

DIAMOND DRILLING REPORT

on the

MM 3 FR. MINERAL CLAIM

MAGGIE MINE AREA - CACHE CREEK DISTRICT

KAMLOOPS MINING DIVISION

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NTS Sheet - 92I/14W	UTM Grid - Zone 10
Latitude - $50^{\circ} 55.4'$	North - 5642400
Longitude - $121^{\circ} 25.1'$	East - 611000

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

November 20, 1978

J. R. Bellamy

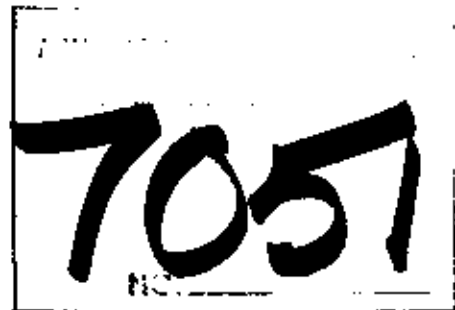


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## SECTION A - SUMMARY OF WORK

### INTRODUCTION

The Maggie copper-molybdenum deposit was discovered in late 1969 and delineated in 1970 and 1971 by percussion and diamond drilling. Present indicated geologic reserves are set at 181,440,000 tonnes grading 0.28% Cu and 0.029% Mo.

During the initial stages of the diamond drilling program in 1970, some of the holes were terminated at depths that, in the light of later deeper drill results, were too shallow.

This report deals with the attempt to deepen hole no. MM-70-2 which was originally terminated at 190.2 m (624') in June 1970.

### LOCATION AND ACCESS

The Maggie deposit is centred in the Bonaparte River valley some 14.5 km N 28° W of the highway junction in the Village of Cache Creek. The geographic co-ordinates are 50° 55.4' latitude and 121° 25.1' longitude with the UTM grid reference being Zone 10, 5642400 N and 611000 E. The NTS sheet designation is 92I/14W. Access from Cache Creek is via Highway 97 for 10.5 km, highway 12 for 0.6 km and then north on the old Cariboo road for some 4.5 km (see drawing MM-78-2).

### TOPOGRAPHY AND PHYSICAL ENVIRONMENT

The main zone lies on the floor of the Bonaparte River valley, a major valley trending NNW from the Thompson River valley at Ashcroft. The elevation in the area of the deposit is 520 meters A.S.L. To the west, moderately sloped valley walls rise to a height of 1300 m A.S.L., while to the east, the valley is flanked by steep rocky slopes which moderate rapidly toward the east and gradually rise to heights between 1500 and 1675 m A.S.L.

Forest cover is comprised of stands of cottonwood trees paralleling the Bonaparte River, with moderately spaced ponderosa pine and douglas fir located on the slopes of the valley.

Vegetation consists of various grasses in the forested areas with sagebrush and scrub cactus appearing on open slopes on the lower elevations.

#### MINERAL TITLE

Bethlehem's mineral property holdings in the Maggie area total 203 claim units as of November 20, 1978. This total is comprised of one mineral lease (M-33R) made up of twelve claims, five modified grid claims of thirty units and one hundred and sixty-one two-post claims.

The work noted in this report was carried out on the MM 3 FR., record no. 96603 D, Kamloops M.D. The mineral claims are shown in detail on drawing nos. MM-78-3 and 4 which are appended in Section D.

#### 1978 DIAMOND DRILLING

The copper-molybdenum mineralization in the Maggie deposit extends in some areas to depths greater than 600 m. Some of the initial diamond drill holes were terminated far short of this depth when low grade intersections were encountered. In retrospect, these holes should have, perhaps, been drilled deeper and it was with this in mind that Bethlehem decided to attempt to deepen hole no. MM-70-2 which originally had been terminated at 190.2 m (624') in June 1970. At that time the casing had been left in place and it was therefore felt, that re-entry and deepening of the hole would not present any great problem.

Connors Drilling of Vancouver was contracted to carry out the work and a model 25A diamond drill was mobilized on October 18, 1978. The previous hole had been cased to 47.2 m (155') and no problem was encountered in putting the NQ drill rods down to this depth. Drilling and reaming of the previous hole, MM-70-2, proceeded to 100.6 m (330') using an NQ diamond bit but once this depth was reached the rods would not turn and had to be withdrawn. A 74.6 mm (2 15/16") tricone bit was then used in an attempt to drill through the severe sections of caving and unstable ground. The tricone became sanded at 51.8 m (170') and was withdrawn. Further attempts to successfully pass the fault zones at 48.8 m (160') and 83.8 - 97.5 m (275-320') proved futile and the decision was then made to abandon this attempt to re-enter hole MM-70-2.

The drill was demobilized on October 25, 1978.

The location of hole MM-78-2 is shown on drawing no. MM-78-4 which is appended in Section D.

#### SUMMARY OF COSTS

The total expenditure for this project was \$9,613.08 of which 80.9% or \$7,779.94 represents expenditures for contractor's services and 19.1% or \$1,833.14 represents expenditures incurred within the Bethlehem organization.

The detailed summary of all the expenditures incurred is set out in Section B.

Respectfully submitted,

  
J. R. Bellamy  
Chief Geologist

SECTION B- STATEMENT OF EXPENDITURES

Expense Period - October 15 to November 17, 1978

1. Contractors' (see accompanying invoices)

## (a) Casidio and Son Holding Co. Ltd.

- site preparation, moving drill on and off site, clean up

Invoice No. 9343 dated November 8, 1978 - \$ 450.00

## (b) Cache Creek Machine Shop Ltd.

- drill service work

Invoice No. 9854 dated October 19, 1978 - \$ 64.00

## (c) Connors Drilling - diamond drill contractor

- Invoice No. 8867 dated November 7, 1978 - \$7,126.46

## (d) Altair Drafting Services Ltd.

- drafting @ \$14.00/hour  
November 1978 - 8.5 hours - \$119.00
- printing - November 1978 - \$ 20.48

Total \$139.48 - \$ 139.48

TOTAL CONTRACTOR EXPENSES - \$7,779.94

2. Bethlehem's Expenditures(a) PersonnelR. E. Anderson - Exploration Manager  
1 day in general project supervision  
@ \$185.00/day

- \$ 185.00

J. R. Bellamy - Project Geologist  
October 17-20, 23, 24; November 9, 1978  
7 days @ \$125.05/day

- \$ 875.35

2. Bethlehem's Expenditures (Contd.)

J. G. Collins - Field Supervisor October 17, 1978 1 day @ \$85.13/day	- \$ 85.13
E. Andersen - Property Agent 1.5 days in data compilation and report preparation - 1.5 days @ \$96.23/day	- \$ 144.35
A. Eno - Secretary 1 day @ \$55.52/day	- \$ 55.52
TOTAL PERSONNEL	- \$1,345.35

(b) Transportation

J. R. Bellamy - Ford F-250 4WD Pick-up 6 days @ \$35.00/day	- \$ 210.00
J. G. Collins - Ford F-250 4WD Pick-up 1 day @ \$35.00/day	- \$ 35.00
TOTAL TRANSPORTATION	- \$ 245.00

(c) Lodging and Meals

J. R. Bellamy - expenses for the period October 17 to 24, 1978	
lodging - 6 nights @ \$17.85/night	- \$107.10
Meals	- \$135.69
	<u>242.79</u> - \$ 242.79

TOTAL BETHLEHEM EXPENDITURES - \$1,833.14

TOTAL PROJECT EXPENDITURES - \$9,613.08







Job 22-809

 Bethlehem Copper Corporation  
 Suite 2100  
 1055 West Hastings Street  
 Vancouver, B.C.  
 V6E 2H6

 INVOICE NO: 8867  
 DATE: November 7, 1978

 SURFACE DIAMOND DRILLING  
 MAGGIE PROPERTY  
 CACHE CREEK, B.C.  
 OCTOBER 19 - 25, 1978

Mobilization - Demobilization (lump sum)

\$1,100.00

## Field Cost Work

Date	Travel Time	Man hours	Drill hours	Remarks
Oct 19,78	1	13	6½	Set-up on hole mm-78-2
" 20,78	1	19	9½	Running 155'-330'
" 21,78	1	17	8½	Tricone 170'-175'
Oct 22,78	D 0	8	4	Set-up for night shift
" 23,78	D 1	24	12	Cleaning hole 160'-307'
" 23,78	N 1	24	12	" " 304'-332'
" 24,78	D 1	24	12	" " 332'-357'
" 24,78	N 2	24	12	" "
" 25,78	D 1	2	1	" "
	<u>7</u>	<u>155</u>	<u>77½</u>	

Total TRavel Time	7 @ 22.00	154.00
Total Man Hours	155 @ 22.00	3410.00
Total Drill Hours	77½ @ 15.00	<u>1162.50</u>

\$4,726.50

## ACCOUNTING DISTRIBUTION

REFERENCE

DIVISION	ACCOUNT	EQUIPMENT/EMPLOYEE CUSTOMER/SUPPLIER	CONTRACT	INVOICE	DEBIT	CREDIT
VOUCHER CONTROL TOTALS				COMPUTER HASH TOTALS	TOTAL DEBITS	TOTAL CREDITS
0000	PREPARED BY	CHECKED BY				

Job 22-809

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

INVOICE NO: 8867  
 DATE: November 7, 1978

Page 2

Supplies Consumed

24	50# Bags quick gel mud	93.40	81.60
9	2# Bags quick trol mud	67.83	70.47
1	only 2 15/16 tricone (20#)		18.60
4	pieces NWL-10 Drill Rods	658.75	235.00
			<u>405.67</u>
	5% Tax		20.28
	Freight on mud 1218 @ 2.65		<u>32.28</u>

458.23

Field Cost Diamonds

1	only NQ Reamer shell # 40964 (partial use)	25.00
1	only BQ core # 6C079 (partial use)	50.00
1	only BW casing shoe #T8764 (partial use)	45.00
1	only NQ core bit # J62-0025	446.92
1	only BQ reamer shell # 08993	<u>185.50</u>
		752.42
	Tax 1.7%	<u>12.79</u>
		765.21
	Plus 10%	<u>76.52</u>

841.73  
\$7,126.46

(Diamond recovery to be credited when cut out reports received)

TIME SHEET

altair drafting services ltd.

DRAFTSMAN M. KUSCIEZOU DATE Nov. 14/78 to Nov. 17/78

DATE	COMPANY NAME	PROJECT	DESCRIPTION	SCALE	MAN HOURS	
11-14-78		HOLIDAY				
11-15-78	BETHLEHEM COPPER CORPORATION	MAGGIE MINE	103		6	
		THUNDER MTN	6		4	
11-16-78		THUNDER MTN.	L		2 1/2	
11-17-78	?	MAGGIE MINE	103		2 1/2	
		JERSEY SECTIONS	109		2 1/2	
		G.C. PROJECT	27		2	
11-18-78						
TOTAL OVERTIME HOURS _____				TOTAL HOURS _____		







BETHLEHEM  
COPPER  
CORPORATION

WEEKLY EXPENSE ACCOUNT SUMMAR.

EMPLOYEE J Bellamy  
WEEK ENDED Oct 28, 1978

EXPENSES

	ALTERNATIVE	VEALS	U.S.	
702 22			9.00	9.00 Parking Oct 16th & 17th
23	17.24	ch.	17.24	Gas Oct 17th
24		"	20.60	
25		"	16.40	
26		R	98.85	U.S. exchange @ 17% / 12.75
27		"		
28		us	88.71	U.S. exchange @ 17% / 7.21 Lips on Can. meals @ 15%
	17.24	65.60	127.85	40.11 250.80

DISTRIBUTION

	902	905	TOTAL
103 6	64.3	17.24	
	169.25		
			250.80

BALANCE

EXPENSE ACCOUNT	300.04
EXPENSE PERIOD	
ABOVE	250.80
BELOW	49.24
FEES	500.00
office	

APPROVAL

*[Signature]*

*R. P. Anderson*  
CONTROLLER

*J. B. Bellamy*  
EMPLOYEE



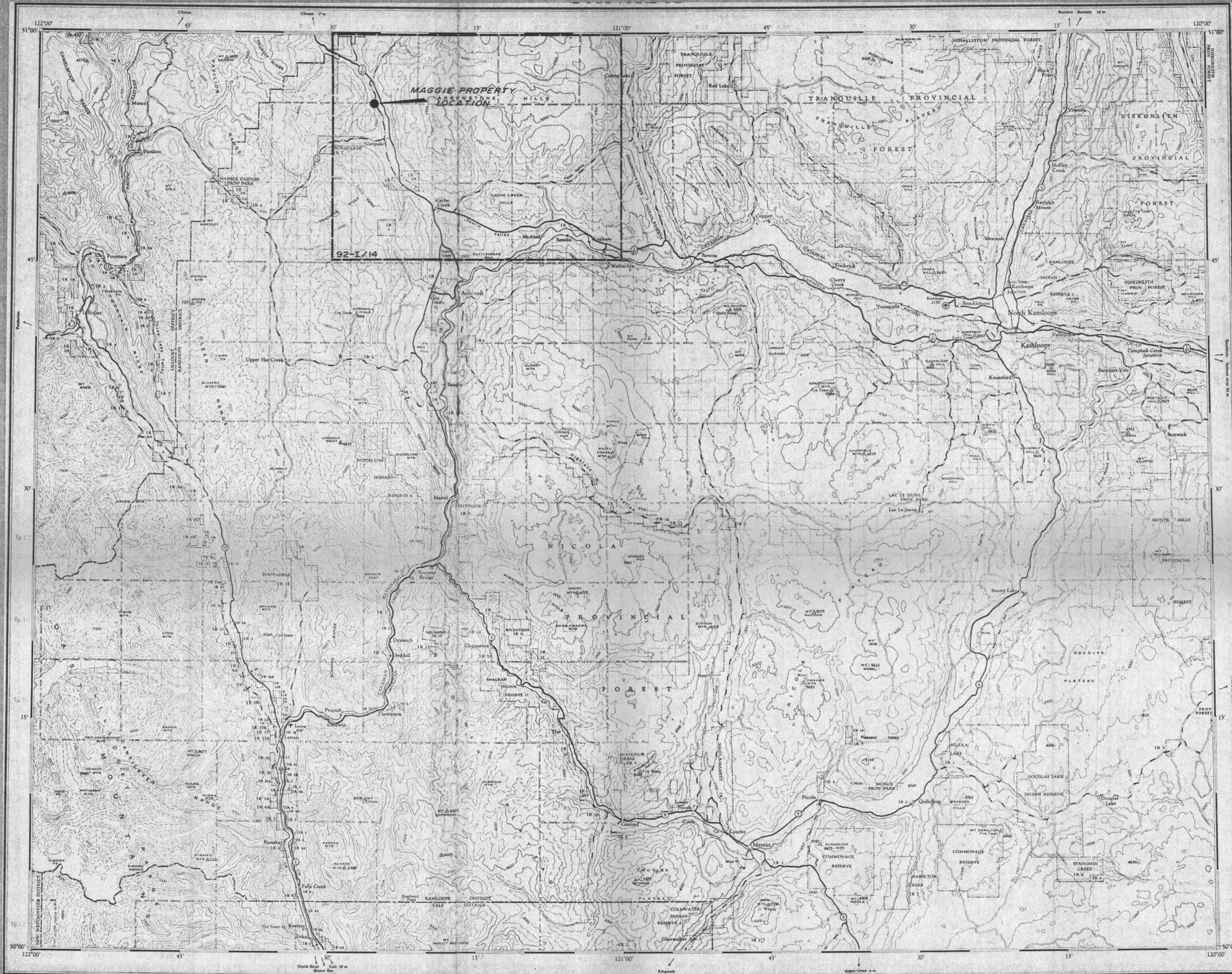
John R. Bellamy

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, Bethaire 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), Frogmore 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.

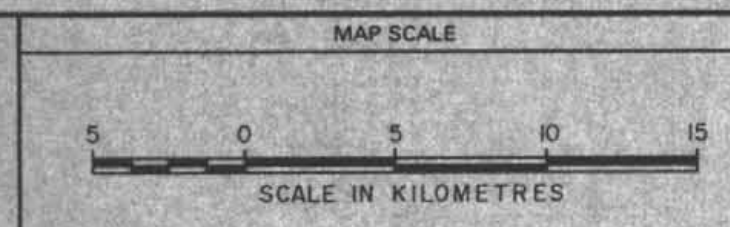
SECTION DILLUSTRATIONS

<u>Drawing No.</u>	<u>Title</u>	<u>Scale</u>
MM-78-1	General Location Plan	1:250,000
MM-78-2	Location Plan	1: 50,000
MM-78-3	Mineral Claim Plan	1: 24,000
MM-78-4	Drill Hole Plan	1: 2,400



MINERAL RESOURCES  
ASSIGNMENT NO.  
**7051**  
NO.

MD-18-A1-1-EC



REVISIONS	No.	Date	MADE BY	DESCRIPTION	OFFICE		DEPARTMENT		MAP INDEX NUMBER	SCALE	DRAWING NUMBER
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	1										
	2										
	3										
	4										
	5										
		DATE	DRAWN BY	CHECKED	APPROVED						
		NOV. 1978		E. A.							

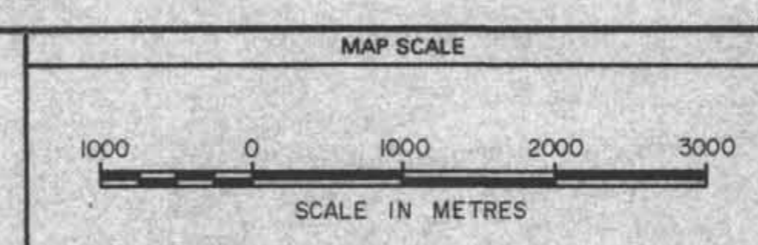
**B** BETHLEHEM  
COPPER  
CORPORATION

MAGGIE MINE PROJECT  
GENERAL LOCATION PLAN

OFFICE	DEPARTMENT	MAP INDEX NUMBER	SCALE	DRAWING NUMBER
VANCOUVER	EXPLORATION	N.T.S. 92-I	1:250,000	MM-78-1



MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**7051**



No.	Date	MADE BY	DESCRIPTION
1			
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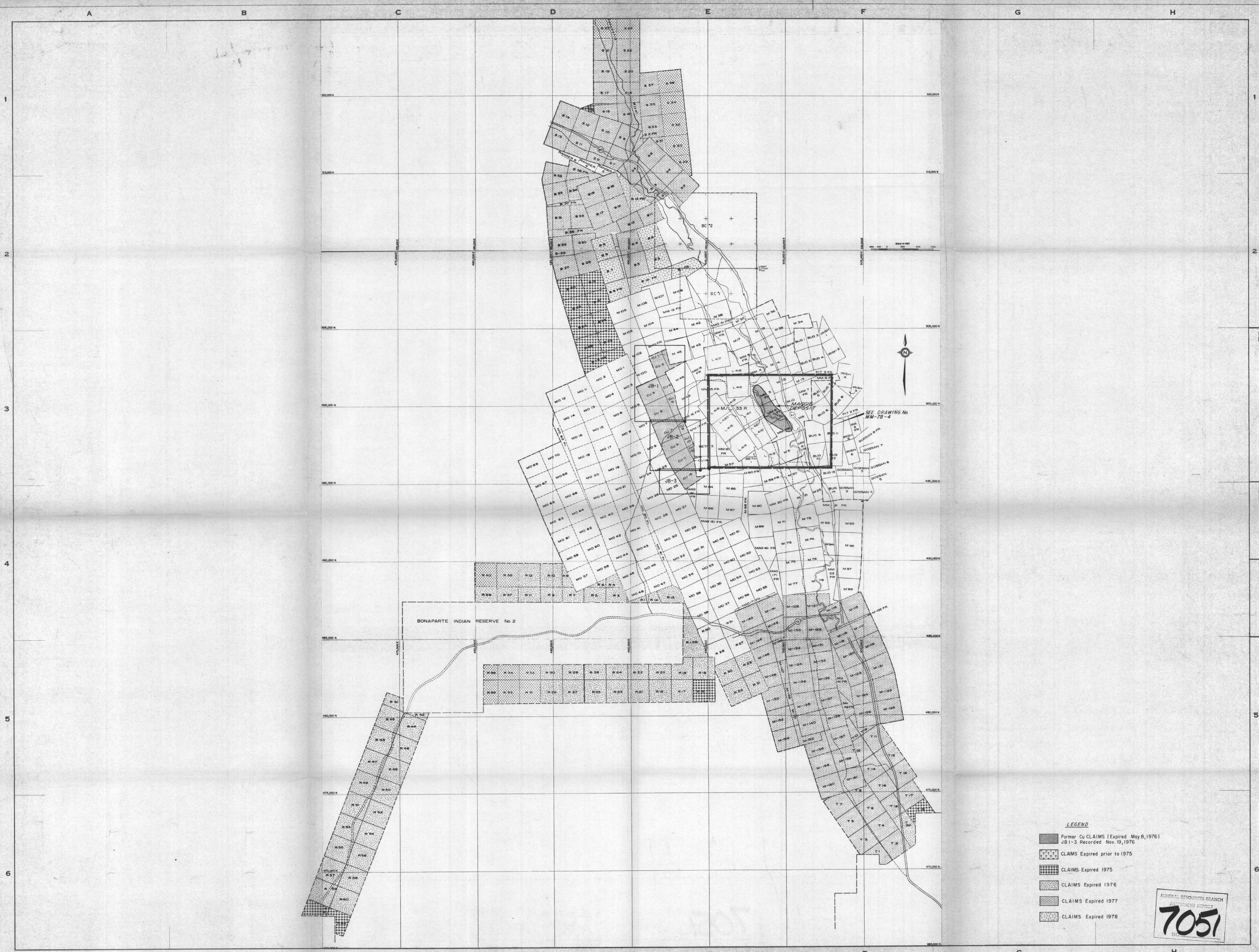
  


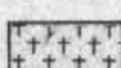
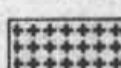



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NOV 1978		E. A.	

**B** BETHLEHEM  
COPPER  
CORPORATION

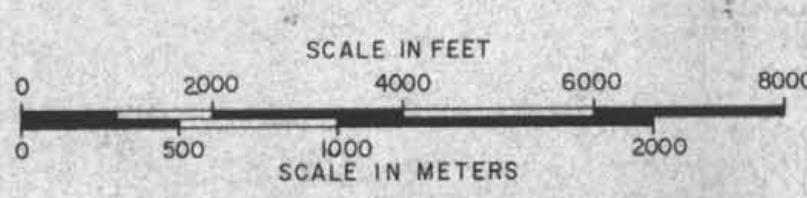
MAGGIE MINE PROJECT  
LOCATION PLAN

OFFICE	DEPARTMENT	MAP INDEX NUMBER	SCALE	DRAWING NUMBER
VANCOUVER	EXPLORATION	92-1/14	1:50,000	MM-78-2



- LEGEND**
-  Former Cu CLAIMS (Expired May 8, 1976)  
JB1-3 Recorded Nov. 19, 1976
  -  CLAIMS Expired prior to 1975
  -  CLAIMS Expired 1975
  -  CLAIMS Expired 1976
  -  CLAIMS Expired 1977
  -  CLAIMS Expired 1978

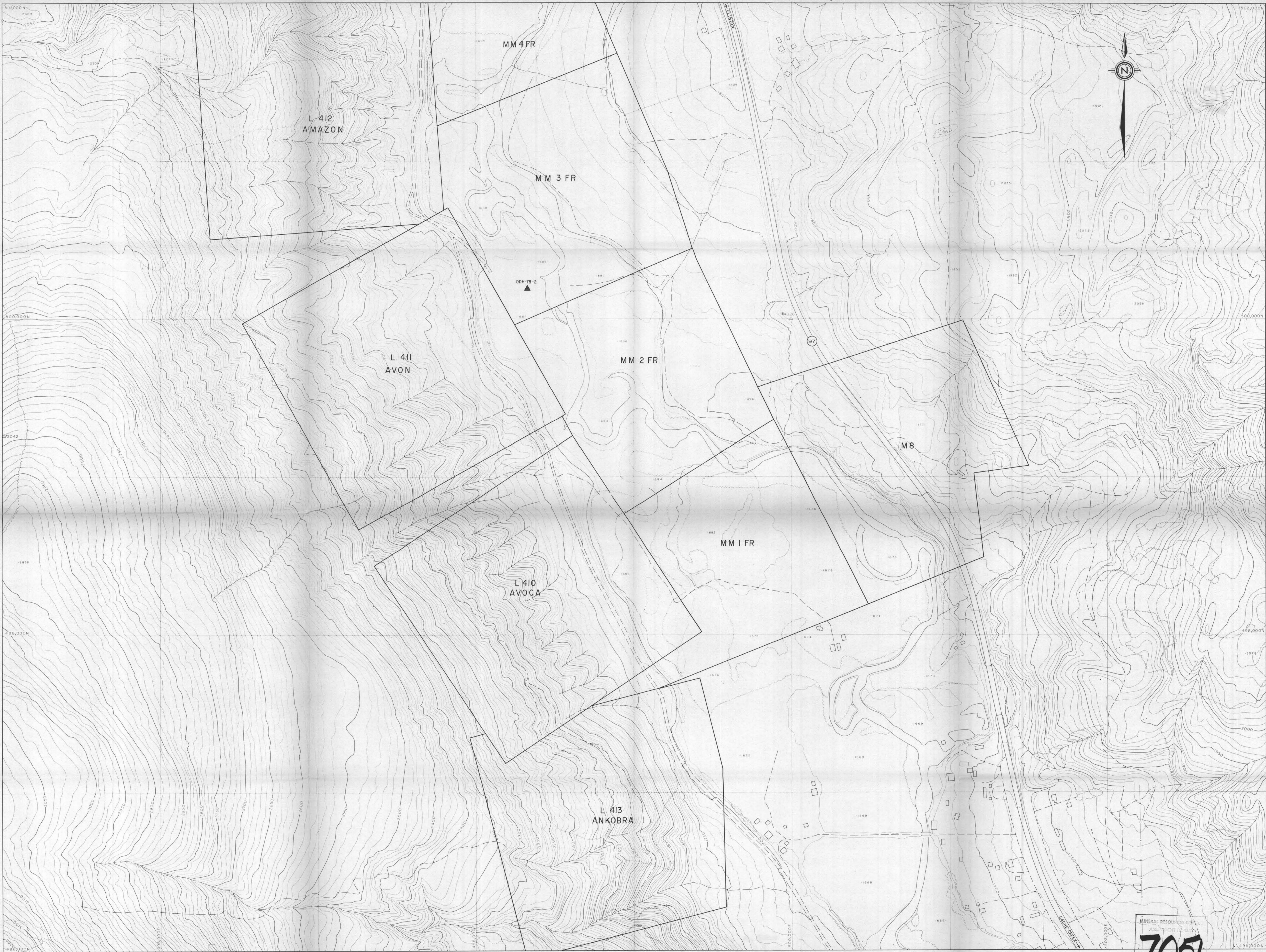
MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**7051**  
NO.



DATE REVISED	BY	DEPT. - EXPLORATION
NOV. 12 / 1975	m.k.	DRAWN BY - Altair / m.k.
DEC. 7 / 1976	m.k.	CHECKED - E. A.
NOV. 16 / 1978	m.k.	APPROVED -
		DATE - APR. 1975
		SCALE - 1:24,000 at 1" = 2000'



TITLE -	
MAGGIE MINE PROJECT MINERAL CLAIMS MAP	
FILE NUMBER -	DRAWING NUMBER -
	MM-78-3



MINERAL RESOURCES  
ASSESSMENT BOARD  
**7051**  
NO.

<p>Lockwood Survey Corporation Limited New Star Division</p>	<p>DATE OF PHOTOGRAPHY, 19 JUNE 1972</p>	<p>SCALE 200 400 600 FEET METRES 40 80 120 160 METRES</p>	<p>SHEET INDEX -</p> <table border="1"> <tr><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td></tr> <tr><td>G</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>N</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>M</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>L</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>K</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>J</td><td></td><td></td><td></td><td></td><td></td></tr> </table>	9	10	11	12	13	14	G						N						M						L						K						J						<table border="1"> <tr><th>DATE</th><th>REVISED</th><th>BY</th><th>DEPT. - EXPLORATION</th></tr> <tr><td></td><td></td><td></td><td>DRAWN BY - Altair / m.k.</td></tr> <tr><td></td><td></td><td></td><td>CHECKED - E. A.</td></tr> <tr><td></td><td></td><td></td><td>APPROVED -</td></tr> <tr><td></td><td></td><td></td><td>DATE - NOV. 1978</td></tr> <tr><td></td><td></td><td></td><td>SCALE - 1: 2400</td></tr> </table>	DATE	REVISED	BY	DEPT. - EXPLORATION				DRAWN BY - Altair / m.k.				CHECKED - E. A.				APPROVED -				DATE - NOV. 1978				SCALE - 1: 2400	<p><b>Bethlehem Copper</b> VANCOUVER BRITISH COLUMBIA</p>	<p>TITLE - <b>MAGGIE MINE PROJECT DRILL HOLE PLAN</b></p> <p>FILE NUMBER - <b>M - 13</b></p> <p>DRAWING NUMBER - <b>MM-78-4</b></p>
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