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CRAIGMONT MINES LTD. N. P. L.

Geophysical Report on

MAGNETOMETRIC SURVEY of LOE GROUP

LOE (Nos. 1-8, 12 miles northwest of Merritt, 50°, 120° SW)

Survey completed: November 6, 1957

Magnetometer readings by: G. Klein and A. Caron
Supervised by: R. E. Renshaw, P. Eng.

Calculations and Maps by: W. S. Pentland

Report by: G. C. Rennie, P. Eng.

February 3, 1958

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CRAIGMONT MINES LTD. (N.P.L.)

MAGNETOMETER SURVEY OF LOE GROUP

EXPENSES INCURRED

Line cutting and blazing - H. Johnson, contractor 12.7 miles at \$50.00 / mile	\$635.00
Magnetometer survey readings - G. Klein and A. Caron 6 days each at \$15.00 / day / man	180.00
Supervision of survey - R. E. Renshaw, P. Eng. 2 days at \$35.00 / day	70.00
Calculation and map preparation - W. S. Pentland 4 days at \$15.00 / day	60.00
Report preparation - C. G. Rennie, P. Eng. 1 day at \$35.00 / day	35.00
	<hr/>
	\$980.00

C. G. Rennie
C. G. Rennie, P. Eng.
Geological Engineer.

GRAZING MINE LTD., N. B. I.

Geophysical Report on

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Graigmont Mines Ltd. N. P. L.

Report on

MAGNETOMETRIC SURVEY of the LOE GROUP

Purpose of the Survey.

The survey was carried out to determine if there were any magnetic anomalies on the LOE group of mineral claims, resulting from the presence or absence of magnetic minerals, such as magnetite in the bedrock on these claims. Large areas of overburden, masking most of the bedrock in the area prevented thorough geological analysis.

The survey was intended to be of reconnaissance nature only, to be followed by a more detailed survey if any anomalies were indicated.

General Geology of the Area.

References: G. S. C. memoir 249, "Geology and Mineral Deposits of Nicola Map-Area, B.C." by W. E. Cockfield, and Geological Map 886A which accompanies the report.

The claims cover a section of the Guichon Batholith of Jurassic age, north of where the Batholith contacts the Nicola series of Upper Triassic age. The few scattered outcrops on the claims are granodiorite suggesting that the entire bedrock may be rock of similar composition, although there is a possibility of less resistant rock of differing composition beneath the overburden.

The most likely mineralization to be expected in this situation would be disseminated copper minerals of a porphyry copper type deposit similar to the Highland Valley bodies. The Highland Valley de-

posits give magnetic low anomalies resulting from the absence or breakdown of the accessory mineral magnetite in the mineralized area. In the unmineralized area, magnetite is a common accessory mineral in the rocks of the Guichenon batholith.

South of this group of claims, concentrations of magnetite associated with hematite and chalcopyrite occur in the Nicola series close to the contact. These concentrations give strong positive anomalies. The possibility of such a mineralized contact occurring beneath overburden on the LOE group could not be overlooked.

Equipment

The magnetometer used for this survey was manufactured by the Radar Exploration Co., Toronto, bears Serial No. 37 and has a scale constant of 22.6 gammas per division of the micrometer scale. This instrument is very light and portable and requires no locking of the motion before being moved to the next station. With practice a trained operator can set up and take a reading in two minutes. The instrument has no auxiliary magnets but has an adjustment that permits allowance for a background magnetic constant which in the case of this survey has been set at an arbitrary 10,000 gammas.

Method of Survey

Prior to the actual survey a base line was cut out using a compass and picket line due north south along the location line of the group of claims. Stations were chained at 300 foot intervals along this base line and cross lines were blazed east and west from these stations to the boundaries of the claims. During the survey stations at 200 foot intervals, at which readings were taken, were chained and

marked along these cross lines.

The magnetometer readings were taken by two men, Messrs. G. Klein and A. Caron who measured in the stations and alternated in operating the magnetometer and recording the readings.

The magnetometer was oriented with a compass so that the side of the instrument marked "N" faced directly to magnetic north and levelled. Then the micrometer scale knob was turned until the indicating needle coincided exactly with the center of the cross hairs. The number of the station, the micrometer reading and the exact time of the reading were recorded on the calculation sheet.

One permanent base station was used against which the entire survey was checked. Readings were taken at this station once in the morning and once at night. Daily base stations were established with reference to this main base and check readings were taken at the daily base station every hour to establish the diurnal variation and to check for any other variations due to magnetic storms. This method of hourly reference to a base station dispenses with the necessity of having a second instrument read at a permanent base station at intervals during the day.

Calculation and Plotting

The calculation and plotting of the notes and preparation of the maps was done by W. S. Portland. Upon checking the diurnal variation he found that the variation in accuracy of the instrument was as much or greater than the diurnal variation, and therefore the diurnal variation, which did not exceed 200 gammas was not used in calculating the readings as used on the map.

Since this instrument has not been calibrated to read the exact amount of the earth's vertical magnetic field it was used to measure the variation in vertical intensity only and for this reason an arbitrary constant of 10,000 gammas was subtracted from the product of the scale reading and the scale constant of 22.6 gammas per scale division.

A daily constant calculated from the daily readings at the main base station was applied in order to have each days readings *on the same basis as the other days readings.* The readings were not all taken on consecutive days as pressure of other work necessitated some days time lapses between sets of readings.

Two maps were prepared by W. S. Portland, one showing the position and amount of each calculated reading with reference to the survey grid lines, the other showing the contouring of areas of equal vertical magnetic intensity. A copy of each map is appended to this report.

Interpretation of the Magnetometer Survey Results.

While it is recognized that the instrument used is not accurate enough to define small variations in magnetic intensity, and that the spacing of the readings is large enough to allow small anomalies to go undetected one may safely conclude that there are no anomalies large enough to warrant further exploration.

The maps illustrate that there is little variation in magnetic intensity in the area. Furthermore the variations which do exist follow no real pattern such as might indicate a favourable con-

tact. Therefore the survey indicates that the bedrock on the Loe group of claims is a relatively homogenous rock with very little variation in content of magnetic minerals. Possibly the small variations of intensity present can be attributed to variations in the depth of overburden or to variations in the amounts of magnetic material in the overburden or a combination of effects.

Conclusions:

Conclusions drawn from this survey are:

1. There are no interesting magnetic anomalies on the Loe group of mineral claims.
2. A detailed or more precise magnetometer survey is not justified by the result of the reconnaissance survey.
3. As evidenced by the scattered outcrops and the magnetometer survey, the bedrock beneath the overburden is very probably all relatively homogenous granodiorite of the Guichon batholith.

Appendix:

1. Sample of survey notes.
2. Plan of Magnetometer Readings.
3. Plan of Areas of Equal Magnetic Intensity.

Respectfully submitted,

C. C. Rennie

C. C. Rennie, P. Eng.
Geological Engineer.

DATE: Nov 1, 1957

LINE: 35
65

C = 10,000

STAT	READ	VALUE	TIME	DIUR	V-D	VI-C	REMARKS
Base Camp	907		8:00				
60 Base	960	21696	8:25			11696	South end of Claims
30 Base	986	22283	8:55			12283	Middle parts of Claims
9S Base	889	22012	9:25			12012	
6S Base	987	22328	9:31			12328	
3S Base	1013	22916	9:37			12916	
6S Base	987	22328	9:43			12328	
6S-200E	1000	22600	9:47			12600	
6S-400E	972	21967	9:52			11967	
6S-600E	980	22148	9:56			12148	
6S-800E	967	21854	9:59			11854	
6S-1000E	984	22215	10:03			12215	
6S-1200E	981	22170	10:06			12170	
6S-1400E	976	22035	10:10			12035	
6S-1500E	981	22148	10:12			12148	
3S-1500E	961	21876	10:15			11876	
3S-1400E	963	21922	10:18			11922	
3S-1200E	984	22215	10:22			12215	
3S-1000E	975	22012	10:26			12012	
3S-800E	970	21899	10:31			11899	
3S-600E	970	21899	10:35			11899	
3S-400E	967	21831	10:40			11831	
3S-200E	994	22419	10:44			12419	
3S Base	1015	22916	10:48			12916	

No correction for
Diurnal variation was
made. (See report)

Note: This note sheet is illustrative only and is not an exact copy of the field notes which were not on hand.



11922	12035	12080	11967	12215	12148	11864	11876	12677	11922	12057	12057	12125	12080	11854	12238	11809	11763	12148	12057
12215	12170	11922	11989	11831	11899	1234	12441	12577	11922	12351	12193	12939	12396	12306	12487	11696	12035	12035	12057
12012	12215	12125	11994	12035	11967	11763	12238	12198	12193	12293	12125	12419	11967	13074	12351	12283	12328	12419	12198
11899	11854	12215	12080	12193	12012	12035	12261	12193	12125	12419	12125	12444	12645	13052	13323	12509	12396	12419	12261
11899	12148	11876	12080	12215	11967	11899	12715	12554	12826	12647	11809	12035	12193	13074	12758	12193	12441	12374	12148
11831	11967	12148	12185	11854	11994	11989	12035	11831	12645	12645	12441	12758	12916	12487	12261	12509	12328	12532	12328
12419	12600	12012	12306	12193	11967	11944	12102	11763	12441	11854	12148	13255	12713	12035	12080	11899	12035	11876	12102
12916	12328	12012	12125	12193	12012	11696	11696	11628	12883	12012	11718	11899	12035	12755	11786	12035	11379	11831	11696
11854	12057	11756	11967	12057	11718	11992	12035	11922	11085	12057	11741	11763	11831	11989	12554	11809	11763	12125	12035
12621	12125	12057	11994	12193	12419	12328	12328	11989	12328	12198	12080	11809	12215	11894	11876	11357	12193	12283	12238
11854	11809	12125	12170	12509	12755	12961	12755	12148	12193	12057	12261	11537	11696	11696	11515	11470	12374	12283	12487
12170	12283	12238	11967	11831	12035	12193	12102	12261	12374	12057	11899	12012	11899	11809	12193	12283	12283	12374	12306
11673	12035	11675	12193	12193	11791	11763	12328	11675	11899	12057	12102	12057	11967	11085	12306	12238	12148	11876	12215
11675	11583	11718	12306	12080	11989	11854	11922	11989	12102	11967	11989	12012	12057	11583	12490	12600	12012	11967	12261
12012	12238	11899	11876	11809	12419	12106	12793	12057	11967	11922	11311	11628	12125	12035	12238	12215	12057	12057	12057
11880	11782	11816	11896	11948	11989	12564	12215	12280	11822	12306	11460	12261	12035	1174	12441	11876	12283	12085	11967

LOE N° 8

LOE N° 5

LOE N° 4

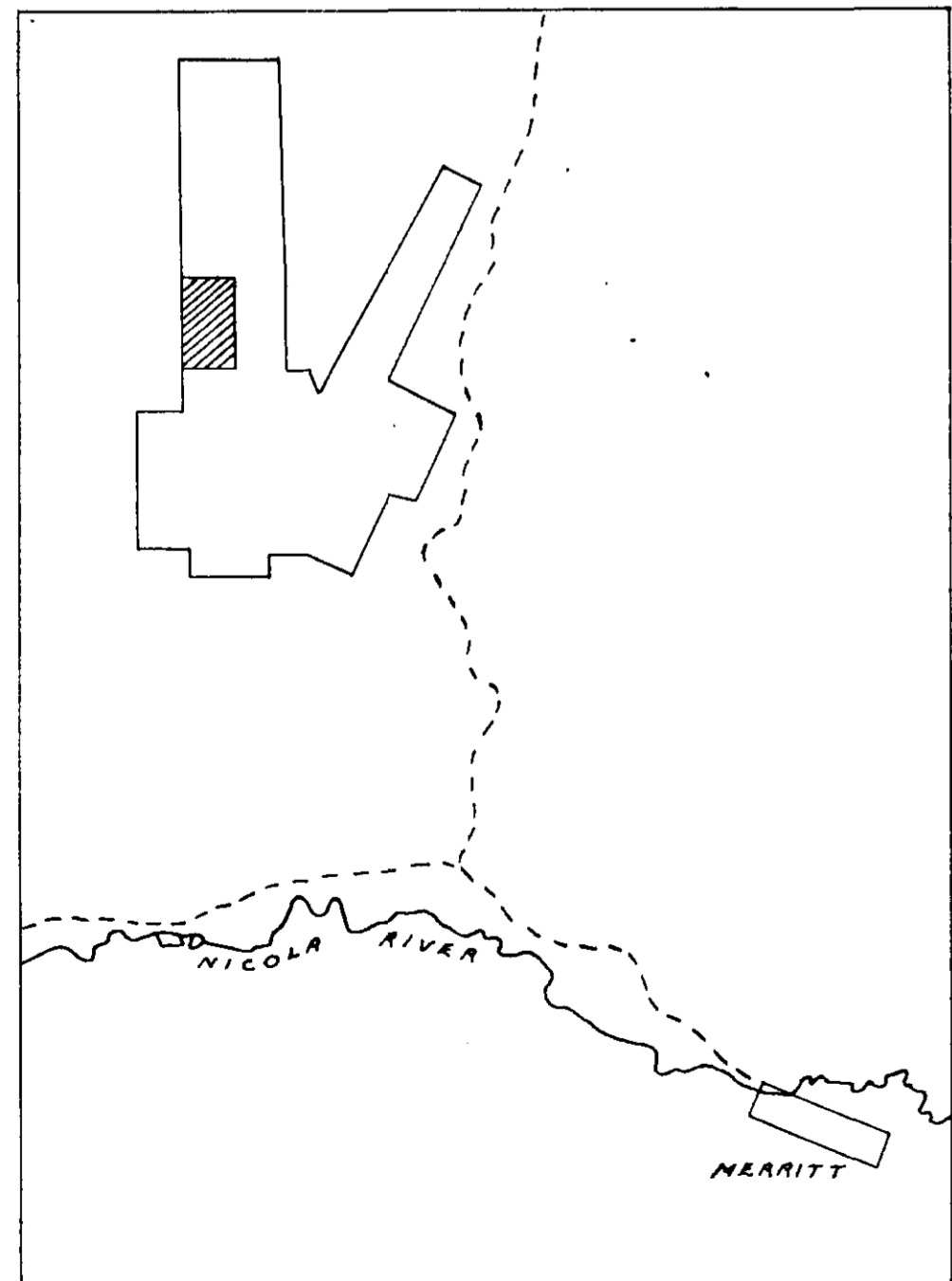
LOE N° 2

LOE N° 7

LOE N° 5

LOE N° 3

LOE N° 1



--- DENOTES APPROXIMATE CLAIM BOUNDARY

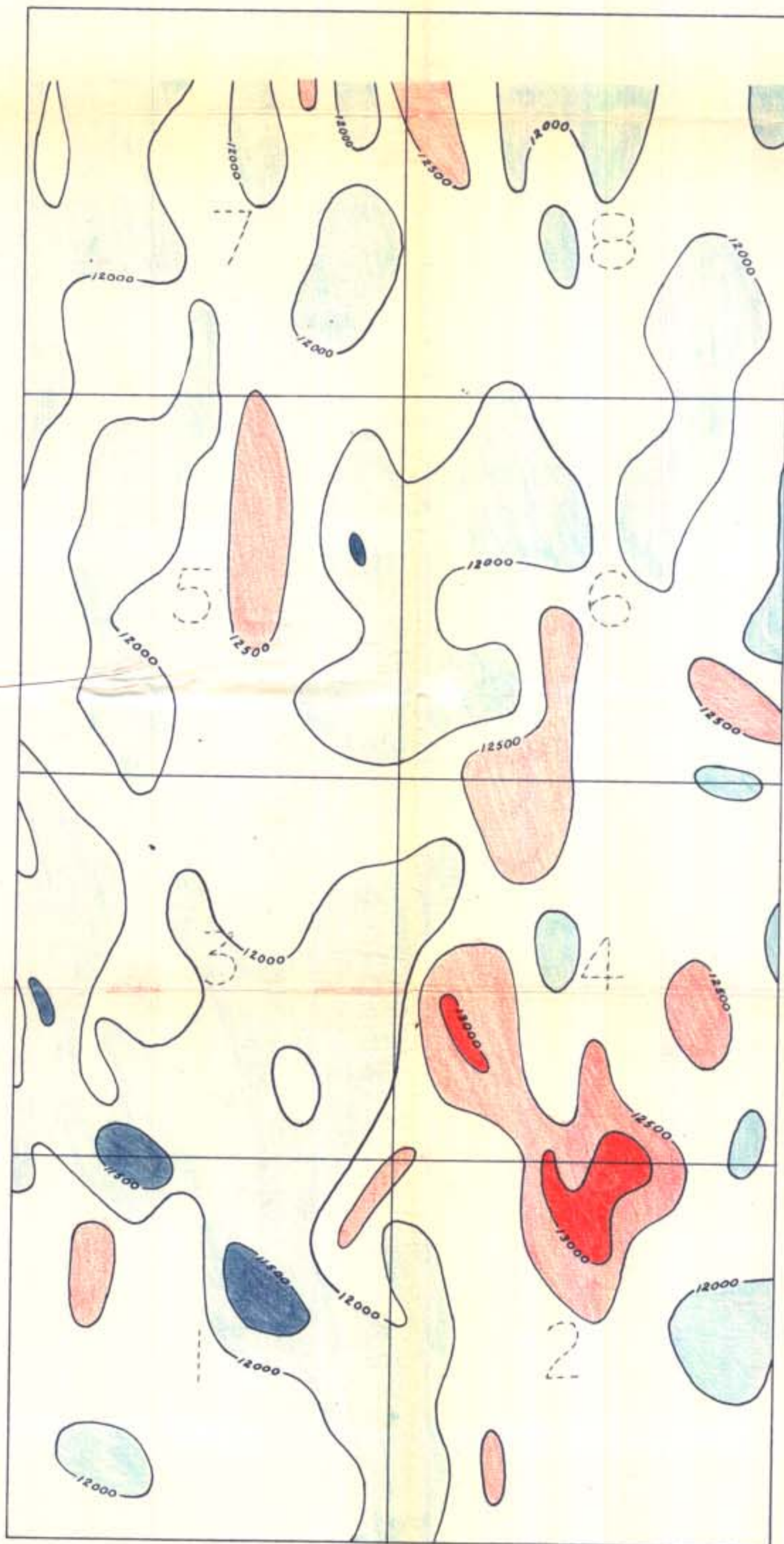
VALUES MEASURED WITH A RADAR ST MAGNETOMETER

A MAP SHOWING THE
 RECORDED MAGNETIC VALUES IN GAMMAS
 ON THE
 LOE MINERAL CLAIMS
 CRAIGMONT PROPERTY
 MERRITT, B. C.
 JANUARY, 1958 SCALE: 1" = 400'
 Drawn by W.S. Portland

Department of
 Mines and Petroleum Resources
 ASSESSMENT REPORT
 NO. 199 MAP #1

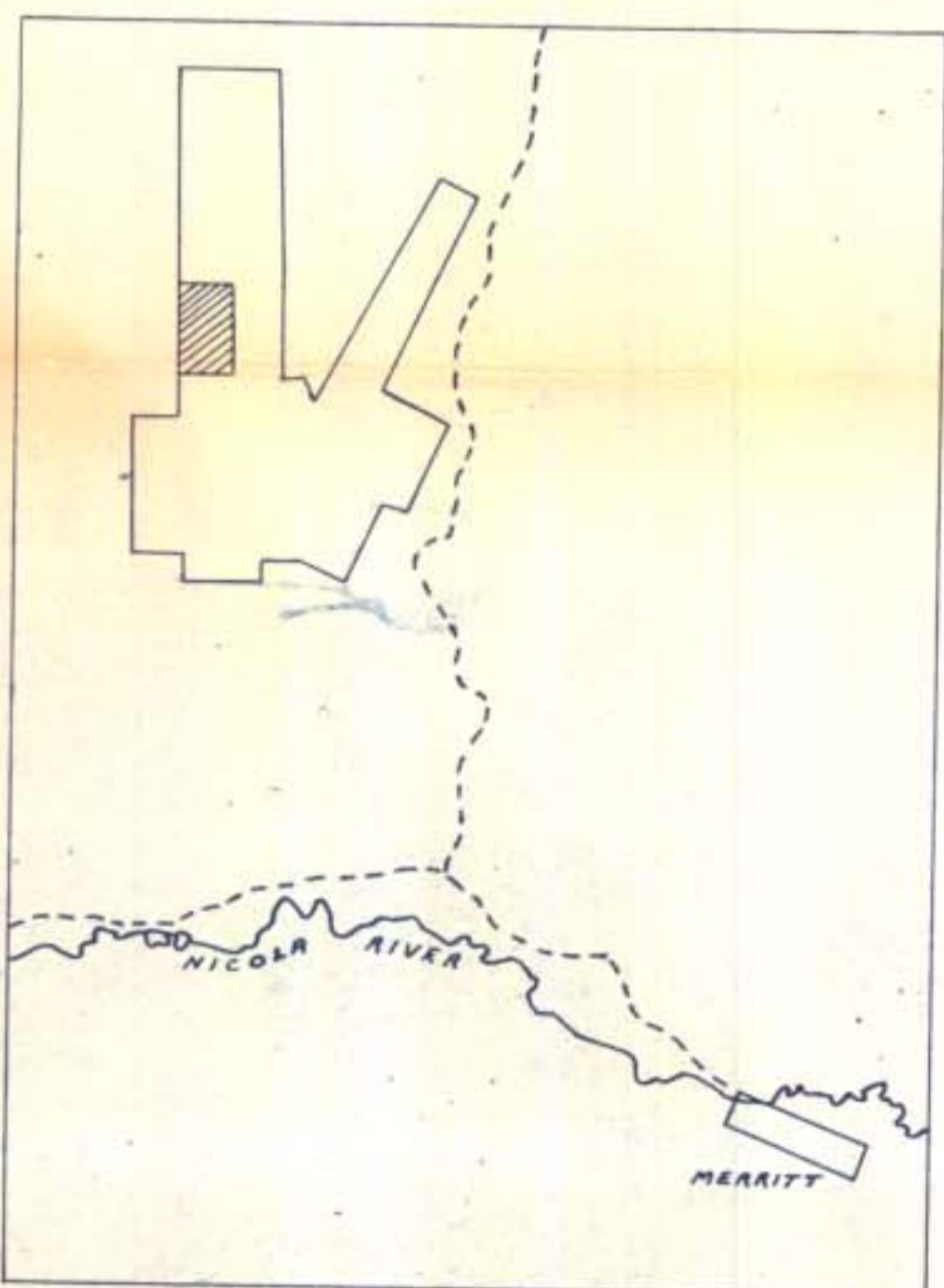
199
 MAP 1

APPENDIX B



LOE MINERAL CLAIMS

LEGEND
 11000 - 11500 F
 11500 - 12000 F
 12000 - 12500 F
 12500 - 13000 F
 13000 F +
 CONTOUR INTERVAL 500 F



RESULTS OF A GROUND MAGNETOMETER SURVEY
 ON THE
 LOE MINERAL CLAIMS
 CRAIGMONT PROPERTY
 MERRITT, B. C.

JANUARY, 1958

SCALE: 1" = 400'

Drawn by: W. S. Pentland
 for

Department of
 Mines and Petroleum Resources
 ASSESSMENT REPORT
 NO. 199 MAP #2



199
 MAP 2

APPENDIX 3