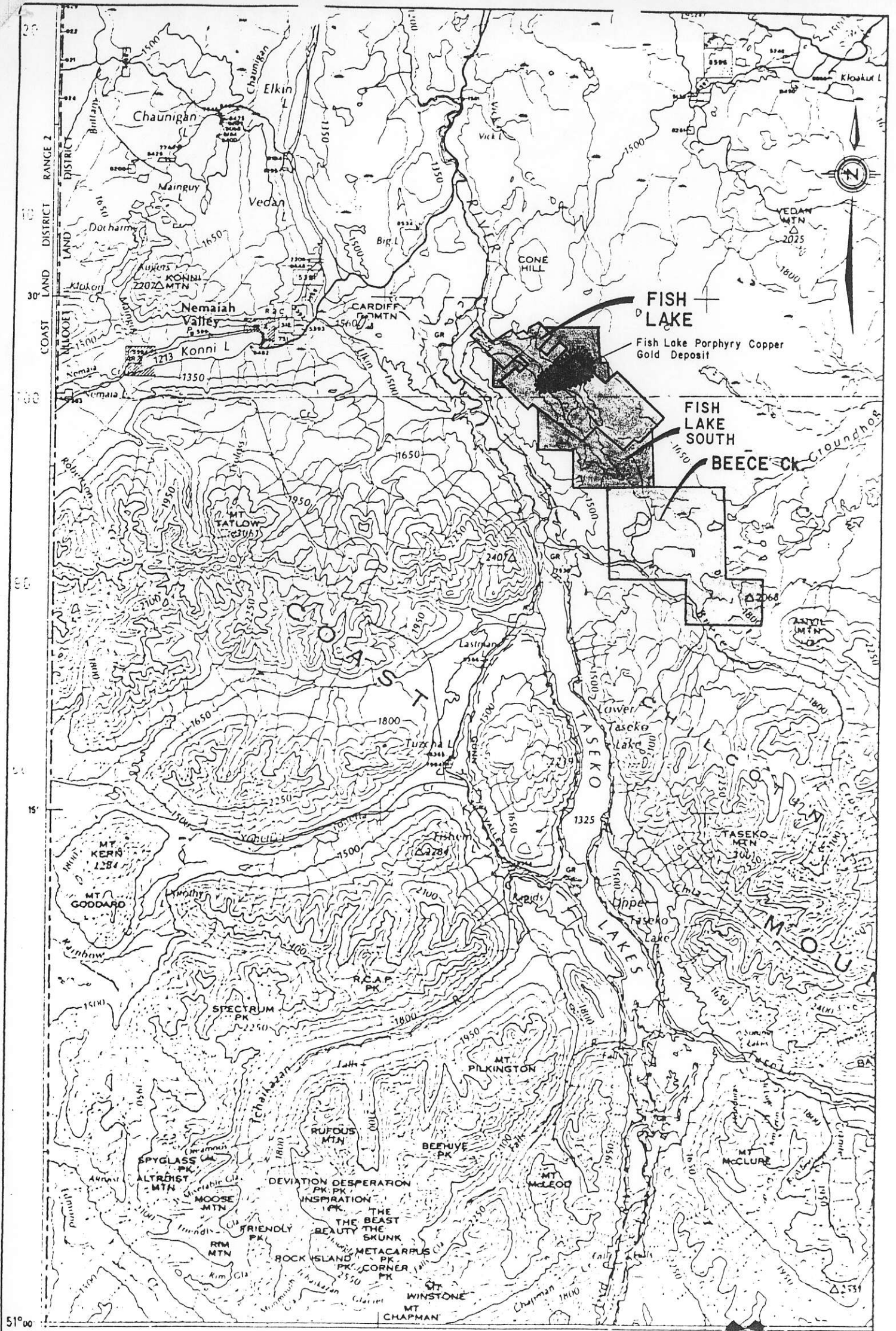
District Funds:

<u>Previously Unallotted</u>	<u>Probability Rating</u>
<u>This Proposal</u>	<u>Size Potential +200 m.t.</u>
<u>Balance Unallotted</u>	<u>of .24% Cu, .014 oz/ton Au.</u>

Approved: \_\_\_\_\_ Proposer: M. Orntenk

Director, Exploration. \_\_\_\_\_ Endorsed: N. J. Macope  
Manager, Exploration

Charge Appropriation: Bethlehem Copper Chief Geologist, Exploration



51°00' 124°00' 45' 50' 55' 30' **Compass** 70

Drawn by:		Traced by: a.m.b.	
Revised by	Date	Revised by	Date

# FISH LAKE

Scale: 1 : 250 000 Date: Aug. 19, 1981 Plate:

# Work Proposal Exploration



**RECEIVED**  
JUL - 4 1991

See - 95A

Property or Account: Fish Lake

Estimated Expenditure: 1,400,000

District or Office: Western District      Approved: Jan. 1, 1981      To: Dec. 31, 1981      Date: July 26, 1981

**STATEMENT OF PROPOSAL:** To account for 1981 expenditures incurred by Bethlehem for a diamond drilling program and to do further core logging, geological mapping, soil sampling and I.P. The drilling was designed to firm up previously indicated tonnage and grade while the surface work is required to plan further definition drilling of the deposit.

**SUMMARY OF PROPOSAL:** The Fish Lake deposit is located 250 km north of Vancouver, B.C. and was acquired early in 1981 from Bethlehem Copper Corporation.

Work done by previous workers consisted of limited diamond drilling by Phelps Dodge in 1960; I.P., soil geochemistry and about 100 m of drilling by Nittetsu in 1970 and 6,000 m of drilling by Quintana in 1974. In 1979/80 Bethlehem did 3,370 m of percussion drilling to test a Au-As soil anomaly, with associated gold showings, about 600 m east of the main deposit (Albert and Renner zones). This work was followed in 1981 by 10,065 m of diamond drilling, principally on the main deposit, which together with the Quintana drilling indicated a zone of at least 200 m.t. of 0.24% Cu and 0.014 oz/ton Au with minor Ag and Mo values. The mineralization is open to depth, along the west and south edges and possibly to the northwest. It consists mainly of pyrite and chalcopyrite, along fractures and in quartz veinlets, that are hosted by highly chloritized and sericitized quartz diorite porphyry, quartz-feldspar porphyry and coeval, volcanoclastic andesitic sediments of Cretaceous age. The mineralized zone is covered by 10-70 m of overburden which results in only two small areas of anomalous Cu and Au values in the soils, but an I.P. survey shows a large strong chargeability anomaly (3-12% F.E.) and a coincident resistivity anomaly (+700 ohm m) over the immediate area of the deposit - both of which are open to the west and northwest.

The work to-date has clearly demonstrated the presence of a large tonnage of low grade Cu-Au mineralization, which has not been adequately defined. To better guide further drilling we need additional I.P. (28 km), soil geochemistry (37 km) and mapping around the deposit plus a thorough re-logging of all the existing core. This work is presently underway and should be completed by the end of September. Besides the above work the budget is supporting metallurgical test studies at the Bethlehem Mine and at Cominco's laboratory in Kimberley.

**TENURE:** Bethlehem may acquire an 80% interest in the property by incurring cumulative optional expenditures totalling \$360,000 by Nov. 30, 1983 (already satisfied); by purchasing 10,000 shares of Taseko Mines by Nov. 30, 1981 and an additional 10,000 shares by Nov. 30, 1982 at a cost of 75¢ and \$1.00 respectively and by notifying Taseko before Nov. 30, 1984 of its intention to bring the property into production.

**ESTIMATED EXPENDITURES:** Expenditures to June 30, 1981 plus future commitments \$1,268,000

Proposed expenditures to December 31, 1981

Permanent salaries (1 man for 3 mo., field and 3 mos., office; 1 man for 2 mos., office)	37,000
Temporary salaries (4 men for 1½ mos., field)	12,000
Truck (1 for 4 mos.)	4,000
Geophysics (28 km I.P.)	30,000
Computer time	5,000
Analyses (soil samples, polished sections, sulfide study)	22,000
Domicile (8 man months)	5,000
Miscellaneous (core boxes, shipping)	5,000
Administration	12,000
	<u>\$1,400,000</u>

**NB:** See attachment for details

**District Funds:**

Previously Unallotted \_\_\_\_\_

This Proposal \_\_\_\_\_

Balance Unallotted \_\_\_\_\_

**Probability Rating**

Size Potential +200 m.t. of .24% Cu and .014 oz/ton Au

Approved: \_\_\_\_\_

Director Exploration

Proposer: *M. G. Garenko*

Endorsed: \_\_\_\_\_

Manager Exploration

Charge Appropriation: *William*

Chief Geologist Exploration

FISH LAKE EXPENDITURES TO DECEMBER 31, 1981

1. PAST EXPENDITURES

Bethlehem to May 1/81	\$1,176,440
Cominco in May	21,677

2. ESTIMATED JUNE EXPENDITURES

Salaries (AP)	\$ 3,900	
Truck	480	
Assays	9,000	
Domicile	1,800	
Surveying	6,500	
Computer	3,555	
	including Administration	27,753

3. FUTURE COMMITTED EXPENDITURES

Share purchase	7,500	
NJW bonus	3,800	
Metallurgical testing	27,000	
	including Administration	42,130

4. PROPOSED EXPENDITURES TO DECEMBER 1981

Permanent Salaries (AP 6 months, MJO 2 months)	37,000	
Temporary Salaries(field,drafting)	12,000	
Truck	4,000	
Miscellaneous(core boxes, shipping etc.)	5,000	
Geophysics (IP 25 km, Y log)	30,000	
Computer	5,000	
Analyses(soil, polished section, sulfide study)	22,000	
Domicile	5,000	
	including Administration	<u>132,000</u>

TOTAL: \$1,400,000

MJO/skg