

2228

104P/6W

REPORT ON
AEROMAGNETIC SURVEY
CASSIAR AREA, BRITISH COLUMBIA
ON BEHALF OF
BRETTLAND MINES LIMITED

by

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

November 15, 1969

CLAIMS: See attached sheet.

LOCATION:

About 12 miles east of Cassiar,
British Columbia

129° 30' 59° 15'

Liard Mining Division

DATES: September 4 - 8, 1969

6
CLAIMS:

Group A

<u>Name</u>		<u>Record Number</u>
DOME	42 - 76	38493 - 38527
BRETT	1 - 5	39846 - 50
BRETT	1 - 8 FR	40159 - 40166
BRETT	9 - 10 FR	39967 - 70
BRETT	11 - 14 FR	
	& 6 - 13	40516 - 27
JOAN	1 - 18	34191 - 208

Group B

DOME	1, 2	36221 - 2
DOME	3	31995
DOME	4	36224
DOME	5 - 12	31997 - 32004
DOME	13 - 20	32366 - 32373
DOME	21 - 24	32415 - 8
DOME	25 - 40	32587 - 602
DOME	41 A	36223
IRON		
CAP	7, 8	1650 - 1

Group C

P1	1 - 20	32156 - 75
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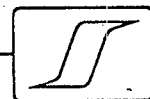
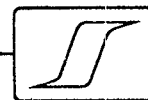


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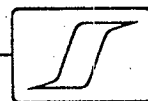
PLATES (in envelope)	<u>Scale</u>
#1 Plate 1 - Magnetometer Contour Plan	1" = 1000'
#2 Plate 2 - Geophysical Interpretation & Mineral Claims	1" = 1000'

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. **2228** MAP.....



SUMMARY

A helicopter-borne magnetometer survey was executed over approximately 15 square miles in the Cassiar Area, British Columbia. Faulting and possible skarn zones have been interpreted as a result of this survey. Each of these interpreted features should be field checked.



REPORT ON
AEROMAGNETIC SURVEY
CASSIAR AREA, BRITISH COLUMBIA
ON BEHALF OF
BRETTLAND MINES LIMITED

INTRODUCTION

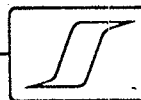
From September 4 through September 8, 1969 an airborne geophysical survey was executed on behalf of Brettland Mines Ltd. in the Cassiar area, British Columbia, covering approximately 15 square miles (see Plate 1).

The airborne survey consisted of magnetometer measurements using a Scintrex NPM-1 nuclear resonance, total intensity 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 this survey. In the case of the present survey a Bell G-2 helicopter, on charter from Haida Northwestern Helicopters, was employed as the transport vehicle.

The survey lines were flown at a nominal 1/8 mile line interval at a mean terrain clearance of 400 feet. The magnetometer sensor was flown 50 feet below the helicopter. Flight navigation and flight path recovery have been based upon a topographic map on the scale of approximately 1" = 1000 feet. The intensity of the earth's total magnetic field in the survey area measures approximately 60,000 gammas and the inclination of the total field vector is approximately 77 degrees.

The purpose of the present program was to map the magnetic field in the survey area.



PRESENTATION OF DATA

The results of the geophysical survey are presented on Plates 1 and 2 on the scale of 1" = 1000'. Some topographic features and the flight lines are shown on the plates. Plate 1 is a magnetic contour plan with a 20 gamma contour interval. Plate 2 shows an interpretation of geological structure based upon the magnetic results.

The magnetometer data are presented together with altimeter and fiducial recording on a dual trace Moseley recorder.

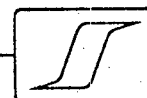
The vertical scale of the magnetic trace is 1" equals 100 gammas with automatic steps of 500 gammas.

DISCUSSION OF RESULTS

The magnetic contour map is dominated by three strong negative anomalies, trending north-westerly in the northernmost portion of the survey area, about $\frac{1}{2}$ mile east of Hot Lake. Two similar negative anomalies were also recorded in the southern part of the survey over McDame Creek.

The north-eastern portion of the survey area is quite disturbed magnetically, containing anomalies relatively limited in areal extent. The maximum positive anomalies were recorded on flight lines 17 and 23 and reach maximum amplitudes of about 300 gammas.

The negative anomalies mentioned above are interpreted as due to basic dikes, however no reference is made of any such dikes in the published geological map of the area.



The positive anomalies in the northeastern half of the area are due in part to topographic effects and basic and metamorphosed rocks, however some may also indicate mineralized skarn zones.

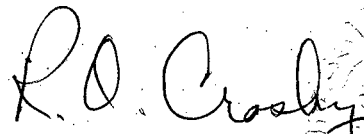
Three faults have been interpreted from the magnetic data.

CONCLUSIONS

The airborne geophysical survey has revealed magnetic features which are interpreted as indicating major faulting and possible skarn type mineralization. Each of the anomalies recorded on the survey should be field checked and the source determined. Additional field work and drilling will depend upon the results of these field checks.

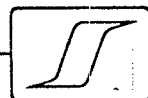
Respectfully submitted,

SEIGEL ASSOCIATES LIMITED



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

Vancouver, B.C.
November 15, 1969



DOMINION OF CANADA:

PROVINCE OF BRITISH COLUMBIA.

To Wit:

In the Matter of

a geophysical survey on behalf of Brettland Mines Limited

I, E. M. Flett for Seigel Associates Limited

of 750 - 890 West Pender Street, Vancouver

in the Province of British Columbia, do solemnly declare that an induced polarization survey has been executed on DOME, BRETT, JOAN, IRON CAP and P1 claims, Cassiar area, British Columbia between September 4 to September 8, 1969. The following expenses were incurred:

(1) Wages:			
	R. Sheldrake	5 days @ \$35.00/day	\$175.00
	T. Szento	5 days @ \$35.00/day	<u>\$175.00</u>
			\$ 350.00
(2) Transportation & shipping to the job			250.00
(3) Transportation on the job - helicopter			
		4.13 hours @ \$150.00/hour	619.50
(4) Food and living expenses - geophysical and airborne crews			
		20 man days @ \$10.00/day	200.00
(5) Paid to Seigel Associates Limited to cover geophysicist's supervision, geophysical instrumentation, calculating, plotting and fairdrawing data and preparation of final reports.			<u>170.00</u>
			\$1,589.50

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 21st day of January 1970, A.D.

EM Flett

Jill Jansen
A Commissioner for taking Affidavits within British Columbia or
A Notary Public in and for the Province of British Columbia.
Sub-mining Recorder

In the Matter of

Statutory Declaration
(CANADA EVIDENCE ACT)

MAGNETOMETER - SCINTREX NPM-1

The Scintrex NPM-1 nuclear resonance airborne magnetometer is based on a Newmont modification of a Varian Associates magnetometer and is produced under license to both companies. It is a very light weight, solid state unit, especially designed for use in a helicopter or light fixed-wing aircraft where weight is an important consideration.

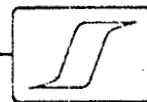
Its cycle period is 1.1 seconds. Each cycle it measures the total intensity of the earth's magnetic field and this quantity, in gammas, is recorded, in analogue form, on a suitable graphic recorder. The full scale sensitivity is usually 1000 gammas and the recorder automatically steps each 500 gammas. In very active areas a full scale sensitivity of 5000 gammas with steps of 2,500 gammas may be employed. Only the magnetic variations are actually recorded although the absolute base level may be established from the NPM-1 as well.

The magnetic sensing head may be on a cable as much as 100 ft. below the aircraft or, in some installations, may be rigidly attached to the aircraft on a suitable boom.

The intrinsic noise level of each reading is about 5 gammas.

Where it is intended to contour the NPM-1 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

A Bonzer, high frequency solid state radioaltimeter 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.

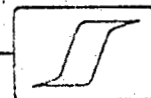
The output of the Bonzer may be expressed in analogue form on a suitable graphic recorder, or may be, for convenience, converted to a semi-digital form on a recorder side pen. In the latter event the altimeter record is a series of spaced pulses whose separation is proportional to the mean terrain clearance.

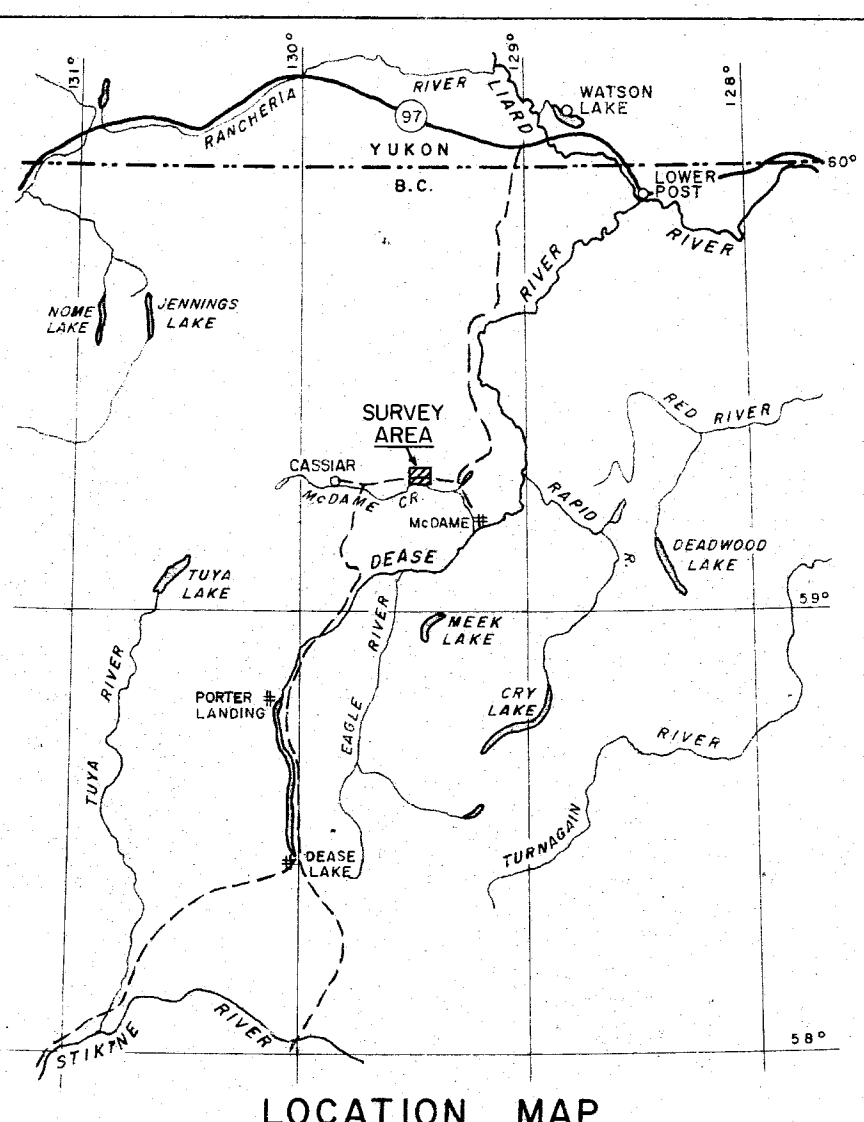
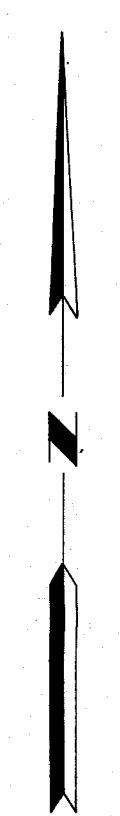
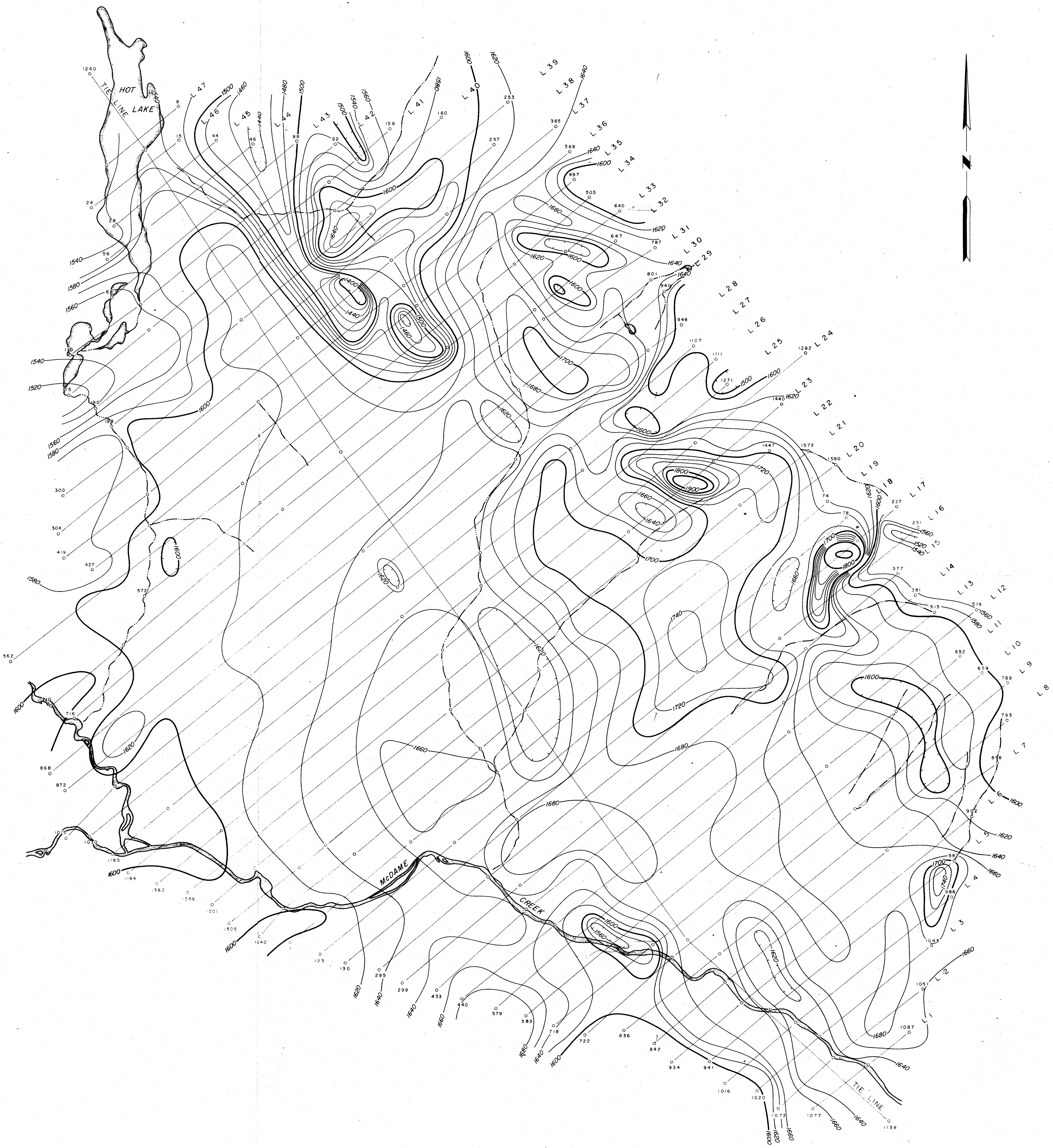
2. Positioning Camera

A Vinten Mark 3 16 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

A Scintrex IA-2 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.





- LEGEND**
- FLIGHT LINE, FLIGHT LINE NUMBER AND NUMBERED CONTROL POINT
 - 100 GAMMA ISOMAGNETIC CONTOUR INTERVAL
 - 20 GAMMA ISOMAGNETIC CONTOUR INTERVAL
 - MAGNETIC LOW

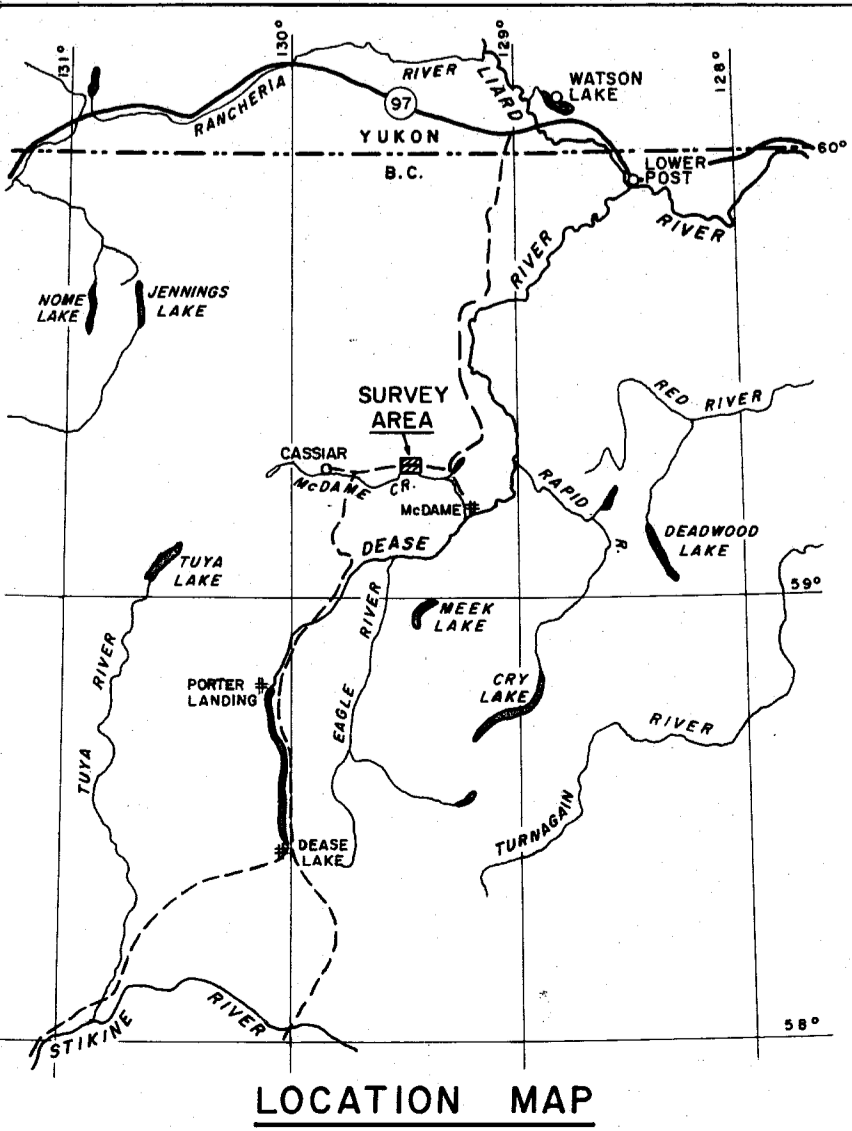
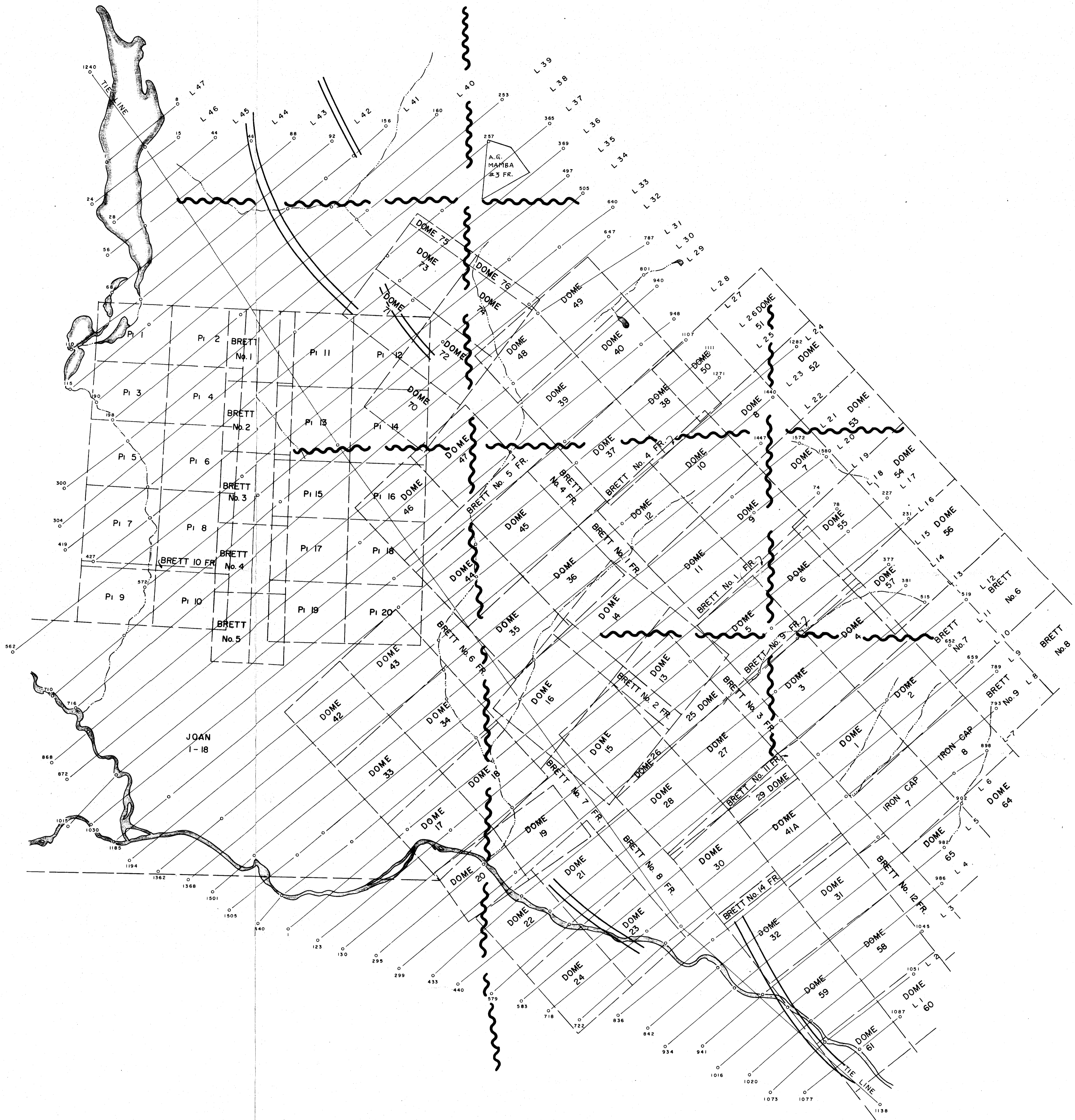
Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2228 MAP #1

PLATE I
BRETTLAND MINES LTD.
CASSIAR AREA, BRITISH COLUMBIA
AIRBORNE GEOPHYSICAL SURVEY
MAGNETOMETER CONTOUR PLAN

SCALE: 1" = 1000'
SURVEY BY SEIGEL ASSOCIATES LIMITED
OCTOBER 29, 1969

2228

P.O. Crosby



LEGEND

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Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2228 MAP #2

PLATE 2
BRETTLAND MINES LTD.
CASSIAR AREA, BRITISH COLUMBIA
GEOPHYSICAL INTERPRETATION

SCALE: 1" = 1000'
SURVEY BY SEIGEL ASSOCIATES LIMITED
OCTOBER, 1969

2228

R.O. Cook