

2880

94M/11E/W,  
14E

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 2880 MAP \_\_\_\_\_

REPORT ON  
AIRBORNE GEOPHYSICAL SURVEY  
WOLF CLAIM GROUP  
FIRESIDE AREA, BRITISH COLUMBIA  
ON BEHALF OF  
DRESSER MINERAL INCORPORATED

by

Richard O. Crosby, B.Sc., P.Eng.

February 10, 1971

CLAIMS:

Name

WOLF 1 - 40 inclusive

LOCATION:

About 70 miles southeast of Watson Lake, Yukon

Liard Mining Division

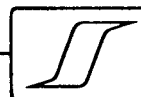
59° 127° NE

DATES:

October 22 to October 26, 1970

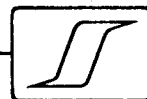
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SUMMARY

A helicopter-borne magnetometer survey was executed over approximately 6 square miles in the Fireside area, British Columbia on behalf of Dresser Minerals Incorporated.



REPORT ON  
AIRBORNE GEOPHYSICAL SURVEY  
WOLF CLAIM GROUP  
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DRESSER MINERALS INCORPORATED

INTRODUCTION

During the period October 22 to October 26, 1970, an airborne geophysical survey was executed on behalf of Dresser Minerals Incorporated in the Fireside area, British Columbia covering approximately 6 square miles (see Plate 1). Centre of the area is located  $59^{\circ}46'N$ ,  $127^{\circ}11'W$ . Basic compilation of the data was carried out between November and December 1970.

The airborne survey included magnetometer measurements using a Gulf Research and Development Corporation, total intensity, fluxgate magnetometer.

Appendix 'A', attached, gives full details of the airborne geophysical equipment and the ancillary equipment employed, as well as the treatment of data resulting from these surveys. In the case of the present survey a Fairchild-Hiller FH-1100 helicopter, on charter from Autair Helicopters, was employed as the basic transport vehicle.

The survey traverses were flown at a nominal 1000' line interval along lines oriented east-west at a mean terrain clearance of 250'. Flight navigation and flight path recovery have been based upon photomosaics on the scale of approximately 1" = 1000'.

The magnetometer sensor and the EM "bird" were flown 100' below the helicopter.

The purpose of the present programme is to map the earth's total magnetic field in the survey area. The anomalies recorded on the survey flights are due primarily to the distribution of magnetic material in the underlying rocks. By means of these anomalies various rock type



and/or structural features may be revealed.

The value of the earth's total magnetic field in the survey area is approximately 59,600 gammas. The inclination is 78°.

PRESENTATION OF DATA

The results of the geophysical survey are presented on Plate 2 on the scale of 1" = 1000'. Some topographic features and flight lines are shown on the plate. Plate 2 shows the magnetic contours at an interval of 100 gammas or less, according to magnetic relief.

The magnetometer data are presented together with altimeter and fiducial recording on analog recorder traces.

The original geophysical traces are on a scale of 1" = 120 gammas with automatic steps of 1000 gammas.

DISCUSSION OF RESULTS

The magnetic map is dominated by a 500 gamma positive anomaly striking northwest-southeast located midway along Line 8. The anomaly is reportedly caused by a basic dike.

The map also reveals three prominent magnetic directions. These are shown on Plate 2 and labelled as magnetic lineaments. They probably reflect major structural directions. They are especially interesting in that two barite deposits occur along the northwesterly and the northeasterly trending lineaments

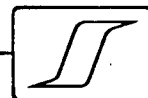
Respectfully submitted,

SEIGEL ASSOCIATES LIMITED

*Richard O. Crosby*

Richard O. Crosby, B.Sc., P.Eng.  
Geophysicist

Vancouver, B. C.  
February 10, 1971



MAGNETOMETER - GULF RESEARCH AND DEVELOPMENT - MARK III

The Fluxgate Magnetometer makes use of a ferromagnetic element of such high permeability that the earth's field can induce a magnetization that is a substantial proportion of its saturation value. If the earth's field is superimposed upon a cycle field induced by a sufficiently large alternating current in a coil around the magnetic, the resultant field will saturate the core. The place in the energizing cycle at which saturation is reached is proportional to the intensity of the earth's ambient field.

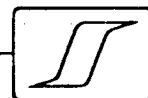
In practice, two parallel cores are aligned with their axes in the direction of the earth's field. Identical primary coils, in series, magnetize the two cores with the same flux density, but in opposite directions since their coil windings are opposite around the respective cores. Thus, the earth's field reinforces the field set up by one coil and opposes the field of the other. In the Gulf Mark III airborne magnetometer, the output pulses are continuously balanced by means of a compensating coil. The current flowing through this coil is recorded on a self balancing moving tape potentiometer recorder.

In as much as variations in the earth's field are of much more importance than absolute values in exploration work, provision is made for balancing out most of the field with one of several compensating coils so that the differences can be recorded with maximum sensitivity. The higher the full scale sensitivity selected for the potentiometer, the larger will be the proportion of the field so nullified. The total field is the compensated portion plus the residual as recorded.

The orienting system that automatically keeps the measuring element described above parallel to the earth's total magnetic field consists of two fluxgate elements mounted so that they are mutually perpendicular to each other and to the measuring element. The outputs of the orienting elements activate servo-mechanisms which keep them in a position of zero magnetic field, thus keeping the measuring element parallel to the earth's field.

Where it is intended to contour the magnetic information it is customary to fly tie lines across the survey grid. A fixed magnetic field monitor is often used as well, on the ground, primarily to indicate periods of magnetic storms during which the aeromagnetic data should be considered as unreliable.

The aeromagnetic data may be contoured if desired, using a contour interval of 25 gammas or up, depending on the amount of magnetic relief. Alternatively they may be used simply for purposes of correlation with simultaneously obtained electromagnetic data to determine which conductor zones are appreciably magnetic.



## ANCILLARY EQUIPMENT

### 1. Altimeter

An APN-1, high frequency solid state radio altimeter is employed to continuously indicate the mean terrain clearance of the helicopter or other transporting aircraft. The altimeter is installed in the aircraft (unless otherwise indicated) so that the elevation of the sensing birds (electromagnetic or magnetic) will be less by the usual vertical displacement of these birds below the aircraft.

### 2. Positioning Camera

A DeHavilland 35 mm. positioning camera is employed with a wide angle lens. Photographs of the ground are taken with sufficient frequency to give a complete record of the flight path of the aircraft or helicopter. The frequency of exposure is controlled by the intervalometer referred to below.

### 3. Intervalometer

An electronic intervalometer provides regularly spaced timing pulses which drive the positioning camera exposure mechanism and produces synchronous "fiducial marks" on the side pen of the geophysical graphic recorder or recorders. Because of the Synchronization of the geophysical traces and the positioning camera it is then possible to relate the geophysical events of interest to their proper ground location. The timing pulse frequency may be adjusted in accordance with the ground speed of the aircraft so that an adequate flight path record is obtained.



DOMINION OF CANADA:  
PROVINCE OF BRITISH COLUMBIA.  
To Wit:

In the Matter of a geophysical survey on behalf of Dresser Minerals Incorporated

I, L. A. Merrifield for Seigel Associates Limited

of 750 - 890 West Pender Street, Vancouver

in the Province of British Columbia, do solemnly declare that an airborne magnetometer survey has been executed on some WOLF 1 - 40 claims Fireside area, British Columbia between October 22 to October 26, 1970. The following expenses were incurred:

(1) Wages:			
	R. Crosby	5 days @ \$40.00/day	\$200.00
	R. Sarto	5 days @ \$30.00/day	<u>150.00</u>
			\$350.00
(2) Transportation on the job.			1,300.00
(3) Food and living expenses.			453.00
(4) Use of geophysical equipment			
		5 days @ \$60.00/day	300.00
(5) Paid to Seigel Associates Limited to cover geophysicist's supervision, calculating, plotting and fairdrawing data and preparation of final reports.			<u>2,000.00</u>
			\$4,403.00

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

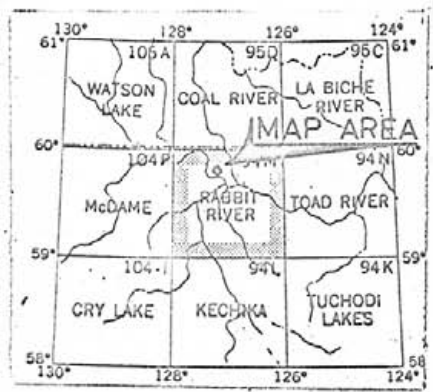
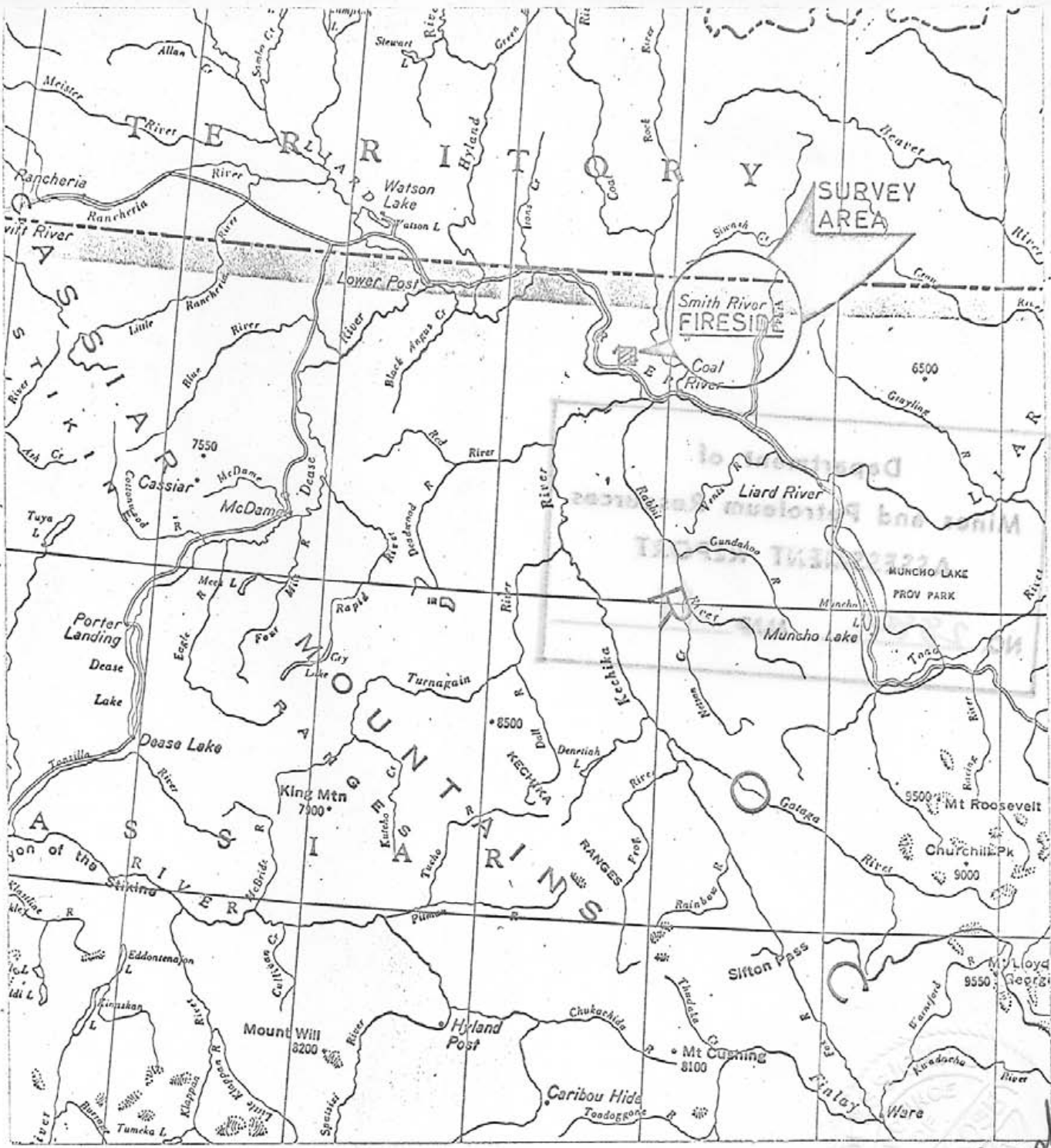
Declared before me at the City  
of Vancouver, in the  
Province of British Columbia, this 24th  
day of February, 1971, A.D.

*L. A. Merrifield*

*Jill Lunn*  
A Commissioner for taking Affidavits within British Columbia or  
A Notary Public in and for the Province of British Columbia.

SUB-MINING RECORDER





DRESSER MINERALS

LOCATION MAP  
AIRBORNE GEOPHYSICAL SURVEY

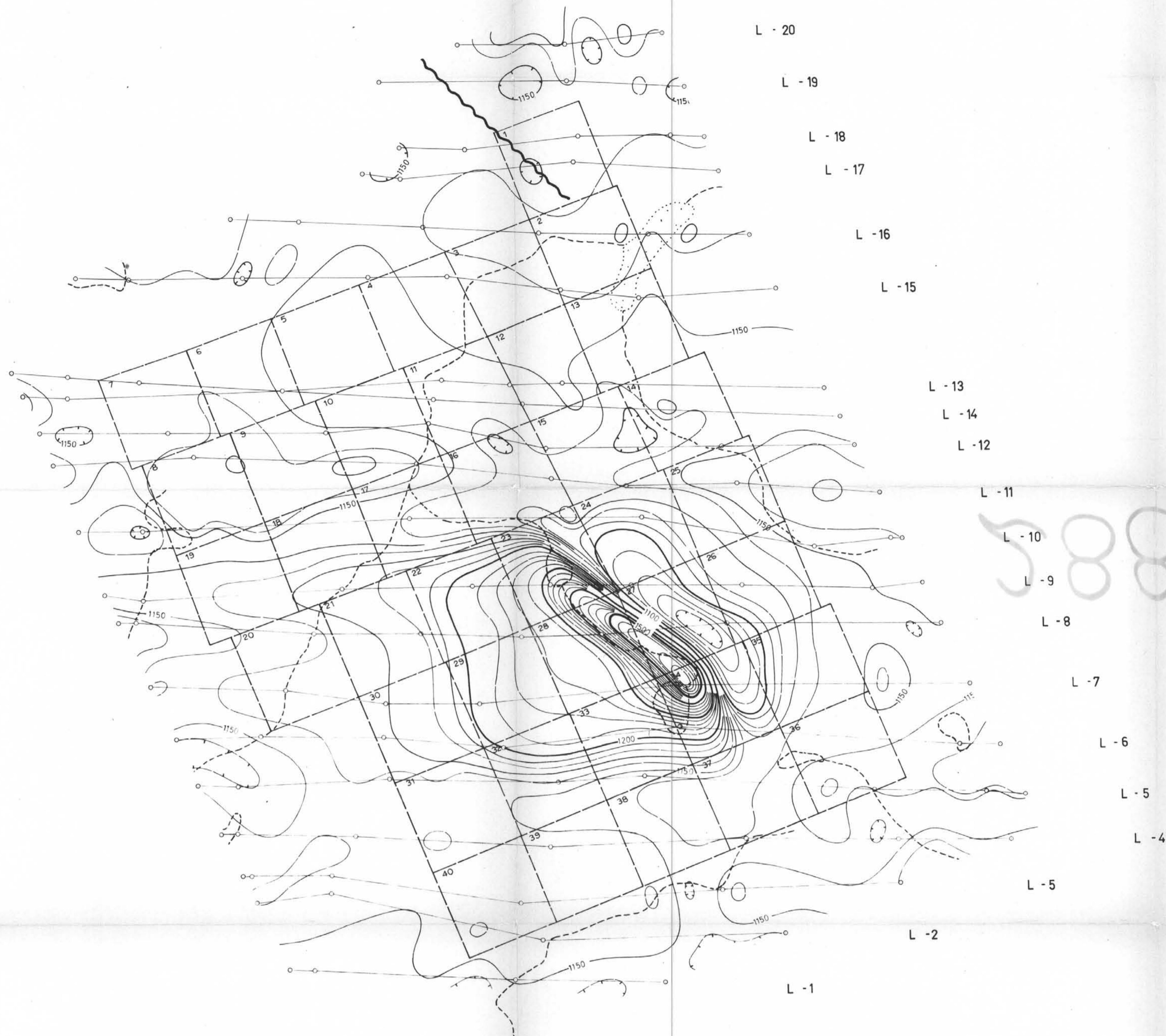


SURVEY BY  
SEIGEL ASSOCIATES, LIMITED  
OCTOBER 1970

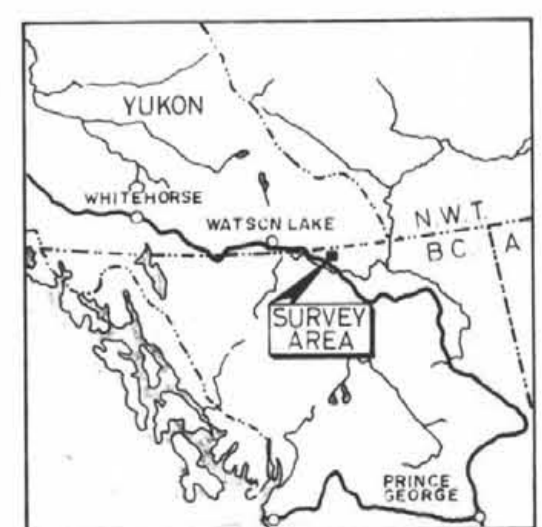
PLATE 1

*Richard O. Crosby*

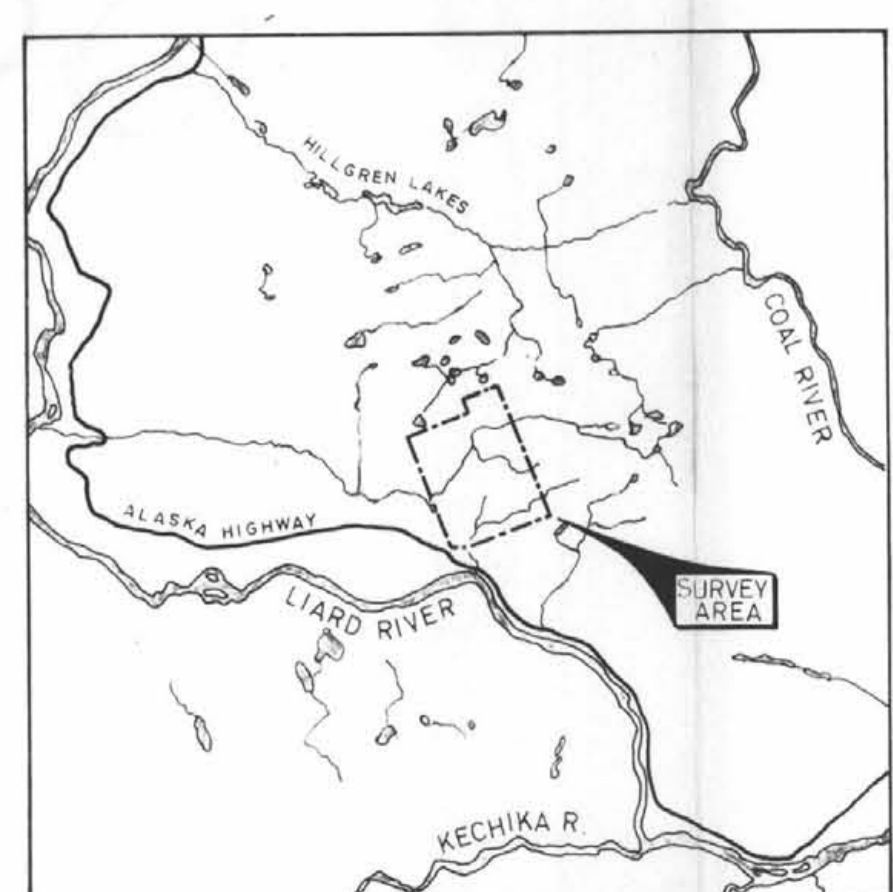




2880 M-2



LOCATION MAP



TO ACCOMPANY A GEOPHYSICAL REPORT  
BY R.O. CROSBY DATED 2. DEC. 1970.

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
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LEGEND

- L-2 — FLIGHT LINE, FLIGHT LINE NUMBER AND NUMBERED FIDUCIAL POINTS.
- 500 GAMMA ISOMAGNETIC CONTOUR INTERVAL
- 100 GAMMA ISOMAGNETIC CONTOUR INTERVAL
- 20 GAMMA ISOMAGNETIC CONTOUR INTERVAL
- 10 GAMMA ISOMAGNETIC CONTOUR INTERVAL
- - - MAGNETIC LOW
- - - AIRCRAFT TERRAIN CLEARANCE - 200'
- - - FLIGHT LINE SPACING 1/8 MILE
- - - BASE INTENSITY ARBITRARY
- - - DRAINAGE
- MAGNETIC LINEAMENT
- - - CLAIM LIMIT

PLATE 2  
DRESSER MINERALS  
WOLF CLAIM GROUP  
FIRESIDE AREA, BRITISH COLUMBIA

AIRBORNE GEOPHYSICAL SURVEY  
MAGNETOMETER CONTOUR PLAN  
CLAIM LOCATION

APPROX. SCALE 1" = 1000 FEET  
0 1000 2000 3000 4000 FEET

SURVEY BY SEIGEL ASSOCIATES LIMITED  
FLOWN AND COMPILED OCT - NOV. 1970



