

AEROMAGNETIC SURVEY
EM and EMU Mineral Claims

SHELDON AREA
Watson Lake Mining Division
Yukon Territory

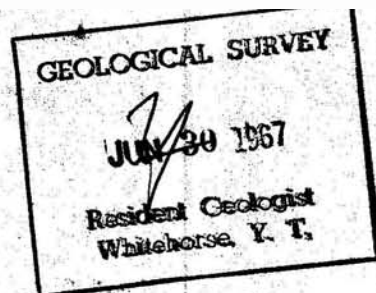
Latitude 62° 15' N.
Longitude 130° 14' W.

September 29th - October 1st
1966

Atlas Explorations Limited

by:

John S. Brock



This report has been examined by
the Geological Evaluation Unit.
Approved as to technical worth by:

D. C. Sullivan
RESIDENT GEOLOGIST

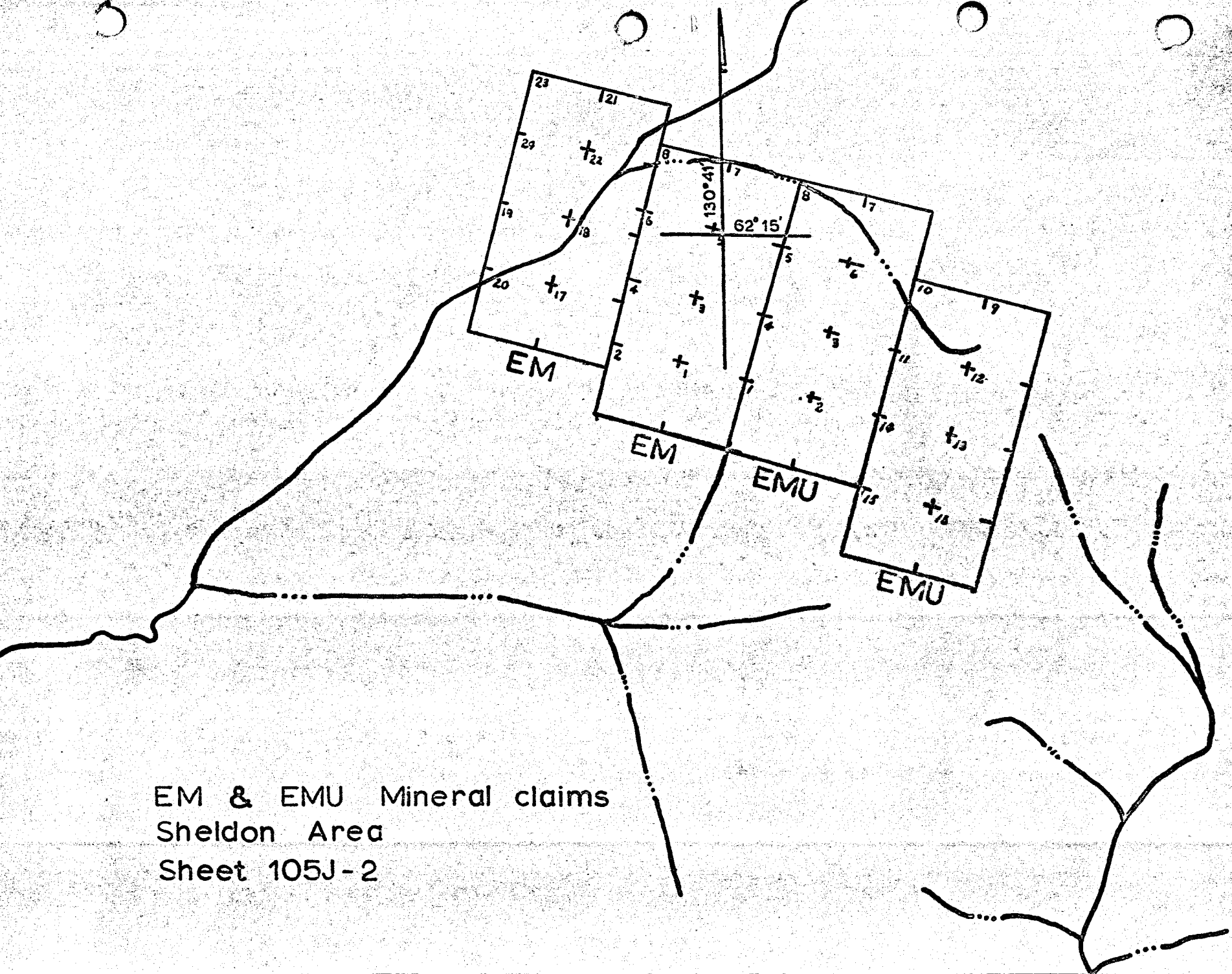
Approved as to cost in the amount
of: \$ 1537.00

R. E. Sullivan
MINING ENGINEER

Registered as representation work
under Section 53(4) Yukon Quartz
Mining Act.

[Signature]
COMMISSIONER OF YUKON

Administrator



EM & EMU Mineral claims
Sheldon Area
Sheet 105J-2

LIST OF MINERAL CLAIMS

<u>Mineral Claim</u>	<u>Grant Number</u>	<u>Date Recorded</u>
EM 1	Y 7954	June 2, 1966
EM 2	Y 7955	"
EM 3	Y 7956	"
EM 4	Y 7957	"
EM 5	Y 7958	"
EM 6	Y 7959	"
EM 7	Y 7960	"
EM 8	Y 7961	"
EM 17	Y 7462	
EM 18	Y 7463	
EM 19	Y 7464	
EM 20	Y 7465	
EM 21	Y 7466	
EM 22	Y 7467	
EM 23	Y 7468	
EM 24	Y 7469	
EMU 1	Y 7938	
EMU 2	Y 7939	
EMU 3	Y 7940	
EMU 4	Y 7941	
EMU 5	Y 7942	
EMU 6	Y 7943	
EMU 7	Y 7944	
EMU 8	Y 7945	
EMU 9	Y 7946	
EMU 10	Y 7947	
EMU 11	Y 7948	
EMU 12	Y 7949	
EMU 13	Y 7950	
EMU 14	Y 7951	
EMU 15	Y 7952	
EMU 16	Y 7953	

AEROMAGNETIC SURVEY
EM and EMU Mineral Claims

TABLE OF CONTENTS

	page
Frontspiece	
Key Map	
List of Claims	
INTRODUCTION	1
LOCATION AND ACCESS	2
PREVIOUS WORK	1
GEOLOGY	2
METHOD OF SURVEY	2
Instrumentation	2
Survey Methods	2
Plotting of Results	3
RESULTS	3
CONCLUSIONS AND RECOMMENDATIONS	3
APPENDICES	
Personnel	Appendix 1
Summary of Costs	2
Affidavit	3
Bibliography	4
Map Folder	5

AEROMAGNETIC SURVEY
EM AND EMU Mineral Claims

INTRODUCTION

The EMU and EM mineral claim groups were transferred to Atlas Explorations Limited by Herman Forst of Whitehorse under an option agreement between Forst and Atlas made in June of 1966. The mineral claims lie to the north of what is assumed to be an extensive belt of copper, lead-zinc, and silver mineralization in proximity to the Traffic Mountain area. It was proposed by Atlas Explorations that the claims under option from Forst be prospected, surveyed by geochemical techniques and covered with an aeromagnetic survey in order that their economic potential be assessed in relation to other ground held in the area by Atlas Explorations.

LOCATION AND ACCESS

The EMU and EM Mineral Claims are located on the Sheldon 4 mile topographic sheet, some 60 miles east-northeast of Ross River and 12 miles northwest of Traffic Mountain. The claims are shown on Claim Sheet 105J-2, at 62° 15' north latitude and 130° 14' west longitude. The group lies over a south-southwest slope above timberline between elevations of 4400 to 5000 feet above sea level.

The airborne survey was flown by helicopter based at Pike Lake, some 7 miles to the south, where Atlas Explorations maintained a base camp for exploration of the Traffic Mountain area. Aircraft equipped with floats may land at Pike Lake, a small lake just north of the property is also suitable for fixed wing aircraft. Expediting was done from the settlement of Ross River where communications were made with the base camp by single sideband radio.

PREVIOUS WORK

The showings were formerly held by Kennco Explorations Limited, in 1959 they were re-staked and acquired by Canadian Yukon Mining

Company Limited. Exploration done by them consisted of geological mapping, trenching and sampling. In 1961 electromagnetic and magnetic surveys were made as well as further prospecting and trenching. By 1962, 4,600 feet of diamond drilling had been completed over a total of 13 holes. The area was re-staked by Forst and associates in 1966.

GEOLOGY

The property was examined by R.E. Gordon Davis in July, 1966. It was reported that the country rocks are Ordovician or Silurian thin bedded argillites and quartzites, it is thought that enough disseminated pyrrhotite is present to explain the geophysical anomalies obtained by those who previously held the ground.

A number of drill cores were examined, the most common rock types are a purplish-brown and green finely banded hornfels and a dark grey to black argillite. Small amounts of sulphides, chiefly pyrrhotite, are widespread. The sulphides occur both as concentrations along the fine banding of the rock and in tiny crosscutting veinlets filled with quartz, calcite and sulphide. The lithology of the drill core corresponds very closely to unit la as mapped in the Traffic Mountain area on the Sheldon Sheet.

METHOD OF SURVEY

Instrumentation

A Gulf Fluxgate Magnetometer Mark III, and operator were provided by Lockwood Survey Corporation for the entire survey. The survey was conducted with a Bell G3 helicopter as fixed-wing aircraft were judged to be unsuitable for some of the regions of more rugged terrain. The magnetometer had a sensitivity range of 1200 gammas, all total field responses were recorded on tape with a Texas recorder.

Survey Methods

The magnetometer was towed at a mean terrain clearance of 400 feet over flight lines of 1320 foot spacing. Effective ground control was maintained by the use of aerial photographs with pre-determined

flight lines for navigational purposes. The helicopter was equipped with AFN-1 radio altimeter and stop motion 35 mm. camera for further ground control and recording of fiducial points. All flight lines were oriented approximately normal to geologic strike.

Plotting of Results

Flight records of the aeromagnetic survey were processed by Atlas Explorations. All airborne information was plotted on 1:1000 scale showing claim group locations, flight lines and fiducial points. Magnetic data was contoured using an interval of 20 gammas for all responses above absolute background (58,500 gammas).

RESULTS

18.7 line miles of aeromagnetic survey were flown over the EM and EMU claim groups and immediate surrounding area. Three anomalous areas of significance were outlined within the claims and one magnetic 'high' outside the claims. Over mineral claims EMU 13 to 16 inclusive, a magnetic anomaly of broad characteristics and peak intensity of 2000 gammas is recorded. The intensity from its minimum closure to its peak value is 45 gammas or approximately 200 gammas on the ground. A stronger belt of magnetics strikes westerly across the northern portion of the property, two 'highs' within this belt are plotted near EM 18 and 19 and EMU 7 and 8. A third high, along strike to the east is off the property. This magnetic trend probably represents hornfels formations but the isolated highs delineated within the belt are thought to be due to disseminated pyrrhotite. It is interesting to note the geochemical coincidences with these magnetic anomalies (see Interpretative Map in folder).

CONCLUSIONS AND RECOMMENDATIONS

The magnetic 'highs' as mentioned above, are well defined and are thought to represent concentrations of pyrrhotite mineralization. Due to geochemical coincidence (see report Geochemical Soil Sampling Survey, EMU and EM mineral claims) it is recommended that further follow up through ground magnetic and geochemical surveys be carried out to fully investigate these zones of possible sulphide mineralizations.

Respectfully submitted, *J. S. P.*

Appendix 1

PERSONNEL

John S. Brock	Field Supervisor and Geophysicist Ross River, Y.T.
Harold Sandau	Operator, Lockwood Survey Corporation, Toronto, Ontario
Blake Macdonald	Technical draftsman Ross River, Y.T.
George Kerr	Helicopter Pilot, Klondike Helicopters Ltd., Whitehorse, Y.T.

Appendix 2

SUMMARY OF COSTS

1) Magnetometer and Operator Rental		
	3 days at 250.00/day	\$ 750.00
2) Helicopter charter		
	1.5 hrs at \$135.00/hr	202.50
3) Subsistence in field		
	18 man days at \$12/day.....	216.00
4) Data reduction		
	18.7 line miles at \$5.00.....	93.50
5) Data presentation and report		
	100.00
6) Mobilization and demobilization		
	portion of cost, Toronto return....	<u>175.00</u>
	TOTAL COST	\$1537.00

Appendix 3

AFFIDAVIT SUPPORTING SUMMARY OF COSTS

I, John S. Brock, Assistant Exploration Manager, Atlas Explorations Limited, of Ross River, Y.T., do hereby swear that I believe the SUMMARY OF COSTS (Appendix 2) as presented in this report, 'Aeromagnetic Survey, EMU and EM Mineral Claims', is both true and correct to the best of my knowledge and belief.



John S. Brock

Sworn before me at Ross River)
Y.T., this date, June 8, 1967)



)
)

A Commissioner of Oaths in
and for the Yukon Territory

Appendix 4

BIBLIOGRAPHY

Sheldon Project Report, January 1967,

(A private report to Atlas Explorations Limited) by C.L. Smith

Geochemical Soil Sampling Survey, EM and EMU Claims, by John S. Brock

(A private report to Atlas Explorations Limited)



ATLAS EXPLORATIONS LTD.
 ROSS RIVER, Y.T.
 EM & EMU MINERAL CLAIMS
 SHELDON AREA
 DEVELOPMENT MAP

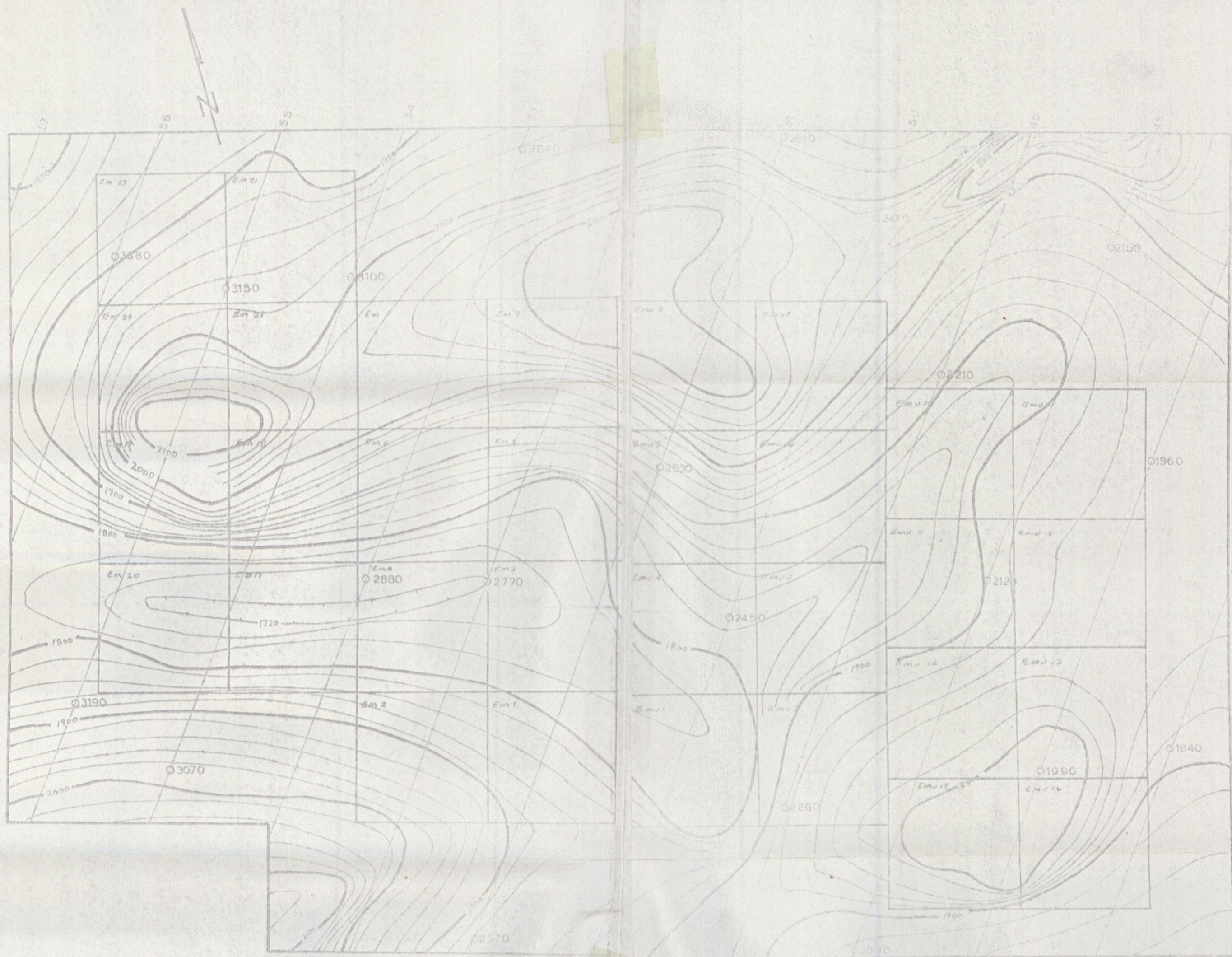
SCALE: 1"=1000'

AEROMAGNETIC HIGH: —

GEOCHEMICAL COPPER HIGH: - - -

GEOCHEMICAL ZINC HIGH: ·····

DRAWN BY: *Blak*



ATLAS EXPLORATIONS LTD.
 ROSS RIVER, Y.T.
 EM & EMU MINERAL CLAIMS
 SHELDON AREA
 AEROMAGNETIC SURVEY

Date of survey - Oct., 1967.
 Flown by Lockwood Survey Corporation.
 Compiled by ATLAS EXPLORATIONS LTD.
 Contour interval - 20 gammas
 Mean flight line spacing - 1320 ft.
 Mean terrain clearance - 400 ft.
 Scale - 1" = 1000'
 Drawn by: R.L.A.