

236

NORANDA EXPLORATION COMPANY LIMITED

GEOLOGICAL SURVEY

of the

MERRITT GROUPS OF MINERAL CLAIMS

THREE MILES NORTHWEST

of

LOWER NICOLA, B.C.

50° 120° EAST SOUTHEAST

M.M. Menzies, P. Eng.
April-September, 1958

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NORANDA EXPLORATION COMPANY LIMITED

COST OF GEOLOGICAL SURVEY

of the

MERRITT GROUPS OF MINERAL CLAIMS

LOWER NICOLA, B.C.

April-September, 1958

PROFESSIONAL:

SUPERVISORY & MAPPING - 150 days @ \$35.00/day - \$5,250.00
SURVEYING B.C.L.S. - 30 days @ \$35.00/day - 1,050.00

TECHNICAL:

DRAUGHTING - 60 days @ \$20.00/day - \$1,200.00
SURVEYING - 60 days @ \$20.00/day - 1,200.00

LABOR:

SURVEY GRID - 350 Man days @ \$15.00/day - \$5,250.00
ASSISTANTS - 100 Man days @ \$15.00/day - 1,500.00

TOTAL - \$15,450.00

COST DISTRIBUTION:

<u>GROUP</u>	<u>NO. of CLAIMS</u>	<u>DISTRIBUTION/CLAIM</u>	<u>DISTRIBUTION/GROUP</u>
PAQUET	8	\$100	\$800.00
RETAN	8	\$100	\$800.00
H.A.R.	8	\$100	\$800.00
R.A.H.	8	\$100	\$800.00
ETTA	8	\$100	\$800.00
NORA NO. 1	7	\$100	\$700.00
O.K.	7	\$100	\$700.00
JIM	8	\$100	\$800.00
SANDY	8	\$100	\$800.00
CHIP	3	\$100	\$300.00
ERN	8	\$100	\$800.00
EAST	8	\$100	\$800.00
CENTER	8	\$100	\$800.00
WEST	8	\$100	\$800.00
OTHERS	<u>10</u>	\$100	<u>\$1,000.00</u>

TOTAL 115 CLAIMS

TOTAL - \$11,500.00

M. H. Menzies

MERRITT GROUPS OF MINERAL CLAIMS

<u>GROUPS</u>	<u>CLAIMS</u>
PAQUET	PAQUET No's 1 - 8
RETAN	RETAN No's 1 - 8
H.A.R.	H.A.R. No's 1 - 8
R.A.H.	R.A.H. No's 1 - 8
ETTA	ETTA No's 1 - 8
NORA No. 1	NORA No's 1,2,3,4,5, 6 Fr.,7 Fr.,
O.K.	O.K. No's 1,2,3,4, 5 Fr., 6 Fr., 7.
JIM	JIM No's 1 - 8
SANDY	SANDY No's 1 - 4
CHIP	CHIP No's 5 - 8
CHIP	CHIP No's 1 Fr., 2 Fr. , 3, 4.
ERN	ERN No's 1 - 5
	MMM No's 1, 2.
	SALAMANDER FR.
EAST	ARRH No's 1 - 8
CENTER	ARRH No's 9 - 16
WEST	ARRH No's 17 - 24

INDIVIDUAL CLAIMS:

PAQUET Fr.
NER No's 1 Fr., 2 Fr., 3 Fr.,
ERN Fr.
NORA No. 1 Fr.
MMM No's 3, 4, 5, 6 fr.

TOTAL NUMBER OF CLAIMS - 115

NORANDA EXPLORATION COMPANY LIMITED

GEOLOGICAL SURVEY

of the

MERRITT GROUPS OF MINERAL CLAIMS

INTRODUCTION:

Noranda Exploration Company Limited first became interested in the Merritt area in the summer of 1957 and by the spring of 1958 had acquired 147 claims and fractions by staking, purchase and option. Work was started in November 1957. Line cutting and geophysical surveying were carried on during the winter and spring of 1958 and surface geological mapping and diamond drilling were done during the spring and summer.

DESCRIPTION:

The Merritt Property is on the southeast slope of Promontory Hills north and west of Lower Nicola, B.C. The eastern claims cover the flat bottom of Guichon Creek Valley at an elevation of 2500 feet while the western claims are on the steep slopes of Promontory Hills at an elevation of 5000 feet. The property is drained by Winney, Birkett, Stumbles and Guichon 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 Promontory 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.

GENERAL GEOLOGY:

Bibliography

- Cookfield, 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. (1957): The Geology and Mineral Deposits of Highland Valley, B.C.; C.I.M. Transactions Vol. LX, 1957, P.P. 273-289.

Table of Formations occurring on the Merritt Property

Kingsvale Group - - - - -	Lower Cretaceous
—unconformity—	
Guichon 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 Guichon 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 Guichon 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 Guichon Creek Batholith and in breccias partially derived from them. The Craigmont copper deposit occurs in Nicola rocks near the contact between the Guichon 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 Guichon Creek 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.

PROCEDURE:

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. Section lines, spaced 400 feet apart, were carried to the north and south of the 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 surveyor 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.

GEOLOGICAL MAPPING:

The geologist examined and mapped all outcrops using the base and section lines for control. Position of outcrops was determined by compass bearing and pacing from the nearest numbered stake. This information was plotted in the field on sheets of squared tracing paper at a scale of 1 inch to 200 feet. Outcrop maps covering an area 6000 feet square were prepared at this scale and the information was later reduced to 400 scale because of the size of the property.

Large areas were heavily covered by glacial till and entirely devoid of outcrops. Claim posts, roads, creeks, fences, and other topographical features were included with the geological data.

GEOLOGY:

Nicola Group rocks underlie most of the HAR and ERN claims. On the ERN No's 3 and 4 the rock is mostly andesite and basalt with some interbedded limy tuffs. A zone, at least 300 feet in width, of strong chloritization with hematite, pyrite, calcite and epidote occurs in greenstone. On the western HAR claims there are extensive outcrops of agglomerate and tuff with smaller outcrops of limestone.

Small bodies of granite were found within the Diorite Stock. In composition the rock is alaskite; orthoclase, plagioclase and quartz with no dark minerals. It is in contact with granitized diorite and transition rocks. To the south of the transition zone a large mass of granite apparently occurs but outcrops are widely scattered and the granite may not be continuous.

Kingsvale Group andesite and agglomerate forms prominent cliffs on the Paquet No. 6 and Retan No. 5 claims. Many other smaller outcrops of Kingsvale

Group rocks are found north of Winney Creek. A porphyritic, biotite rhyolite found on the ERN No. 4 claim and resembling other Kingsvale Group rocks, may be a dyke cutting Nicola rocks. An outcrop of agglomerate found in the canyon of Winney Creek probably belongs to the Kingsvale Group. This agglomerate, soft and easily weathered, resembles core sections in diamond drill hole M-1. A large part of the Merritt property is covered by Kingsvale and the geology relevant to ore deposition is thus effectively obscured.

The ARH claims Nos. 9 to 20 are underlain mainly by granitic rocks of the Stock to the south of the main Guichon Creek Batholith. The contact between the Stock and the Nicola Group trends east-west for about 6000 feet west of Dry Lake and then curves sharply to the southwest. Although the Nicola-Stock contact was not seen, it apparently follows a small ravine and is covered by heavy overburden. To the east of Dry Lake the contact is covered by the Kingsvale Group.

Most of the outcrops seen in the Stock area are granitized diorite. This rock is a diorite with small stringers and veins of pink feldspar and considerable epidote. Outcrops of unaltered diorite are commonly found associated with the altered diorite. On ARH No's 13 and 17 there are bodies of granitized diorite intimately mixed with Nicola rocks. These may be rocks in which the granitization process was not carried to completion. Smaller areas of this rock type are found elsewhere. All outcrops of transition rock examined are at least 400 feet from the main mass of the Nicola group with the exception of one small outcrop which lies well within the Nicola Group.

Small areas of very weak chalcopyrite mineralization were found near the border of the diorite stock. These are single fractures with minor amounts of chalcopyrite and malachite. This weak mineralization is in a wide transition zone and occurs in altered rocks of the Nicola Group and Diorite Stock.

DIAMOND DRILLING:

Five diamond drill holes were drilled to check geophysical anomalies. Diamond drill hole M-1 on the HAR No. 1 claim was drilled to a depth of 201 feet to test a good electro_magnetic conductor. The hole was entirely within the Kingsvale Group and most of the core was strongly weathered or altered. Near the end of the hole a soft agglomerate was encountered. It consisted of a dark grey matrix with light coloured angular fragments up to a half inch across. The matrix and many of the fragments were very soft and could be scratched by finger nail. It was satisfactorily established that this rock is an electrical conductor and thus responsible for the electromagnetic anomaly. Disseminated magnetite was found above this conductive horizon. The hole was abandoned before reaching the nearby Nicola contact because of drilling difficulties and because the electromagnetic anomaly was satisfactorily explained.

Diamond drill hole M-2 on the ERN No. 3 claim was drilled to 450 feet. After passing through 133 feet of overburden the hole encountered andesite, agglomerate, tuff, and greenstone of the Nicola Group. Several zones of gouge and fault breccia were found. These were only penetrated after much experimentation and they seriously delayed the drilling schedule. Very weak, disseminated pyrite mineralization was encountered in several sections of the core.

Diamond drill hole M-3 on the ERN No. 3 claim was drilled to 426 feet. The rocks and mineralization encountered in this hole was similar to that of D.D.H. M-2 except that a coarse grained diorite was cut between 195 and 354 feet. Fewer faults were present.

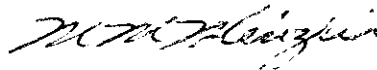
Diamond drill hole M-4 on the ARH No. 15 claim was drilled to 249 feet. The rock and mineralization in this hole are similar to that in D.D.H. M-2. Near the end of the hole some porphyry and diorite were encountered.

Diamond drill hole M-5 on the Paquet No. 3 claim was drilled to 363 feet entirely in overburden and rocks of the Kingsvale Group. Some fracture filling by a mineral of the zeolite family and a few small quartz veinlets were seen in the core.

CONCLUSIONS:

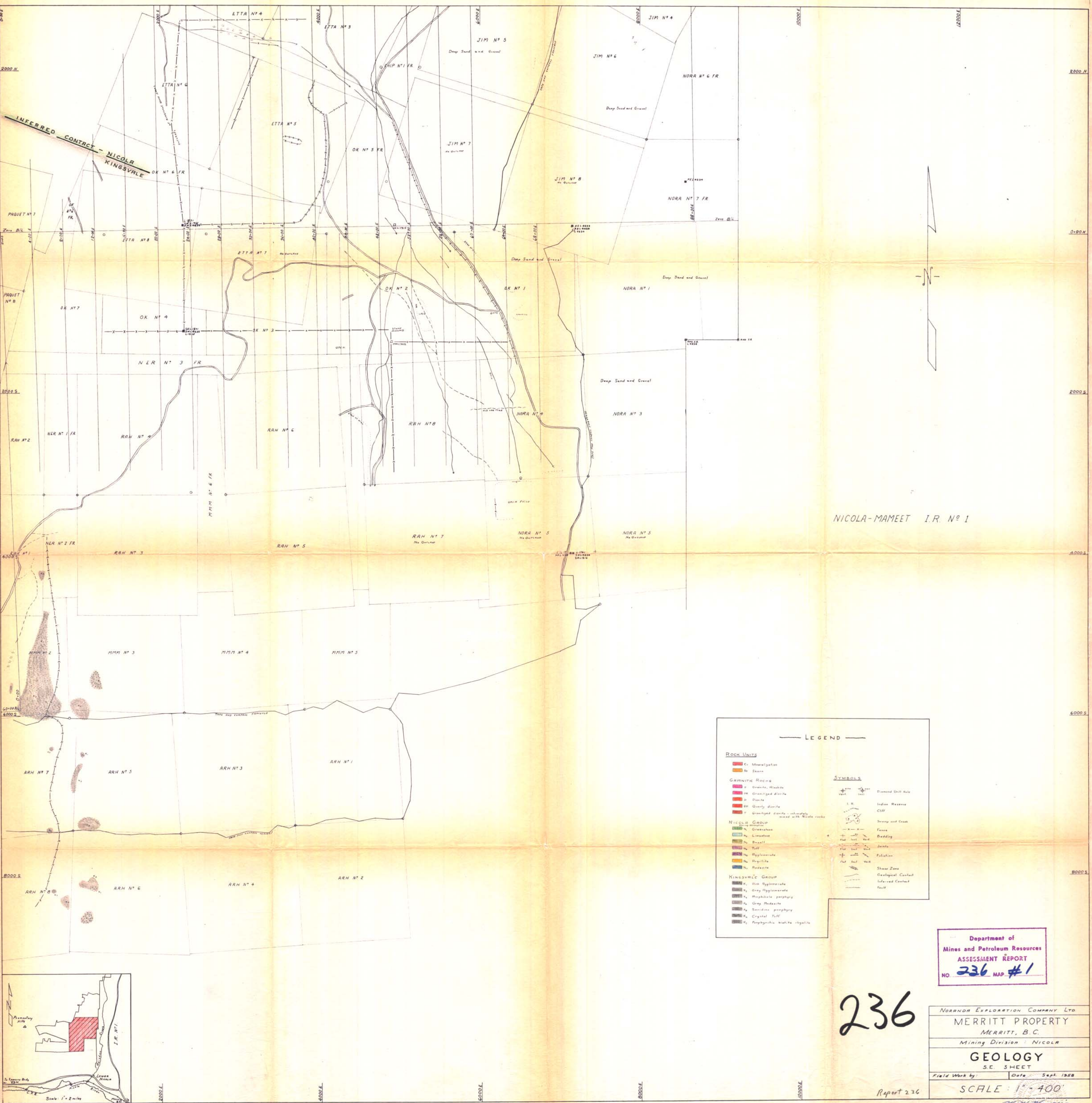
The geological and geophysical surveys and diamond drilling programme carried out between January and September, 1958 by Noranda Exploration Company Limited on their Merritt Groups of mineral claims did not reveal any appreciable copper mineralization. However, results of the current development programme at the Craigmont Mine may require renewed exploration on the Etta, Paquet, and Retan claims. These claims are entirely covered by overburden or Kingsvale rocks but the underlying geological features of this area, still effectively obscured, should become increasingly clear as the Craigmont programme gathers momentum.

Respectfully submitted,



Morris M. Menzies, P. Eng.

15th September, 1958



NICOLA-MAMEET I.R. No. 1

LEGEND

Rock Units		SYMBOLS	
 Cr. Metasiltstone	 Sh. Sand		Diamond Drill Hole
GRANITIC ROCKS			Indian Reserve
 G. Granite, Muskito	 G. Granitoid diorite		Cliff
 G. Diorite	 G. Quartz diorite		Swamp and Creek
 G. Granitoid diorite, interbedded with Nicola rocks			Fence
NICOLA GROUP			Bedding
 G. Greenstone	 G. Limestone		Joint
 G. Basalt	 G. Tuff		Fault
 G. Agglomerate	 G. Basaltic		Shear Zone
 G. Basaltic			Geological Contact
KINGSVALE GROUP			Inferred Contact
 G. Agglomerate	 G. Agglomerate		Fault
 G. Basaltic porphyry	 G. Basaltic		
 G. Basaltic	 G. Basaltic		
 G. Basaltic	 G. Basaltic		
 G. Basaltic	 G. Basaltic		
 G. Basaltic	 G. Basaltic		

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. **236** MAP #1

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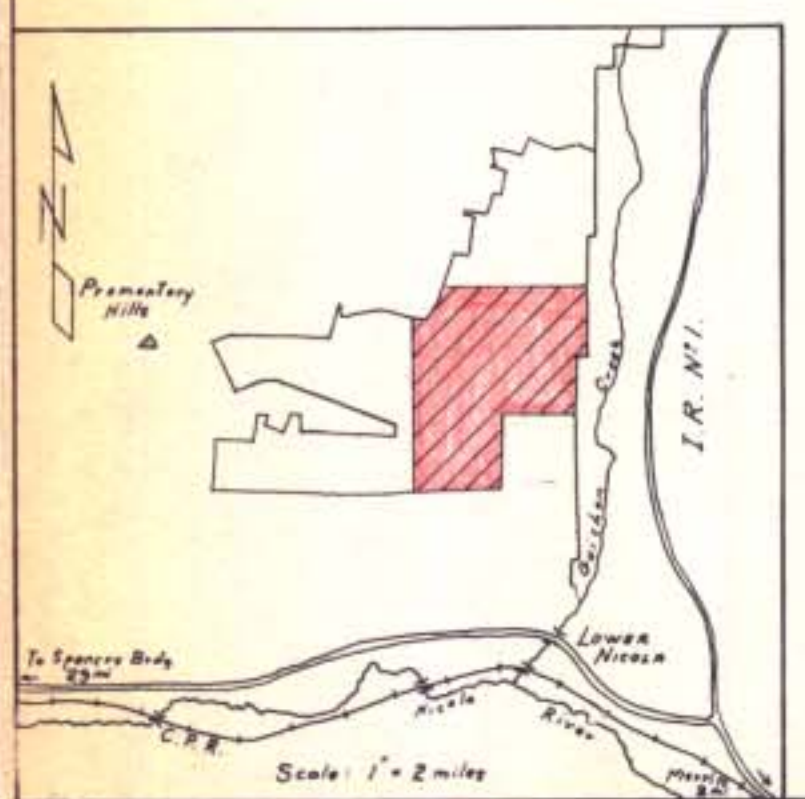
NORANDA EXPLORATION COMPANY LTD
MERRITT PROPERTY
MERRITT, B.C.
Mining Division - NICOLA

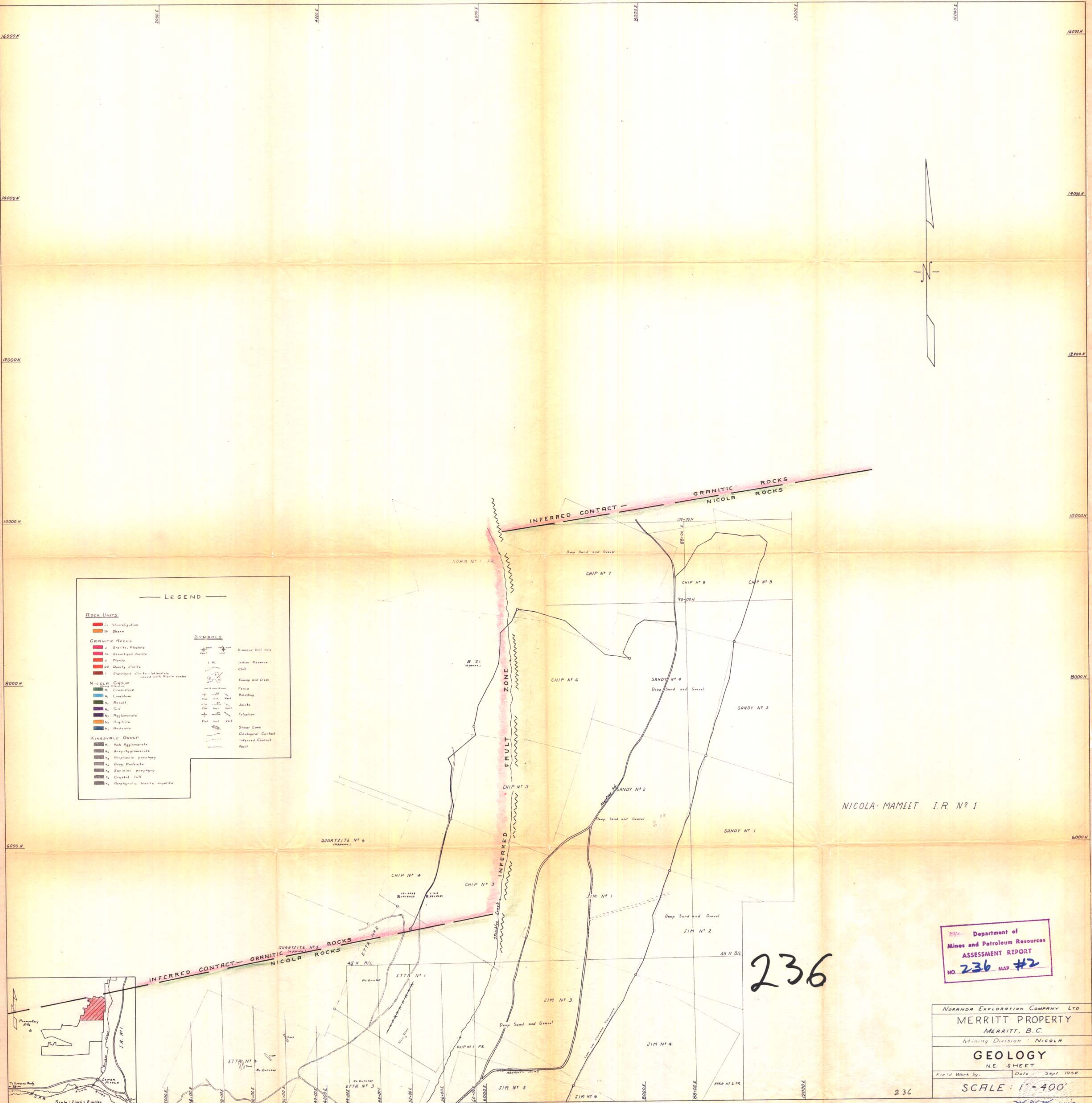
GEOLOGY
SE. SHEET

Field Work by: _____ Date: Sept. 1958

SCALE: 1" = 400'

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— LEGEND —

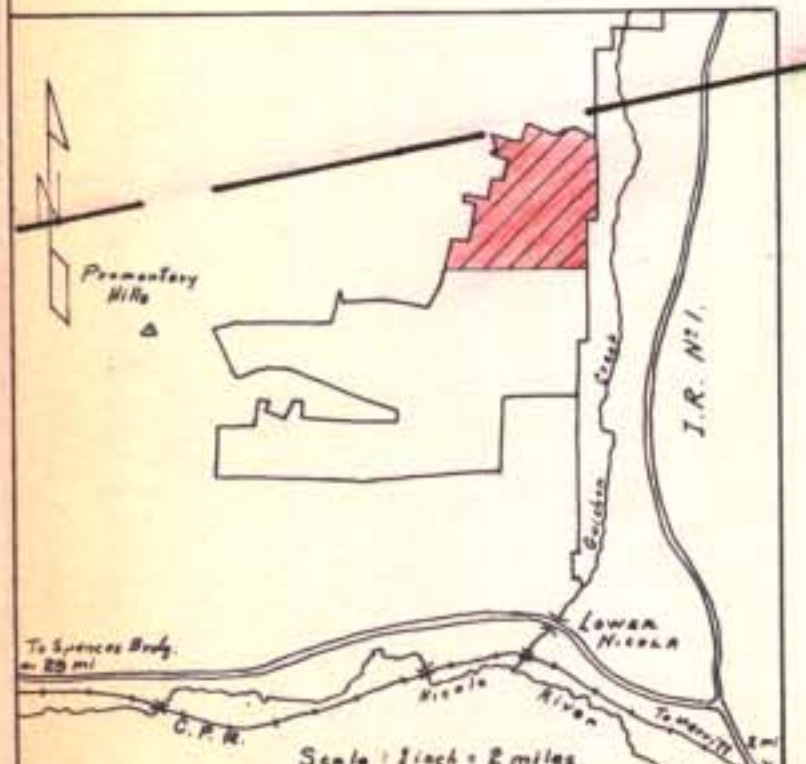
Rock Units	
1. Metasediment	
2. Shale	
GRANITIC ROCKS	
3. Granite, Alaskite	
4. Granitized diorite	
5. Diorite	
6. Quartz diorite	
7. Granitized diorite (alternately mixed with Nicola rocks)	
NICOLA GROUP	
8. Unconsolidated	
9. Limestone	
10. Basalt	
11. Tuff	
12. Agglomerate	
13. Basaltic	
14. Basaltic	
KINGSVILLE GROUP	
15. Pink Agglomerate	
16. Grey Agglomerate	
17. Amphibole porphyry	
18. Grey Mudstone	
19. Sandstone porphyry	
20. Crystalline Tuff	
21. Porphyritic basaltic tuffite	

SYMBOLS	
	Diamond Drill Hole
	Indian Reserve
	Swamp and Creek
	Fence
	Bedding
	Joint
	Faultion
	Shear Zone
	Geological Contact
	Inferred Contact
	Fault

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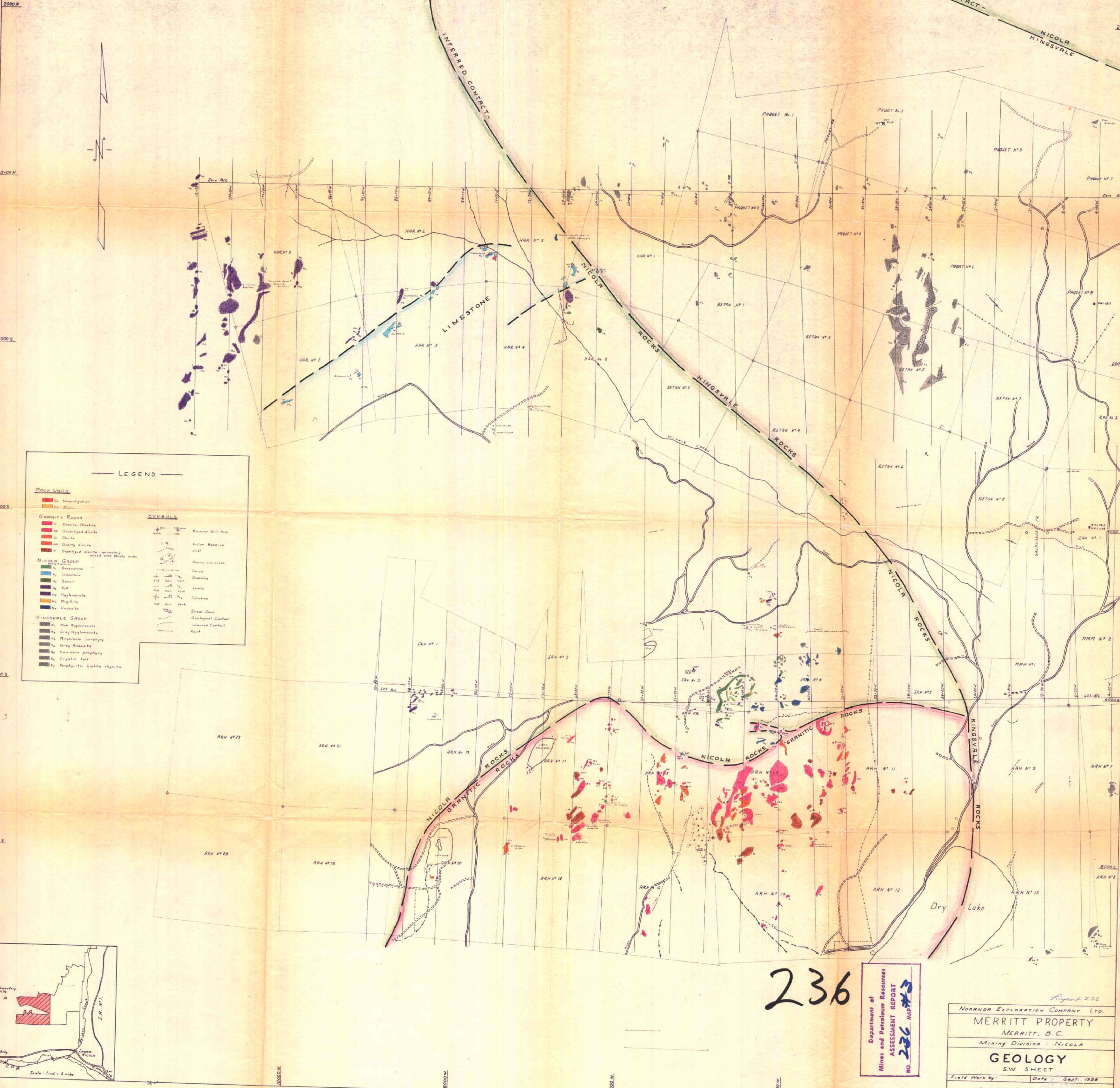
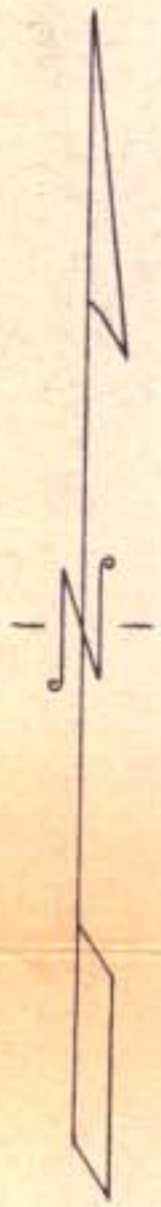
Department of
 Mines and Petroleum Resources
 ASSESSMENT REPORT
 NO. 236 MAP #2

NORANDA EXPLORATION COMPANY LTD.	
MERRITT PROPERTY	
MERRITT, B.C.	
Mining Division: NICOLA	
GEOLOGY	
N.E. SHEET	
Field Work by:	Date: Sept 1958
SCALE: 1" = 400'	



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M. H. H. H.
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— LEGEND —

ROCK UNITS

- Co. Metavolcanic
- So. Sandstone

GRANITIC ROCKS

- S. Granite, Muskite
- Ca. Granitized diorite
- O. Quartz
- Qn. Quartz diorite
- Y. Quartzified diorite - intimately mixed with Nicola veins

NICOLA GROUP

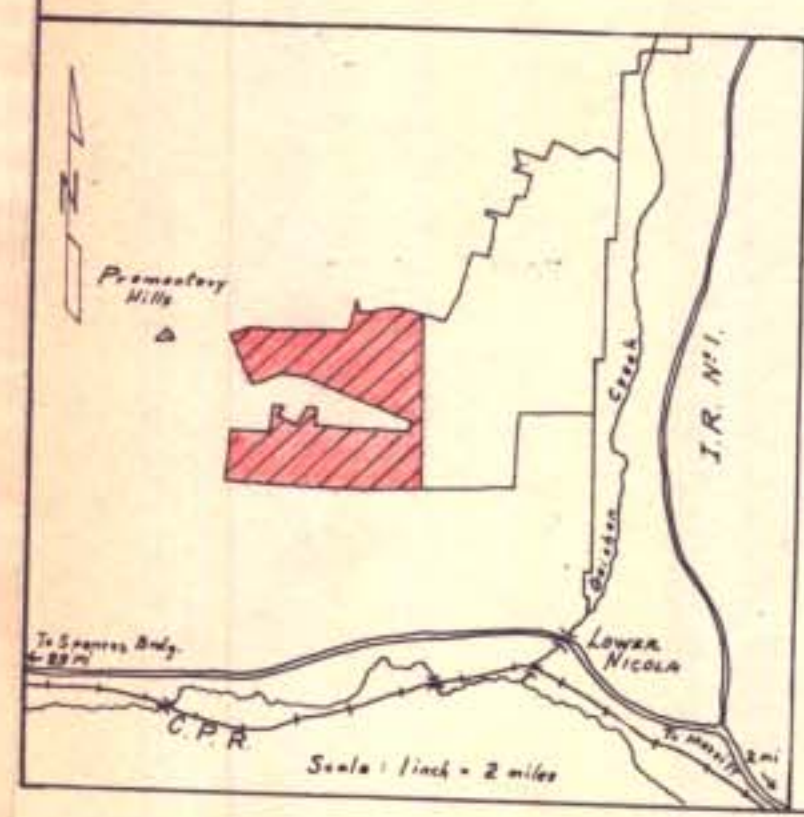
- N₁ Gneiss
- N₂ Limestone
- N₃ Basalt
- N₄ Tuff
- N₅ Agglomerate
- N₆ Basaltic
- N₇ Basaltic

KINGSVALE GROUP

- K₁ Pink Agglomerate
- K₂ Gray Agglomerate
- K₃ Basaltic porphyry
- K₄ Gray Basaltic
- K₅ Basaltic porphyry
- K₆ Crystalline Tuff
- K₇ Paraphyritic basaltic rhyolite

SYMBOLS

- Diamond Drill Hole
- Indian Reserve
- Cliff
- Swamp and creek
- Fence
- Shedding
- Joint
- Foliation
- Shear Zone
- Geological Contact
- Inferred Contact
- Fault

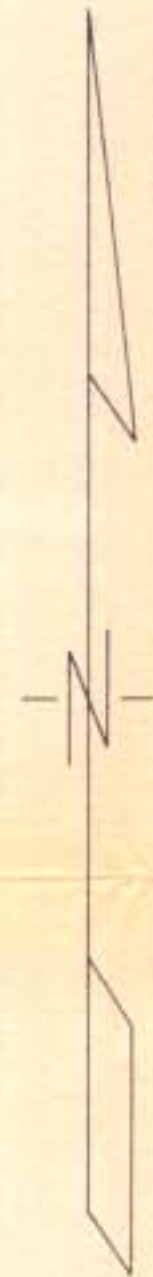


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Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 236
MAP

Report 236
NORANDA EXPLORATION COMPANY LTD.
MERRITT PROPERTY
MERRITT, B.C.
Mining Division: NICOLA
GEOLOGY
SW SHEET
Field Work by: _____ Date: Sept. 1958
SCALE: 1" = 400'

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NE Sheet

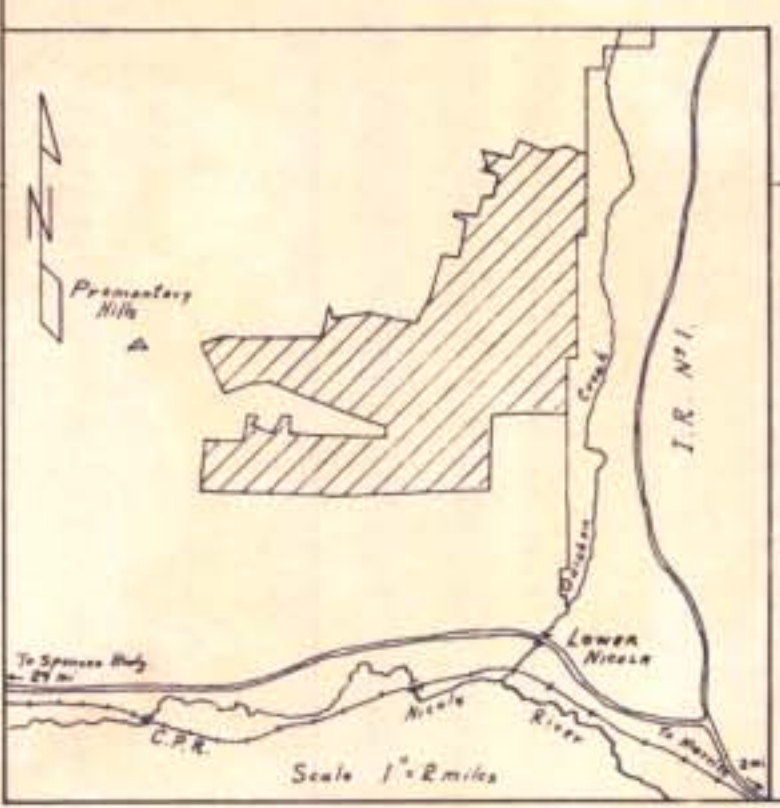
NICOLA - MAMEET I.R. No 1

SE Sheet

SW Sheet

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Department of
Mines and Petroleum Resources
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NO. 236 MAP #4



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

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H.T. Carwell
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