

COMBINED GEOLOGICAL AND GEOCHEMICAL  
ASSESSMENT REPORT

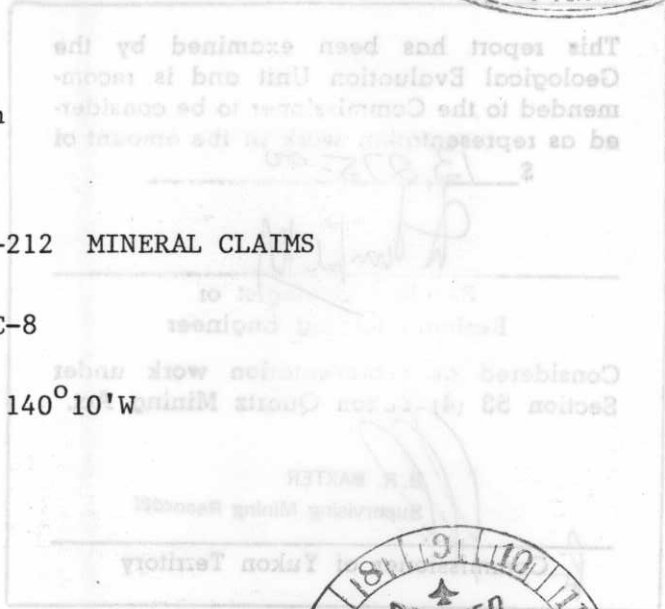


on

ROAD 1-4 and RAIL 1-212 MINERAL CLAIMS

116-C-8

64°23'N - 140°10'W



Noranda Exploration Company Limited  
(No Personal Liability)

090709



COMBINED GEOLOGICAL AND GEOCHEMICAL ASSESSMENT REPORT

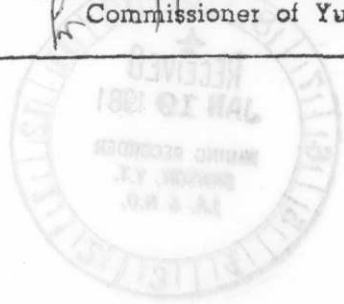
This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of \$ 13,275.00

*[Signature]*  
 Resident Geologist or  
 Resident Mining Engineer

Considered as representation work under Section 53 (4) Yukon Quartz Mining Act.

*[Signature]*  
 B. R. BAXTER  
 Supervising Mining Recorder

*[Signature]*  
 Commissioner of Yukon Territory



Norman Exploration Company Limited (No Personal Liability)

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I N D E X  
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INTRODUCTION

Figure 1 - Location Plan

GEOCHEMISTRY

Table 1 - Summary of Geochemical Values.

GEOLOGY

Table 2 - Table of Formations.

SUMMARY AND CONCLUSIONS

APPENDIX

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Statement of Qualifications

Geological Summary by E. Johnson

Geological Summary by P. Vaillancourt

MAPS IN POCKET

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Geological Plan I ..... Dwg. No. 5  
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Geochemical Results ..... Dwg. No. 8

COMBINED GEOLOGICAL AND GEOCHEMICAL ASSESSMENT REPORT ON ROAD 1-4 AND RAIL 1-21  
MINERAL CLAIMS

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INTRODUCTION

The claims referred to in this report are registered in the name of Noranda Exploration Company Limited (No Personal Liability) and comprise the following group:

ROAD 1-4	YA 32570-573
RAIL 1-4	YA 32574-577
RAIL 5-12	YA 32666-673
RAIL 13-20	YA 32674-681
RAIL 21-24	YA 32777-780
RAIL 25-32	YA 32792-799
RAIL 35-46	YA 32800-811
RAIL 47-56	YA 32812-821
RAIL 57-59	YA 32822-824
RAIL 60-62	YA 32825-827
RAIL 63-166	YA 32835-32938
RAIL 165-212	YA 47217-264

The property is located 35 miles Northwest of Dawson City, Y.T. on claim sheet 116-C-8. Access in 1980 was by helicopter from Dawson City.

Work referred to in this report in 1980 consisted of reconnaissance style Geological mapping and soil Geochemistry as follows:

- i) Geological Mapping - P. Vaillancourt, G. Macdonald - June 19 - July 3, 1980
- ii) Geochemical Reconnaissance - S. Coombes, D. Van Dieran, - June 19 - July 3, 1980  
and Prospecting T. Archibald and July 10-17, 1980.

All were employees of Noranda Exploration Company Limited.

Mapping by E. Johnson, under contract to Noranda, is included for the sake of completeness only. No costs of this mapping are included in the assessment application.

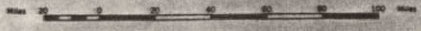
Mapping and Geochemical control was provided by topographic maps with a scale of 1: 10,000.



CANADA  
DEPARTMENT OF  
MINES AND TECHNICAL SURVEYS  
SURVEYS AND MAPPING BRANCH

# YUKON TERRITORY

SCALE 1:4,444,444  
1 inch equals approximately 71 miles



Road  
Railway  
Territorial capital

### POPULATED PLACES

500 to 2,000  
Under 500

Lambert Conformal Conic Projection with Standard Parallels at 49°N and 77°N

Reproduced from the 1:2,000,000 map of Canada by the  
Surveys and Mapping Branch, Ottawa, 1963.

## RECONNAISSANCE SOIL GEOCHEMISTRY

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All soils were analyzed for copper, zinc, lead, molybdenum and silver at the Noranda Exploration Office in Vancouver, B.C.; analyst was E. Van Lewan. Soils were analyzed for tungsten at Rossbacker Labs, Vancouver.

### Sampling Method

Samples were obtained by digging holes with a maddock to a depth (if feasible) where visible "B" horizon or sub-outcrop was encountered. (The "B" horizon was preferably sampled). Samples were placed in "Hi Wet Strength Kraft 3½ x 6 1/8" open end" envelopes on which the sample number was marked in indelible felt pen. The sample location was indicated in the field with the site number on red flagging tape.

### Laboratory Determination Method

The samples are first placed in a drying cabinet for a period of 24 to 48 hours; the sample material is then screened and sifted to obtain a -80 mesh fraction. The determination procedure for total copper, lead, zinc, silver and molybdenum is as follows:

0.200 grams of the -80 mesh material is digested in 2 ml of  $\text{HClO}_4$  and 0.5 ml of  $\text{HNO}_3$  for approximately 4 hours. Following digestion, each sample is diluted to 5 ml with de-mineralized  $\text{H}_2\text{O}$ . A varian Techtron model AA-5 Atomic Absorption Spectrophotometer is used to determine the parts per million copper, silver, lead, zinc and molybdenum content in each sample.

The theory of Atomic Absorption Spectrophotometer process is fully described in the literature and will not be elaborated upon in this report.

### Presentation of Results

Results of the soil survey are presented in Drawings 6, 7 and 8 of this report. These plan maps have a scale of 1:10,000 and present elements in parts per million.

### Discussion of Results

The following table summarizes values as determined for the area:

TABLE I  
Summary of Soil Values

Cu	Threshold	24 - 40 ppm
	Anomalous	> 40 ppm
Zn	Threshold	70 - 99 ppm
	Anomalous	>100 ppm
Pb	Threshold	25 - 34 ppm
	Anomalous	> 35 ppm
W	Threshold	5 - 9 ppm
	Anomalous	> 10 ppm

(a) Copper-Lead-Zinc-Molybdenum-Silver

Only erratic threshold to weakly anomalous responses were obtained in copper, lead, zinc, molybdenum and silver geochemistry.

(b) Tungsten

Tungsten shows a moderately anomalous response in three places along the presumed contact, with values in the 20-35 ppm range for more than one site. Little or no bedrock geology is available in these areas. Therefore, the significance of the results is unknown, except that the anomaly source must be different than the presently known mineral occurrences on the east side of the ridge (areas of Grids I and II). One piece of sphalerite-bearing garnet-diopside skarn float was found in the vicinity of one geochemistry anomaly in 1980.

CONCLUSIONS AND RECOMMENDATIONS

Since soil and silt geochemistry have been shown effective exploration tools to indicate the presence of mineralization on the property, the anomalous tungsten responses on the south west side of the intrusive probably reflect mineralization along the contact in those regions. These anomalies should be better defined by grid geochemical and geophysical surveys and geological mapping in 1981.

GEOLOGICAL SURVEY

The RAIL and ROAD Mineral Claims are underlain by regionally metamorphosed Paleozoic (?) pelitic and carbonate sedimentary rocks which have been intruded by a Cretaceous(?) granodioritic stock. Near intrusive contacts sedimentary units may be highly altered; The intrusive is also commonly moderately to highly altered near contacts. Table II summarizes lithologies noted.

TABLE II: Table of Formations

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Cretaceous:	( Kg, Kgp	-	Fresh, equigranular medium grained quartz monzonite or granodiorite; border phases often porphyritic, brecciated and altered.
	(		
	( Psbq	-	Grey-brown, silvery weathering quartz biotite schist; silicified near intrusive contacts and may be skarnified in part.
	(		
	( Pm	-	Marble; grey and white coarsly recrystallized limestone.
	(		
Lower Paleozoic	( Pn	-	Banded hornfels; biotite - diopside intergrowths.
	( Psk	-	Garnet-diopside calc-silicate hornfels (skarn), Massive skarn.
	(		
	( Pq	-	Quartzite; in part chloritic.
	( Pa	-	Amphibolite

Intrusive Rocks

Intrusive rocks are generally grey-brown, medium grained and slightly weathered. The rock is composed largely of quartz, plagioclase and hornblende with accessory biotite, and magnetite. Border phases of the intrusive are often moderately altered and contain miarolitic cavities. Aplitic and pegmatitic dykes are common in the marginal areas. Geochemically, the intrusive stock appears to be anomalously high in tungsten content. The three samples submitted for analysis returned values of 10, 15 and 20 ppm tungsten.

Metamorphic Rocks

In the vicinity of the ROAD and RAIL property host rocks are regionally metamorphosed to form amphibolite, quartz-biotite schist, quartzite and marble. These lithologies are gently dipping (south-west (?) ) with structures trending north-west.

Metamorphic Rocks (Continued)

Near the intrusive, these rocks are moderately to highly altered. Quartz-biotite schist has been silicified and partially skarnified and has a conspicuous banded appearance. Skarn has formed along the contact between marble and schist. This rock type is generally a garnet-diopside skarn with accessory minerals including epidote, chlorite, wollastonite and quartz. Pyrrhotite is generally, but not always, present in amounts ranging up to more than 50%. Sphalerite, chalcopyrite, malachite and molybdenite are present as trace amounts. Tungsten (as scheelite) is present as finely disseminated grains, up to 4%  $WO_3$ . Mineralization does not appear to date to be concentrated in any particular skarn mineralogy.

A banded biotite - garnet/diopside skarn unit appears in some places. This rock forms fairly thick (> 50 m) successions of monotonously repetitive thinly banded (bands to 2 cm) skarn. Biotite layers (partly replaced (?) by pyrrhotite) alternate with dark reddish-green garnet-diopside skarn. Minor scheelite is occasionally present in thicker garnet-diopside members.

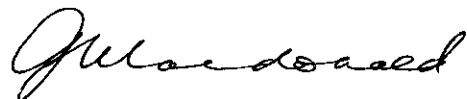
Quartzite and amphibolite appear on the western portion of the property. These rocks do not appear to have been greatly altered by the intrusive.

Quartz veins are common in units, locally altered by the intrusive, and in dykes associated with the intrusive.

Summary and Recommendations

The RAIL and ROAD mineral claims are underlain by geology favourable to host tungsten mineralization. The property should be thoroughly mapped on a grid system. A detailed rock-type examination should be conducted (thin section and whole-rock geochemistry) to determine if any units are more favourable for economic mineral host rocks than others.

Submitted by:



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G. Macdonald  
District Geologist  
Noranda Exploration Company Limited  
(N.P.L.)

A P P E N D I X

NORANDA EXPLORATION COMPANY, LIMITED

STATEMENT OF COST

PROJECT CASSIAR CREEK

DATE August 22, 1980

TYPE OF REPORT Geology - Geophysics - Geochem

a) Wages:

No. of Days 191

Rate per Day \$67.51785

Month Of: January 1, 1980 to July 31, 1980

Total Wages 191 x \$ 67.51785 \$12,895.91

b) Food and Accomodation:

No of days 191

Rate per day \$ 29,92696

Month of: January 1, 1980 to July 31, 1980

Total Cost 191 x \$ 29,92696 5,716.05

c) Transportation:

No of days 191

Rate per day \$ 109.599424

Month of: January 1, 1980 to July 31, 1980

Total Cost 191 X \$ 109.599424 20,933.49

d) Instrument Rental:

Type of Instrument

No of days

Rate per day \$

Month of:

Total Cost X \$

Type of Instrument

No of days

Rate per day \$

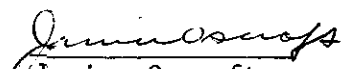
Month of:

Total Cost X \$

f) Analysis (See attached schedule)		
g) Cost of preparation of Report		
Author		
Drafting	\$ 450.02	
Typing		450.02
h) Other:		
Camp & Field Supplies	5,825.22	
Contractors	2,998.67	
		<u>8,823.89</u>
		<u>\$48,819.36</u>

Total Cost

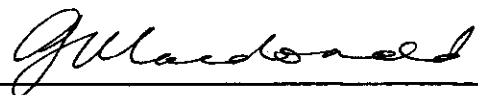
The exploration cost of \$48,819.36 is certified correct

  
 Janice Oscroft  
 Br. Accountant

STATEMENT OF QUALIFICATIONS

I, GLEN MACDONALD of the City of Whitehorse, in the Yukon Territory, DO  
HEREBY CERTIFY that:

1. I have been employed as a Geologist by Noranda Exploration Company Limited (No Personal Liability) since May 1976.
2. I am a graduate of the University of British Columbia, with a Bachelor of Science degree in Geology.
3. I am a member of the Canadian Institute of Mining and Metallurgy.



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G. Macdonald, District Geologist  
Noranda Exploration Company Limited  
(N.P.L.)

Geological Summary Report

on

Cassiar Creek Property

116 C/8

Noranda Exploration Company Limited

(No Personal Liability)

May 1980

E. Johnson



Geological Summary Report

on

Cassiar Creek

Introduction

The Rail, Road Claims are registered in the name of Noranda Exploration Company Limited (NPL) and comprise the following

claims:	Road	1-4
	Rail	1-4
	Rail	5-12
	Rail	13-20
	Rail	21-24
	Rail	63-166

Mapping was conducted on Rail M.C. by Eric Johnson Geologist under contract to Noranda Exploration Company Limited (NPL) from May 23, 1980 to May 31, 1980. Mapping control was provided by topographic maps with a scale of 1:10,000. Results are presented in drawing No. 1 (in pocket).

## Geology

### Major Rock Types

#### I) Igneous

##### i) Granodiorite:

The main body of the intrusive rock is composed of a normal appearing granodiorite which contains biotite, quartz plagioclase, orthoclase, minor amounts of hornblende, oxides and other accessory minerals. Scheelite is present as an accessory mineral in the main intrusive (samples have been submitted for analysis). The texture of the main granodiorite is idiomorphic granular with relatively coarse biotite and feldspars generally in the 2 - 4 mm. size range. Larger (1 cm.) orthoclase phenocrysts are seen in some specimens. Jointing and blocky weathering are apparent in some outcrops and talus slopes. Exposure is generally poor due to vegetation cover and relatively gentle topographic relief characteristic of this unglaciated region.

##### ii) Marginal phase Granodiorite:

Foliated (or gneissic) granodiorite characterizes the margins of the intrusive. The appearance of the intrusive rock is altered by an increase in silica content, alignment of mafic components and a decrease in grain size of all components. The color of the marginal granodiorite tends toward a brown or tan phase caused by increased weathering or alteration of feldspar and biotite. The compositional variation of the foliated granodiorite may result from incorporation of metamorphic host rocks at the margin of the intrusive. The texture probably results from crystallization during the period of active heat flow out of the main body of the intrusive.

## II) Metamorphic Rock Types

### i) Silicified Schistose or Banded Hornfels:

Near the intrusive contact, a quartz rich banded hornfels (or silicified schist) is commonly seen in outcrop and talus. This rock appears to be related to the marginal phase of the intrusive by an exchange of mineral components, dominantly silica. The micas, biotite and muscovite are strongly concentrated in thin bands separated by quartz and feldspar rich layers. The appearance of this rock type varies according to the composition of the host rock intruded by the granodiorite. Banding is generally coarser than is seen in less highly contact metamorphosed rocks of the Nasina series (unit A). Biotite and chlorite dominate over muscovite content. Minor amounts of garnet, pyroxene, amphibole, epidote and representatives of other mineral groups are present; however the mineralogy is dominated by the quartz, mica and feldspar components. Occasionally quartz and feldspars have the appearance of "blebs" or "eyes" contained within the metamorphic banding. Crosscutting quartz veins are also seen. Small dykes of igneous granitic texture are common within this banded hornfels. The character of this rock results from its' proximity to the intrusive, where various igneous components incorporated with the host rock along pre-existing schistose layers. This rock may be thought of as a silicified schist which occupies the zone of contact metamorphism immediately adjacent to the margin of the intrusive where exchange of mineral components was facilitated. Some mineralization or skarn development is indicated in these banded silicified hornfels because of the addition of components from the intrusive. However, because of the original quartzitic composition of these host rocks, only minor development of tungstite (scheelite) or sulfide mineralization occurred.

Structurally, the silicified hornfels behaves as if it is allied with the intrusive. Topographic features, such as Pionjar Creek, follow along the incompetent zone at the outer edge of the silicified hornfels.

ii) Calc-silicate Hornfels or Skarn:

In areas adjacent to the intrusive contact where composition of the host rock was favourable, a skarn rock type composed of garnet, diopside, epidote, chlorite, graphite, calcite and other minerals (wollastonite?) has formed. The appearance of this rock is characteristic due to its' green and red color. Some minor amounts of oxide, sulfide and tungstate can be seen in skarn samples obtained from the North for of Pionjar Creek. Copper stain is common.

iii) Banded Marble:

A white to grey, relatively coarse grained, banded marble is exposed on hillsides west of the campsite and the forks of Pionjar Creek. This marble appears to be in direct contact with the intrusive. However there is little or no skarn development in this marble due to the monomineralic composition of the rock (dominantly calcite). The presence of this carbonate unit in the metamorphic stratigraphy is significant because its' margins contain additional components which allow formation of skarn and tungstate minerals.

iv) Skarn Schist or Hornfels, Banded Hornfels, Silicified Schist, Schistose Quartzite, and Contact Meta-Schists:

This unit includes a wide variety of contact metamorphosed schists. The unit is generally recessive weathering due to its' altered texture and composition. The degree of metamorphism decreases with distance from the intrusive rocks.

Alteration is characterized by quartz veining, chloritization sericitation and oxidation in varying degrees. The unit generally contains minor scheelite as seen with a U.V. lamp. Rocks of this unit are gradational with other metamorphic rocks.

v) Nasina Series Schists: (GSC Unit A.)

Near Piojar Creek the Nasina series is dominantly a grey micaceous quartzite, grey or brown quartz-mica schist, and crystalline marble. Contact metamorphism is generally absent more than 1000 meters from the intrusive.

vi) Pegmatite:

A pegmatitic rock containing coarse white mica, wolframite (?), tourmaline (?), quartz and feldspar was found in Pionjar Creek downstream from the main skarn zone.

## Geological Summary

The intrusive contact near Pionjar Creek trends N.N.W. The regional trend of the metamorphic units strikes westerly and dips slightly toward the south. The strike of the foliation (or schistosity) of the metamorphic rocks encounters the gñodiorite intrusion at nearly a perpendicular attitude. This geologic situation would seem to facilitate migration of fluids from the intrusive into the metamorphic rocks. Contact metamorphism is extensive in the carbonate bearing strata of the Nasina series and less well developed in the quartzites and mica schists. The contact metamorphic aureole exhibits a wide variety of rock types.

During the mapping program, a geophysical survey was conducted using magnetometer and V.L.F. along a grid with a base line sub-parallel to the intrusive contact. The geophysical and geological methods delineated the igneous-metamorphic contact. In the area of the main showing of skarn development the magnetometer survey delineated several distinctive magnetic anomalies adjacent to the contact along the north fork of Pionjar Creek. These anomalies exhibit intense "lows" surrounded by high readings of the vertical field. These anomalous areas are restricted in extent and adjacent to the intrusive skarn, (and altered, chloritized hornfels) contact.

**LEGEND**  
**FOR**  
**DIAGRAMMATIC CROSS SECTIONS**

**Kg — GRANODIORITE**

**Kgp — MARGINAL PHASE**

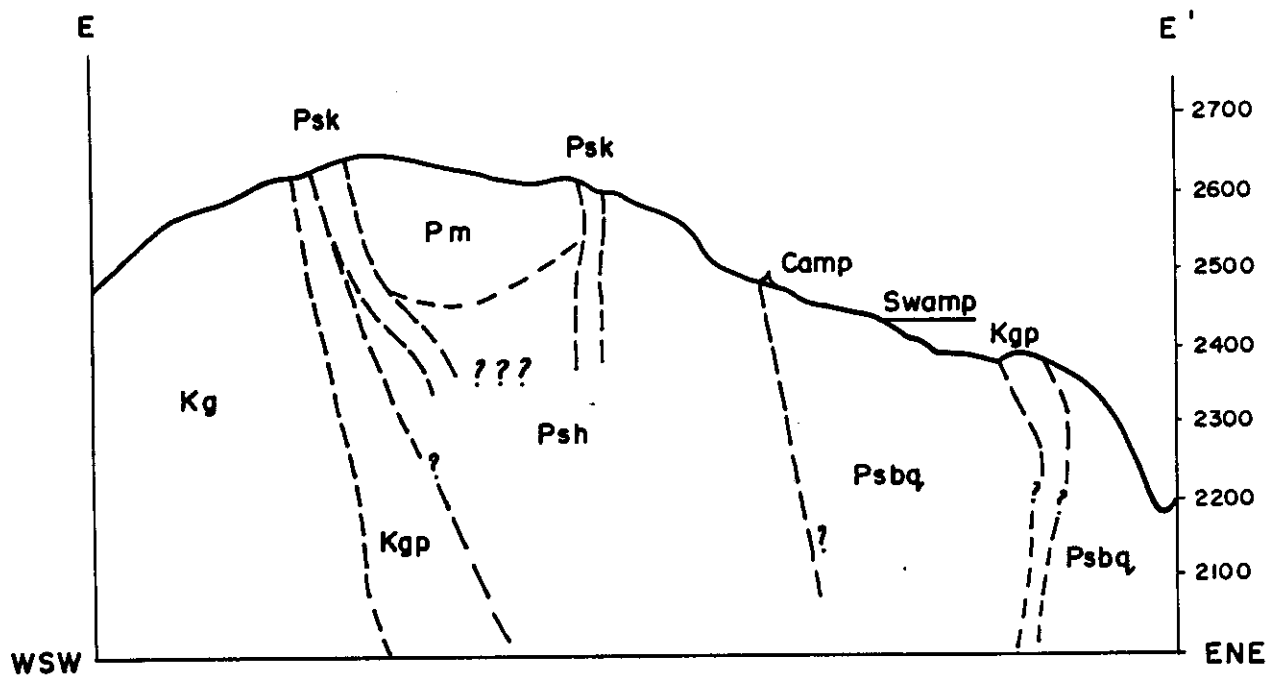
**Pm — MARBLE**

**Pn — SILICIFIED BANDED HORNFELS**

**Psk — COLE - SILICATE HORNFELS  
GARNET DIOPSIDE SKARN**

**Psh — OXIDIZED HORNFELS  
CHLORITIZED SCHIST (Psha)**

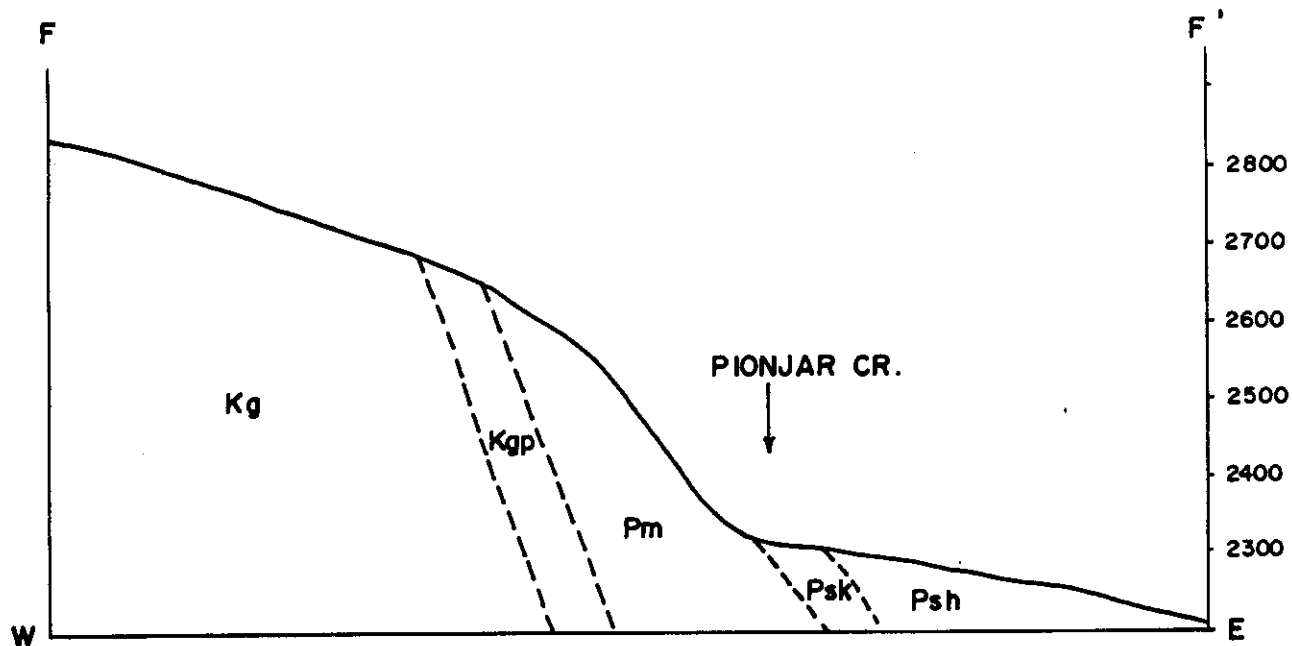
**Psbq — BIOTITE - QUARTZ SCHIST  
QUARTZITE (NASINA SERIES)**



DIAGRAMMATIC CROSS SECTION  
 SOUTH OF PIONJAR CR. AND CAMP  
 LOOKING NORTH

①

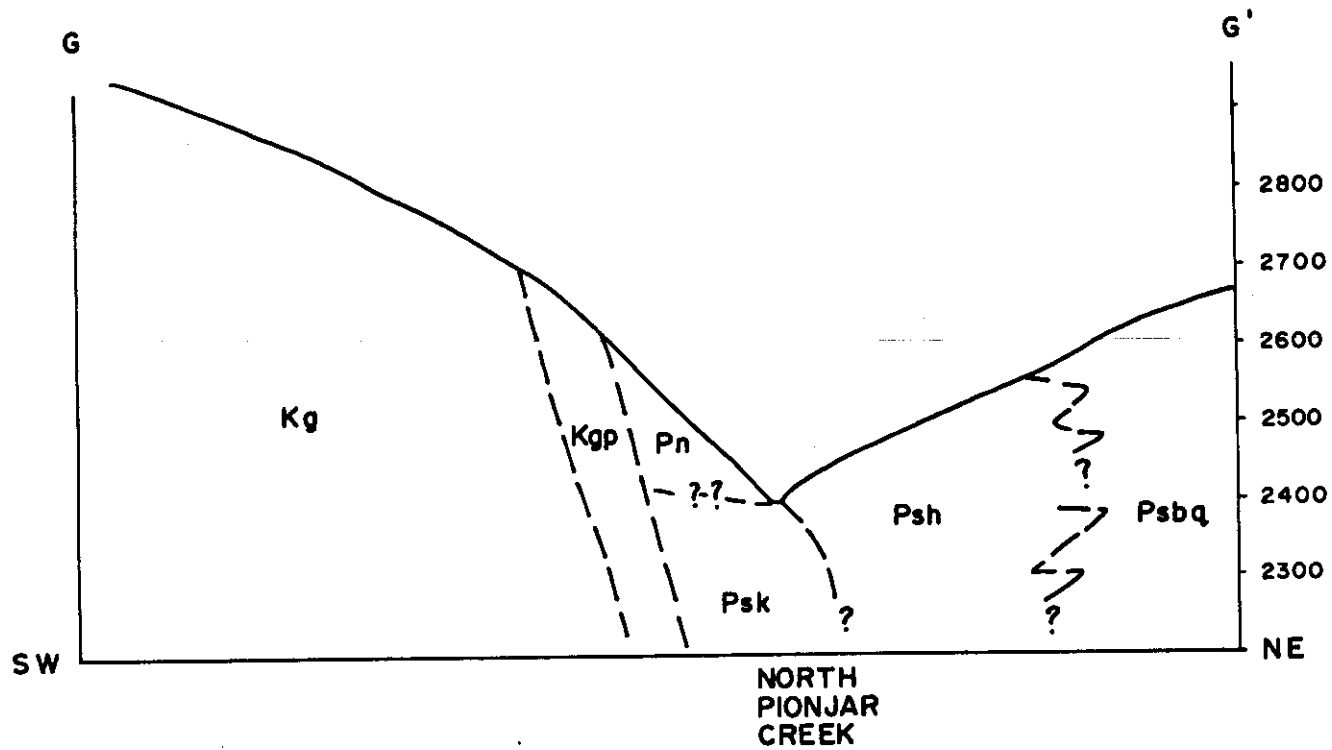
HORIZONTAL SCALE: 1:10,000  
 VERTICAL SCALE: 1cm. = 30 M.



DIAGRAMMATIC CROSS SECTION  
 FORKS OF PIONJAR CREEK  
 LOOKING NORTH

②

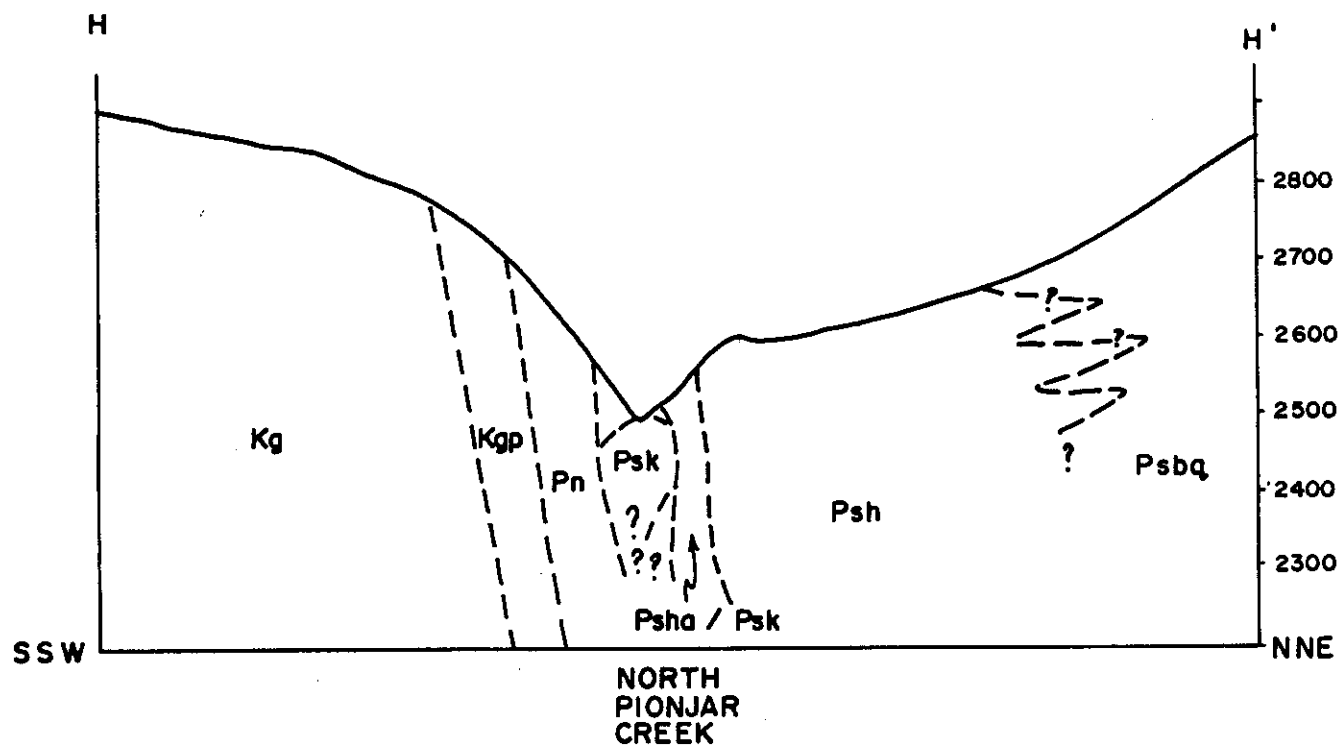
HORIZONTAL SCALE: 1:10,000  
 VERTICAL SCALE: 1cm = 30 M.



DIAGRAMMATIC CROSS SECTION  
 200M. UP NORTH PIONJAR CREEK  
 LOOKING NORTH

③

HORIZONTAL SCALE 1:10,000  
 VERTICAL SCALE: 1cm. = 30m.



DIAGRAMMATIC CROSS SECTION  
 400 M. UPSTREAM NORTH PIONJAR CREEK  
 LOOKING NORTH

④

HORIZONTAL SCALE: 1:10,000  
 VERTICAL SCALE: 1cm. = 30 M.

SUMMARY REPORT ON THE CASSIAR CREEK PROPERTY, SUMMER 1980.

Pierre Vaillancourt

August 26, 1980.

## Introduction

This report on the property near Cassiar Creek will review the results of a reconnaissance mapping and prospecting project conducted from the 20th of June to the 3rd of July 1980. During this project, mapping along the south-eastern portion of the area at the contact revealed three distinctive lithologies. After discussing the character of each unit, the structural relationships will be considered.

## Lithology

At the south-eastern contact along the Yukon River, where most of the mapping was done, the rocks were grouped in three separate units according to composition and physical features, they are:

- 1) The quartz-mica schist unit
- 2) The quartzite, greenstone rock unit
- 3) The granodiorite intrusive unit

### 1) Schist unit (Quartz-muscovite-biotite schist)

This metamorphic unit, located at the periphery of the intrusive zone and constituting the country rock forms poor exposures and is most often found as float, as outcrops are often covered in vegetation. This unit is best described as a low grade schist. It is commonly tan brown to grey, soft and brittle at times. The unit's weathered appearance occasionally gives way to a green more crystalline schist. Generally, the rocks display a uniform texture, color and composition. The composition of the rock consists mostly of muscovite, biotite, quartz and occasionally some amphiboles. Lenses of quartz can be observed throughout the unit and because the rock is well foliated, it breaks into flags with pronounced mica surfaces. In the schist unit, there is very little mineralization discernable megascopically, there are some sulphide specks in the form of pyrite. Some specimens show variable amounts of iron staining, however any iron minerals originally present were oxidized, leaving rust colored marks.

## 2) Quartzitic rock unit (greenstone, quartzite)

This metamorphic unit situated along the banks of the Yukon River is well exposed and grades up into granite to form massive cliffs. It is an extremely varied unit, ranging from a very hard quartzite to a softer almost schist like rock. There is no pattern to the composition or textures of the rocks which have been affected to various degrees by regional and contact metamorphism. Intense folding appears to have occurred in places, in addition the unit contains many basaltic dikes. The appearance of this unit changes from yellow and tan to darker greens, browns and reds with prominent iron staining. However, the high quartz content does characterize the rocks, their composition is usually 80% to 90% quartz but other common minerals include biotite, muscovite, calcite, amphiboles and disseminated sulphides. There is evidence of iron mineralization but most of the minerals have been oxidized, hematite is rarely present. The overall mineralization is low grade and very erratic, the best sulphide mineralization seems to occur in the basaltic dikes, where pyrite, galena and molybdenite can be found. Although there is no definitive nature of the unit, some outcrops are banded, some are massive, the most distinctive feature is a green, very crystalline, hard rock described as a greenstone (L.H. Green, 1972). The cleavage seems to be related to doming resulting from the intrusion.

## 3) Granodiorite unit

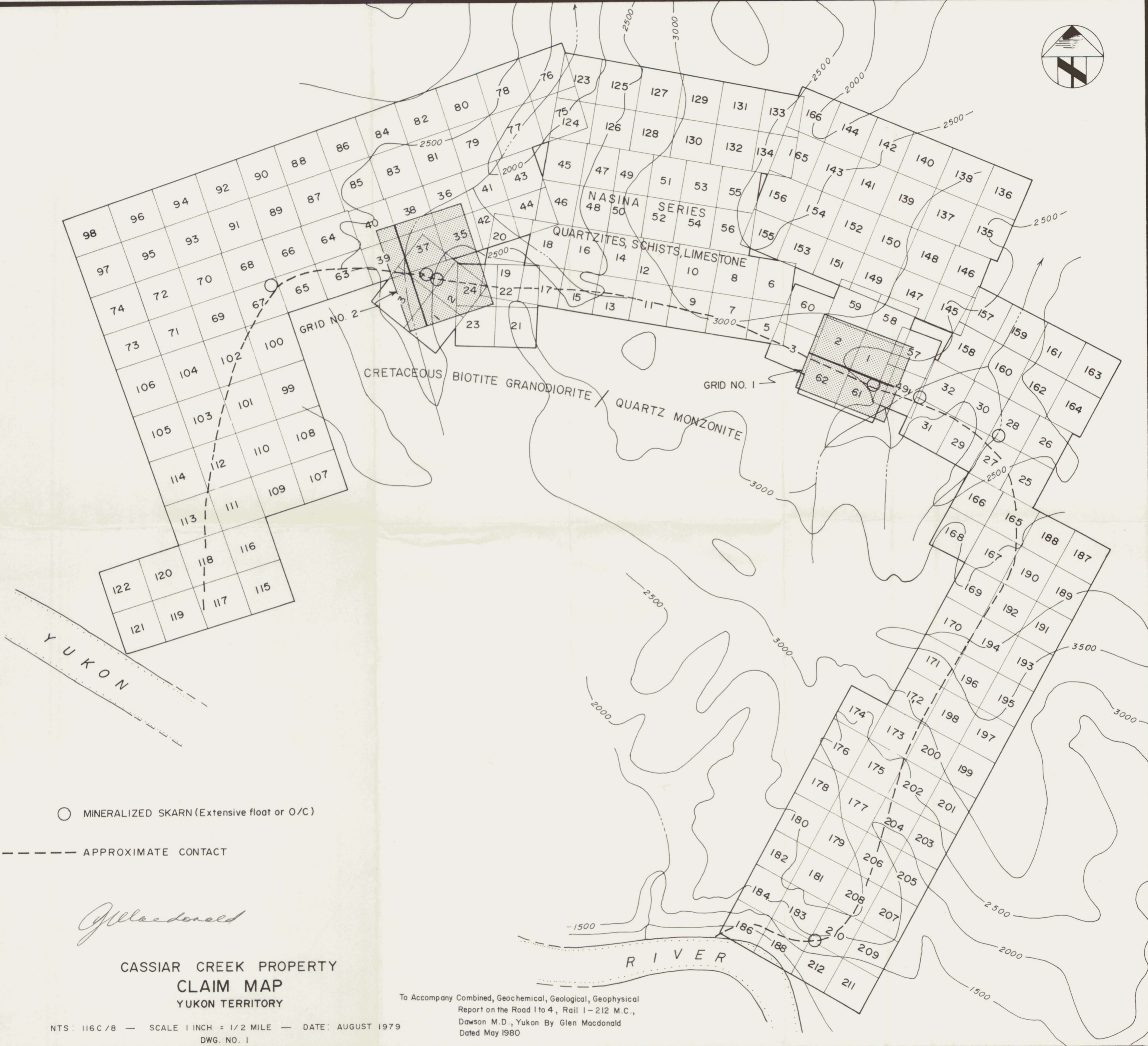
This large intrusive mass is cliff forming along the Yukon River presents consistent composition and physical features. Although some rocks are weathered and crumbly the unit more commonly displays resistant outcrops. The unit is best described as a granodiorite, though a quartz monzonite composition has been observed at the contact margin in places (Green, 1972). The rock consists of medium grained crystals of potash feldspar, plagioclase feldspar, quartz, biotite and minor hornblende. In places the potash feldspar is coarse grained. The only

variation in composition occurs with biotite. No economic mineralization was noted.

#### Structural relationship

The structure is often difficult to interpret because intense folding is combined with fracturing and heavy weathering. The strong foliation of the schist has made it difficult to determine whether the bedding is parallel to foliation or at an angle; often the bedding is not observable. In addition, wrinkle lineations are present on many of the foliated surfaces. Due to the lack of marker beds and the poor outcrop, entire folds can't be recognized, however it is possible to note isoclinal folds with axial planes parallel to cleavage.

At this location, because of the weathering, the contact with the intrusive is poorly defined and relationships of units with respect to a possible skarn mineralized zone are difficult to establish. From structural as well as field observations, it seems the quartzitic rock unit is most often found in contact with the granite. The relationship suggests an intrusive body rising to affect the enclosing rocks through contact metamorphism or in the case of skarn: metasomatism. This process may have generated a skarn in the area of the property where skarn is found, however in the project area, metamorphism produced only quartzitic rocks. From the limited fieldwork it is not possible to ascertain the precise nature of the intrusive episode, though there appears to be no skarn in the mapped area. The lack of skarn may be due to an insufficient amount of carbonate rock to form a skarn or because of other unfavorable conditions. It is likely that along with the intrusive deformation, faulting or doming as well as subsequent tilting occurred, possibly altering the position of the skarn zone. It is also likely that planation, tilting and weathering followed the main event.



○ MINERALIZED SKARN (Extensive float or O/C)

----- APPROXIMATE CONTACT

*G. Macdonald*

### CASSIAR CREEK PROPERTY CLAIM MAP YUKON TERRITORY

NTS: 116C/8 — SCALE 1 INCH = 1/2 MILE — DATE: AUGUST 1979  
DWG. NO. 1

To Accompany Combined, Geochemical, Geological, Geophysical  
Report on the Road 1 to 4, Rail 1-212 M.C.,  
Dawson M.D., Yukon By Glen Macdonald  
Dated May 1980



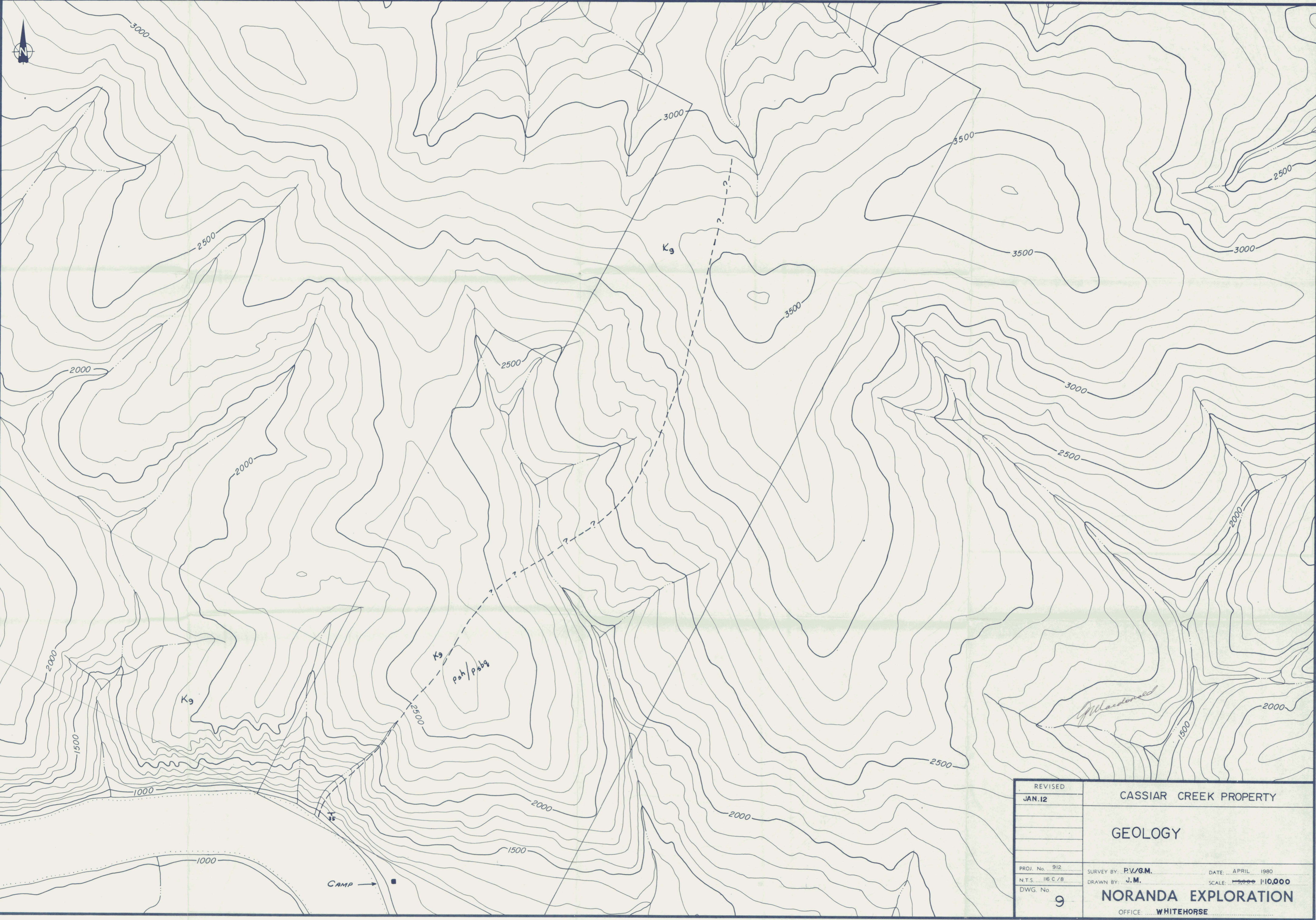
- Kg GRANODIORITE
- Kgp MARGINAL PHASE GRANODIORITE, PEGMATITIC DYKE
- Pm CRYSTALLINE MARBLE
- Ph SILICIFIED BANDED HORNFELS
- Psk CALC - SILICATE HORNFELS GARNET - DIOPSIDE SKARN
- Psh BANDED HORNFELS OXIDIZED CHLORITIZED CONTACT META-SCHIST (Psho)
- Psbq NASINA SERIES SCHISTS, SCHISTOSE QUARTZITE

- SAMPLING SITE (ROCK)
- CONTACT - OBSERVED, PROBABLE

TO ACCOMPANY GEOLOGICAL REPORT ON THE RAIL B ROAD MC, DAWSON M.D. YUKON TERR. BY E. JOHNSON, DATED JUNE 1980

*E. Johnson*

REVISED JAN. 12/81	<b>CASSIAR CREEK PROPERTY</b>
	GEOLOGY, GRID I AREA
PROJ. No. 312	SURVEY BY: E. JOHNSON PV/GM. DATE: MAY/JUNE 1980
N.T.S. 1:6 C/B	DRAWN BY: J.V.V. SCALE: 1:10,000
DWG. No. 5	<b>NORANDA EXPLORATION</b>
	OFFICE: VANCOUVER



REVISED	CASSIAR CREEK PROPERTY	
JAN. 12	GEOLOGY	
PROJ. No. 912	SURVEY BY: P.V./G.M.	DATE: APRIL 1980
N.T.S. 1/6 C/B	DRAWN BY: J.M.	SCALE: 1:10,000
DWG. No. 9	NORANDA EXPLORATION	
	OFFICE: WHITEHORSE	

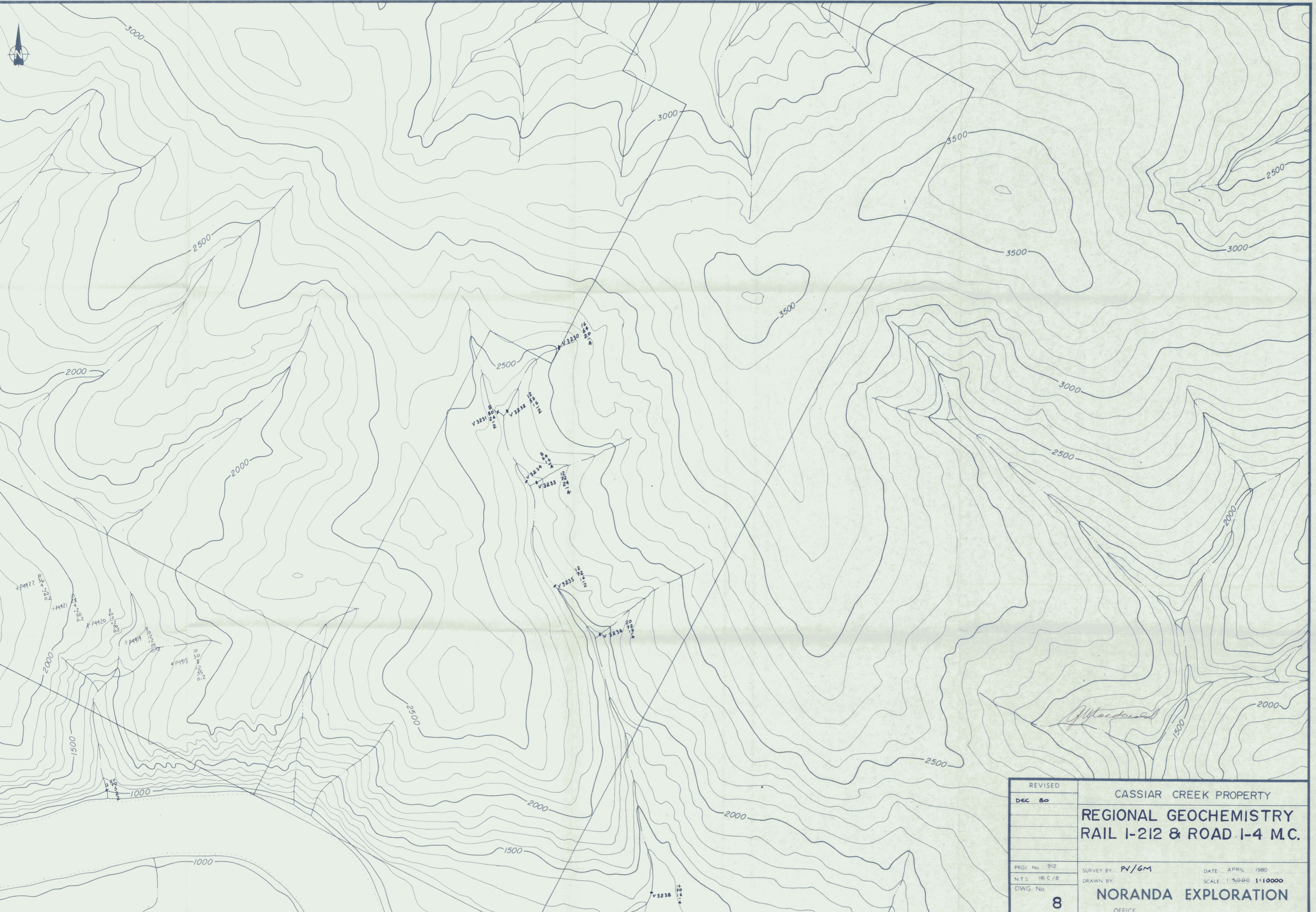


REVISED JAN. 13 1961	CASSIAR CREEK PROPERTY
GEOLOGY	
PROJ. No. 912	SURVEY BY: P.V. G.M. DATE: APRIL 1960
N.T.S. 116 C 78	DRAWN BY: G.M. SCALE: 1:10,000
DWG. No. 10	NORANDA EXPLORATION
	OFFICE: WHITEHORSE



REVISED	CASSIAR CREEK PROPERTY	
	REGIONAL GEOCHEMISTRY	
	RAIL 1-212 & ROAD 1-4 M.C.	
PROJ. No.	SURVEY BY:	DATE: FEB 1980
N.T.S. 1:62,500	DRAWN BY: J.T.V.	SCALE: 1:62,500
DWG. No.	<b>NORANDA EXPLORATION</b>	
6	OFFICE: VANCOUVER	





REVISED	CASSIAR CREEK PROPERTY	
DEC 80	REGIONAL GEOCHEMISTRY	
	RAIL I-212 & ROAD I-4 M.C.	
PROJ. No. 912	SURVEY BY PV/GM	DATE APRIL 1980
N.T.S. 1/6 C/B	DRAWN BY	SCALE 1:5000 1:10000
DWG No.	NORANDA EXPLORATION	
8	OFFICE	

PPM  
Cu  
Zn  
Pb  
Mo  
W

TO ACCOMPANY COMBINED GEOLOGICAL GEOCHEMICAL AND GEOPHYSICAL REPORT  
ON ROAD I-4 AND RAIL I-212 M.C. BY G. MACDONALD, MAY, 1980.  
GEOLOGICAL & GEOCHEMICAL ASSESSMENT REPORT DECEMBER, 1980