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REPORT ON
A VERTICAL MAGNETIC SURVEY OVER
THE BETTY LOU AND LOU GROUPS OF
MINERAL CLAIMS, PROMONTORY HILL, MERRITT, B.C.
NOVEMBER 1960 - APRIL 1961

23 May, 1961

A. Allan.

Canex Aerial Exploration Ltd. - Owner
Lat. 50°N. Long. 120°W.

STATEMENT FOR ACCEPTANCE OF THIS REPORT
FOR ASSESSMENT WORK


I, James Douglas Little, wish to state that the following report was carried out under my direction and supervision, as Assistant General Manager of Canadian Exploration Limited. I am a mining engineer registered in the Province of British Columbia and have supervised exploration work carried out by the above company for the past five years.

The field work covered by this report was carried out by a qualified and capable geologist and magnetometer operator, Mr. Andrew Allan, a senior geologist employed by Canadian Exploration Limited. His qualifications to carry out the detailed work are as follows:-

Mr. Allan graduated from the University of British Columbia in 1949 with a B. A. degree in geology. Since that time he has held responsible positions in the exploration departments of several mining companies, namely:- New Jersey Zinc Exploration Ltd., Transcontinental Resources Ltd., and Newmont Mining Corporation. Mr. Allan has conducted geophysical surveys since 1949 and has submitted reports for assessment purposes in the Yukon Territory, Saskatchewan, and Quebec.

I hereby certify that the above statements concerning my supervision of the geophysical work embodied in this report, my qualifications to fulfill the requirements of the Mineral Act, and the qualifications of Mr. Andrew Allan to perform the work are well and truly represented.

JDL:mg
Vancouver, B. C.
26 June 1961.


J. D. LITTLE,
Registered Mining Engineer.

CANEX AERIAL EXPLORATION LTD.


REPORT ON
A VERTICAL MAGNETIC SURVEY OVER
THE BETTY LOU AND LOU GROUPS OF
MINERAL CLAIMS, PROMONTORY HILL, MERRITT, B.C.
NOVEMBER 1960 - APRIL 1961

Mineral Claims: . Lou M.Cs. 19-26 inclusive
Betty Lou M.Cs. 1-14 inclusive
Betty Lou Fr. M.Cs. 1-7 inclusive
Willy #4 Fr. M.C.

Location: . 10 miles north-west of Merritt, B.C.
(Lat. 50°N, Long. 120°W), Nicola, M.D.

Geophysical Survey By:

Vancouver, B.C.
23 May 1961.


A. ALLAN,
Geologist.

**Department of
Mines and Petroleum Resources
ASSESSMENT REPORT**

NO. 357 MAP

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INTRODUCTION.

A vertical intensity magnetic survey was undertaken on the Betty Lou and Lou mineral claims during 1960 and 1961. The survey commenced in October, continued to November 1960, and was completed in April 1961. A Hilger and Watt vertical intensity variometer was used throughout the survey.

A report on the survey is submitted herewith for your information and consideration.

SUMMARY.

A magnetic survey was conducted over the mineral claims between October 1960 and April 1961. Magnetic observations were made at 100' intervals along north-south lines spaced 200' apart.

With the exception of the intrusive diorite, the sedimentary and pyroclastic rocks underlying the claims exhibit low magnetic susceptibility. The diorite exhibited magnetic characteristics due to permanent magnetism and higher magnetic susceptibility. Spot highs due to segregations or concentrations of magnetite within the diorite were common.

At the conclusion of the survey the results were plotted and a magnetic contour overlay prepared. (Plate 2.)

No anomalies indicative of large magnetite concentrations were found.

CONCLUSION.

Scattered high magnetic readings in the northwest corner of the claim group are due to concentration of magnetite within the intrusive diorite.

One small anomalous area was found on the Betty Lou No. 5 Mineral Claim. This may reflect contained magnetite in andesite, or be due to other causes. The dimensions are too small to be of immediate interest.

The lack of magnetic anomalies on the Betty Lou and Lou mineral claims does not eliminate the chances of finding mineralized zones within the claim group.

The general geologic setting is favourable for mineral deposition, and it is considered essential that other geophysical methods be tried over the claims in an effort to provide targets for diamond drilling.

The lack of detailed geological information over the claim group is a serious detriment to interpretive analyses of the geophysical results.

RECOMMENDATION.

1. That the claim groups be mapped on a scale of 100' = 1 inch.
2. That an Induced Polarization survey be conducted over the Nicola group rocks; a line spacing of 400' and a spread of 800' on the electrodes seems preferable. The effective depth penetration of the 800' spread is in excess of 1000'.
3. Any anomalies found by the initial Induced Polarization survey should be defined on a closer spacing of lines and electrodes prior to drilling.

4. The main area of interest extends from the forestry lookout to the west boundary of the claims, and from the south claim boundary north to the intrusive contact.

CLAIMS.

The Betty Lou and Lou groups are comprised of 30 mineral claims and fractions, all held by location. The claim names, tag numbers, record numbers and due dates are as follows:-

<u>Claim</u>	<u>Tag No.</u>	<u>Record No.</u>	<u>Due Date</u>
Lou 19	338739	9755	November 17, 1961
Lou 20	338740	9756	" " "
Lou 21	338737	9757	" " "
Lou 22	338738	9758	" " "
Lou 23	338727	9759	" " "
Lou 24	338728	9760	" " "
Lou 25	338725	9761	" " "
Lou 26	338726	9762	" " "
Betty Lou 1	308225	5103	November 12, 1961
Betty Lou 2	308226	5104	" " "
Betty Lou 3	308227	5105	" " "
Betty Lou 4	308228	5106	" " "
Betty Lou 5	308229	5107	" " "
Betty Lou 6	308230	5108	" " "
Betty Lou 7	308231	5109	" " "
Betty Lou 8	308232	5110	" " "
Betty Lou 9	308233	5111	" " "
Betty Lou 10	308234	5112	" " "
Betty Lou 11	308235	5113	" " "
Betty Lou 12	308236	5114	" " "
Betty Lou 13	308237	5115	" " "
Betty Lou 14	308238	5116	" " "
Betty Lou #1 Fr.	227099	11535	October 20, 1962
Betty Lou #2 Fr.	227100	11536	" " "
Betty Lou #3 Fr.	226669	11537	" " "
Betty Lou #4 Fr.	226670	11538	" " "
Betty Lou #5 Fr.	226679	11539	" " "
Betty Lou #6 Fr.	370205	12218	June 17, 1962
Betty Lou #7 Fr.	370206	12219	" " "
Willy #4 Fr.	370201	12215	" " "

OWNERSHIP.

The claims are all held in the name of Canex Aerial Exploration Ltd., 700 Burrard Building, Vancouver 5, B.C.

LOCATION & ACCESSIBILITY.

The Betty Lou and Lou mineral claims lie 10 miles northwest from Merritt, B.C., on Promontory Mountain. Access to the group is by paved road from Merritt for seven miles and thence over a good gravel road to the top of Promontory, about 5 miles.

TOPOGRAPHY.

The terrain is moderately rugged, Promontory Mountain is well rounded on top with steep slopes to the north, the south slopes are moderate. Elevation at the forestry observation post is 5866 feet.

The climate is semi-arid, hot and dry during the summer months and moderately cold during the winter.

GENERAL GEOLOGY.

The claims are underlain by rock formations of the Nicola Group; a series of sedimentary formations intercalated with minor pyroclastic sediments and volcanics.

Intrusive into the Nicola Group is the Guichon Batholith, a hornblende diorite. Dykes and small stocks of quartz feldspar porphyry occur on the claims.

The rock formations within the Nicola Group are identified as follows:- greywacke, andesitic tuff, agglomerate, limestone, argillite, andesite, and quartz eye tuff. This series has been subject to considerable metasomatic alteration, in some instances sufficient to alter the original character of the rock completely. The chief forms of alteration are, silification, chloritization and the development of skarn. Minor disseminated pyrite-pyrrhotite mineralization is widespread, locally a few specks of chalcopyrite were noted.

STRUCTURAL GEOLOGY.

The formations strike northeast with dips to the north and south; they appear to lie along the south limb of a northeasterly trending anticline. This structure is further complicated by drag folding and faulting. For the most part, the drag folds indicate a northeasterly plunge.

GEOPHYSICS

SURVEY CONTROL.

An east-west baseline was established across the claim groups. The baseline commenced at a triangulation station on the east side and tied into the government survey station on Promontory Mountain. North-south cross lines were cut across the claims on 200' line spacing. The cross lines were stationed every 100', horizontal distance.

INSTRUMENTATION.

A Hilger and Watt vertical intensity variometer was used to measure the vertical component of the magnetic field, instrument No. 99130. The scale constant of this instrument is 30 gammas per scale division. The survey required a two man crew for efficient operation in the field.

METHOD.

A series of readings were taken along the baseline stations and average

values calculated for each station. The operator checked into the base stations as frequently as possible to establish the diurnal correction. For the most part, the diurnal and temperature corrections were of no significance.

The corrected gamma values were plotted on the plan map and adjusted to the nearest even 50 gammas, to simplify contouring. The adjustment was necessary due to the very low magnetic relief over most of the area.

Over 2500 stations were occupied and magnetic observations taken at each station.

INTERPRETATION.

Interpretation of the magnetic data was based on actual gamma values, geology by C. W. Ball, April 1960, and by observation in the field during the course of the survey.

Outcrops of hornblende diorite in the vicinity of the higher readings contained up to 15% magnetite. The sharp localized nature of the anomalies indicate a source of magnetics at shallow depth. It is concluded that these are due to concentrations of magnetite, within or near the intrusive diorite contact.

The elongation of the magnetic contours in a northeast direction is a direct expression of differing magnetic susceptibilities in the underlying rock types. If the geology were mapped in more detail it would be possible to trace out individual beds by the use of the magnetic contours.

There appears to be a slight indication of north-south faulting, however, the magnetic expression along the faults is so slight as to be invalid without the background geological information.

With the exception of establishing the intrusive contact, the results of the survey were inconclusive.

Respectfully submitted



A. ALLAN,
Geologist.

AA:mg

Acknowledgement:

The writer wishes to acknowledge information obtained from the following:-

1. C. W. Ball - Geological Report Betty Lou Group, 1960.
2. Dept. of Mines - Geology of Promontory Hills Area, 1961
(Unpublished Map).
3. W. Fessler - Geophysicist, Hunting Survey Corporation.

EXPENDITURES

The following crew members were employed during the periods specified, as follows:-

A. Allan	Geologist - Supervisor		
	Sept. 26 - Nov. 30, 1960	43 dys. @ \$25.00/dy.	\$ 1,075.00
	Apr. 17 - 29, 1961	10 dys. @ \$25.00/dy.	250.00
E. Freeze	Linecutting		
	Sept. 26 - Nov. 30, 1960	60 dys. @ \$450.00/mo.	900.00
A. Welch	Linecutting		
	Sept. 26 - Nov. 15, 1960	42 dys. @ \$400.00/mo.	560.00
W. Curr	Linecutting		
	Oct. 12 - Nov. 12, 1960	30 dys. @ \$10.00/day	300.00
B. Backler	Engineer - survey control - mag. operator		
	Oct. 13 - Nov. 30, 1960	45 dys. @ \$450.00/mo.	900.00
	Apr. 17 - Apr. 29, 1961	15 dys. @ \$450.00/mo.	900.00
F. Carter	Magnetometer operator		
	Apr. 17 - 29, 1961	15 dys. @ \$400.00/mo.	200.00
Compilation, Interpretation and Map preparation			<u>300.00</u>

Total Expenditure \$ 4,485.00

A. Allan

A. ALLAN,
Geologist & Field Supervisor.

Additional expenditures (not included above)

Vehicle Operation	\$ 650.00
Crew board & lodging	
270 man dys. @ \$4.00/dy.	<u>1,080.00</u>

Total \$1,730.00

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 Vancouver, B.C. in the province of British Columbia, this 24th day of May, 1961.

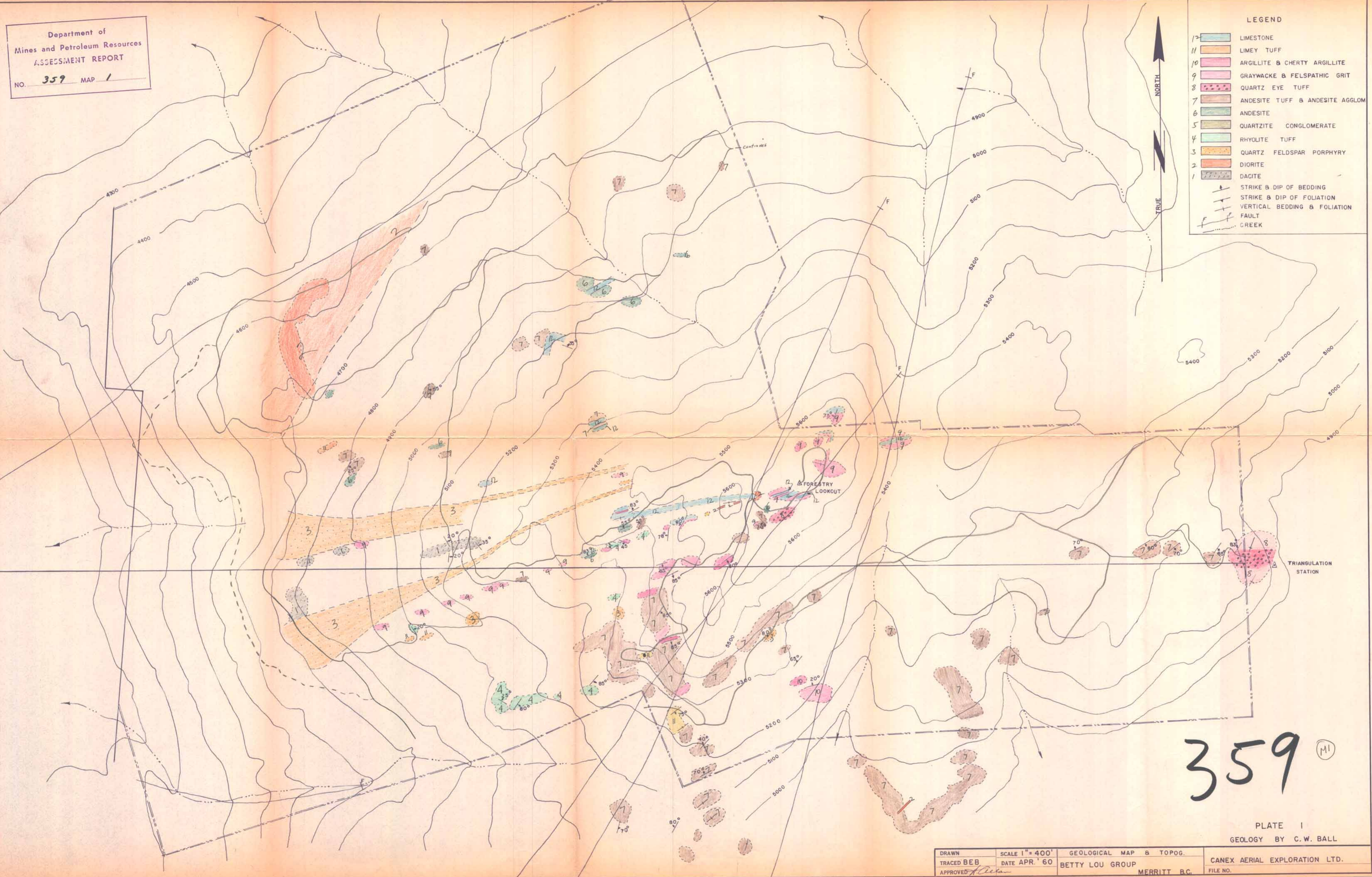
A. Allan

Shirley Jeannotte. 5.

Sub-mining Recorder

LEGEND

- 12 LIMESTONE
- 11 LIMY TUFF
- 10 ARGILLITE & CHERTY ARGILLITE
- 9 GRAYWACKE & FELSPATHIC GRIT
- 8 QUARTZ EYE TUFF
- 7 ANDESITE TUFF & ANDESITE AGGLOM.
- 6 ANDESITE
- 5 QUARTZITE CONGLOMERATE
- 4 RHYOLITE TUFF
- 3 QUARTZ FELDSPAR PORPHYRY
- 2 DIORITE
- 1 DACITE
- ▲ STRIKE & DIP OF BEDDING
- ▲ STRIKE & DIP OF FOLIATION
- ▲ VERTICAL BEDDING & FOLIATION
- FAULT
- CREEK

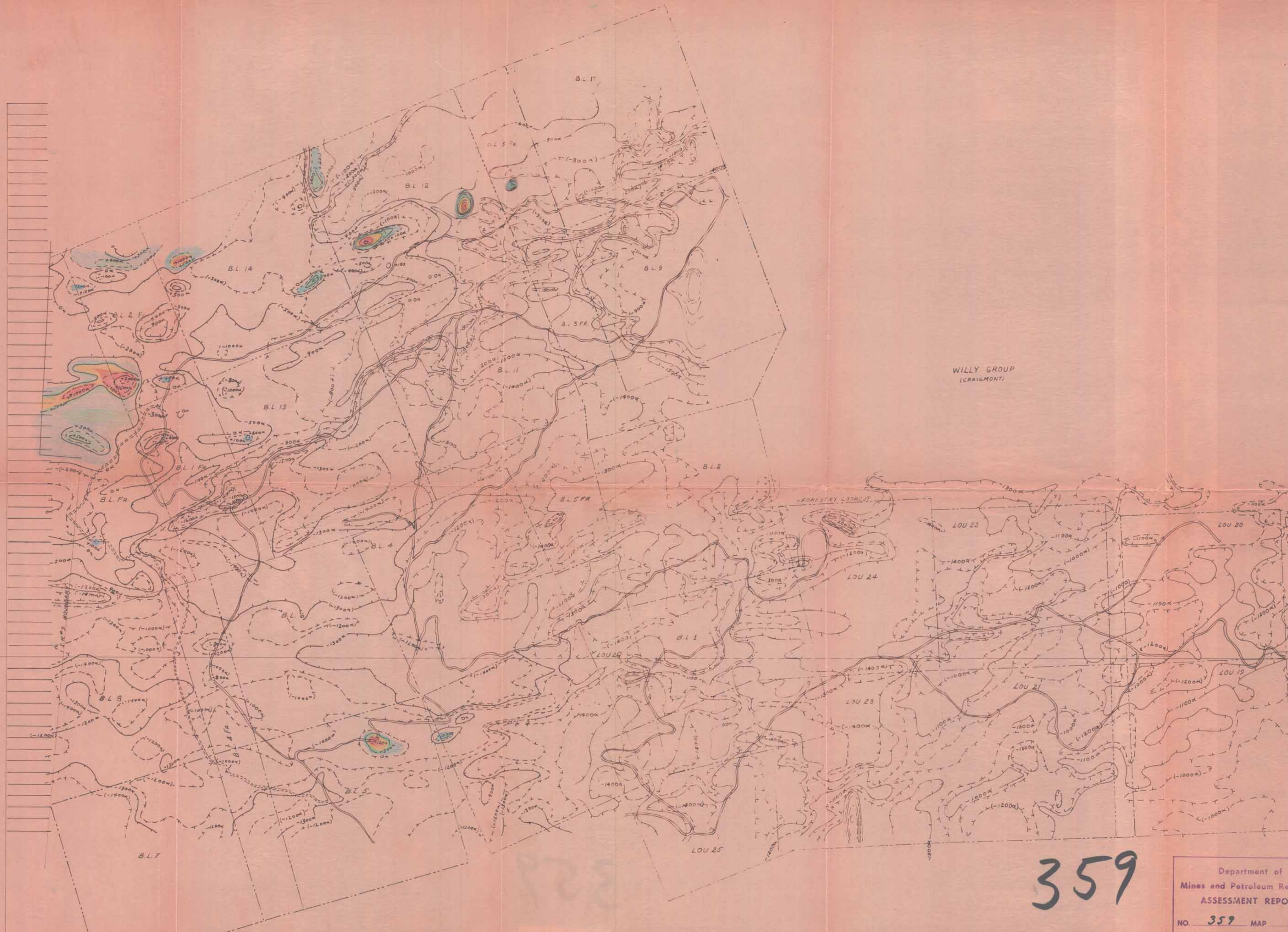


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PLATE I
GEOLOGY BY C.W. BALL

DRAWN TRACED BEB APPROVED <i>[Signature]</i>	SCALE 1" = 400' DATE APR. '60	GEOLOGICAL MAP & TOPOG. BETTY LOU GROUP MERRITT B.C.	CANEX AERIAL EXPLORATION LTD. FILE NO.
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IR#9



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- 3+00N
- 2+00N
- 1+00N



BASELINE 0+00

LEGEND

- + 1000 gammas
- + 800 "
- + 600 "
- + 400 "
- + 200 "

SYMBOLS

- CLAIM BOUNDARY
- == ROAD
- POSITIVE CONTOUR
- - - NEGATIVE CONTOUR

CONTOUR INTERVAL = 100 gammas
accuracy ± 25 gammas

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PLATE 2

- 100+00W
- 98+00W
- 96+00W
- 94+00W
- 92+00W
- 90+00W
- 88+00W
- 86+00W
- 84+00W
- 82+00W
- 80+00W
- 78+00W
- 76+00W
- 74+00W
- 72+00W
- 70+00W
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- 44+00W
- 42+00W
- 40+00W
- 38+00W
- 36+00W
- 34+00W
- 32+00W
- 30+00W
- 28+00W

DRAWN A.A.	SCALE 1" = 400'	CANADIAN EXPLORATION LIMITED	MAGNETIC CONTOUR PLAN
TRACED	DATE FEB/61	BETTY LOU GROUP	FILE NO. VENTURE 40
APPROVED <i>[Signature]</i>		MERRITT B.C.	

