

222

NORANDA EXPLORATION COMPANY LIMITED

GEOPHYSICAL SURVEY

of the

MERRITT GROUPS OF MINERAL CLAIMS

THREE MILES NORTHWEST

of

LOWER NICOLA, B.C.

70° 120° EAST SOUTHEAST

M.M. Menzies, P. Eng.

January-September, 1958

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NOBANDA EXPLORATION COMPANY LIMITED

COST OF GEOPHYSICAL SURVEY

of the

MERRITT GROUPS OF MINERAL CLAIMS

LOWER NICOLA, B.C.

January - September, 1958

PROFESSIONAL:

SUPERVISORY - 50 days @ \$35.00/day - \$1,750.00
SURVEY - 150 days @ \$35.00/day - \$5,250.00

TECHNICAL:

DRAUGHTING - 50 days @ \$20.00/day - \$1,000.00

LABOR:

SURVEY GRID 350 days @ \$15.00/day - \$5,250.00
ASSISTANTS 50 days @ \$15.00/day - \$750.00

TOTAL \$14,000.00

COST DISTRIBUTION:

<u>GROUP</u>	<u>No. of CLAIMS</u>	<u>DISTRIBUTION/CLAIM</u>	<u>DISTRIBUTION/GROUP</u>
Paquet	8	\$100.00	\$800.00
Retan	8	\$100.00	\$800.00
H.A.R.	8	\$100.00	\$800.00
CENTER (A.R.H.)	8	\$100.00	\$800.00
WEST (A.R.H.)	6	\$100.00	\$600.00
ERM	5	\$100.00	\$500.00
O.K.	4	\$100.00	\$400.00
B.A.H.	3	\$100.00	\$300.00
ETTA	3	\$100.00	\$300.00
CHIP	3	\$100.00	\$300.00
SANDY	2	\$100.00	\$200.00
M.M.M.	2	\$100.00	\$200.00
OTHERS	<u>5</u>	\$100.00	<u>\$500.00</u>

65 claims

TOTAL \$6,500.00

Merritt
Merritt

MERRITT GROUPS OF MINERAL CLAIMS

GROUPS

PAQUET

RETAN

H.A.R. ✓

CENTER (A.R.H.) ✓

WEST (A.R.H.) ✓

ERN

O.K. ✓

R.A.H.

ETTA

CHIP

SANDY

M.M.M.

CLAIMS

PAQUET NO'S 1 - 8

RETAN NO'S 1 - 8

H.A.R. NO'S 1 - 8

CENTER NO'S 9 - 16

WEST NO'S 16 - 22

ERN NO'S 1 - 5

O.K. NO'S 3, 4, 7, 6 Fr.,

R.A.H. NO'S 1, 2, 4,

ETTA NO'S 6, 7, 8.

CHIP NO'S 7, 8, 9.

SANDY NO'S 3, 4.

M.M.M. NO'S 1, 2.

OTHERS

PAQUET FR.

SALAMANDER FR.

ERN FR.

NER NO. L FR.

M.M.M. NO. _ FR.

TOTAL NUMBER OF CLAIMS - 65

NORANDA EXPLORATION COMPANY LIMITED

GEOFYSICAL SURVEY

of the

MERRITT GROUPS OF MINERAL CLAIMS

INTRODUCTION:

Noranda Exploration Company Limited first became interested in the Merritt area in the summer of 1958 and by the spring of 1958 had acquired 147 claims and fractions by staking, purchase and option. Work was started in November 1958. Line cutting and geophysical surveying were carried on during the winter and spring of 1958 and surface geological mapping and diamond drilling followed during the spring and summer.

DESCRIPTION:

The Merritt property is on the southeast slope of Prementory Hills north and west of Lower Nicola, B.C. The eastern claims cover the flat bottom of Guichen Creek Valley at an elevation of 2500 feet while the western claims are on the steep slopes of Prementory Hills at an elevation of 5000 feet. The property is drained by Winney, Birkett, Stumbles and Guichen Creeks. During the summer the smaller streams disappear into the gravel which underlies their lower courses. A few small swampy lakes are found on the property. Climate is characteristic of the interior dry belt with only slight rainfall during the summer months. The claims cover a logged area with scattered stands of pine, fir and balsam still remaining. Underbrush is light.

A branch line of the Canadian Pacific Railway and a Provincial highway follow the winding Nicola River Valley two miles south of the property.

Forestry roads, old logging roads, and recently constructed bulldozer roads give access to most of the mining claims in the general area.

Prospectors have been active in the Merritt district at various times for the past 70 or 80 years. Numerous claims were staked and some work done but the only nearby properties which have any recorded production are the Aberdeen Mine 8 miles to the north and the Copper Belle 5 miles to the southeast. Small quantities of highgrade copper ore were found at both properties. The Craigmont Mine, where large quantities of copper ore have been indicated, is about one half mile north of the north boundary of the Merritt property. Old pits showing small amounts of copper mineralization are found immediately west of the Etta Claims and others lie on the southern slopes of Prementary Hills.

During the summer of 1958 several companies, syndicates and individuals conducted exploration programmes on claims near the Merritt property and in the Highland Valley area 20 miles to the north.

BIBLIOGRAPHY:

- Cockfield, W.E. (1948): Geology and Mineral Deposits of Nicola Map-Area, British Columbia; Geol. Surv., Canada. Memoir 249
- Duffell, S. and McTaggart, K.C. (1951): Ashcroft Map-Area, British Columbia; Geol. Surv., Canada. Memoir 262
- Rice, H.M.A. (1947): Geology and Mineral Deposits of the Princeton Map-Area, British Columbia; Geol. Surv., Canada. Memoir 243
- White, W.H., Thompson, R.M., McTaggart, K.C. (1958): The Geology and Mineral Deposits of Highland Valley, B.C.; C.I.M. Transactions Vol. LX, 1957 PP 273-289.

GENERAL GEOLOGY:

Table of Formations occurring on the Merritt Property

Kingsvale Group - - - - -	Lower Cretaceous
---unconformity---	
Guichen Creek Batholith - - - -	Lower Jurassic
---intrusive contact---	
Nicola Group - - - - -	Upper Triassic

The Nicola Group is composed mainly of volcanic rocks with some interbedded sediments and includes tuffs, breccias, agglomerates, limestone, argillite, and conglomerate. Limestone normally occurs in short, narrow lenses interbedded with other rocks. Upper Triassic fossils are found in the sediments. The Group is spread over a very large area extending southerly from north of Kamloops Lake to a point just north of the International Border.

The Guichen Creek Batholith is composed mainly of granodiorite and quartz diorite with some diorite and gabbro. The batholith is intrusive into the Nicola Group and is overlain by Mid-Jurassic rocks. It was probably emplaced during the Lower Jurassic period and is therefore older than the main Coast Intrusions west of the Fraser River.

Much of the Merritt property lies south of the southern extremity of the main Guichen Creek batholith. The batholith extends 40 miles to the northwest and has a maximum width of 17 miles. A stock 1 to 3 miles northwest of Lower Nicola is separated from the main batholith by older Nicola rocks and the overlying Kingsvale Group and thus its exact relationship with the main batholith is unknown.

Copper deposits at Highland Valley are found in granitic rocks intruding the Guichen Creek batholith and in breccias partially derived from them. The Craigmont copper deposit occurs in Nicola rocks near the contact between the

Guichen Creek batholith and limy tuffs of the Nicola Group.

The Kingsvale Group consists of two parts, a series of sedimentary rocks at the base of the group and a series of volcanic rocks conformably above. These rocks are arkose, grit, mudstone, conglomerate, argillite, andesite, basalt, agglomerate, tuff, and breccia. The sedimentary beds are not always present. The Kingsvale Group is unconformably above the Nicola Group and Guichen batholith. Between Promontory Hills and Lower Nicola the Cretaceous rocks have been mapped as Kingsvale by the Geological Survey of Canada but these are somewhat different than Kingsvale rocks found elsewhere.

REASONS FOR INVESTIGATIONS:

The Merritt claims adjoin Craigmont to the south and east and as geological conditions on both properties are similar it was hoped that an orebody of the Craigmont type might be discovered by detailed Geological and Geophysical surveys.

CONTROL:

The zero base line was laid out by transit with the point of origin near the southwest corner of lot 1915. This line was cut and chained at 100 foot intervals 8,800 feet to the east and 11,200 feet to the west. A second east-west base line was later established 6,000 feet south of the zero base line. Later, base lines at 9,000 North and 10,000 North were used to control the surveys of the Jim and Chip claims. Section lines, spaced 400 feet apart, were carried to the north and south of the zero and 6,000 South base lines by pickets and chained at 100 foot intervals. Geophysical and geological surveys were then carried out using this system of lines for control. A B.C. land surveyer determined claim boundaries of the more important groups and checked the positions of the picket lines. Sixteen claims were fully

surveyed by transit and all others were tied in by chain and brunton with some transit control.

MAGNETOMETER INSTRUMENT:

The instrument is a Sharpe D.I.M. magnetometer, a super-dip needle type. Readings represent the number of degrees of clockwise needle swing from zero at top center. The scale constant of the instrument is very nearly 100 gammas per degree in the 90° to 180° quadrant. Before starting a survey in any area the auxilliary magnet is adjusted so that readings will fall within this quadrant of maximum sensitivity.

PROCEDURE:

Readings were taken every 100 feet along the section and base lines. In more important areas where detailed coverage was required section lines were spaced at 100 or 200 foot intervals. Normally, only one magnetometer operator was needed but in areas where section lines were widely spaced a compass man assisted the operator in running lines and chaining off each station. Corrected readings were plotted at a scale of 1 inch to 400 feet and contoured at 5 degree intervals.

Six base control stations were established at widely spaced points on the Merritt property and diurnal variations were eliminated throughout the survey by referring to the nearest base station three times daily.

RESULTS:

Average readings over the various rock types are as follows:

Kingsvale Group -	155-157 degrees.
Nicola Group -	159-160 degrees.
Granitic Rocks -	157-160 degrees.

The survey indicated three major anomalous areas. These are composed of a number of small magnetic highs.

Anomaly "A" on the Paquet No. 3 and 5 claims is underlain by Kingsvale Group rocks. Diamond drill hole M-5 probed this area and disclosed only Kingsvale Group rocks with small amounts of disseminated magnetite.

Anomaly "B" on the Ern No. 3 and ARH No. 15 claims is underlain by Nicola Group and granitic rocks. Diamond drill holes M-2, M-3, and M-4 showed disseminated magnetite in Nicola Group rocks and some weak pyrite mineralization. Some very minor copper mineralization was found in altered granitic rocks in this general area.

Anomaly "G" on the Jim and Chip claims was discovered by an airborne magnetometer survey and this was followed by a detailed ground survey over this area with readings taken every 100 feet on section lines spaced 200 feet apart. No outcrops were found near the anomaly and the glacial cover is probably from 200 to 500 feet thick. The ground survey outlined a number of small irregular magnetic highs which fell within the anomalous airborne area. This anomalous area probably marks the contact between the Guichen Creek batholith and Nicola Group rocks. Drilling of this area has not been attempted because of the great depth of overburden.

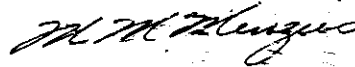
CONCLUSIONS:

No important copper mineralization has been found associated with the magnetic anomalies of the Merritt property.

The magnetic characteristics of certain horizons within the thick Kingsvale Group probably make the discovery of magnetic deposits within the underlying Nicola rocks very unlikely.

The magnetic survey has been of value in interpreting structure in areas of granitic and Nicola rocks.

Respectfully submitted,



Morris M. Mansie, P.Eng.

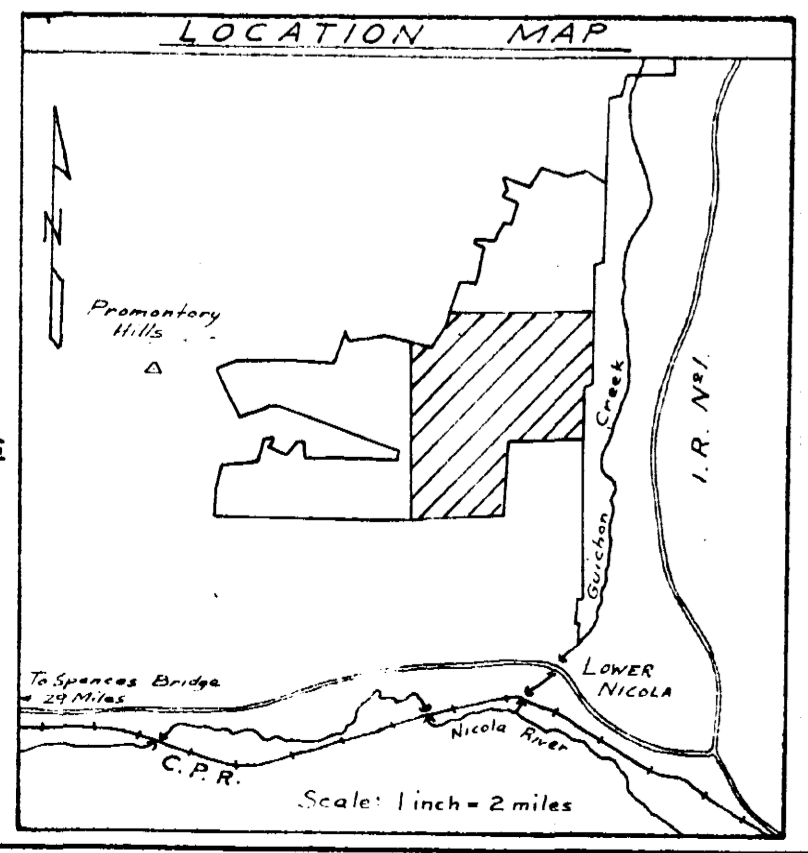
14th November, 1958



NICOLA-MAMEET I.R. No 1

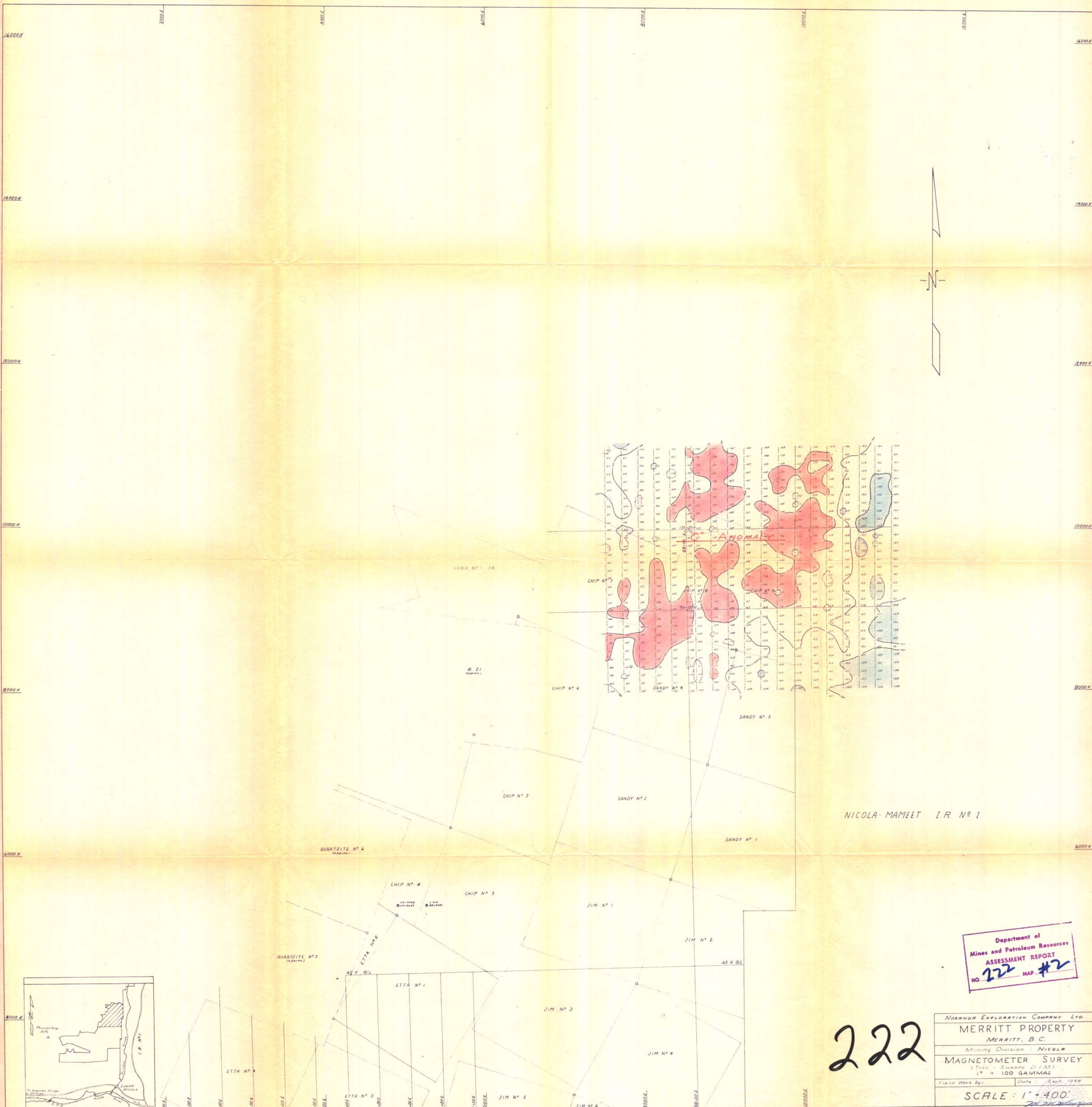
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Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 222 MAP #1



NORANDA EXPLORATION COMPANY LTD.
MERRITT PROPERTY
MERRITT, B.C.
Mining Division: NICOLA
MAGNETOMETER SURVEY
(Type - SHARPE D.I.M.)
1" = 100 GAMMAS
Field Work by: Date: Sept. 1958
SCALE: 1" = 400'

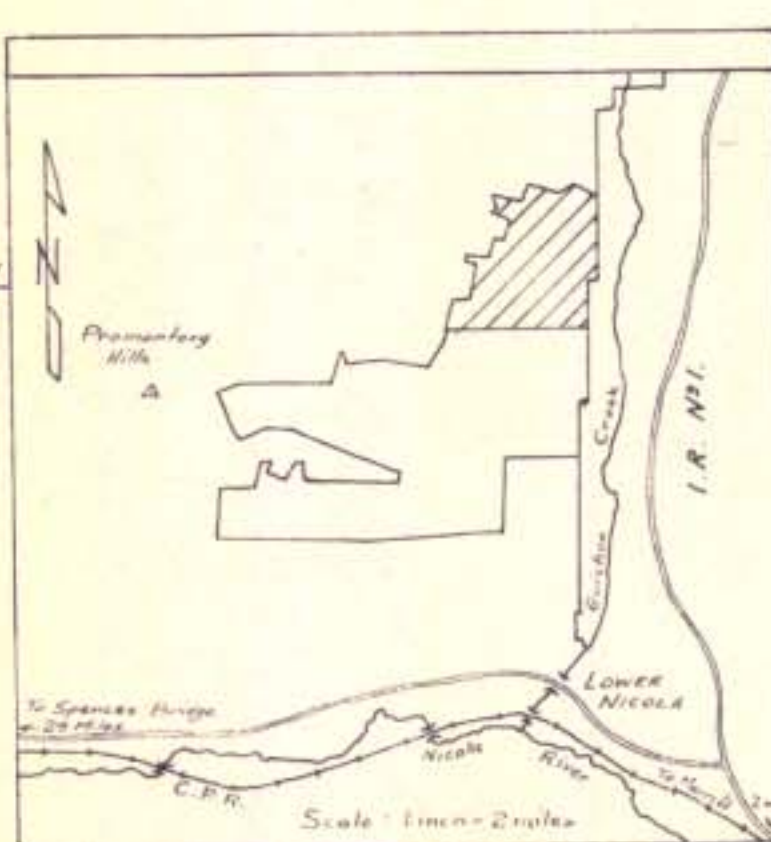
Handwritten signature and stamp



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 222 MAP #2

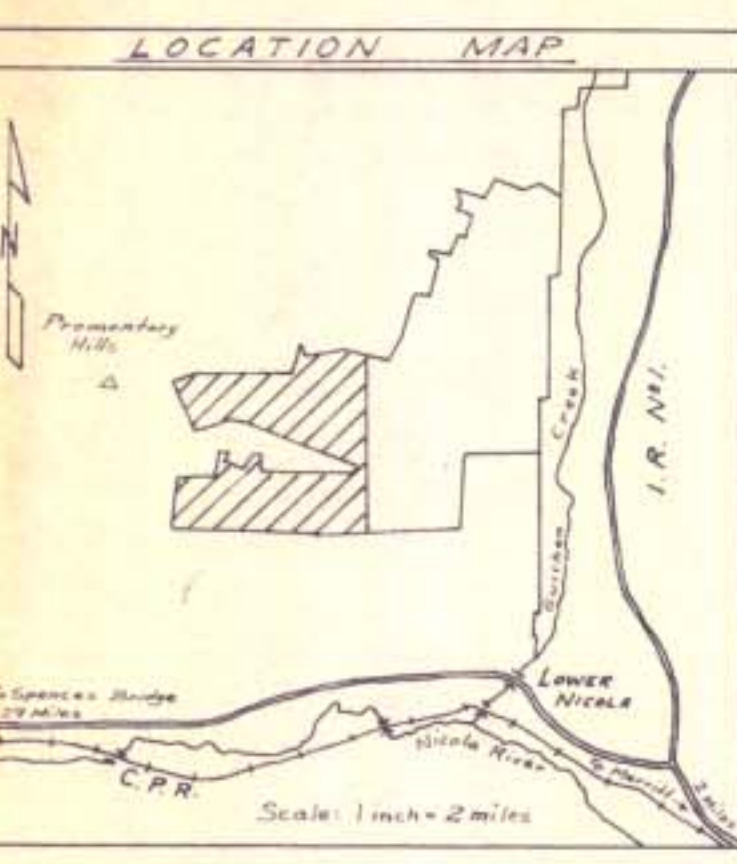
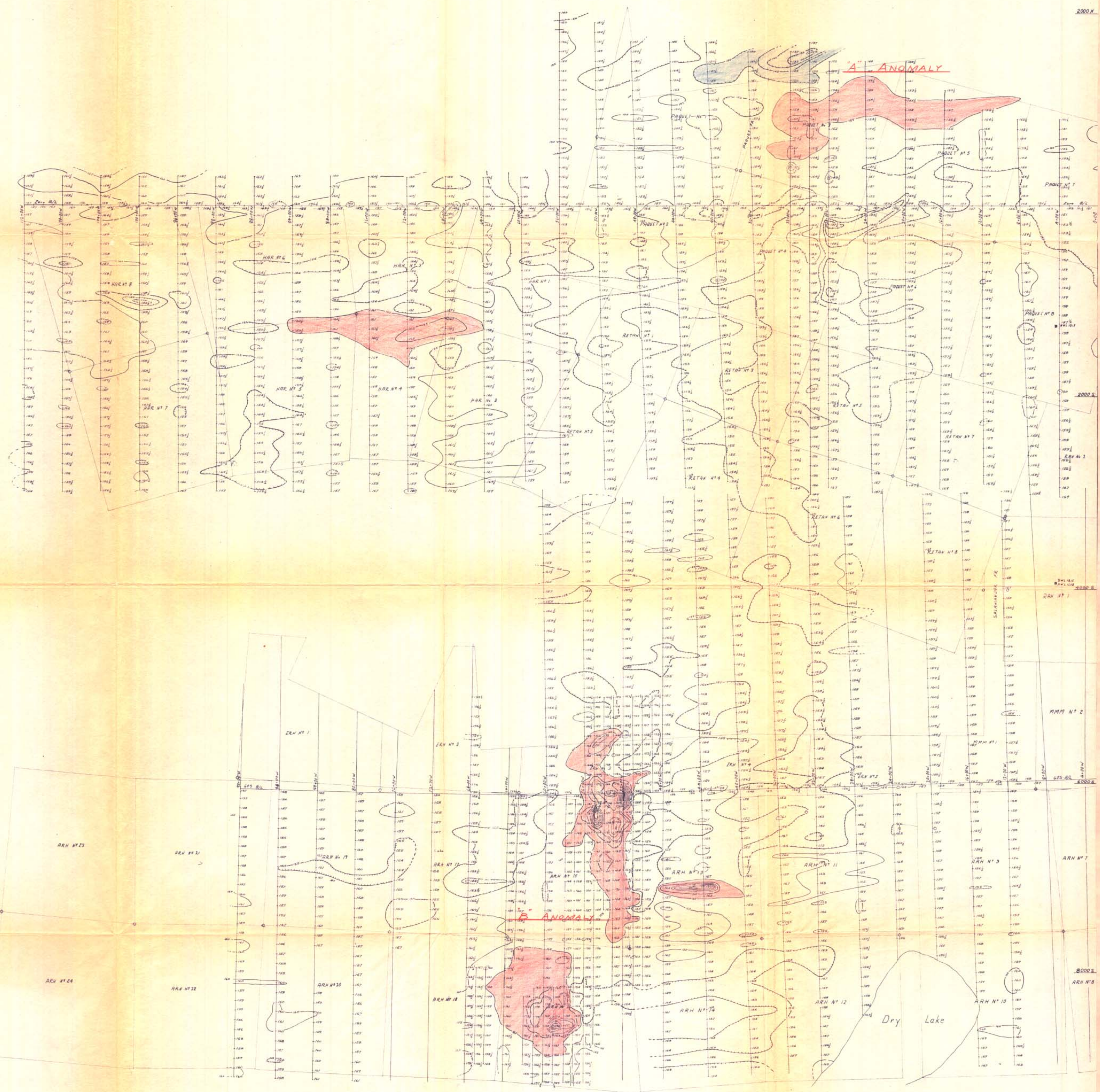
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NORANDA EXPLORATION COMPANY LTD.	
MERRITT PROPERTY	
MERRITT, B.C.	
Mining Division: NICOLA	
MAGNETOMETER SURVEY	
(Type - SHARPE D.I.M.)	
1" = 100 GAMMAS	
Field Work by:	Date: Sept. 1958
SCALE: 1" = 400'	



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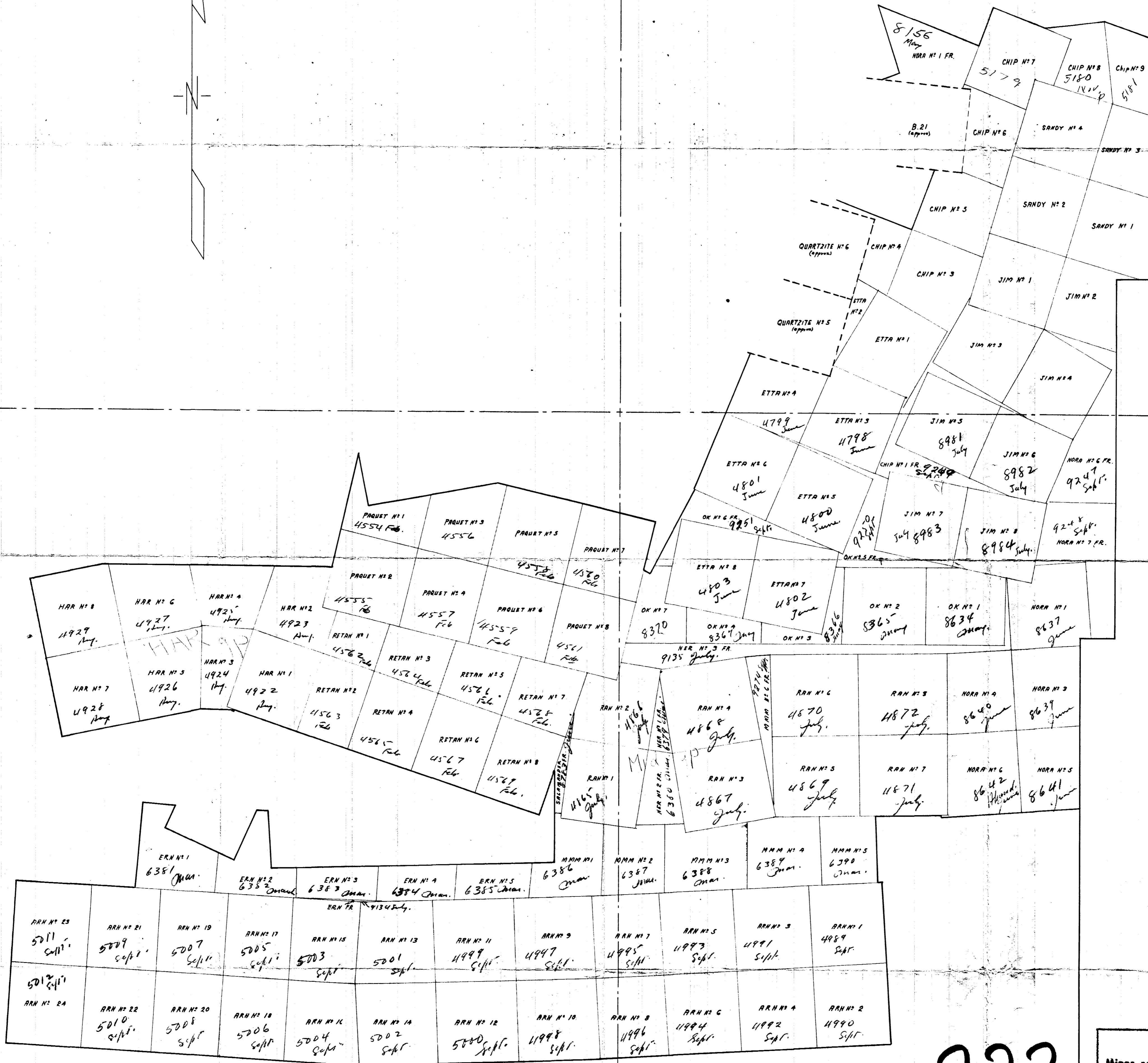
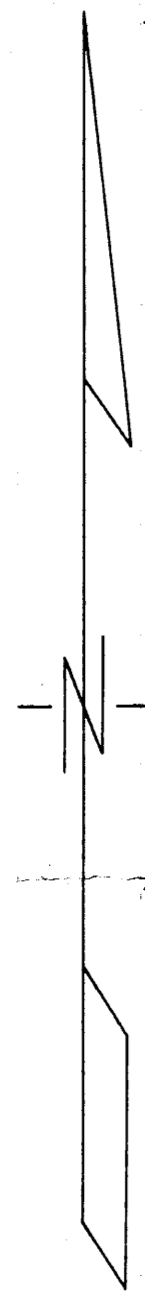
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14000 W
16000 W
18000 W
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Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 222 MAP 73

NORANDA EXPLORATION COMPANY LTD.
MERRITT PROPERTY
MERRITT, B.C.
Mining Division: NICOLA
MAGNETOMETER SURVEY
(TYPE - SHARPE D.I.M.)
1" = 100 GAMMAS
Field Work by: _____ Date: Sept. 1958
SCALE: 1" = 400'



NE Sheet

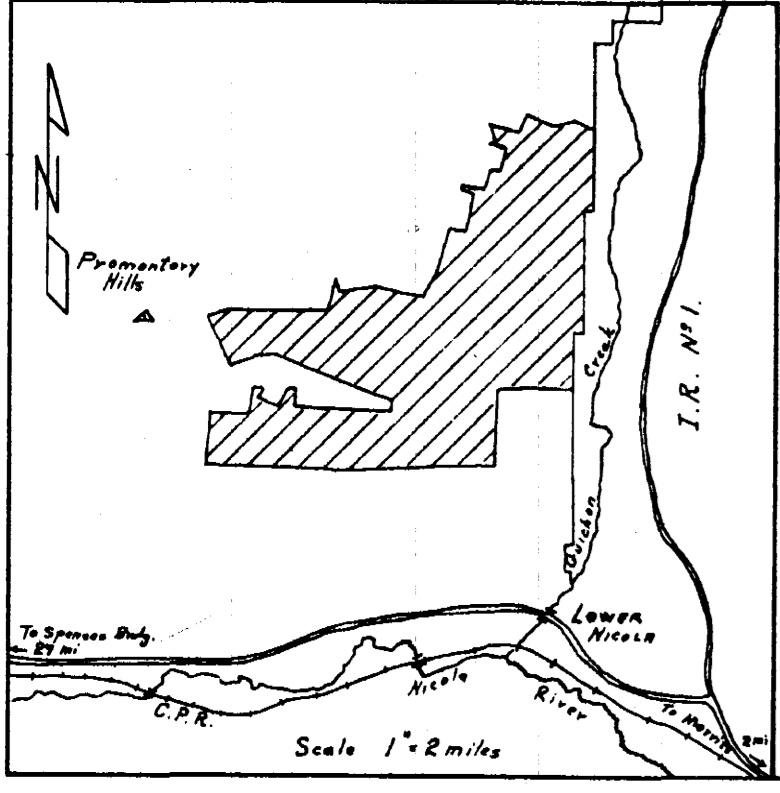
NICOLA - MAMEET I.R. NO 1

SW Sheet

SE Sheet

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Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 222 #4



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to this

NORANDA EXPLORATION COMPANY LTD.
MERRITT PROPERTY
MERRITT, B.C.
NICOLA MINING DIVISION
INDEX MAP
Field Work by: H.T. Connell Date: Sept. 1958
SCALE: 1" = 1000'