

Anaconda Canada Exploration Ltd.

ASSESSMENT WORK REPORT

Electromagnetometer (VLF) and Magnetometer Surveys

OPEC 10 CLAIM

Omineca Mining Division  
British Columbia

NTS 93 N/9W and 10E  
Latitude:  $55^{\circ}40'N$  Longitude:  $124^{\circ}35'W$

Field Work Performed: July 28, August 2-6, 15-17, 1983

Report By: Alan Scott

Dated: November, 1983

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**11,592**

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## INTRODUCTION

Within the period July 28 to August 17, 1983, a 16.5 line kilometer grid was established over the OPEC 10 mineral claim, and magnetometer and VLF surveys conducted over the grid.

The exploration target on the OPEC claims is bulk tonnage low grade gold mineralization associated with ankerite-sericite-quartz-pyrite alteration in volcanic and/or volcaniclastic rocks.

This report describes the procedures used on the geophysical surveys, presents the data, and discusses the results.

## LOCATION AND ACCESS

The OPEC 10 Mineral Claim is located approximately 240 kilometers northwest of Prince George, B.C., at latitude  $55^{\circ}40'N$  and longitude  $124^{\circ}35'W$  (Map 1). The claims are some 3 kilometers northwest of the town of Manson Creek.

The claims are reached by gravel road from Fort St. James, B.C., a distance of 225 kilometers. Fixed wing aircraft from Prince George land at Germansen Landing, 27 kilometers northwest of Manson Creek.

## CLAIMS AND OWNERSHIP

The claims (Map 2) are located in the Omineca Mining Division and are wholly owned by Manson Creek Resources Ltd. OPEC 10 consists of 20 units and is record number 3411. The date of record is November 6, 1980. The claims are currently subject to an option agreement with Anaconda Canada Exploration Ltd.

## GEOLOGY

The OPEC 10 claims are almost entirely covered with overburden, so that little is known of the local geology. The regional geology was reported on by Riccio et. al. (assessment report November, 1982) and is reproduced (in part) below.

The claims lie within the Omineca Geoanticline of the Canadian Cordillera in Nina Creek Group rocks interpreted to be of Pennsylvanian to Permian age. The Nina Creek Group is in fault contact with Taki Group alkalic volcanic rocks on the west and with the Lower Cambrian Proterozoic Wolverine Complex metamorphic rocks on the east.

The Germansen-Manson River area has been an active placer gold camp since 1870. The most productive rivers have been Germansen and Manson Rivers and Slate, Lost, Blackjack, and Kildare Creeks.

## GEOPHYSICAL SURVEYS

### Magnetometer Survey

A Geometrics Unimag II total field proton precession magnetometer was used for the magnetics survey. The data was corrected for diurnal drift by reference to base station readings with a Unimag I at half hour intervals.

The magnetometer survey results are presented in contour plan form on Map 3 at the rear of the report. The plotted value should be multiplied by 10 and have 50000 gammas added to obtain the field reading at the station.

## Electromagnetometer Survey (VLF)

A Phoenix VLF 2 electromagnetometer was used for the VLF survey, with station NLK (Seattle, Washington at 24.8 kHz) as the primary VLF field. The in phase tilt angle values are presented as line profiles and the horizontal component of the field strength in contour form on accompanying Map 4.

The tilt angle profiles are plotted so that a left wave crossover would be obtained over a thin conductive body. Normally a peak horizontal field strength value will occur directly over a conductive body.

## DISCUSSION OF RESULTS

Magnetic field highs are indicated on the contour plan (Map 3) by three levels of shading, namely:

- dark shading - greater than 58000 gammas
- medium shading - 57800 - 58000 gammas
- light shading - 57700 - 57800 gammas

The most prominent magnetic feature in the survey area is the broad zone of grid east - west trending parallel magnetic highs indicated as area I on Map 3. Magnetic highs within this zone are believed to represent ultramafics, and lows within the zone to be highly carbonatized ultramafics. Areas II and III, which are smaller zones containing east - west trending magnetic highs, are also believed to represent ultramafic units. The generally low magnetic relief area to the northeast of areas II and III is believed to be underlain by metagabbros.

The VLF survey results are presented on Map 4. Only one "thin" discrete VLF conductor was detected on the survey (as evidenced by a well defined in phase tilt angle crossover). It extends from Line 1600N, station 2825E to Line 1800N, station 2850E and is open to the northwest. This conductor lies immediately to the northeast of magnetic area II. Elsewhere in the survey area the VLF tilt angle responses are more typical of contact related changes in resistivity than of discrete conductors.

Areas of high relative horizontal field strength have been arbitrarily indicated by the greater than 170% contour (shaded area). In general, higher field strength is indicative of relatively conductive underlying material (either in the overburden or in bedrock). The trend of the field strength contours corresponds closely to the grid east - west trends on the magnetic field plan. Individual field strength highs either lie within magnetic lows or flank magnetic highs - such as along the southern boundary of magnetic area I, between areas I and III, and to the northeast of area III.

## CONCLUSIONS

No outcrop was found on the OPEC 10 mineral claim. However, regional geological work indicates the claim is underlain by ultramafics and metagabbros. Three areas of moderate to strong grid east west trending magnetic highs have been defined from the magnetometer survey, and are believed to indicate the location of ultramafic rocks. Local lows within that area may represent altered portions of the ultramafics. The relatively low magnetic relief area in the northern portion of the survey area is believed to indicate the location of metagabbros.

Only one "thin" VLF conductive response was defined from the VLF survey. It lies just northeast of the 2800E tie line on lines 1600 and 1800N. Elsewhere in the survey area VLF responses are more typical of that for contacts between varying resistivity material (either in the overburden or bedrock).

No further work could be recommended on the OPEC 10 claim at this time, solely on the basis of these geophysical results.

Respectfully submitted,



Alan Scott, Geophysicist.

## Distribution:

Mining Recorder (2) ✓  
L. Riccio, Project Geologist  
ACE files

APPENDIX I  
Statement of Expenditures  
OPEC 10 Mineral Claim  
(Grid preparation, magnetometer and VLF Surveys)

1	Salaries:		
	F. Thrane, technician: July 28, Aug 2-6, 15-17		
	9 days @ 98/day	= 882	
	T. Frakes, assistant: Aug 2-6, 15-17 8 days @ 87	= <u>696</u>	
			1578
2	Expenses:		
	Meals, accommodations: 17 man days @ 30/man day	= 510	
	Consumables (gas, oil, notes, topofils etc.)	= <u>180</u>	
			690
3	Equipment Rentals:		
	(2) Ulimag magnetometers: 2 x 7 days @ 15/day	= 210	
	Suburban 4x4 truck rental: 9 days @ 40/day	= 360	
	Phoenix VLF 2: 7 days @ 15/day	= <u>105</u>	
			675
4	Charges per operating day:		
	(towards drafting, supervision, report)		
	7 survey days @ 200/survey day	= <u>1400</u>	
	Total Expenditures: =		<u>\$4343</u>

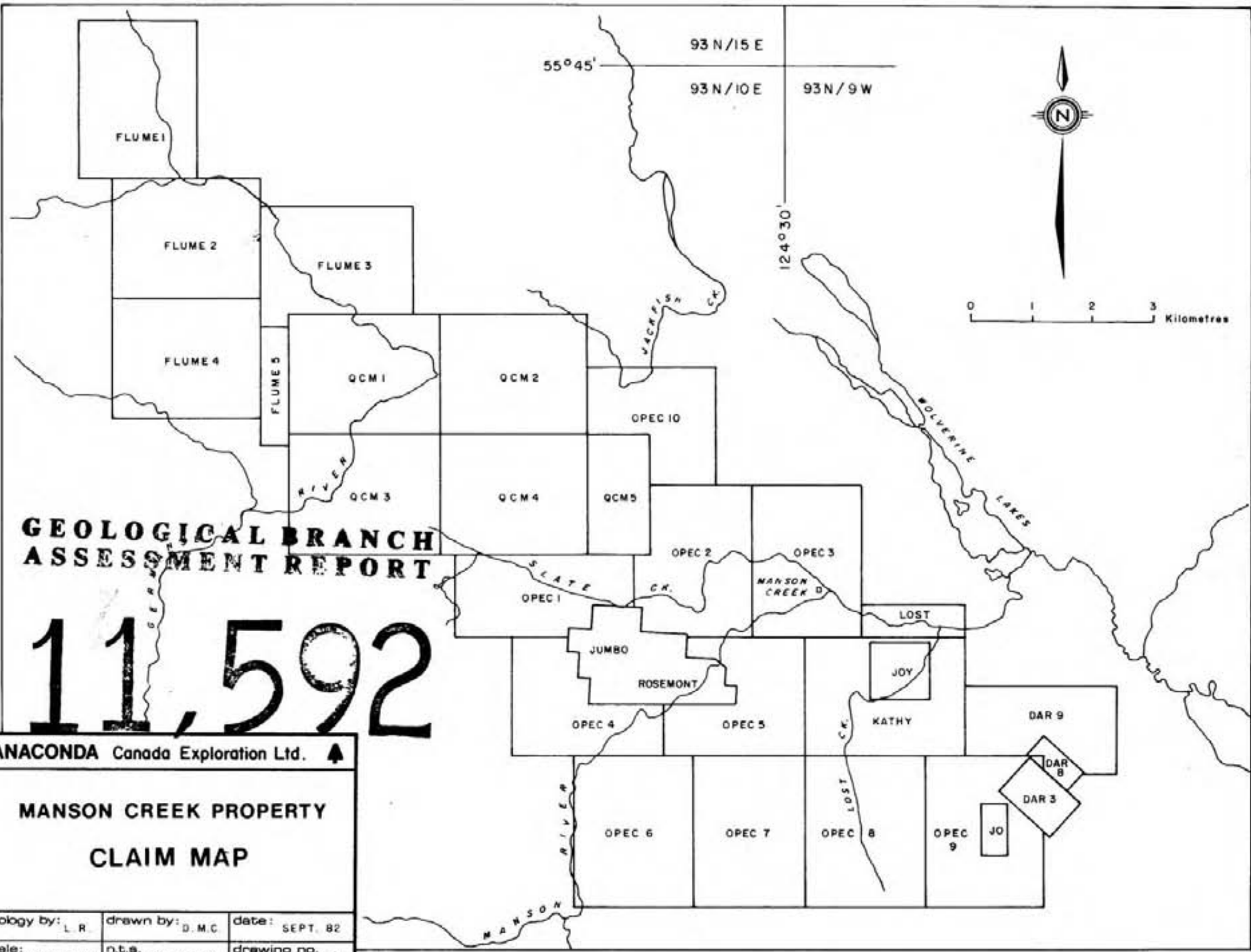


APPENDIX II  
CERTIFICATION

I, Alan R. Scott. of 4013 West 14th Avenue, Vancouver. B.C., am employed as a professional geophysicist by Anaconda Canada Exploration Ltd. and have knowledge of the work performed and costs incurred per this report. I further attest that:

1. I graduated with a B. Sc. (geophysics) from the University of British Columbia in 1970.
2. That I am a member of the Society of Exploration Geophysicists, and of the Association of Professional Engineers, Geologists, and Geophysicists of the Province of Saskatchewan.
3. That I have been practicing my profession for the past 13 years.

Alan R. Scott,  
Geophysicist.



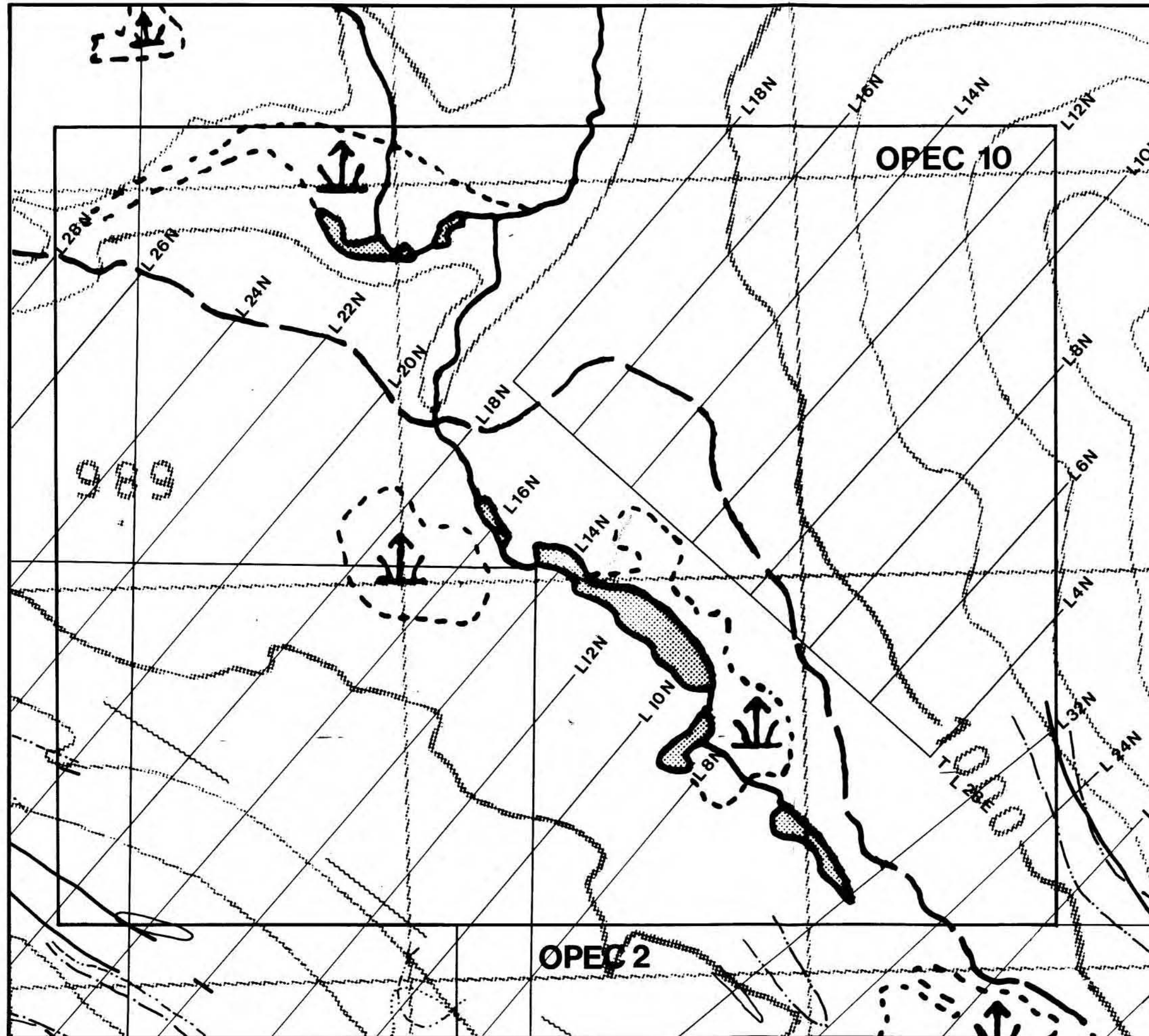
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**MANSON CREEK PROPERTY  
CLAIM MAP**


geology by: L.R.	drawn by: D.M.C.	date: SEPT. 82
scale: AS SHOWN	n.t.s. AS SHOWN	drawing no. 1 of 1



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0 100 500 Metres

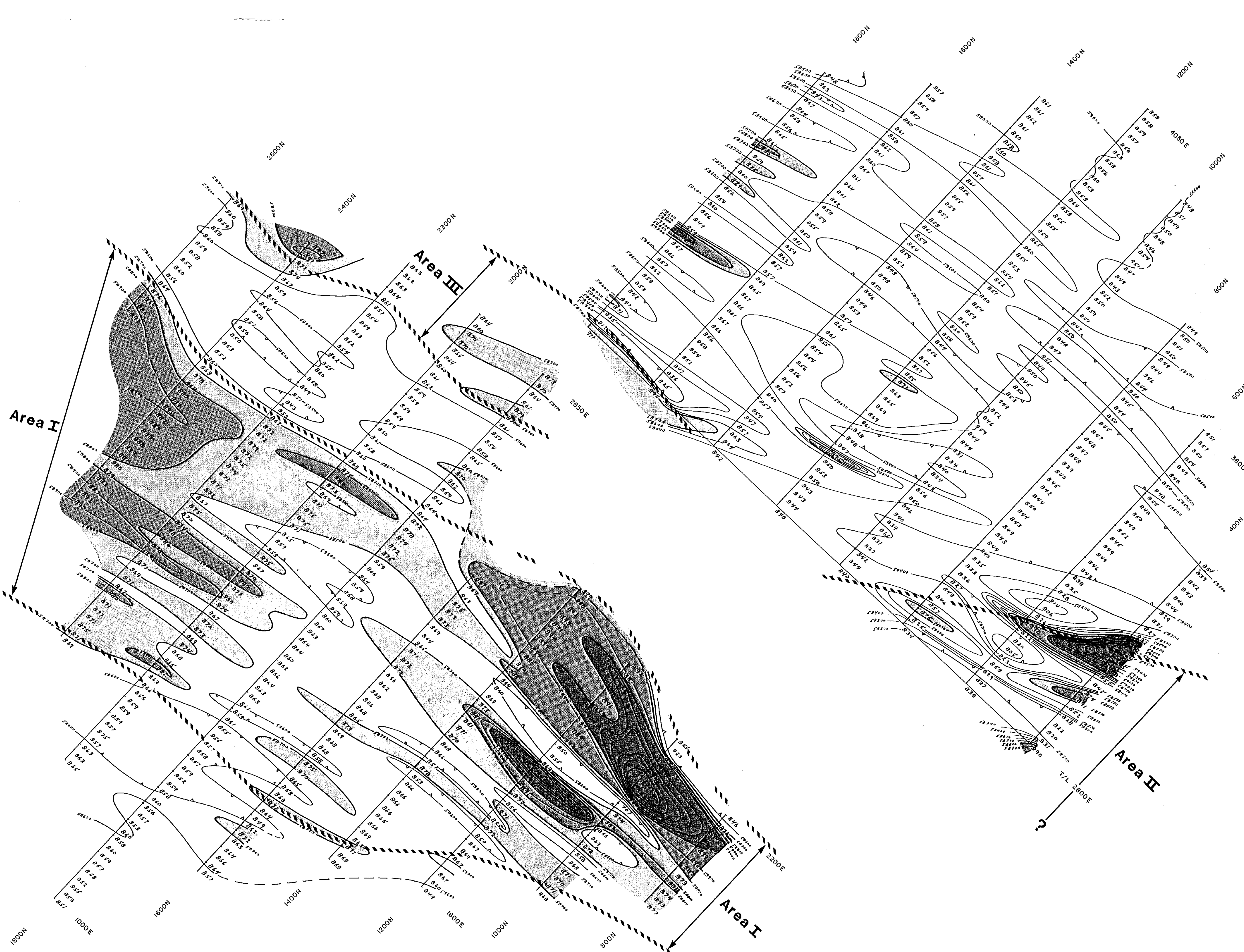
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**MANSON CREEK**

**GRID LOCATION**

geology by:	drawn by: D.M.C.	date: NOV. 83
scale: 1:10,000	n.t.s. 93 N/10	fig./proj. no. 2





**LEGEND**

TOTAL FIELD MAGNETOMETER SURVEY  
 INSTRUMENT: Unimag I Proton Precession Magnetometer  
 MAGNETIC FIELD = (plotted value X 10) + 50,000 gammas

- > 59000 gammas
- 58800 - 59000 gammas
- 58700 - 58800 gammas

Area I, II, III: Approximate boundary of areas of moderate to strong magnetic field highs.

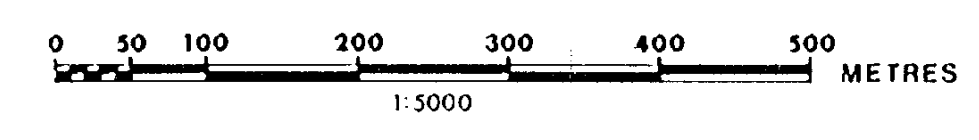
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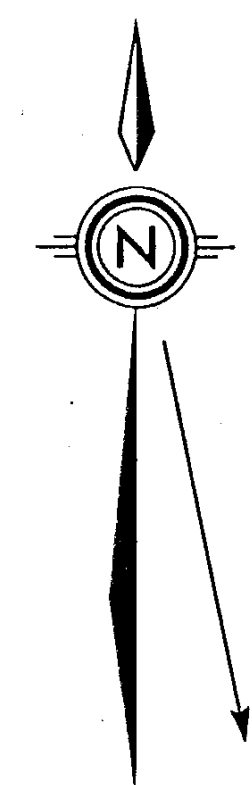
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**MANSON CREEK  
 MAGNETOMETER SURVEY  
 OPEC 10 CLAIMS**

geology by	A.S.	drawn by	D.M.C.	date	NOV. 83
scale	1:5000	fig. no.	93 N/10	fig./proj. no.	3







**LEGEND**

INSTRUMENT: Phoenix VLF 2  
 VLF STATION: NLK (Seattle, Washington)

+10°  
 In phase tilt angle 0  
 -10°

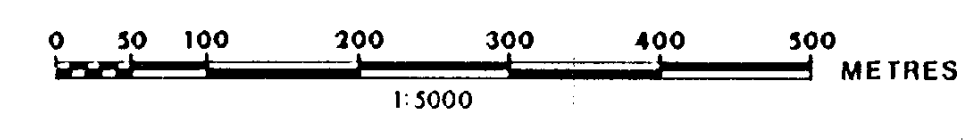
"Thin" VLF conductor axis

CONTOUR INTERVAL: 10% Relative horizontal field strength  
 (shaded area 170% RHFS)

Area I, II, III: Approximate boundary of areas of moderate to strong magnetic field highs (from map 3)

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<b>MANSON CREEK</b>		
<b>VLF SURVEY</b>		
<b>OPEC 10 CLAIMS</b>		
geology by: A.S.	drawn by: D.M.C.	date: NOV. 83
scale: 1:5000	nts: 93 N/10	fig./proj. no: 4