GEOCHEMICAL SURVEY REPORT

on the

Hi #1, LOW, CHANCE, CORE and SHORE

MINERAL CLAIMS

EALUE LAKE AREA

LIARD MINING DIVISION

NTS	- 104H/13	UTM Grid	- Zone 9
Latitude	- 57° 47'	North	- 6404700
Longitude	- 129° 50'	East	- 450450

BETHLEHEM COPPER CORPORATION
Suite 2100 - Guinness Tower
1055 West Hastings Street
Vancouver, B.C. V6E 2H8

August 31, 1979

J. R. Bellamy
Chief Geologist

TABLE OF CONTENTS

SECTION A - SUMMARY OF WORK

Introduction

The Hi group of mineral claims are located on the eastern flank of Ehahcezetle Mountain, on the Klastline Plateau, just north of Ealue Lake in the Liard Mining Division. The ten mineral claims form a contiguous group covering an assemblage of volcanics, meta sediments and sedimentary rocks. Chalcopyrite occurs in the lower sequence of porphyritic andesites and in skarn zones developed in limestones and limy sedimentary rocks lying above the andesites. Previous work on the property, which concentrated on delineating the extent of copper mineralization in the sediments, included geophysical, geochemical and limited diamond drilling programs.

Between June 20th and July 13th,1979, Bethlehem personnel conducted a geochemical sampling program over portions of the Ealue Lake group that are underlain by the transition zone between porphyritic andesites and the lower meta-sedimentary units. Soil samples were collected on 50 m by 100 m grid spacings and were analyzed for copper and zinc. The rock geochemical samples were analyzed for gold, copper and zinc.

Location and Access

The Ealue Lake property, consists of ten mineral claims composed of twenty-seven units, that lie on the north shore of Ealue Lake. The "Keene Access Road" which runs from Highway 37 to the Klappan River passes through the southern part of the claim group between Mile 6 and 8. Access to this road is obtained by turning east off the Stewart-Cassiar highway from a point 1.9 km north of Tatogga Lake.

The Ealue Lake claims cover a rugged topography which ranges in elevation from 860 m at lake level to 1,615 m on the upland eastern flanks of Ehahcezetle Mountain. The steep south facing slopes have been

deeply incised by streams, one of which flows through a steep walled canyon on the western edge of the claim group. The northern end of this stream starts on the Rose property of Texasgulf Canada Ltd. and empties into Ealue Lake on the Shore claims. The geochemical sampling program was conducted across the lower reaches of this canyon in an area of scree slopes, cliffs and very heavy scrub timber. The upper portions of the claim group are above tree-line and include areas of moderate relief with sub-alpine vegetation.

The property location is detailed on drawing nos. EL-79-1 and EL-79-2 which are appended in Section E.

History

The Ealue Lake property originally consisted of four Hi claims staked and recorded by J. Schussler in November of 1974. The extended group now consists of claims previously owned by Stan Bridcut and Magnus Bratlien and those added on in 1977. These claims were staked to cover ground originally known as the"Klappan-Rose" showing. In 1929 work was first recorded on the claim group which continued to be worked sporadically for years. Work on the various copper showings that comprised the "Klappan-Rose" property included the driving of one adit and the trenching and sampling of nearby copper occurrences.

In the late 1960's Yukonadian Mineral Exploration acquired a 35 unit claim block covering the "Klappan-Rose" showings and adjacent ground to the northwest. Granduc Mines Ltd. optioned the ground in 1970 and conducted a program of reconnaissance geological mapping and stream and soil geochemical sampling.

The claims lapsed in 1974 and the northwest area was restaked by Texasgulf Canada Ltd. in June of 1975. Texasgulf undertook a preliminary mapping program in 1975 and followed up with a geological, geochemical, geophysical and diamond drilling program in 1976.

Work on the Schussler property consists of some reconnaissance mapping, local geophysical and geochemical surveys and a three hole diamond drilling program. In 1976 Texasgulf completed a 200 X 400 m soil grid over the adit showings while at the same time Falconbridge Nickel Mines set up a soil sampling grid and sampled the central part of the Ealue Lake property.

E.M. anomalies found by Presunka Geophysical Exploration Ltd. in 1975 were drill tested between May 17 and July 2, 1976 by D.J. Drilling Co. Ltd. Three holes were drilled, two from the same setup on the Low mineral claim and one from a site on the Hi 2 mineral claim. The diamond drill holes intersected a mixed assemblage of sediments and meta sediments but did not encounter economic copper mineralization.

Mineral Title

The property,located in the Liard Mining Division is comprised of four (4) two-post claims and six (6) modified grid claims, the total number of claim units being twenty-seven (27). All claims are registered in the name of John Schussler. The details of these mineral claims is listed below:

CLAIM NAME	NO. OF UNITS	RECORD NO.	RECORD DATE	EXPIRY DATE (as of July 19,1979)
Hi #1	1	72290P	Nov. 21, 1974	Nov. 21, 1982
Hi #2	1	72291P	Nov. 21, 1974	Nov. 21, 1982
Hi #3	1	72292P	Nov. 21, 1974	Nov. 21, 1982
Hi #4	1	72293P	Nov. 21, 1974	Nov. 21, 1982
LOW	1	114(5)	May 25, 1976	May 25, 1984
CHANCE	1	121(6)	June 14, 1976	June 14, 1983
SHORE	3	122(6)	June 14, 1976	June 14, 1983
CORE	4	123(6)	June 14, 1976	June 14, 1983
SUN	8	150(7)	July 20, 1976	July 20, 1979
WIT	6	153(7)	July 21, 1976	July 21, 1980
10 claims	27 units			

The location of these claims is detailed on drawing nos. EL-79-2 and EL-79-3.

General Geology

The Ealue Lake claims lie on the Klastline Plateau on the eastern flanks of the Stikine Arch near the north-western corner of the Bowser sedimentary basin. During late Triassic and Early Jurassic time thick sequences of andesitic volcanic and eugeosynclineal clastic sedimentary rocks were deposited in this area. These units were moderately deformed and were intruded by subvolcanic intrusives and post Upper Triassic syenites, porphyry dykes and many small igneous stocks of late Mesozoic to Tertiary age. Most of the intrusions are acidic in composition and are accompanied by alteration halos of sericite and pyrite.

Property Geology

The Hi group of claims are underlain by Upper Triassic conglomerates, tuffaceous sandstones, greywackes, siltstones, minor black shales, limy clastics and limestones overlying augite andesites and derived volcanoclastic rocks. Andesite composition and texture vary on the property and some varieties could be dykes or sills of more mafic rich andesites. Volcanic rocks are found on the Core claims and crop out along the canyon walls along the western boundary of the Hi claims. Scree slopes obscure the contact between the andesites and the overlying sedimentary rocks. Faulting and shearing combined with selective metamorphism of some sedimentary units complicates the relationship between volcanics and sediments.

At approximatey the 1,330 metre elevation on the western precipitous slope of the Hi No. 1 and No. 3 claims can be found a skarn zone composed of various calc-silicate rocks including chlorite, epidote, calcite and silica. This zone, which is over a hundred metres in thickness strikes northwesterly, dips some 30-40 degrees to the northeast and is cut by a hornblende syenite sill 15 to 20 metres in thickness. Directly above this sill the limy metasediments are the most heavily skarnified and host high grade copper mineralization where cut by northwesterly trending shear zones. Seven of these mineralized shear zones were found at about the 1,340 metre elevation from the northern boundary of Hi No. 3 claim to the adit near the Hi No. 1 initial post.

Tuffaceous sediments above the adit strike N 5°W and dip 32° easterly indicating a general northwesterly trend to the sedimentary succession. Limy units and conglomerate-siltstone bedding indicate a more steeply dipping attitude to the sediments but as with the andesites, metamorphism and faulting have complicated the simple sedimentary picture. The syenite sill is also offset in numerous places by north-south shears and block faults so it is difficult to map its exact relationship with the meta sediments. The syenite meta sediment contact has been measured striking N 95°E and dipping 75° to the N.E. Other attitudes suggest the syenite is striking nearer to 120 to 150 degrees.

Above the skarnified meta sediments the sedimentary sequence becomes more clastic and coarser grained. In general the limestones become more arenaceous up section. They grade upward to limy conglomerates, limy siltstones, greywackes, maroon fragmental volcanics, volcanic sandstones and tuffs, siltstones and into a thick sequence of coarse conglomerates. The latter conglomerates and interbedded tuffaceous sediments and volcanic sandstones underlie the eastern half of the claim group. Pelecypods were found in a grey pyritized detrital limestone that occurs in a succession of coarse limestone conglomerates west of diamond drill hole three. Fossil orientation suggests the outcrop is a vertical limestone unit with the top facing east. No fossils were found in the lower limy sedimentary units.

The sedimentary and volcanic units are badly broken up by fault and shear structures. The augite andesites in the steep canyon are sheared and block faulted along a N 20° - 30° east trend and sheared and veined at N 105° - 125° E. Another major shear trend was noted striking N 165° E. Slickensides indicate the eastern fault segments were uplifted relative to the western blocks. Shear veins in the andesites carry pyrite in a quartz-sericite-clay matrix that is often mylonitized and gossaned. Veins along the lower canyon were chip sampled and assayed for copper, zinc and gold. The shear structures that host chalcopyrite mineralization in the skarn trend about 150° to 165° and dip 65° to the S.E. Other mineralized shear sets trend between N 10°E and N 15°E with variable steep dips. Chalcopyrite occurs in and adjacent to the shear veins in pods,

fracture fillings and as stringer veins. (See drawing EL-79-4 - rock sample locations).

Geochemical Survey

A soil geochemical survey was completed over portions of the Core, Shore, Low and Chance mineral claims. Ten lines totalling 9.1 km were sampled at 50 meter intervals on grid lines 100 metres apart. Soil samples were taken from the interface between the A and B horizon and were geochemically analyzed for copper and zinc. The sample depth varied from 5 to 50 cm depending upon the development of the A horizon. In areas of steeper topography the A horizon was often incompletely developed or missing entirely. Material sampled at these locations consisted of fine to coarse sands and silts belonging to the C horizon. An effort was made to get most material near surface ground water seeps. One hundred and ninety-eight geochemical soil samples were collected and sent to Vangeochem Laboratories Ltd., 1521 Pemberton Avenue, North Vancouver.

Fifteen rock geochemical samples were obtained on the Core claims from shear and shear quartz veins that cut silicified, pyritized and chloritized andesites. The sampling of fault gouge and quartz veins by chip sampling was to determine if late stage hydrothermal fluids carried an increase in metal values. The location and results of the soil geochemical survey and the rock geochemical sampling are presented in drawing nos. EL-79-4 and EL-79-6.

Chemical analysis by Vangeochem was done on 2.5 gms of minus 80 mesh particles using standard techniques of digestion, followed by determination of copper and zinc concentrations using a Varian Tectron AA-5 atomic absorption equipment. The rock geochemical samples were crushed and analyzed for gold, copper and zinc. Certificates of analysis are appended in Section D.

Discussion of Results

The geochemical soil sampling program tested the southern sampled portion of the Ealue Lake property. In 1976 Falconbridge Nickel Mines Ltd. soil sampled the central area of the claim group and found that

several strong anomalies occurred along the eastern flank of the canyon that cuts through the Hi 1 claim. Mapping and prospecting of this area in 1979 indicated the anomalies were caused by shear controlled chalcopyrite rock zones in a wide limy skarn horizon that trends across the Hi 1 and 3 claims.

The larger Falconbridge zinc anomalies are not coincident with the copper anomalies and are possibly related to the change from volcanic to sedimentary rock units. The limestones and limy volcanoclastics mark the change in lithology from porphyritic andesities to tuffaceous and conglomeritic units. Throughout much of the property the limy units are metamorphosed to calc-silicate skarns or are intruded by syenitic sills. The zinc anomalies on the Ealue Lake group occur directly below the calc silicate skarns and probably represent down slope migration of zinc values from the skarn zones.

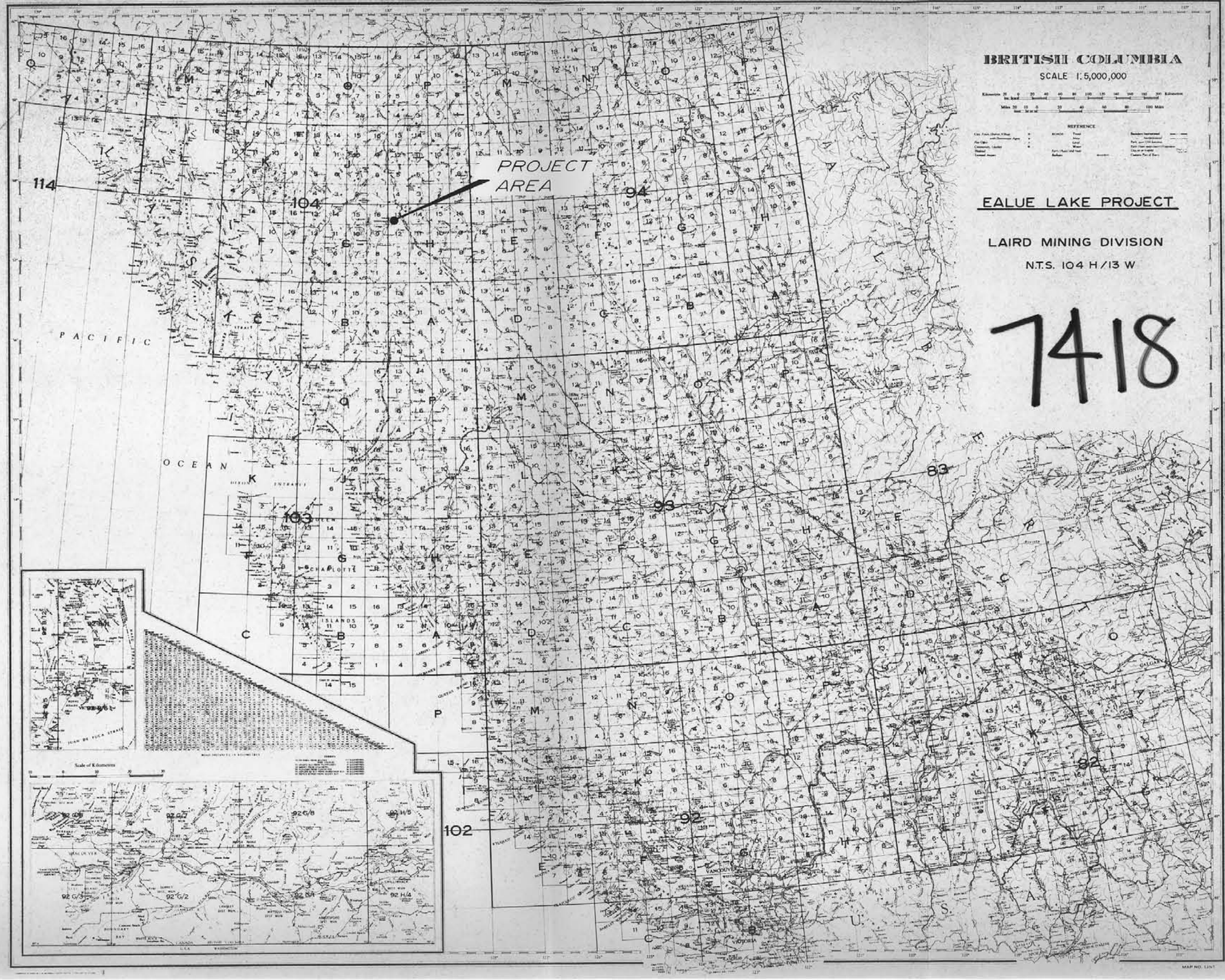
There is a zone of anomalous copper values on the Core claim group. This area is underlain by porphyritic and brecciated andesite volcanics interbedded with bands or lenses of limy volcano clastic rocks. Malachite was noted to occur with the limy units and it appears to cause an anomalous copper geochemical zone in the north-west corner of the Core claim group. The anomalous area is rugged, with weakly developed A and B horizons so that the geochemical values probably reflect bedrock copper and zinc values.

The low rock geochemical values from the shear and quartz veins sampled indicate the late stage hydrothermal activity did not enrich the silicified andesites with significant base metal values. Several of the pyritic quartz veins that were sampled contained gold values and one pyritic laminated quartz vein contained 4750 P.P.B. in gold. As only one quartz vein contained significant gold values the area is not considered to have a viable gold potential.

Respectfully submitted,

J. Bellamy

J. R. Bellamy
Chief Geologist


PROJECT AREA
PACIFIC
OCEAN
114
104
94
103
93
83
102
92
BRITISH COLUMBIA
SCALE 1: 5,000,000
REFERENCE
EALUE LAKE PROJECT
LAIRD MINING DIVISION
N.T.S. 104 H/13 W
7418
Scale of Kilometres
92 G/1
92 G/8
92 H/5
92 G/3
92 G/2
92 G/4
92 H/4
MAP NO. 1,INT.

SECTION B - STATEMENT OF EXPENDITURES

Expense Period June 20 to July 19, 1979

1. Contractor's Expenditures (see accompanying invoices)

(a) Vangeochem Laboratories Ltd. - geochemical analysis

Invoice	5109	dated	July 17, 1979	- $169.00
"	5111	"	"	- $309.40
"	5112	"	July 18, 1979	- $ 31.20
"	5113	"	"	- $114.75
				$624.35

(b) Lift Air International Ltd. - helicopter transport on June 23, 1979 -
Invoice No. 32679 dated July 9, 1979 - $248.90

(c) Yukon Airways Ltd. - helicopter transport on July 12, 1979
Invoice No. 4123 dated July 12, 1979 - $398.05

TOTAL CONTRACTOR'S EXPENDITURES - $1,271.30

2. Bethlehem Expenditures

(a) Personnel

R.E. Anderson, P.Eng. - Exploration Manager
3 days in general project supervision
@$185.00/day - $ 555.00

J.R. Bellamy - Chief Geologist
20 days in project supervision and report preparation @ $125.05/day
(June 20 - July 4; July 9-13) - $2,501.00

2. Bethlehem Expenditures (Contd.)

D. Mazurkewich - Field Assistant 18 days (June 20 - July 4; July 9-11) @ $56.84/day	$1,023.12
S. Kemp - Field Assistant 18 days (June 20-July 4; July 9-11) @ $51.55/day	$ 927.90
E. Andersen - Property Agent 2 days in data compilation and report preparation @ $96.23	$ 192.46
A. Emo - Secretary 2 days @ $55.52/day	$ 111.04
Total Personnel	$5,310.52

(b) Transportation

J. R. Bellamy - Chevrolet 4WD pick-up 20 days @ $40.00/day	$ 800.00

(c) Lodging and Meals

Tatogga Lake Resort @ $20.00/person/day

- J.R. Bellamy	- 20 days	- $400.00
- D. Mazurkewich	- 18 days	- $360.00
- S. Kemp	- 18 days	- $360.00
		$1,120.00

TOTAL BETHLEHEM EXPENDITURES	$7,230.52
TOTAL PROJECT EXPENDITURES	$8,501.82

VANGEOCHEM LAB LTD. (604) 986 - 5211
1521 PEMBERTON AVE., NORTH VANCOUVER, B. C.
CANADA V7P 2S3

IN ACCOUNT WITH:

Bethlehem Copper Corp. Ltd.

INVOICE: 5109

DATE: July 17, 1979

TERMS: NET 14 DAYS

FOR REPORT 79 18 012 PROJECT: Ealue Lake ORDER NO. 79147

65 Soil samples for preparation	@$0.45	$ 29.25
65 trace analyses for Cu, Zn.	@$2.15	139.75
Total		$169.00

27-842

VANGEOCHEM LAB LTD. (604) 986 - 5211
1521 PEMBERTON AVE., NORTH VANCOUVER, B. C.
CANADA V7P 2S3

5111

IN ACCOUNT WITH:

Bethlehem Copper Corp. Ltd.

INVOICE:

DATE: July 17, 1979

TERMS: NET 14 DAYS

FOR REPORT 79 18 013 PROJECT: Ealve Lake ORDER NO. 79149

119 Soil samples for preparation	@$0.45	$ 53.55
119 trace analyses for Cu, Zn.	@$2.15	255.85
Total		$309.40

27-842

JUL 19 1979 EA

VANGEOCHEM LAB LTD. 604-988-2172

1521 PEMBERTON AVE., NORTH VANCOUVER, B.C.
CANADA

IN ACCOUNT WITH:

Bethlehem Copper Corp. Ltd.

INVOICE: 5 1 1 2

DATE: July 18, 1979

TERMS: NET 14 DAYS

FOR REPORT 79 18 014 PROJECT: Ealve Lake ORDER NO. 79145

12 Soil samples for preparation	@$0.45	$ 5.40
12 trace analyses for Cu, Zn.	@$2.15	25.80
Total		$31.20

27-842

VANGEOCHEM LAB LTD. (604) 986 - 5211
1521 PEMBERTON AVE., NORTH VANCOUVER, B. C.
CANADA V7P 2S3

IN ACCOUNT WITH:

Bethlehem Copper Corp. Ltd.

INVOICE: 5113

DATE: July 18, 1979

TERMS: NET 14 DAYS

FOR REPORT 79 18 015 PROJECT: Ealue Lake ORDER NO. 79146

15 Rock samples for preparation	@$1.75	$ 26.25
15 trace analyses for Cu, Zn.	@$2.15	32.25
15 trace analyses for Au.	@$3.75	56.25
Total		$114.75

27-842

INVOICE

JUL - 9 1979

LIFTAIR INTERNATIONAL LTD.

SOLD TO
Bethlehem Copper Corp.
2100 Guiness Tower
1055 W. Hastings St. Vancouver
V6E 2H8

INVOICE No. 32679

DATE:

INTEREST 1½% PER MONTH
AFTER 30 DAYS

To charter helicopter June 23, 1979

Pilot: L. Perry

Hughes 500C C-GXWF

0.8 hours @ $280.00	$224.00 ✓
Fuel 16.6 gals @ $1.50	24.90 ✓
	$248.90 ✓

Flight report attached

Thank you

854-024 248.90 024-854
110-002 248.90 RD

OVA/ml

PAYABLE TO LIFTAIR INTERNATIONAL LTD. AT
HANGAR No. 25, McCALL FIELD, CALGARY, CANADA T2P 2G3

YUKON AIRWAYS LTD.

"A"HANGAR, WHITEHORSE, YUKON Nº 4123
Y1A 3E4 PHONE: (403) 668-2107

DATE: 12 JULY 1979. A/C: C-FOKQ

NAME: BETHLEHEM COPPER CORP.

ADDRESS: 2100 1050 HASTINGS ST. WEST
VANCOUVER, B.C.

FROM DEASE	MILES	HOURS	CARGO	PASSENGER/REMARKS
TO TATTOGA.		.8		
TATTOGA		.4		
DEASE		.7		

SPECIAL INSTRUCTIONS	1.9	@ 190	PER HOUR	361 00
		@	PER MILE	
	WAITING TIME	@	PER HOUR	
	FUEL 28.5	@ 1.30	PER GAL.	37 05
	OTHER			
			TOTAL	398 05

PILOT'S SIGNATURE

DEASE
BASE

CHARTERER'S AUTHORIZATION

STAR PRINTING WHITEHORSE

SECTION C - STATEMENT OF QUALIFICATIONS

John R. Bellamy

1. Attended the University of Calgary from 1966 to 1970 and graduated with a B.Sc., Geology.

2. Geologist with Cominco Ltd. from May to September 1970 carrying out field exploration in the Yukon.

3. Geologist with Cominco Ltd. from May to September 1971 carrying out exploration and mine geological work in the Pinchi Lake area of central British Columbia.

4. Commenced employment with Bethlehem Copper Corporation in September 1971 and has been continuously employed by this firm and involved in the following activities:

   (a) September 1971 to September 1972 - engaged at the Highland Valley operations as an exploration geologist working on the J.A. Project; a large scale drilling program.

   (b) September 1972 to April 1973 - assigned to Bethlehem's subsidiary, Betheire Mines Ltd., to conduct property evaluations and co-ordinate exploration programs in the Republic of Ireland.

   (c) May 1973 to September 1973 - carrying out regional geological mapping programs in the Yukon and Northwest Territories.

   (d) October 1973 to June 1974 - engaged on a large scale diamond drilling program on the Iona and Jersey zones at the Highland Valley operations.

   (e) July 1974 to September 1974 - assigned to the Arctic Red Syndicate, a large scale regional venture in the Mackenzie Mountains of the Yukon and Northwest Territories.

   (f) October 1974 to March 1975 - managed Bethlehem's branch office in Manila, Philippines and carried out mineral property evaluations.

   (g) April 1975 to December 1975 - engaged as Project Geologist on a number of properties including the Rev group in the Northwest Territories and the Sierra Madre in Sonora, Mexico.

(h) 1976 - Project Geologist working on various programs including the Bear-Twit (Northwest Territories), Victorio Mtns. (New Mexico), and general work in Nevada and British Columbia.

(i) 1977 - Project Geologist on the Little Hatchet property (New Mexico), Frogmoore Lakes (B.C.), Arctic Red (N.W.T.), and Sheba property (B.C.).

(j) January to June 1978 - general property examinations and reviews in British Columbia.

(k) July to September 1978 - Project Geologist in charge of the Skeena Project, a large scale regional sampling program in northwestern B.C.

(i) September 1978 - appointed Chief Geologist for Bethlehem Copper.

SECTION D - LABORATORY REPORTS

Report No. 79 18 012
" " 79 18 013
" " 79 18 014
" " 79 18 015

Statement of Analytical Procedure

VANGEOCHEM LAB LTD.
1521 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.,
CANADA V7P 2S3

Ealue L.
986-5211
TELEPHONE: [illegible]
AREA CODE: 604

• Specialising in Trace Elements Analyses •

Certificate of Geochemical Analyses

—IN ACCOUNT WITH—

Bethlehem Copper Corp. Ltd.
#2100, 1055 W. Hastings Street
Vancouver, B. C. V6E 2H8
Attention:

Report No: 79 18 012 Page 1 of 2
Samples Arrived: July 12, 1979
Report Completed: July 17, 1979
For Project: Ealue Lake
Analyst: E.T. & Staff
Invoice #5109 Job #79147

Sample Marking	Cu ppm	Zn ppm				
91	157	173				
92	295	157				
93	85	124				
94	450	192				
95	630	255				
96	700	140				
97			no sample in bag			
98	145	208				
99	260	192				
100	32	130				
01	32	104				
02	28	243				
03	43	278				
04	50	112				
05	42	365				
06	17	218				
07	41	248				
08	27	187				
09	31	630				
110	30	112				
11	27	252				
12	33	88				
13	178	257				
114	42	138				
145			no sample in bag			
46	84	315				
47	50	900*				
48	94	405				
49	77	445				
50	227	304				
51	800	280				
52	355	416				
53	200	423				
54	88	630				
55	900	1160*				
56	48	830*				
57	65	258				
58	31	600				
159	30	328				

sj

REMARKS: copy of this report to Dease Lake, B. C.

* samples repeated for analysis and checked O.K.

Signed:

% Mo x 1.6683 = % MoS_2 1 Troy oz./ton = 34.28 ppm 1 ppm = 0.0001% nd = none detected ppm = parts per million

All values are believed to be correct to the best knowledge of the analyst based on the method and instruments used.

VANGEOCHEM LAB LTD.
1521 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.,
CANADA V7P 2S3

TELEPHONE: 986-5211
AREA CODE: 604

• Specialising in Trace Elements Analyses •

Certificate of Geochemical Analyses

–IN ACCOUNT WITH–
Bethlehem Copper Corp. Ltd.

Attention:

Report No: 79 18 012 Page 2 of 2
Samples Arrived:
Report Completed:
For Project:
Analyst:

Sample Marking	Cu ppm	Zn ppm				
160	30	395				
61	22	700				
62	34	730				
63	28	252				
64	38	330				
65	33	242				
66	31	720				
67	22	650				
68	24	290				
69	48	900				
70	24	770				
71	42	340				
72	41	185				
73	28	175				
74	60	128				
75	35	310				
76	105	222				
77			no sample in bag			
78	12	204				
79	28	450				
80	58	900				
81	60	800				
82	48	680				
83	26	170				
84	71	207				
185	25	700				

REMARKS:

Signed:

% Mo x 1.6683 = % MoS_2 1 Troy oz./ton = 34.28 ppm 1 ppm = 0.0001% nd = none detected ppm = parts per million

All values are believed to be correct to the best knowledge of the analyst based on the method and instruments used.

Ealve L.

VANGEOCHEM LAB LTD.
1521 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.,
CANADA V7P 2S3

TELEPHONE: 986-5211
AREA CODE: 604

HGE ✓
REA ✓
EAL ✓
JRB ✓

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Certificate of Geochemical Analyses

—IN ACCOUNT WITH—

Bethlehem Copper Corp. Ltd.
#2100, 1055 W. Hastings Street
Vancouver, B. C. V6E 2H8
Attention:

Report No: 79 18 013 Page 1 of 4
Samples Arrived: July 13, 1979
Report Completed: July 17, 1979
For Project: Ealve Lake
Analyst: E.T. & Staff
Invoice #5111 Job # 79149

Sample Marking	Cu ppm	Zn ppm				
1	28	275				
2	42	273				
3	45	103				
4	32	70				
5	62	135				
6	65	120				
7	144	95				
8	53	85				
9	52	180				
10	44	65				
11	62	73				
12	40	74				
13	66	190				
14	73	130				
15	43	88				
16	27	115				
17	43	87				
18	18	95				
19	18	70				
20	23	67				
21	36	170				
22	98	288				
23	48	88				
24	52	84				
25	18	158				
26	40	300				
27	28	345				
28	77	295				
29	26	412				
30	48	432				
31	17	128				
32	38	105				2nd
33	58	90				2nd time
34	35	80				
35	130	118				
36	38	106				
37	17	75				
38	27	248				
39	19	78				

REMARKS: copy sent J. Bellamy, Dease Lake, B. C.

Signed:

% Mo x 1.6683 = % MoS_2 1 Troy oz./ton = 34.28 ppm 1 ppm = 0.0001% nd = none detected ppm = parts per million

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VANGEOCHEM LAB LTD.
1521 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.,
CANADA V7P 2S3

986-5211
TELEPHONE: ~~988-2152~~
AREA CODE: 604

• *Specialising in Trace Elements Analyses* •

Certificate of Geochemical Analyses

–IN ACCOUNT WITH–

Bethlehem Copper Corp. Ltd.

Attention:

Report No: 79 18 013 Page 2 of 4
Samples Arrived:
Report Completed:
For Project:
Analyst:

Sample Marking	Cu ppm	Zn ppm				
40	35	118				
41	47	132				
42	100	222				organic
43	188	250				AB organic
44	170	273				
45	133	258				
46	90	400				
47	57	110				
48	35	67				
49	16	112				
50	24	134				
51	112	90				
52	65	88				
53	36	65				
54	29	292				
55	45	253				
56	52	215				
57	55	160				
58	67	167				
59	48	278				
60	28	118				
61	27	67				
62	40	75				
63	62	150				
64	42	188				
65	34	388				
66	33	650				
67	30	255				
68	40	112				
69	38	240				
70	40	262				
71	31	232				
72	25	140				
73	24	82				
74	88	90				
75	62	90				
76	82	88				
77	67	103				
78	20	100				

REMARKS:

Signed:

% Mo x 1.6683 = % MoS_2 1 Troy oz./ton = 34.28 ppm 1 ppm = 0.0001% nd = none detected ppm = parts per million

All values are believed to be correct to the best knowledge of the analyst based on the method and instruments used.

VANGEOCHEM LAB LTD.
1521 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.,
CANADA V7P 2S3

986-5211
TELEPHONE: XXX-XXXX
AREA CODE: 604

• Specialising in Trace Elements Analyses •

Certificate of Geochemical Analyses

—IN ACCOUNT WITH—
Bethlehem Copper Corp. Ltd.

Attention:

Report No: 79 18 013 Page 3 of 4
Samples Arrived:
Report Completed:
For Project:
Analyst:

Sample Marking	Cu ppm	Zn ppm				
79	25	87				
80	61	183				
81	28	80				
82	103	222				
83	198	303				
84	120	256				
85	82	208				
86	195	422				
87	162	338				
88	41	123				
89	203	228				
90	223	307				
115	67	120				
16	202	110				
17			no sample in bag			
18	48	370				
19	28	170				
20	39	570				
21	29	382				
22	27	235				
23	33	235				
24	32	190				
25	25	173				
26	32	153				
27	23	256				
28	37	288				
29	59	208				
30	41	135				
31	145	95				
32	19	130				
33	98	170				
34	173	235				
35	90	162				
36	33	288				
37	48	810				
38	78	318				
39	135	265				
40	38	123				
141	32	162				

REMARKS:

Signed:

% Mo x 1.6683 = % MoS_2 1 Troy oz./ton = 34.28 ppm 1 ppm = 0.0001% nd = none detected ppm = parts per million

All values are believed to be correct to the best knowledge of the analyst based on the method and instruments used.

VANGEOCHEM LAB LTD.
1521 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.,
CANADA V7P 2S3

TELEPHONE: 986-5211
AREA CODE: 604

• *Specialising in Trace Elements Analyses* •

Certificate of Geochemical Analyses

–IN ACCOUNT WITH–
Bethlehem Copper Corp. Ltd.

Attention:

Report No: 79 18 013 Page 4 of 4
Samples Arrived:
Report Completed:
For Project:
Analyst:

Sample Marking	Cu ppm	Zn ppm				
142	36	192				
43	55	225				
144	32	100				

REMARKS:

Signed:

% Mo x 1.6683 = % MoS_2 1 Troy oz./ton = 34.28 ppm 1 ppm = 0.0001% nd = none detected ppm = parts per million

All values are believed to be correct to the best knowledge of the analyst based on the method and instruments used.

VANGEOCHEM LAB LTD.
1521 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.,
CANADA V7P 2S3

Ealve C.
986-5211
TELEPHONE: [illegible]
AREA CODE: 604

• Specialising in Trace Elements Analyses •

Certificate of Geochemical Analyses

—IN ACCOUNT WITH—

Bethlehem Copper Corp. Ltd.
#2100, 1055 W. Hastings Street
Vancouver, B. C. V6E 2H8
Attention:

Report No: 79 18 014 Page 1 of 1
Samples Arrived: July 12, 1979
Report Completed: July 18, 1979
For Project: Ealve Lake
Analyst: E.T. & VGC Staff
Invoice #5112 Job #79145

Sample Marking	Cu ppm	Zn ppm				
186	113	120				
87	72	450				
88	37	212				
89	27	95				
90	22	70				
91	45	107				
92	33	85				
93	62	73				
94	—	—	no sample			
95	44	80				
96	57	80				
97	18	75				
198	17	168				

REMARKS:
copy sent to Mr. John Bellamy, Dease Lake, B C

Signed:

% Mo x 1.6683 = % MoS_2 1 Troy oz./ton = 34.28 ppm 1 ppm = 0.0001% nd = none detected ppm = parts per million

All values are believed to be correct to the best knowledge of the analyst based on the method and instruments used.

VANGEOCHEM LAB LTD.
1521 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.,
CANADA V7P 2S3

Ealue Lake
986-5211
TELEPHONE: 986-2072
AREA CODE: 604

• *Specialising in Trace Elements Analyses* •

Certificate of Geochemical Analyses

–IN ACCOUNT WITH–
Bethlehem Copper Corp. Ltd.
#2100, 1055 W. Hastings Street
Vancouver, B. C. V6E 2H8
Attention:

Report No: 79 18 015 Page 1 of 1
Samples Arrived: July 12, 1979
Report Completed: July 18, 1979
For Project: Ealue Lake
Analyst: E.T. & VGC Staff
Invoice #5113 Job # 79146

Sample Marking	Cu ppm	Zn ppm	Au ppb			
0501 B	600	113	10			
02	28	60	10			
03	6	43	40			
04	17	88	10			
05	11	102	nd			
06	49	102	20			
07	32	42	20			
08	13	198	4750			
09	188	63	10			
10	7	32	20			
11	52	75	20			
12	15	108	nd			
13	5	68	10			
14	23	77	40			
0515 B	60	37	10			

REMARKS: copy sent to Mr. John Bellamy, Dease Lake, B. C.

Signed: [signature]

% Mo x 1.6683 = % MoS_2 1 Troy oz./ton = 34.28 ppm 1 ppm = 0.0001% nd = none detected ppm = parts per million

All values are believed to be correct to the best knowledge of the analyst based on the method and instruments used.

986-5211
VANGEOCHEM LAB LTD. 1521 PEMBERTON AVE., NORTH VANCOUVER, B.C., CANADA 604-986-2172

August 17, 1979

To: Bethlehem Copper Corp. Ltd.
#2100 - 1055 W. Hastings St.
Vancouver, B. C.
V6E 2H8

From: Vangeochem Lab. Ltd.
1521 Pemberton Ave.
North Vancouver, B. C.
V7P 2S3

Subject: Analytical procedure used to determine hot acid soluble Cu and Zn in geochemical silt and soil samples.

Re: Report #79 - 12 - 012 to report #79 - 12 - 014 inclusive.

1. Sample Preparation

(a) Geochemical soil or silt samples were received in the laboratory in wet - strength 3½ x 6½ Kraft paper bags.

(b) The wet samples were dried in a ventilated oven.

(c) The dried soil and silt samples were sifted by using a shaking machine with 80 - mesh stainless steel sieves. The plus 80 - mesh fraction was rejected and the minus 80 - mesh fraction was transferred into a new bag for analyses later.

2. Methods of Digestion

(a) 0.50 gram of the minus 80- mesh was used. Samples were weighed out by using a top-loading balance.

(b) Samples were heated in a sand bath with nitric and perchloric acids (15% to 85% by volume of the concentrated acids respectively.)

. . . 2

VGC

986-5211

VANGEOCHEM LAB LTD. 1521 PEMBERTON AVE., NORTH VANCOUVER, B.C., CANADA 604-986-2172

(c) The digested samples were diluted with demineralized water to a fixed volume and shaken.

3. Method of Analysis

Cu and Zn analyses were determined by using a Tachtron Atomic Absorption Spectrophotometer Model AA4 or Model AA5 with their respective hollow cathode lamps. The digested samples were aspirated directly into an air and acetylene flame. The results, in parts per million, were calculated by comparing a set of standards to calibrate the atomic absorption unit.

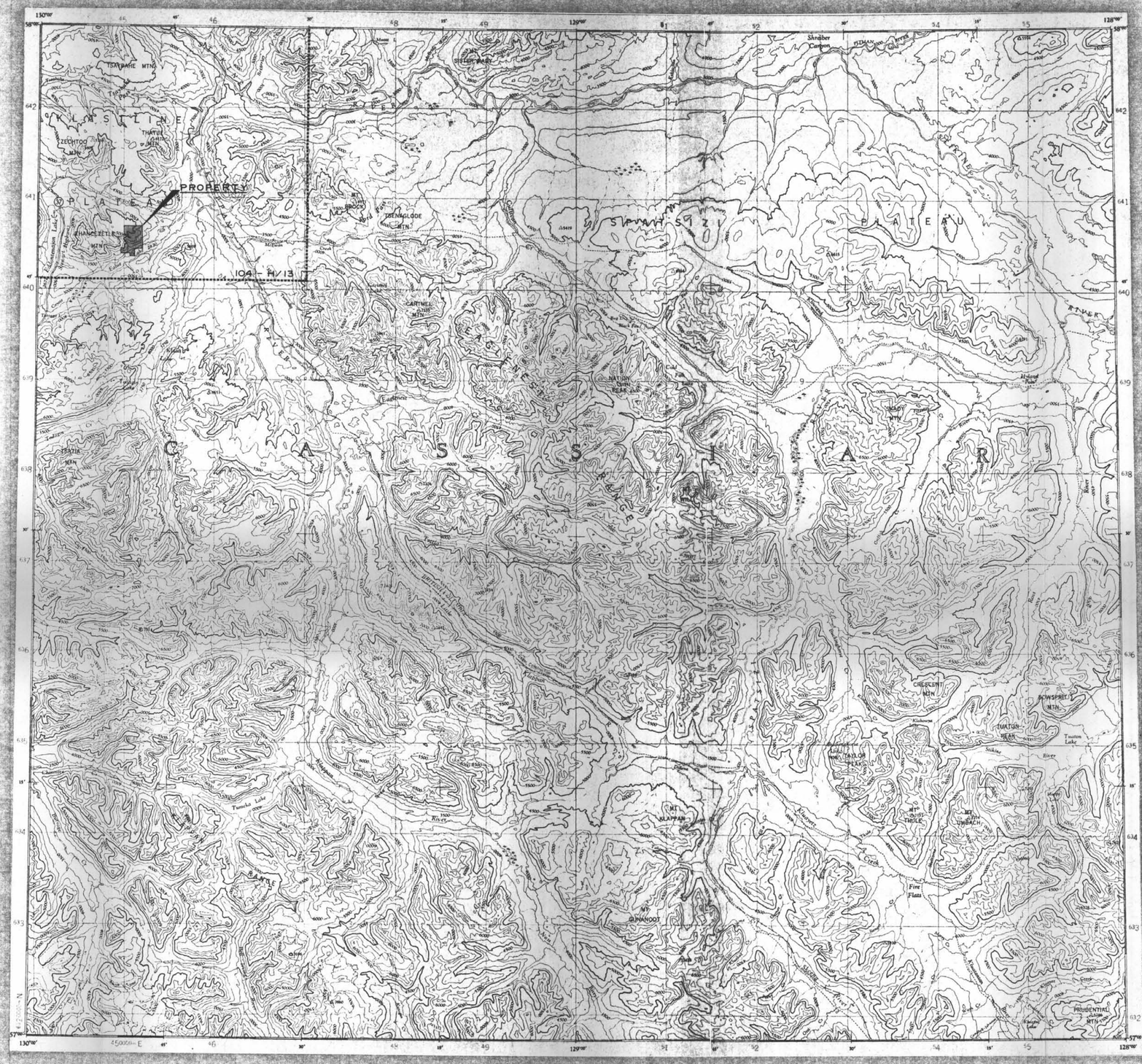
4. The analyses were supervised or determined by Mr. Conway Chun or Mr. Eddie Tang and the laboratory staff.

Eddie Tang
Vangeochem Lab Ltd.

CC: kj

SECTION E - ILLUSTRATIONS

Drawing No.	Title	Scale
EL-79-1	General Location Plan	1:250,000
EL-79-2	Location Plan	1: 50,000
EL-79-3	Mineral Claims	1: 10,000
EL-79-4	Geochemical Plan - Cu	1: 10,000
EL-79-5	" " - Zn	1: 10,000
EL-79-6	" " - Au	1: 10,000



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 7418

MAP SCALE

5 0 5 10 15
SCALE IN KILOMETRES

REVISIONS	No.	Date	MADE BY	DESCRIPTION
	1			
	2			
	3			
	4			
	5			

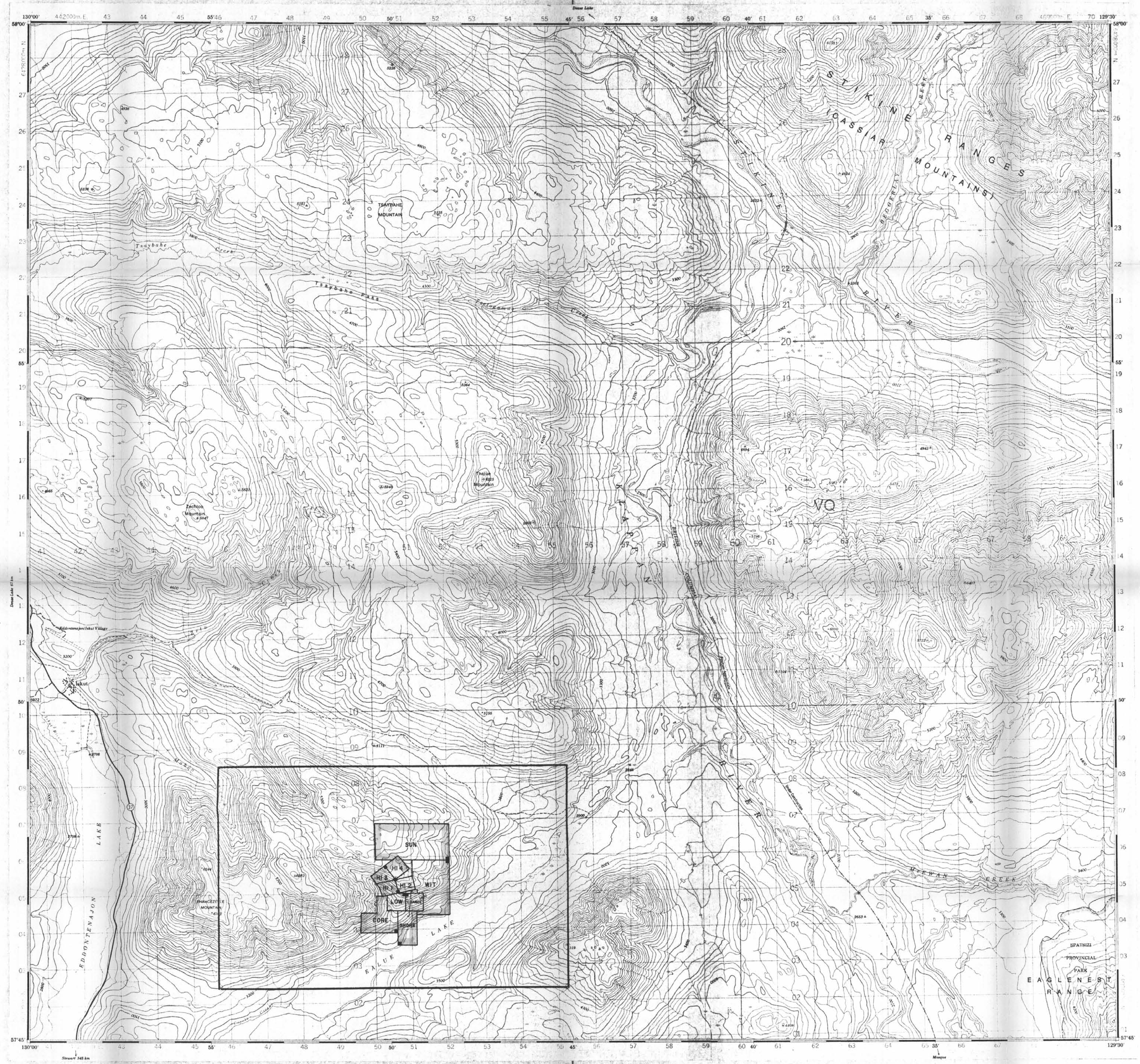
DATE	DRAWN BY	CHECKED	APPROVED
JULY 1979	Altair/amb	E.A.	

BETHLEHEM COPPER CORPORATION

EALUE LAKE PROJECT
GENERAL LOCATION PLAN

OFFICE	DEPARTMENT	MAP INDEX NUMBER	SCALE	DRAWING NUMBER
VANCOUVER	EXPLORATION	104 H	1:250,000	EL-79-1

NDI-156 A1-B.C.



MAP SCALE
1000 0 1000 2000 3000
SCALE IN METRES

REVISIONS No.	Date	MADE BY	DESCRIPTION
1			
2			
3			
4			
5			

DATE	DRAWN BY	CHECKED	APPROVED
JULY 1979	Altair/amb	E.A.	

BETHLEHEM COPPER CORPORATION

EALUE LAKE PROJECT
LOCATION PLAN

OFFICE	DEPARTMENT	MAP INDEX NUMBER	SCALE	DRAWING NUMBER
VANCOUVER	EXPLORATION	104 H/13	1:50,000	EL-79-2

NCI - 215.B1 - B.C.

U.T.M. GRID ZONE 9

NOTE:
CLAIM CONFIGURATION BASED ON LOCATION LINE SURVEY PLAN BY McELHANNEY ASSOCIATES – OCT. 1976

MAP SCALE
in metres
200 0 200 400 600

REVISIONS No.	Date	MADE BY	DESCRIPTION
1			
2			
3			
4			
5			

DATE	DRAWN BY	CHECKED	APPROVED
JUNE 1979	Altair/amb	E.A.	

BETHLEHEM COPPER CORPORATION

OFFICE	DEPARTMENT
VANCOUVER	EXPLORATION

EALUE LAKE PROJECT
MINERAL CLAIMS PLAN

MAP INDEX NUMBER	SCALE	DRAWING NUMBER
104 H/13 W	1:10,000	EL - 79 - 3

NCI - 215.81 - B.C.

N

MABON CREEK

6405000 m. N.

447000 m. E.

Baseline

100+00N
0+00 (Line 24S of Falconbridge Grid)
100+00S
200+00S
300+00S
400+00S
500+00S
600+00S
700+00S
800+00S

LAKE

EALUE

6405000 m. N.

454000 m. E.

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
7418
NO.

U.T.M. GRID ZONE 9

• SOIL SAMPLE

x ROCK SAMPLE

MAP SCALE

200 0 200 400 600

SCALE IN METRES

REVISIONS	No.	Date	MADE BY	DESCRIPTION
	1			
	2			
	3			
	4			
	5			

DATE	DRAWN BY	CHECKED	APPROVED
JULY 1979	Altair /	E. A.	

BETHLEHEM COPPER CORPORATION

OFFICE	DEPARTMENT
VANCOUVER	EXPLORATION

EALUE LAKE PROJECT

GEOCHEMICAL PLAN
Cu-ppm

MAP INDEX NUMBER	SCALE	DRAWING NUMBER
104 H/13W	1:10,000	EL-79-4

NCI - 215.B1 - B.C.

U.T.M. GRID ZONE 9

• SOIL SAMPLE

x ROCK SAMPLE

MAP SCALE

200 0 200 400 600

SCALE IN METRES

REVISIONS No.	Date	MADE BY	DESCRIPTION
1			
2			
3			
4			
5			

DATE	DRAWN BY	CHECKED	APPROVED
JULY 1979	Altair /	E. A.	

BETHLEHEM COPPER CORPORATION

OFFICE	DEPARTMENT
VANCOUVER	EXPLORATION

EALUE LAKE PROJECT

GEOCHEMICAL PLAN

Zn - ppm

MAP INDEX NUMBER	SCALE	DRAWING NUMBER
104 H/13W	1:10,000	EL-79-5

NCI - 215.81 - B.C.

MABON CREEK

6405000 m. N.

447000 m. E.

Baseline

100+00N
0+00 (Line 24S of Falconbridge Grid)
100+00S
200+00S
300+00S
400+00S
500+00S
600+00S
700+00S
800+00S

X 10
10 X
20 X 10,10 X 20 X
20 X 4750
X10 40X10 X10
10 X

EALUE LAKE

6405000 m. N.

454000 m. E.

N

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
7418
NO.

U.T.M. GRID ZONE 9

• SOIL SAMPLE

x ROCK SAMPLE

MAP SCALE

200 0 200 400 600

SCALE IN METRES

REVISIONS No.	Date	MADE BY	DESCRIPTION
1			
2			
3			
4			
5			

DATE	DRAWN BY	CHECKED	APPROVED
JULY 1979	Altair /	E. A.	

BETHLEHEM COPPER CORPORATION

EALUE LAKE PROJECT

GEOCHEMICAL PLAN
Au-ppb

OFFICE	DEPARTMENT	MAP INDEX NUMBER	SCALE	DRAWING NUMBER
VANCOUVER	EXPLORATION	104 H/13W	1:10,000	EL-79-6

NCI - 215.01 - B.C.