6393

GEOLOGICAL AND GEOPHYSICAL REPORT

on the

A 5-8 AND C 7 MINERAL CLAIMS

COUS CREEK AREA

ALBERNI MINING DIVISION

Latitude 49° 13' Longitude 124° 54.5'

N.T.S. Sheet No. 92F/2W

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

August 31, 1977

R. E. Anderson, P.Eng.

TABLE OF CONTENTS

SECTION A - SUMMARY OF WORK

Introduction:

The Cous Creek copper prospect owned by Cous Creek Copper Mines Ltd. was acquired by Bethlehem under the terms of an option agreement dated May 30, 1977. The property was originally staked in 1972 with additional claims being added in 1974. During 1976 Craigmont Mines carried out a program of geochemical sampling and magnetic surveys that yielded limited results. The apparent correlation between the magnetic and geochemical anomalies prompted Bethlehem to carry out additional geologic and geophysical investigations, the results of which are contained herein.

Location and Access:

The property is located 8 km WSW of Port Alberni adjacent to the southwest boundary of the Esquimalt and Nanaimo Railway Land Grant. Geographic co-ordinates are 49° 13' latitude and 124° 54.5' longitude with the UTM grid reference being Zone 10, 360200 E, 5452200 N. Access is provided via a good paved and gravel road that branches off Highway 4 just west of the Port Alberni city boundary. The timber in the area has been harvested and thus a number of good access roads traverse the property.

Topography and Physical Environment:

The claims are situated immediately north and west of Cous Creek which drains into Alberni Inlet. Elevations on the property range from 200 m to 700 m A.S.L. Relief is generally moderate. The area has been almost completely logged and is now in various stages of secondary growth.

Mineral Title:

A total of thirty-six located mineral claims form the property. Four were staked in 1972 with the remaining thirty-two being acquired in 1974. A schedule of these claims is set out in Section D.

General Geology:

The property is underlain by N - S striking bands of andesite, basalt, limestone and tuff which have been intruded by diorite and quartz diorite. Skarn and massive sulphide mineralization occur sporadically throughout the central portion of the claim block. Blebs of massive pyrrhotite, pyrite and minor chalcopyrite are generally found in the andesite in close proximity to the quartz diorite contact. Skarn mineralization is related to the limestone. A more detailed geologic description is contained in the report by C. M. Armstrong, P.Eng. which is found in Section B.

Work Program:

Following a property examination on May 30, 1977 by Bethlehem geological personnel, it was decided to engage C. M. Armstrong, P.Eng. to carry out a program of detailed geologic mapping and geophysical work on the principal showings. Mr. Armstrong carried out this program during the period from July 5 to 23, 1977 and his report dated July 22, 1977 is contained in Section B.

Discussion of Results:

The results of Mr. Armstrong's field work and his subsequent interpretation are set out in his accompanying report. Accordingly, Bethlehem plans to conduct some additional geophysical examinations and possibly some exploratory drilling, although the nature and extent of this work has not been decided.

Summary of Costs:

Total expenditures incurred during the report period were $4,874.75. Consultant's fees totalled $2,798.44 or 57.41%, contractors' costs were $1,043.42 or 21.40% while expenses incurred within the Bethlehem organization were $1,032.89 or 21.19% of the total outlay.

Respectfully submitted,

R. E. Anderson, P.Eng.
Exploration Manager

Examination

of the

COUS CREEK PROPERTY

Port Alberni, B. C.

Alberni Mining Division

92F/2W

for

Bethlehem Copper Corporation
2100 - 1055 West Hastings Street
Vancouver, B. C. V6E 2H8

by

C. M. Armstrong, P.Eng.
CONSULTING ENGINEER
4085 West 29th Avenue
Vancouver, B. C.
V6S 1V4, Canada
(604) 224-7678

July 22, 1977

CONTENTS

INTRODUCTION

On July 5, 1977 Robin Anderson, Exploration Manager for Bethlehem, Wally Maxmenko, Secretary-Treasurer for Cous Creek Copper Mines, and the writer examined the principal 7 showings on the Cous Creek property. With an objective of establishing favourable drill targets, the writer was requested to attempt to establish the relationship, or correlation, if any, between the several massive sulphide showings, relying principally on geological mapping and VLF-EM surveying.

Geological, geochemical, and magnetometer maps with topographic control (20-metre contour interval) prepared by Craigmont Mines in 1976 at a scale of 1:5000, as well as a Craigmont magnetometer survey report (Sep. 15/76) and assay data from various examiners of the property were supplied very kindly for reference by Lawrence Vezina, president of Cous Creek Copper Mines Limited. The work by Craigmont was of a preliminary reconnaissance nature with blazed lines flagged at 50-metre intervals and at 100-metre (central area) or 200-metre line spacings. Only outcrop areas cut by the grid lines were mapped very roughly by Craigmont personnel, most interline outcrop was not mapped, and numerous areas of abundant outcrop similarly were not mapped. Use of the Craigmont and other information was very much appreciated.

WORK COMPLETED

Because of the variability of attitude (strike and dip) of the several massive sulphide showings, it appeared best to establish small, optimally-oriented grids over each showing, tied in to the extensive Craigmont grid, and to evaluate each showing by VLF-EM surveys and detailed geological mapping.

Providing that coupling with the Jim Creek transmitter were acceptable, and that continuity of mineralization existed for 100 metres, or so, along strike and dip, the massive sulphide bodies should appear as excellent conductors.

2.7 kilometres of cut line were completed by the writer over the 7 showings, including slope-corrected (horizontal) chaining, picketing at 30-metre intervals, and lines at 30-metre spacings. Dense secondary growth was encountered only in the area of the C-7 showing.

5.0 kilometres of detailed VLF-EM surveying was completed, with readings at 15-metre intervals. The showings were surveyed on lines at 15 metre spacings.

Approximately 75% of the grid was mapped geologically at a detailed scale of 1:1250. The geology was considerably more complex than indicated by Craigmont's reconnaissance mapping.

The Craigmont soil sample analyses (copper) were processed by graphical statistical techniques to establish values for weakly, moderately, and strongly anomalous copper soil values, being 100, 200, and 450 ppm, respectively (see Appendix). Only single station, weakly anomalous copper soil values were obtained by Craigmont in the vicinity of showings 1-M and 4-M, both of which contain high grade copper values. Similar soil values were obtained in proximity to showing 5-M. Soil sampling of the detailed grid was not undertaken.

Representative 5 kilogram samples were chipped from bedrock in 6 of the showing pits, and analysed for Cu, Ag, Au, and Zn (see Appendix). Showing 1-M containing high grade copper was omitted by error.

DISCUSSION

Magnetite

Magnetite occurs in variable proportions in most of the showings, and, consequently, detailed magnetometer surveys probably could define the exact extent of most of the deposits better than any other technique. Compass deflections in the vicinity of the mineralization perhaps provide some indication of strike continuity of the zones:

- 1-M — 10° compass deflection at 35 metres east indicates at least that much strike continuity.
- 3-M — compass deflected only in immediate pit area; no deflection beyond 10 metres; probably a massive sulphide pod.
- 4-M — compass deflected only in immediate pit area; no deflection beyond 5 metres; probably a massive sulphide pod.

Swamp area (VLF-EM conductor) on lines 0.3e and 0.6e in vicinity of 1-M showing: no compass deflection noted on each of the lines.

The dioritic andesite (6) and diorite (10) lithologies appear to be consistently and uniformly magnetic (weakly), and, accordingly, a detailed magnetometer survey could assist in establishing the continuity of these lithologies in overburden-obscured areas. The andesite porphyry (7) appears to be similarly uniformly magnetic (very weakly).

Geology

In general appearance, the volcanic assemblage appears to be part of the Lower Jurassic Bonanza Subgroup of the Vancouver Group, rather than part of the Upper Triassic Karmutsen Formation. However, because the limestone (presumably Upper Triassic Quatsino) on the west dips at least locally 60° to the west, overturning of the sequences is implied. No reliable attitudes could be obtained from the various volcanic lithologies, and the strike of well-bedded tuffs was east-west, dipping 50° to 80° southerly: both deformation and faulting (block) are suggested.

Showings 8-M, 3-M, 2-M, and 5-M occur within 30 metres of an assumed arcuate north-south fault which occupies a fairly well defined depression or gully throughout. It is probable that the massive sulphide shoots occur in roughly east-west fracture zones related to the major north-south fault. In addition, there is some suggestion that the 3-M and 5-M deposits occur at the boundaries between different flows: massive andesite and amygdaloidal andesite flows in the former, and amygdaloidal andesite and andesite flow breccia in the latter. Because of the absence of outcrop along strike of the showings, it is not possible to define the strike extent of the deposits.

Copper-bearing occurrence 1-M probably also is related to a subsidiary fault in a well defined depression for 30 metres, plus, easterly of the showing. This fault probably branches from another north-south fault indicated by a shallow depression bordered by elongate outcrop ridges. The showing also occurs near the contact of massive andesite and amygdaloidal andesite.

Minor faulting appears to be associated with copper-bearing showing 4-M which occurs at the contact with massive diorite and pillowed andesite-andesite flow breccia. It is uncertain whether a small, highly weathered gossan 50 metres to the northwest, plus minor disseminated chalcopyrite in andesite at the same location represents the strike extension of the zone. A small outcrop of massive magnetite occurs on the same contact about 50 metres to the northeast.

As shown by the analyses (see Appendix), only copper is of economic significance. Showings 1-M (samples by others vary from 1.65% to 5.5% Cu) and 4-M contain high grade copper, in the order of 3%; and showings 2-M, 3-M, and 5-M contain low, but potentially significant copper values, in the order of 0.3%. If 100 metres, plus, of strike and dip continuity existed for the massive sulphides, zoning of values within the deposits could result in low grade copper values, such as these, at the extremities of the shoots. Showings 8-M (massive magnetite) and C-7 (massive pyrite) contained no significant values.

The writer's impression, only, of these massive sulphide deposits which have been exposed to date is that they are small, lenticular pods formed at structurally favourable locations (fault intersections and contact zones) by "hydrothermal solutions" emanating from a volcanic source.

VLF-EM

All of the showings have acceptable coupling with the transmitting station at Jim Creek, Washington. If the zones had strike and dip continuities of 100 metres, or so, which minimum continuity is required for exonomic significance, excellent conductors should result.

Showing 4-M does not appear as a conductor, and, accordingly, probably is a small massive sulphide pod.

Showings 8-M, 1-M, and 3-M yielded very low order conductors with net dip angles (filtered and smoothed) less than 10%, and with liberal strike continuities in the order of 50 metres, or less.

Slow running water and minor swampy ground that may be contributing to the conductor pattern is associated with showing 2-M; however, the northwest trending conductor of moderate intensity, less than 15%, extends for about 50 metres, and a total conductor length of 75 metres, plus, is possible.

Showing 5-M occurs at the southeast corner of 100 metres, plus, of northwest trending swampy ground which coincides with a strong, about 25%, conductor. While the contribution of the massive pyrite to the conductor is not known, the following facts suggest that some follow-up work is warranted:

1. The massive pyrite contains low copper values, about 0.4%.
2. The conductor (and swamp) parallel the limestone contact 50 metres to the southwest, which contact defines a broad anticlinal structure that could represent a favourable structural locus for sulphide deposition.
3. The zone may coincide with the favourable contact between andesite flow breccia and amygdaloidal andesite.
4. Weakly anomalous soil values were obtained by Craigmont about 50 metres to the south (95 ppm) and 200 metres on strike to the northwest (123 ppm).
5. The major north-south fault which appears to be responsible for the localization of a number of the massive sulphide pods passes immediately east of the showing.

A strong, well defined, east-west trending conductor, about 20%, coincides with swampy ground on lines 0.6e and 0.9e at 0.3n (1-M baseline). Because the major north-south fault passes immediately east of the conductor, there is a possibility that massive sulphides are present. As previously mentioned, no deflection of a compass needle was observed over the anomaly. Total conductor length exceeds 100 metres.

Soil Sampling

Two broad, semi-continuous zones of weakly to moderately anomalous copper soil values extend from Craigmont line 8600N to 9400N (800 metres), centered at about 10,300E. The writer made several traverses over the anomalous areas which occur on a steep, east-facing slope. Much outcrop that does not appear on the Craigmont geology map occurs in the vicinity of the anomalies; however, the anomalous areas are mostly overburden-covered. No explanation for the anomalies was found: pyrite fracture disseminations and local intense fracturing of the andesitic rocks were the only signs of possible encouragement noted. Disseminated copper mineralization certainly does not occur over wide areas, but there could be relatively narrow, overburden-obscured zones of sulphide mineralization, including chalcopyrite, possibly related to north-south faulting. Air photo interpretation would assist in assessing the possibilities of major structural control.

CONCLUSIONS AND RECOMMENDATIONS

Consideration of geology, VLF-EM response, and sampling results, individually and/or collectively, indicate that:

showing 8-M has no economic potential;

showings C-7 and 3-M have very minor potential;

showings 2-M, 4-M, and 1-M have minor potential;

showing 5-M has some economic potential, if the deposit has strike continuity comparable to the length of the coincident swamp (more than 100 metres) and VLF-EM conductor;

the swamp conductor centered at 0.6e-0.35n could be associated with massive sulphides, and, with a possible strike length of about 100 metres, also could have economic significance.

Because of the low cost to acquire additional definitive data, the writer recommends that the grid over showing 5-M be expanded with 2 additional 120-metre (plus) lines at 0.3e and 0.0e (XL), and that a detailed magnetometer survey be conducted over the entire grid to demonstrate the magnetic response of the showings, and to further define the strike continuity of the showings.

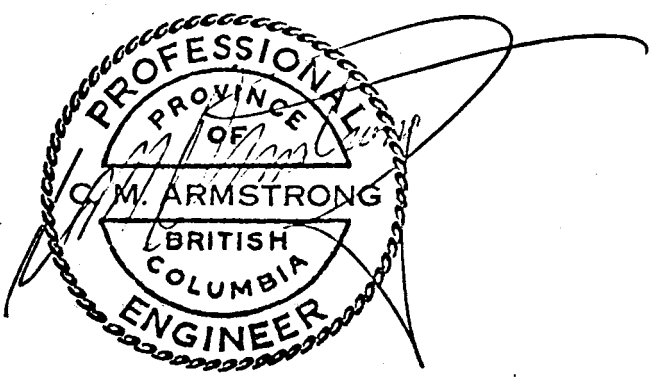
If the magnetic response over the 5-M showing indicates a possible strike length of at least 100 metres, the anomaly should be drilled.

Similarly, if the 0.6e-0.35n swamp conductor has magnetic correlation for a strike length of at least 100 metres, the anomaly should be

drilled, or possibly bulldozer-trenched.

If the magnetometer survey does not indicate acceptable probable strike continuity of the showings, no further work by Bethlehem is recommended by the writer on the property.

A total of 3 days should be allowed for the additional work, including magnetometer survey, mapping, VLF-EM survey, and data processing.



APPENDIX

Craigmont Soil Sampling - Grapnical Statistical Analysis

General Testing Laboratories - Analyses

GENERAL TESTING LABORATORIES

DIVISION SUPERINTENDENCE COMPANY (CANADA) LTD.
1001 EAST PENDER ST., VANCOUVER, B.C., CANADA, V6A 1W2
PHONE (604) 254-1647 TELEX 04-507514 CABLE SUPERVISE

TO:
BETHLEHEM COPPER CORPORATION LTD.
2100 - 1055 West Hastings Street
Vancouver, B.C.
V6E 2H8

CERTIFICATE OF ASSAY

No.: 7707-1851 DATE: July 21, 1977

We hereby certify that the following are the results of assays on: Ore

MARKED	GOLD OZ/ST	SILVER OZ/ST	Copper Cu (%)	Zinc Zn (%)	XXX	XXX	XXX	XXX
E-24848								
2M 1 - 276K	0.002	0.05	0.31	0.04				
3M 1 - 277K	0.003	0.05	0.25	0.04				
4M 1 - 278K	0.005	0.35	3.58	0.06				
5M 1 - 279K	0.003	0.10	0.38	0.10				
8M 1 - 280K	0.003	0.04	0.06	0.01				
71 - 281K	0.002	trace	0.03	0.02				

cc. Mr. C.M. Armstrong, P. Eng.

E: REJECTS RETAINED ONE MONTH. PULPS RETAINED THREE MONTHS. ON REQUEST PULPS AND REJECTS WILL BE STORED FOR A MAXIMUM OF ONE YEAR.

L. WONG
PROVINCIAL ASSAYER

COPY

C. M. ARMSTRONG, P.Eng.
Consulting Engineer

4085 West 29th Avenue
Vancouver, B.C. V6S 1V4
Canada (604) 224-7678

GEOCHEMISTRY — Statistical Analysis Calculations

Property Cous Creek — Date Jul. 1977

Company Bethlehem — Element Cu

Lognormal distribution

$n = \frac{\log R}{\log w} =$

R = ratio of highest to lowest value = 560 / 280

w = width of classes & log w = 0.05, 0.1, or 0.2

n = number of classes

Class Limits ppm	Class Limits log	Mid-pt log x	Frequency Count	Total f	%	Σ%	t*	ft	ft²	f(t+1)²
~~1.86~~	~~0.27~~									
		~~0.32~~	1 2 2 3 4 5 6 7 8 9							
~~2.35~~	~~0.37~~	0.42		4	0.66	100.82 ✓				
~~2.95~~	~~0.47~~	~~0.52~~		0	—	✓				
~~3.72~~	~~0.57~~	0.62		2	0.33	99.36 ✓				
~~4.68~~	~~0.67~~	0.72		4	0.66	99.03 ✓				
~~5.89~~	~~0.77~~	0.82		5	0.82	98.37 ✓				
~~7.41~~	~~0.87~~	0.92		9	1.48	97.55 ✓				
~~9.33~~	~~0.97~~	1.02		6	0.99	96.07 ✓				
~~11.75~~	~~1.07~~	1.12		11	1.81	95.08 ✓				
~~14.79~~	~~1.17~~	1.22		19	3.12	93.27 ✓				
~~18.62~~	~~1.27~~	1.32		16	2.63	90.15 ✓				
~~23.44~~	~~1.37~~	1.42		35	5.75	87.19 ✓				
~~29.51~~	~~1.47~~	1.52		47	7.72	81.44 ✓				
~~37.15~~	~~1.57~~	1.62		61	10.02	73.72 ✓				
~~46.77~~	~~1.67~~	1.72		56	9.36	63.70 ✓				
~~58.88~~	~~1.77~~	1.82		60	10.93	54.34 ✓				
~~74.13~~	~~1.87~~	1.92		26	4.27	43.41 ✓				
~~93.33~~	~~1.97~~	2.02		64	10.51	39.14 ✓				
~~117.5~~	~~2.07~~	2.12		47	7.72	28.63 ✓				
~~147.9~~	~~2.17~~	2.22		31	5.09	20.91 ✓				
~~186.2~~	~~2.27~~	2.32		13	2.13	15.82 ✓				
~~234.4~~	~~2.37~~	2.42		12	1.97	13.69 ✓				
~~295.1~~	~~2.47~~	2.57		9	1.48	11.72 ✓				
~~371.5~~	~~2.57~~	2.62		1	0.16	10.24 ✓				
~~467.7~~	~~2.67~~	2.72		1	0.16	10.08 ✓				
~~588.8~~	~~2.77~~			1	0.16	9.92 ✓				
				609 ✓	100.02 ✓					

b = 50 ppm

b+5 = 100 ppm

b+25 = 200 ppm

b+35 = 450 ppm

x_o = assumed mean = , c = cell interval =

$*t = \frac{x - x_o}{c}$

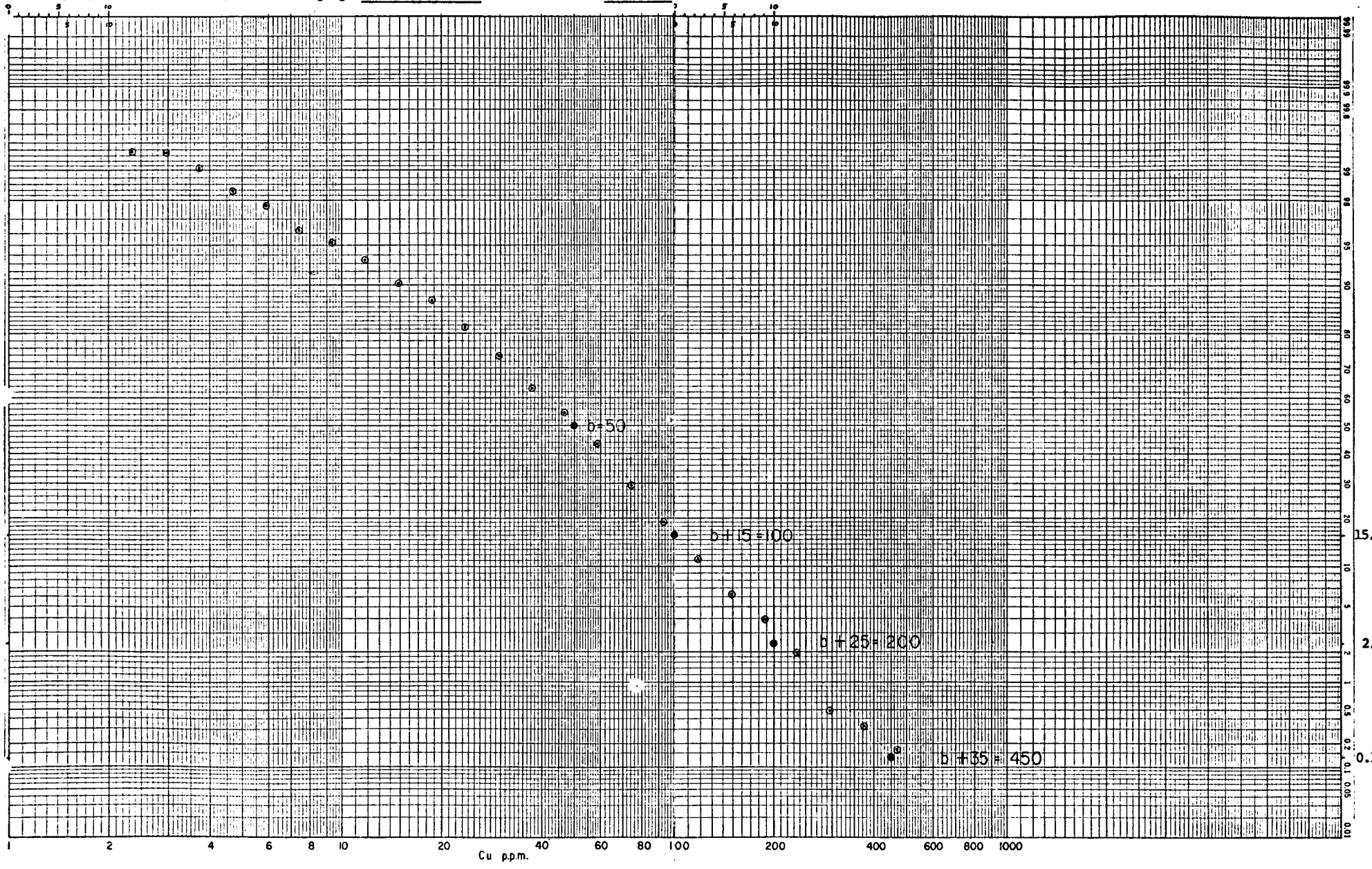
C. M. ARMSTRONG, P.Eng.
CONSULTING ENGINEER
4085 West 29th Avenue
Vancouver, B.C., Canada
(604) 224-7678 V6S 1V4

GEOCHEMISTRY Statistical Analysis Graph

Property COUS CREEK Date JUL. 1977

Company BETHLEHEM COPPER CORPORATION Element Cu

(CRAIGMONT 1976 SOIL SAMPLING)



SECTION C - STATEMENT OF EXPENDITURES

A. Consultant (see accompanying invoice)

1.	C. M. Armstrong. P.Eng. - geological and geophysical investigations carried out during the period from July 5 to 23, 1977.	$ 2,798.44
	TOTAL CONSULTANT'S EXPENDITURES	$ 2,798.44

B. Contractors (see accompanying invoices)

1.	Okanagan Helicopters Ltd. - transportation to property on May 30, 1977 utilizing a Bell Model 206 B unit.	$ 776.92
2.	General Testing Laboratories - assaying services	$ 117.00
3.	Altair Drafting Services Ltd.	
	(i) Drafting @ $12/hour June 1977 - 3 hrs. - $36.00 Aug. 1977 - 7 hrs. - $84.00	
	(ii) Printing - August 1977 $29.50	
	149.50	$ 149.50
	TOTAL CONTRACTORS' EXPENDITURES	$ 1,043.42

C. Company Expenditures

1.	Personnel	
	R. E. Anderson, Exploration Manager 3 days @ $174.71/day (May 30, July 5 and one additional day of general supervision)	$ 524.13
	R. J. Nethery, Geologist 2 days @ $109.05/day (May 30 and July 5, 1977)	$ 218.10
	E. Andersen, Property Agent 2 days @ $85.11/day (report preparation)	$ 170.22
	A. Parnaby, Secretary 2 days @ $45.22/day (report preparation)	$ 90.44
	Total Personnel	$ 1,002.89
2.	Transportation	
	R. E. Anderson - Ford F-150 2WD pickup one day @ $30/day - $30.00	
	Total Transport	$ 30.00
	TOTAL COMPANY EXPENDIUTRES	$ 1,032.89
	TOTAL PROPERTY EXPENDITURES	$ 4,874.75

BETHLEHEM COPPER CORPORATION

DATE	INVOICE No.	AMOUNT	DATE	INVOICE No.	AMOUNT
1977 July 25	Your account of July 23rd, 1977	$ 2,798.44 ✓			

BETHLEHEM COPPER CORPORATION

No 7197

SUITE 2100, GUINNESS TOWER, 1055 WEST HASTINGS STREET
VANCOUVER, B.C. V6E 2H6

July 25th, 1977

PAY TO THE ORDER OF C. M. ARMSTRONG $ 2,798.44

100 DOLLARS

BETHLEHEM COPPER CORPORATION

NON-NEGOTIABLE

TO THE
BANK OF MONTREAL
MAIN OFFICE — THREE BENTALL CENTRE
595 BURRARD STREET
VANCOUVER, B.C.
V7X 1L7

PER _____

PER _____

VOUCHERS PAYABLE

CHARGE	ACCOUNT No.	DR.	CR.
	824-018 ✓ 110-002 ✓	$ 2,798.44 ✓	$ 2,798.44 ✓

VOUCHER ENTERED

APPROVED FOR PAYMENT

C. M. ARMSTRONG, P.ENG.
CONSULTING ENGINEER
4085 West 29th Avenue
Vancouver, B. C.
V6S 1V4, Canada
(604) 224-7678

July 23, 1977

TO BETHLEHEM COPPER CORPORATION

2100 - 1055 West Hastings Street
Vancouver, B. C. V6E 2H8

ATTN Mr. Robin Anderson
Exploration Manager

COUS CREEK PROPERTY
Port Alberni, B. C.
Examination & Report dated July 22, 1977

Consulting fee	Jul. 5-23	12 days @ $175 =	$2100.00
Transportation			
Personal vehicle -	rental - 10 days @ $10 =	$100.00	
	mileage - 440 mi @ 5¢ =	22.00	
	120 mi @ 25¢ =	30.00	
Fuel		31.25	
Ferries		24.00	
			207.25
Food	10 days @ $14 =		140.00
Accomodation			123.10
EM-16 rental	6 days @ $25 =		150.00
Personal supplies & equipment			15.00
Telephone, copying, typing, miscellaneous supplies			63.09
			$2798.44

824-018

BETHLEHEM COPPER CORPORATION

DATE	INVOICE NO.	AMOUNT	DATE	INVOICE NO.	AMOUNT
June 20 1977	Inv. 187642 184748 184751	$ 776.92 891.84 743.43 $ 2,412.19			

BETHLEHEM COPPER CORPORATION

№ 7054

SUITE 2100, GUINNESS TOWER, 1055 WEST HASTINGS STREET

VANCOUVER. B.C. V6E 2H8 June 20 1977

PAY TO THE ORDER OF OKANAGAN HELICOPTERS LTD. $ 2,412.19 / 100 DOLLARS

BETHLEHEM COPPER CORPORATION

NON-NEGOTIABLE

PER _____

PER _____

TO THE
BANK OF MONTREAL
MAIN OFFICE — THREE BENTALL CENTRE
595 BURRARD STREET
VANCOUVER. B.C.
V7X 1L7

VOUCHERS PAYABLE

CHARGE	ACCOUNT No.	DR.	CR.
	854-018	776.92	
	628-000	743.43	
	854-008	445.92	
	854-007	445.92	
	110-002		2,412.19

VOUCHER ENTERED

APPROVED FOR PAYMENT

OKANAGAN HELICOPTERS LTD.
HEAD OFFICE:
439 AGAR DRIVE, INTERNATIONAL AIRPORT SOUTH
VANCOUVER, B.C. V7B 1A5
TEL. (604) 278-5502 TELEX: 04-508883

0190

ACCOUNT NUMBER 044 16 187642

FLIGHT DATE 30 05 77 | JUN 2 1977

BASE NO.	BASE	AIRCRAFT TYPE
140	VANCOUVER	206B

TYPE OF CONTRACT - X: HOURLY X | DAILY MINIMUM 1 TO 29 DAYS | 30 DAYS OR MORE

FLIGHT LOCATION: Port Alberni — TYPE OF FLYING: CS 9

IND. CLASS | AIRCRAFT REG. NO.: 03 GJHJ

FLIGHT LOCATION: 20-11-13,21 — 8 2 7 6

STATE OF AIRCRAFT - X: UNSERVICEABLE | STORED

PILOT 1 | PILOT 1

PILOT 2 | PILOT 2

ENG. NAME - 1: B.H.C.

ENG. NAME - 2:

CHARTERER'S BILLING ADDRESS

MR Anderson
Bethlehem Copper
2100-1055 W Hastings St
Vancouver B.C.
V6E 2H8

PURCHASE ORDER NO.	NO. OF PASSENGERS	FREIGHT LBS.

OPERATION

Vancouver - Damsite pad - Port Alberni
RTN Port Alberni

18-854

PRINT NAME OF PERSON AUTHORIZED TO SIGN

T.O.L. 10	DIV. 12 SUB. 14	EXTRA CHARGES OR ADJUSTMENTS	AMOUNT
		OUR TERMS ARE DUE & PAYABLE	
		WITHIN 30 DAYS FROM DATE OF INVOICE	
		INTEREST OF 1½% PER MONTH WILL BE CHARGED	
		IF NOT PAID WITHIN 30 DAYS.	

	TAKE-OFF	LAND	FLYING TIME
			7.3

ZONE ☐ ☐ ☐ ☐

	NON REV. HRS.	REV. HRS.	TARIFF	AMOUNT
		2.3	315 00	724 50
OUR FUEL ~~53~~ GALS. @				
OUR FUEL 53 GALS. @			95	50 35
OUR FUEL GALS. @				
OUR OIL 2.3 HRS. @			90	2 07
EXTRA CHARGES OR ADJUSTMENTS				
TOTAL $				776 92

CUST. SUP. (FUEL HRS.)

THE CARRIAGE OF PASSENGERS BAGGAGE AND GOODS BY OKANAGAN HELICOPTERS LTD IS SUBJECT TO THE TERMS CONDITIONS AND LIMITATIONS OF LIABILITY SET FORTH IN ITS TARIFF C.T.A. LIABILITY FOR LOSS OF DAMAGE TO GOODS IS LIMITED TO 50 CENTS PER POUND. FILED WITH THE A.T.A. AN EXTRACT OF WHICH IS AVAILABLE FOR EXAMINATION AT THE OFFICE OF OKANAGAN HELICOPTERS LTD.

SIGNED FOR CHARTERER BY: L E Anderson

SIGNED FOR CARRIER BY:

BETHLEHEM COPPER CORPORATION

DATE	INVOICE No.	AMOUNT	DATE	INVOICE No.	AMOUNT
July 26 1977	Inv. V33565	$ 117.00 ********			

BETHLEHEM COPPER CORPORATION

№ 7228

SUITE 2100, GUINNESS TOWER, 1055 WEST HASTINGS STREET

VANCOUVER, B.C. V6E 2H8 July 26 1977

PAY TO THE ORDER OF GENERAL TESTING LABORATORIES DIVISION / $ 117.00 /

100 DOLLARS

BETHLEHEM COPPER CORPORATION

NON-NEGOTIABLE

TO THE
BANK OF MONTREAL
MAIN OFFICE – THREE BENTALL CENTRE
595 BURRARD STREET
VANCOUVER, B.C.
V7X 1L7

PER _____

PER _____

VOUCHERS PAYABLE

CHARGE	ACCOUNT No.	DR.	CR.
	842-018 / 110-008 /	117.00 /	/ 117.00

VOUCHER ENTERED

APPROVED FOR PAYMENT

INVOICE

General Testing Laboratories Division
Superintendence Company (Canada) Ltd.
1001 East Pender St.
Vancouver, B.C. V6A 1W2
Ph (604) 254-1647

INVOICE V33565
DATE July 21, 1977
JOB NO.
LAB NO 7707-1851

BO 125

TO: BETHLEHEM COPPER CORPORATION LTD.
2100 - 1055 West Hastings Street
Vancouver, B.C.
V6e 2H8

JC	JOB #	C.M	S.L	H	P.C

To: Assaying submitted samples of Ore (as per enclosed report) for AuAgCuZn:

6 samples x 19.50 = $ 117.00

DUE AND PAYABLE ON RECEIPT OF INVOICE. 1½% PER MONTH (18%) PER ANNUM CHARGED ON OVERDUE ACCOUNTS.

BETHLEHEM COPPER CORPORATION

MINERAL CLAIMS

Property: COUS CREEK **Mining Division:** Alberni

Name of Claim	Record Number	Metal Tag Number	Date Recorded	Expiry Date
A 5	19539 (M)	301183 M	20 Sept. 1972	20 Sept. 1982
A 6	19540 (M)	301182 M	20 Sept. 1972	20 Sept. 1982
A 7	19541 (M)	301180 M	20 Sept. 1972	20 Sept. 1982
A 8	19542 (M)	301181 M	20 Sept. 1972	20 Sept. 1982
B 1	20682 (K)	337866 M	27 Aug. 1974	27 Aug. 1978
B 2	20683 (K)	337867 M	27 Aug. 1974	27 Aug. 1978
B 3	20684 (K)	337868 M	27 Aug. 1974	27 Aug. 1978
B 4	20685 (K)	337869 M	27 Aug. 1974	27 Aug. 1978
B 5	20686 (K)	337870 M	27 Aug. 1974	27 Aug. 1978
B 6	20687 (K)	427351 M	27 Aug. 1974	27 Aug. 1978
B 7	20688 (K)	427352 M	27 Aug. 1974	27 Aug. 1978
B 8	20689 (K)	427353 M	27 Aug. 1974	27 Aug. 1978
B 9	20690 (K)	427364 M	27 Aug. 1974	27 Aug. 1978
B 10	20691 (K)	427365 M	27 Aug. 1974	27 Aug. 1978
C 1	20785 (M)	427380 M	9 Sept. 1974	9 Sept. 1979
C 2	20786 (M)	427381 M	9 Sept. 1974	9 Sept. 1979
C 3	20787 (M)	427382 M	9 Sept. 1974	9 Sept. 1979
C 4	20788 (M)	427383 M	9 Sept. 1974	9 Sept. 1979
C 5	20789 (M)	427384 M	9 Sept. 1974	9 Sept. 1979
C 6	20790 (M)	427385 M	9 Sept. 1974	9 Sept. 1979
C 7	20791 (M)	427386 M	9 Sept. 1974	9 Sept. 1979
C 8	20792 (M)	427387 M	9 Sept. 1974	9 Sept. 1979
D 1	20771 (M)	427366 M	9 Sept. 1974	9 Sept. 1978
D 2	20772 (M)	427367 M	9 Sept. 1974	9 Sept. 1978
D 3	20773 (M)	427368 M	9 Sept. 1974	9 Sept. 1978
D 4	20774 (M)	427369 M	9 Sept. 1974	9 Sept. 1978
D 5	20775 (M)	427370 M	9 Sept. 1974	9 Sept. 1978
D 6	20776 (M)	427371 M	9 Sept. 1974	9 Sept. 1978

(continued)

BETHLEHEM COPPER CORPORATION

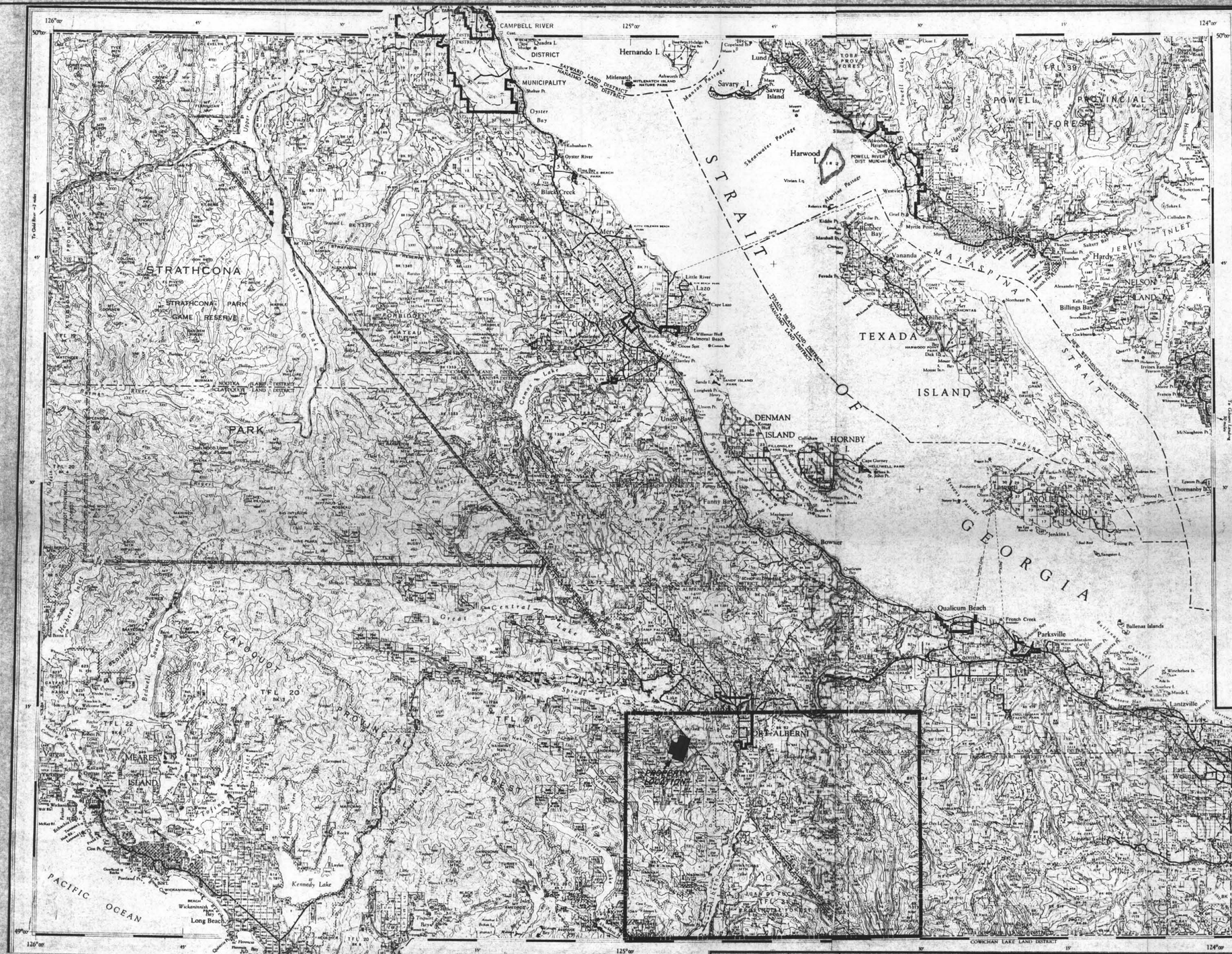
MINERAL CLAIMS

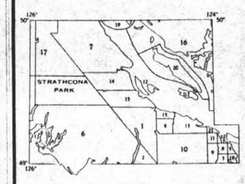
Property: COUS CREEK **Mining Division:** Alberni

Name of Claim	Record Number	Metal Tag Number	Date Recorded	Expiry Date
D 7	20777 (M)	427372 M	9 Sept. 1974	9 Sept. 1978
D 8	20778 (M)	427373 M	"	"
D 9	20779 (M)	427374 M	"	"
D 10	20780 (M)	427375 M	"	"
D 11	20781 (M)	427376 M	"	"
D 12	20782 (M)	427377 M	"	"
D 13	20783 (M)	427378 M	"	"
D 14	20784 (M)	427379 M	"	"

SECTION E - ILLUSTRATIONS

Drawing No.	Title	Scale
CC-77-1	General Location Plan	1:250,000
CC-77-2	Location Plan	1:50,000
CC-77-3	Topographic Plan	1:10,000
CC-77-4	Mineral Claim Plan	1:10,000
CC-77-5	Survey Grid Plan	1:1,250
CC-77-6	Geology Plan	1:1,250
CC-77-7	Geophysical Plan	1:1,250





LAND DISTRICTS

1	ALBERNI	11	MOUNTAIN
2	BARCLAY	12	NANAIMO
3	BRIGHT	13	NANOOSE
4	CAMERON	14	NELSON
5	CEDAR	15	NEWCASTLE
6	COMOX-ALBERNI	16	NEW WESTMINSTER
7	CUMBERLAND	17	NICOLA
8	CRANBERRY	18	OYSTER
9	DOUGLAS	19	SAYWARD
10	DUNSMUIR	20	TEXADA ISLAND
		21	WELLINGTON

MAJOR RESERVES, LICENCES, AND GRANTS

REFERENCE

Tree Farm Licence
Prov. Forest Reserve
E & N Land Grant

ALBERNI, B.C.
SHEET 92 F
THIRD STATUS EDITION

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 6393

Drawing No. CC-77-1 to accompany "Geological and Geophysical Report on the A 5-8 and C-7 Mineral Claims" by P.E. Dawson P.Eng dated August 31, 1977.

6393

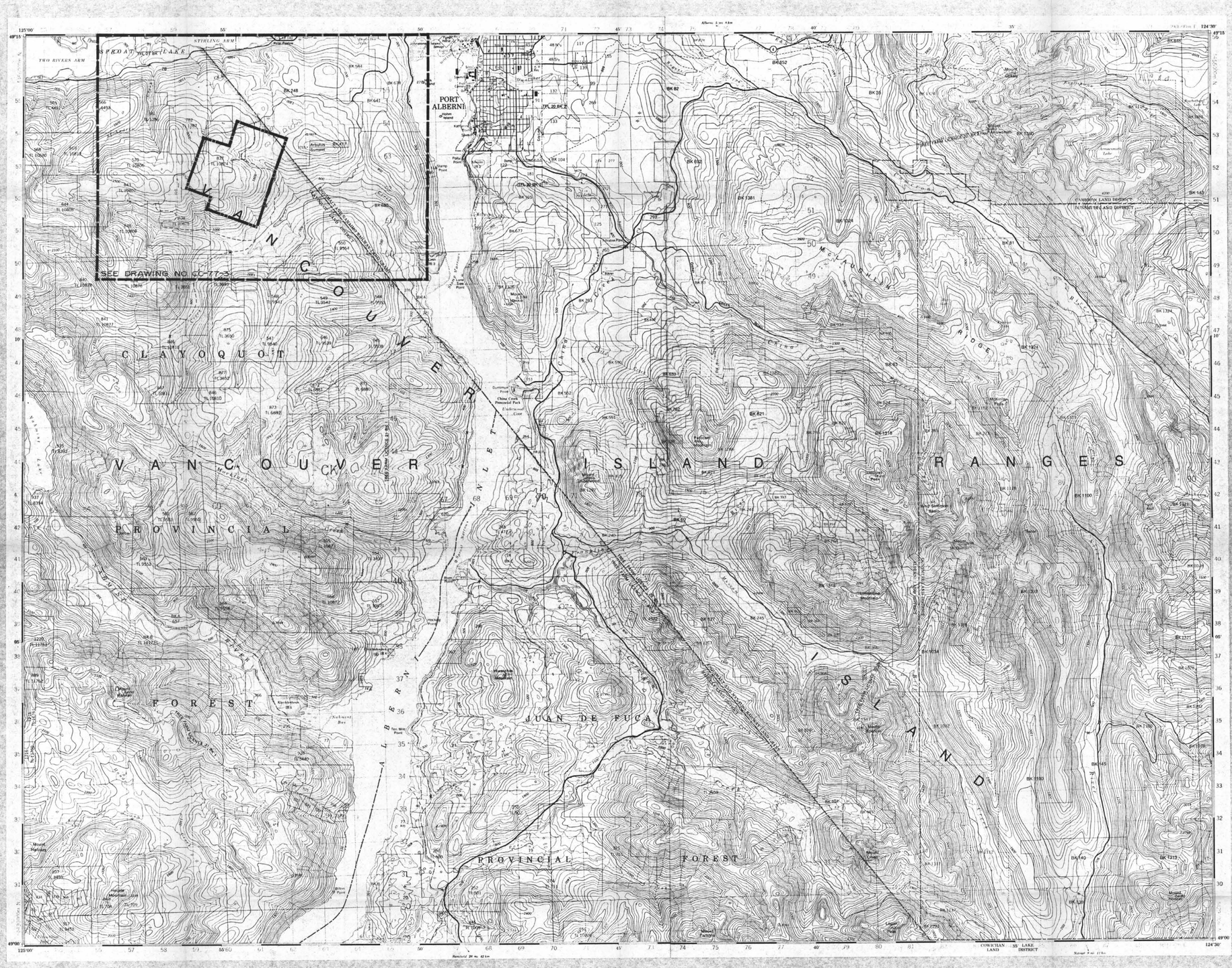
DATE REVISED	BY	DEPT. — EXPLORATION
		DRAWN BY —
		CHECKED — E.A.
		APPROVED —
		DATE — JUNE / 1977
		SCALE — 1: 250,000

Bethlehem Copper
VANCOUVER BRITISH COLUMBIA

TITLE — COUS CREEK PROJECT
GENERAL LOCATION PLAN

FILE NUMBER — N.T.S. 92 F

DRAWING NUMBER — CC-77-1



SCALE IN METRES
1000 0 1000 2000 3000 4000

DATE REVISED	BY

DEPT. — EXPLORATION
DRAWN BY —
CHECKED — E.A.
APPROVED —
DATE — MAR. / 1977
SCALE — 1: 50,000

Bethlehem Copper
VANCOUVER BRITISH COLUMBIA

TITLE — COUS CREEK PROJECT
LOCATION PLAN

FILE NUMBER — N.T.S. 92 F/2

DRAWING NUMBER — CC-77-2

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 6393

6393

Drawing No. CC-77-2 to accompany "Geological and Geophysical Report on the A 5-8 and C 7 Mineral Claims" by R.B. Anderson P.Eng dated August 31, 1977

STIRLING ARM

SPROAT LAKE

TFL 21 BK 1

Water Pipeline

Devils Den Lake

Johnstone

BK 584

BK 678

BK 248

BK 641

BK 477

BK 680

Arbutus Summit

1715

1615

Creek

Ck

St Andrew

Fossell

Cous Creek

566
L 4493

781
TL 1286

782
TL 1287

570
TL 10806

837
TL 10874

843
TL 10807

838
TL 10875

845
TL 10809

550
TL 9554

1360

889

876

874

78

89

141

27

56

55

54

53

52

51

50

300

500

600

700

800

900

1000

1100

1200

1600

2000

2500

U.T.M. 360000E

U.T.M. 5452000N

ESQUIMALT AND NANAIMO RAILWAY LAND GRANT

CHAYOQUOT LAND DISTRICT

Drawing No. CC-77-3 to accompany "Geological and Geophysical Report on the A 5-8 and C 7 Mineral Claims" by P.C. Hudson P.Eng dated August 31, 1977

SCALE IN METRES
200 100 0 200 400 600 800

DATE REVISED	BY

DEPT. — EXPLORATION
DRAWN BY —
CHECKED — E.A.
APPROVED —
DATE — SEPT. 1977
SCALE — 1: 10,000

Bethlehem Copper CORPORATION VANCOUVER BRITISH COLUMBIA

TITLE — COUS CREEK PROJECT TOPOGRAPHICAL PLAN

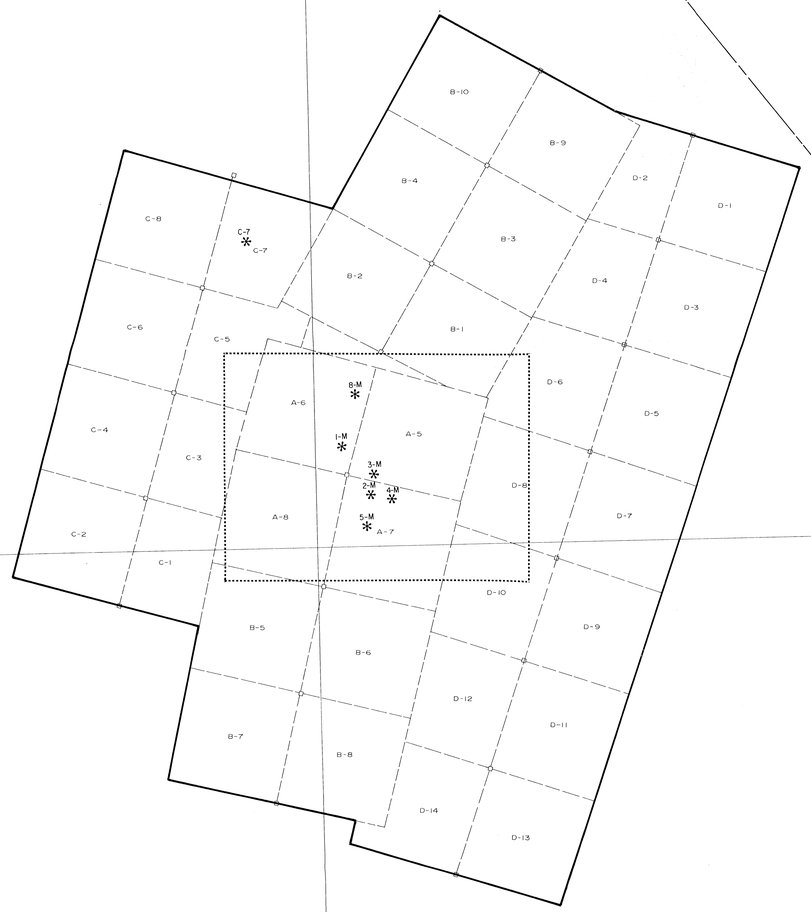
FILE NUMBER — MINERAL RESOURCES BRANCH ASSESSMENT REPORT NO. 6393

DRAWING NUMBER — CC-77-3

6393

STIRLING ARM

U.T.M. 360000 E



U.T.M. 5452000 N

ESQUIMALT AND NANAIMO RAILWAY LAND GRANT

U.T.M. 5452000 N

U.T.M. 360000 E

6393

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 6393

Drawing No. CC-77-4 to accompany
"Geological and Geophysical Report
on the A 5-8 and C 7 Mineral Claims"
by W. P. Atchison, P.Eng.
dated August 31, 1977

SCALE IN METRES
200 100 0 200 400 600 800

LEGEND
5-M ✲ - MINERAL SHOWING

NOTE:
MINERAL CLAIM CONFIGURATION DERIVED FROM OCT. 10, 1976 CRAIGMONT MINES GEOLOGICAL MAP.
..... OUTLINE OF 1:1250 SCALE DRAWINGS

DATE REVISED	BY

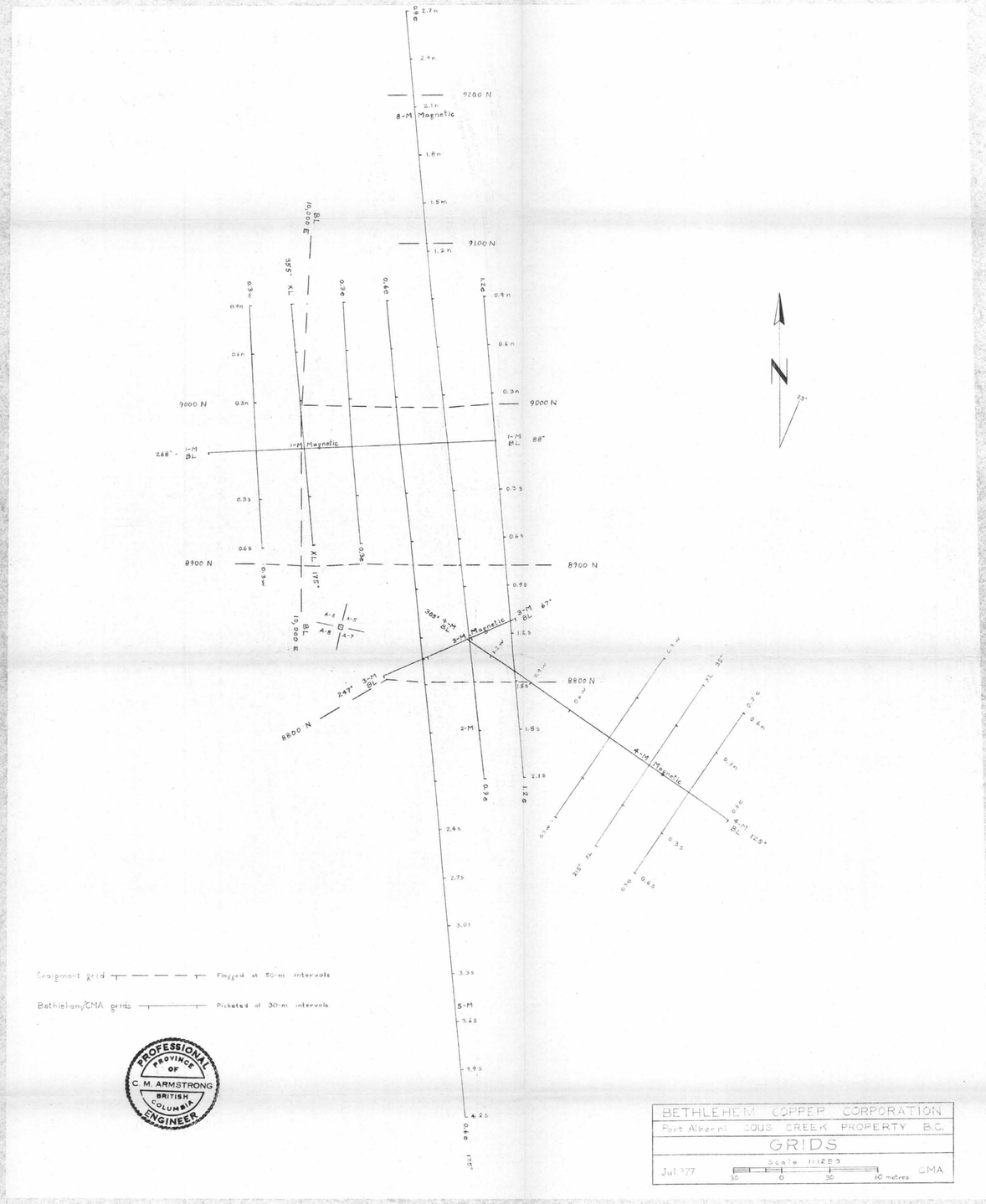
DEPT. — EXPLORATION
DRAWN BY — Altair / m.k.
CHECKED — E.A.
APPROVED —
DATE — SEPT. 1977
SCALE — 1:10,000

Bethlehem Copper CORPORATION
VANCOUVER BRITISH COLUMBIA

TITLE — COUS CREEK PROJECT
MINERAL CLAIMS PLAN

FILE NUMBER —

DRAWING NUMBER — CC-77-4



PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
C. M. ARMSTRONG

BETHLEHEM COPPER CORPORATION
Port Alberni COUS CREEK PROPERTY B.C.
GRIDS
Scale 1:1250
Jul. '77 30 0 30 60 metres CMA

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 6393

6393

Drawing No. CC-77-5 to accompany "Geological and Geophysical Report on the A 5-8 and C 7 Mineral Claims" by C. M. Armstrong, P.Eng. dated August 31, 1977

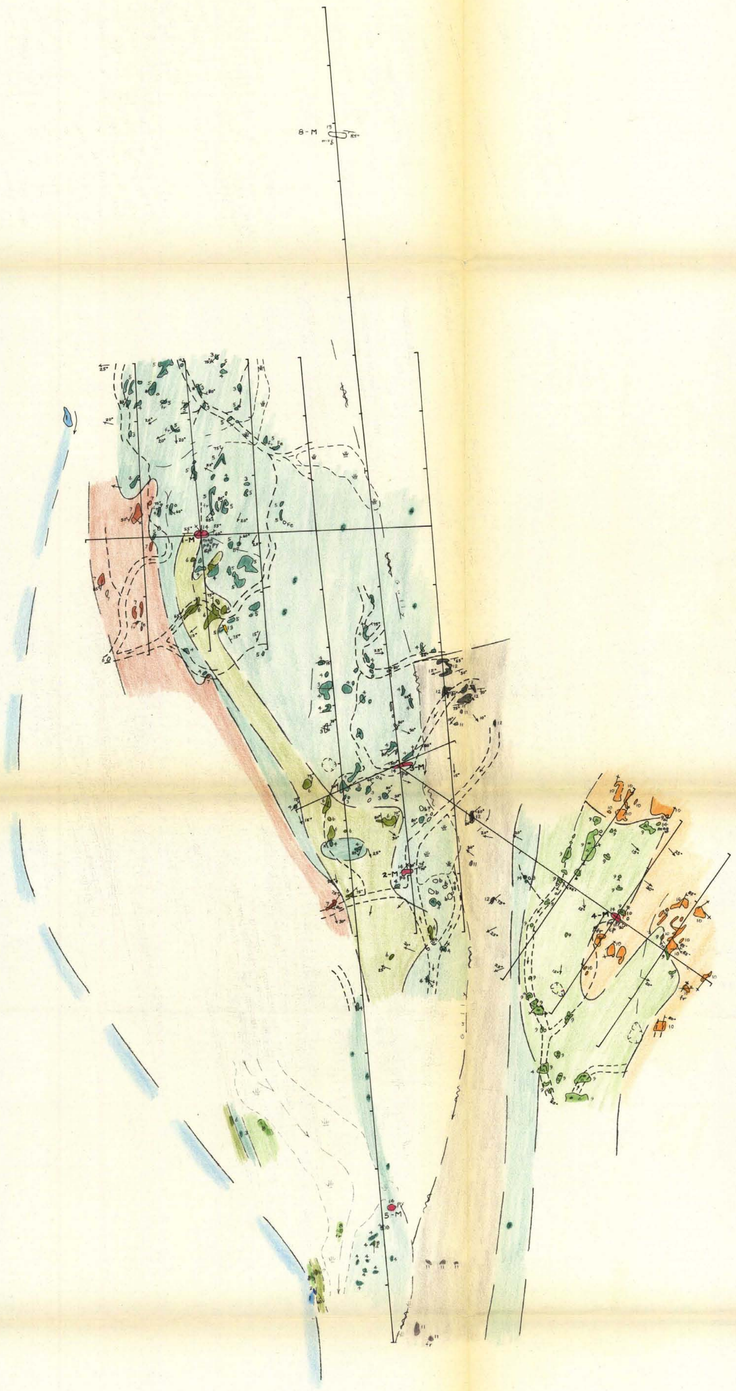
DATE REVISED	BY	
		DEPT. — EXPLORATION
		DRAWN BY — C.M.A.
		CHECKED —
		APPROVED —
		DATE — SEPT. 1977
		SCALE — 1:1250

Bethlehem Copper
VANCOUVER BRITISH COLUMBIA

TITLE — COUS CREEK PROJECT SURVEY GRID PLAN

FILE NUMBER —

DRAWING NUMBER — CC-77-5



Legend on separate sheet 3

6393

BETHLEHEM COPPER CORPORATION
Port Alberni COUS CREEK PROPERTY B.C.
GEOLOGY
Scale 1:1250
Jul. '77 CMA
30 0 30 60 metres

LEGEND

Lithologies

14	Massive sulphides/oxides	Bonanza	Lower Jurassic
13	Acid dykes		
12	Tuff		
11	Agglomerate		
10	Diorite (plus epidote clots)		
9	Pillowed andesite & flow breccia		
8	Andesite flow breccia		
7	Andesite porphyry		
6	Dioritic andesite		
5	Andesite/amygdaloidal andesite mixture		
4	Amygdaloidal andesite		
3	Andesite		
2	Greywacke (bedded)	Quatsino	Upper Triassic
1	Limestone		

Symbols

py	pyrite		topographic slope
po	pyrrhotite		fault - inferred
cp	chalcopyrite		sheet fractures
mag	magnetite		fracture or joint
Fe	iron stain		bedding or contact
b	boulder		contact - assumed
fr	highly fractured		
	depression		
	swampy ground		

Jul. '77 CMA Sheet 3

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
C. M. ARMSTRONG

Drawing No. CC-77-6 to accompany "Geological and Geophysical Report on the A 5-8 and C 7 Mineral Claims" by C. M. Armstrong P.Eng. dated August 31, 1977

DATE REVISED	BY

DEPT. — EXPLORATION
DRAWN BY — C.M.A.
CHECKED —
APPROVED —
DATE — SEPT. 1977
SCALE — 1:1250

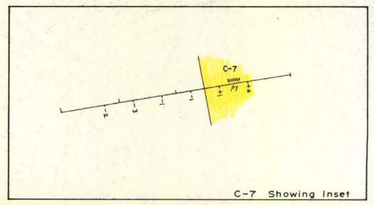
Bethlehem Copper
VANCOUVER BRITISH COLUMBIA

TITLE — COUS CREEK PROJECT GEOLOGY PLAN

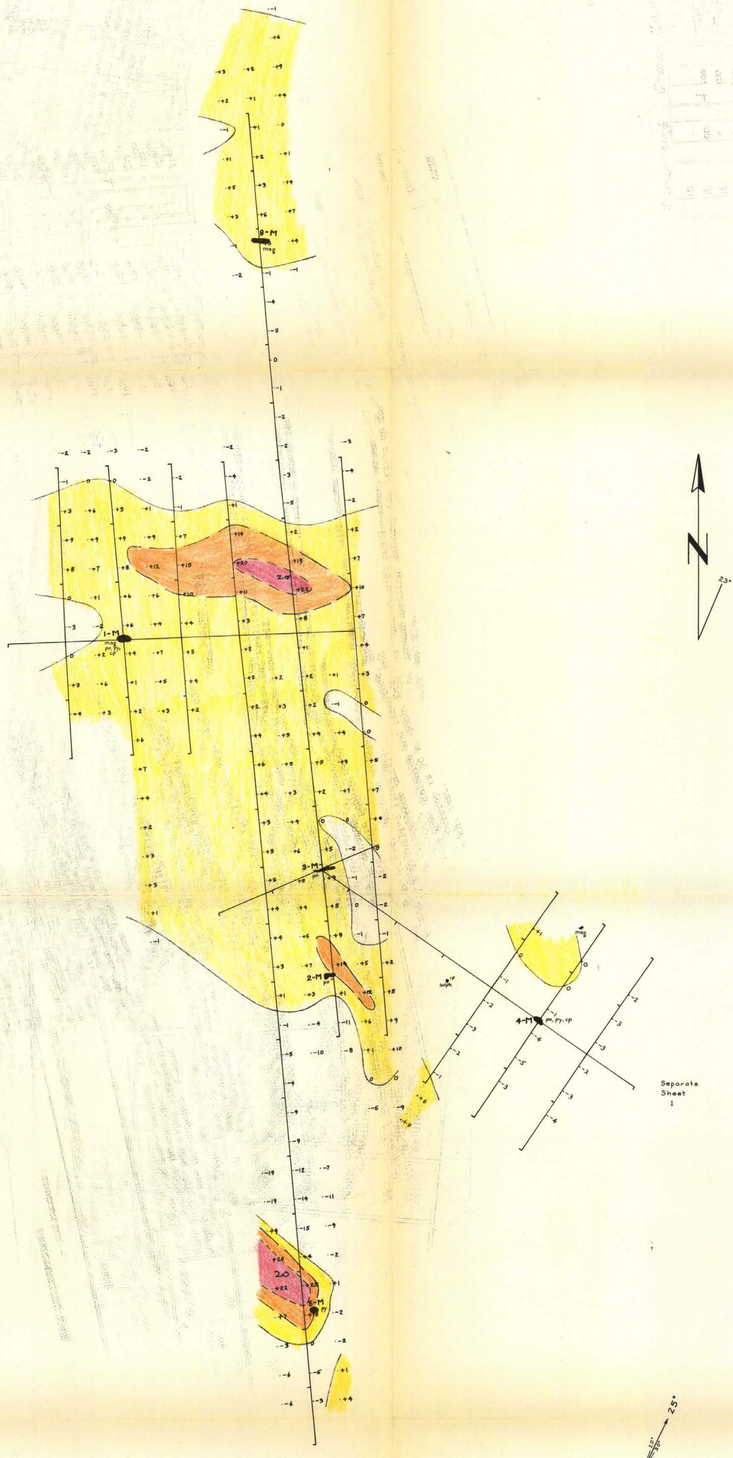
FILE NUMBER —

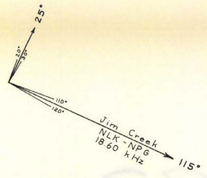
DRAWING NUMBER — CC-77-6

C-7 Showing
See Inset



C-7 Showing Inset





PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
C. M. ARMSTRONG

CONDUCTOR	%
Weak	0
Moderate	10
Strong	20
Very strong	40

Geonics EM-16
Ser. No. 3327

BETHLEHEM COPPER CORPORATION
Port Alberni COUS CREEK PROPERTY B.C.
VLF-EM Jim Creek
Jul. '77 Scale 1:1250 CMA
30 0 30 60 metres

6393

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 6393

Drawing No. CC-77-7 to accompany
"Geological and Geophysical Report
on the A 5-8 and C 7 Mineral Claims"
by R. E. Anderson P.Eng
dated August 31, 1977

DATE REVISED	BY	
		DEPT. — EXPLORATION
		DRAWN BY — C.M.A.
		CHECKED —
		APPROVED —
		DATE — SEPT. 1977
		SCALE — 1:1250

Bethlehem Copper
VANCOUVER BRITISH COLUMBIA

TITLE — COUS CREEK PROJECT
GEOPHYSICAL SURVEY

FILE NUMBER —

DRAWING NUMBER — CC-77-7