

104

GEOLOGICAL REPORT

on the

St. Joseph Mineral Claims Nos. 1 - 16

Ft. Steele M.D.

Situated 6 miles in a direction south  
70° west of Cranbrook, British Columbia

49° - 115° Southwest

by

Charles S. Ney, P. Eng.

May 1 to Nov. 30, 1954

## GEOLOGICAL REPORT ON ST. JOSEPH GROUP

### INTRODUCTION

The St. Joseph Group of 16 mineral claims are owned by B. Fresina of Cranbrook, B.C. They cover property formerly known as the "B and V".

Geological work was done on the claims and surrounding territory intermittently from May 1 to November 30, 1954 by the staff of Northwestern Explorations, Limited. Outcrops on the claims were mapped on a scale of 400 ft. to one inch. The work was supervised in part by W.P. Hammond, P. Eng., and also by C. S. Ney, P. Eng., who compiled the data and wrote the present report. Field work was performed by C. S. Ney, P. Eng., K. C. Campbell and John M. Anderson, geologists, J. Greenaway and F. Gray, surveyors, and R. Gale, junior geologist.

### LOCATION

The claims are located about six miles in a direction south seventy degrees west from Cranbrook, B.C. They cover a broad wooded hill which rises immediately to the east of Kiakho Valley one to two miles south of Kiakho Lake, in the elevation range of 3500 to 4400 feet.

### ACCESS

A second class dirt road extends into the north end of the property from Cranbrook, via Jim Smith Lake. Numerous Jeep roads provide access to almost any part of the property.

### MAPPING METHODS

An east-west baseline 4000 feet in length was cut out and surveyed by transit. Two picket lines were run from different points north and south of the baseline for 2000 feet. Several additional east-west lines were run by compass. Geological data and claim posts were tied in to these lines by short pace-compass surveys. Contours and some other topographic features were plotted from air photographs.

### GENERAL GEOLOGY

The following bedrock formations are represented in the area:

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### Maps in Folder

- #1 1. Map showing outcrops and geological observations, topographic features and claim boundaries. Scale 1" = 400'.
- #2 2. East-west cross-section illustrating geological structure. Scale 1" = 400'.

Claims on which Assessment Work is being applied.

St. Joseph No. 1	-----	149865
2	-----	135101
3	-----	B36966
4	-----	B36967
5	-----	B36968
6	-----	B36969
7	-----	B36970
8	-----	B36971
9	-----	B36972
10	-----	B36973
11	-----	A37234
12	-----	A37233
13	-----	A23124
14	-----	A23125
15	-----	A37231
16	-----	A37232

The work applies equally to all claims. The claims are all adjoining, and there is outcrop on all except 15 and 16.

<u>Age</u>	<u>Formation</u>	<u>Lithology</u>
Mesozoic	Kiakho Lake Stock (Intrusive Contact)	Intrusive monzonite porphyritic monz. and monz. porphyry.
Precambrian	(Purcell Intrusives (Intrusive Contact) { { Upper Div. { { { Aldridge { Formation { { Middle Div.	Diorite sills and dykes.  Fine quartzite Black Argillite   Siltstone and fine quartzite, minor argillite.

#### Middle Aldridge

Most of the area is underlain by Middle Aldridge sedimentary rocks. These are hard, grey, fine-grained quartzite and siltstone, in beds one to three feet thick separated by thin partings of argillite. Included are sequences of thin-bedded argillaceous quartzites a few tens of feet thick.

#### Upper Aldridge

The base of the Upper Aldridge is represented by very thinly laminated, black, slaty argillite. Many bands of this member contain a few percent of pyrrhotite distributed along the bedding planes in the form of lenses about one-half inch in diameter and one thirty-second of an inch thick. This distinctive rock outcrops along the road on claims 1 and 2, and in a small area near the final posts of claims 13 and 14. The Black Argillite member is about 80 feet thick. It is succeeded by at least 150 feet of siltstone beds identical with those in the Middle Division.

#### Purcell Intrusive

Purcell Intrusive is exposed along the lower slope of Kiakho Valley on claims 7 and 9. It is a dark greenish, moderately coarse-grained igneous rock. It takes the form of a sill for the most part. Locally it crosscuts the bedding, pinching and

swelling and dividing into two sills. The total thickness of diorite is about 200 feet. It probably extends under the entire area of the claims, reaching a depth of 12 - 15 hundred feet under claim 1.

#### Kiakho Lake Stock

Half a mile north of Fresina Creek, a stock of monzonite outcrops on both sides of Kiakho Valley. The rock is light grey, coarse-grained; often porphyritic with large pink feldspar crystals. Quartz is rarely visible and magnetite is a conspicuous accessory. Distribution of monzonite float suggests that a portion of the stock extends southeast onto claim 10.

small dyke of the same type of rock occurs near the centre of claim 4, and a large outcrop lies southeast of claim 16.

#### STRUCTURE

On the average, the sedimentary rocks strike northwest and dip about twelve degrees northeast. This structure is modified by gentle flexures striking and plunging at a low angle northeast, so that the actual strike of the beds varies from north-south to east-west, with the dip always in the northeast quadrant. There is a slight northeast trending anticlinal axis through the northwest corner of claim 10, and synclinal axis through claim 4. A short distance northwest of claim 10, dips steepen to as much as 35 degrees adjacent to the Kiakho Lake stock.

The small fault on claim 2 is exposed in an open cut and shows black argillite offset against massive siltstone. The west side appears to have moved southward and downward in relation to the east. In section, the stratigraphic offset appears to be about 200 feet.

#### MINERALIZATION

There are a number of small quartz veins on the claims which have been developed by open-cuts, shallow shafts, and a tunnel. The veins have in common a strike of about west to twenty degrees north of west, and a dip of steep south to vertical. They occur invariably in thick beds of hard fine-grained quartzite. Vein matter is white to dark grey quartz and minor carbonate, mineralized sparingly with pyrite, galena, pyrrhotite, and arsenopyrite. Their width seldom reaches a foot, and their length appears limited to a few tens of feet. In two localities the wall

rocks are highly altered and mineralized for distances up to nearly a foot. No relation appears to exist between the veins and the intrusives, except possibly in the case of a somewhat different vein southeast of claim 8.

#### CONCLUSION

The St. Joseph claims are underlain by sedimentary rocks of the Middle and Upper Divisions of the Aldridge formation. These rocks are intruded by a sill of Purcell diorite about 200 feet or less thick which dips under the property and should be found at a depth of 12 - 15 hundred feet under claim 1. The occurrence of monzonite on claim 4, and the isolated outcrop southeast of claim 16, suggests that the entire area may be underlain at considerable depth by a large intrusive body.

The structure expressed by the sedimentary rocks is a series of simple open flexures plunging at a low angle to the northeast. A small normal fault crosses the property in a northeasterly direction. This is visible supporting evidence for the existence of a large fault with about the same strike and direction of movement believed to lie to the southeast of the property.

The small lead-bearing veins do not have any visible association with the intrusive rocks of either group.

*Charles S. Ney P. Eng.*  

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Charles S. Ney, P. Eng.

Work Performed on St. Joseph GroupMay - December 1954

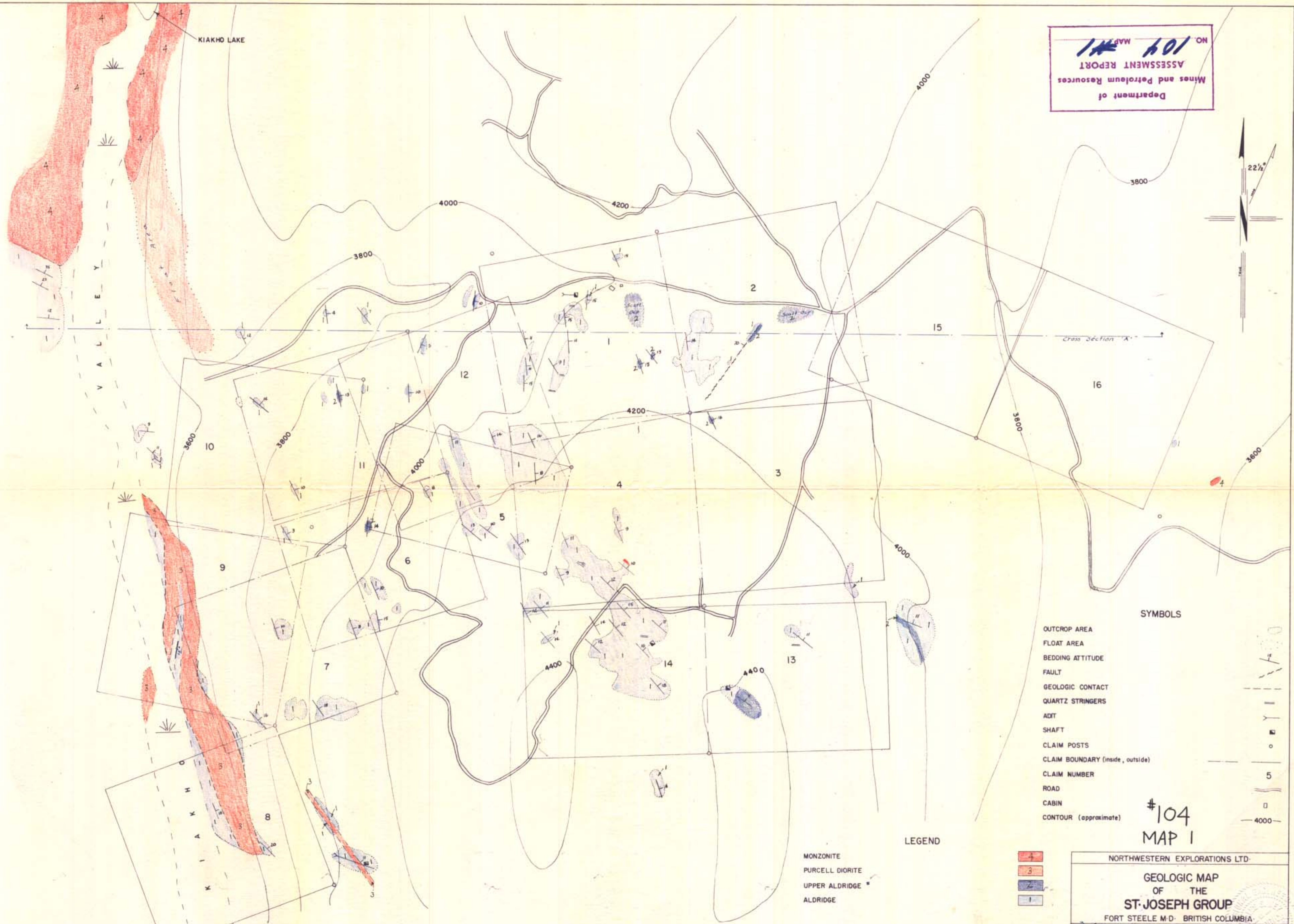
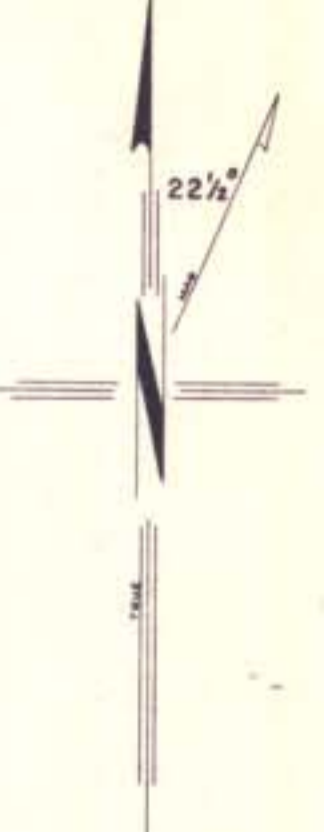
<u>Name:</u>	<u>Category:</u>	<u>Period:</u>	<u>No. Days:</u>	<u>Rate:</u>	<u>Total:</u>
W.P. Hammond	P. Eng.	May 19	1	35	35
C.S. Ney	P. Eng.	May 21, 26, 29. Oct. 14, 22, 25, 26, 30. Dec. 6, 7.	10	35	350
K.C. Campbell, Geologist		May 21 Oct. 14	2	15	30
J.M. Anderson, Geologist		Oct. 22, 25, 26 Dec. 6, 7.	5	15	75
R. Gale	Geologist	July 12 - Aug. 15	28	15	420
J. Greenaway	Surveyor	"	28	15	420
F. Gray	Helper	"	28	12	336
					1666
Total - - -				\$	1666

*Charles S. Ney*

Charles S. Ney, P. Eng.



Department of  
 Mines and Petroleum Resources  
 ASSESSMENT REPORT  
 ON  
 MAP #104



SYMBOLS

- OUTCROP AREA
- FLOAT AREA
- BEDDING ATTITUDE
- FAULT
- GEOLOGIC CONTACT
- QUARTZ STRINGERS
- ADT
- SHAFT
- CLAIM POSTS
- CLAIM BOUNDARY (inside, outside)
- CLAIM NUMBER
- ROAD
- CABIN
- CONTOUR (approximate)



LEGEND

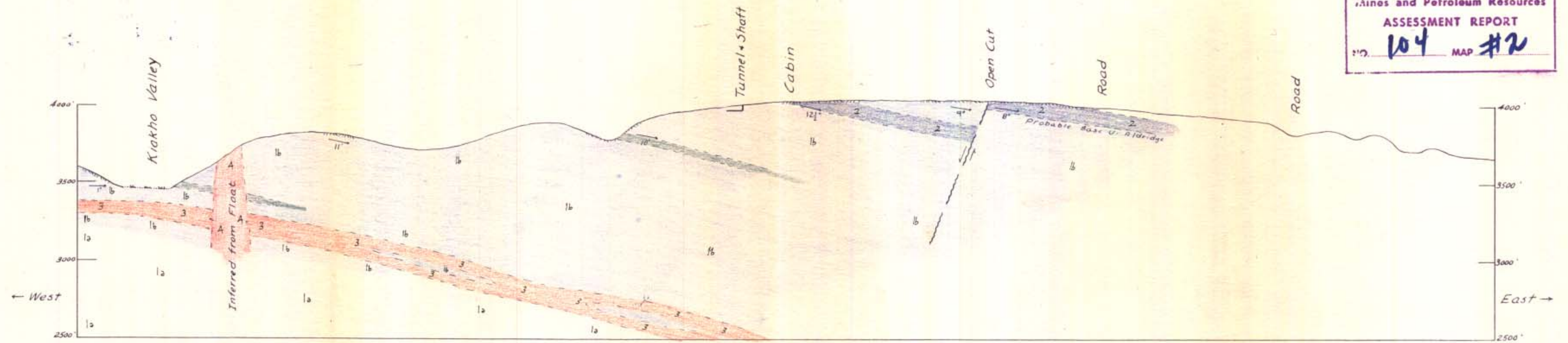
- MONZONITE
- PURCELL DIORITE
- UPPER ALDRIDGE \*
- ALDRIDGE



\*Incl. Argillite at lower horizons

#104  
MAP I

NORTHWESTERN EXPLORATIONS LTD.		
GEOLOGIC MAP OF THE ST. JOSEPH GROUP		
FORT STEELE M.D. BRITISH COLUMBIA		
DATE 12-18-54	DRAWN BY KCAFJMO	PLATE NO.
Revised By	Date	Scale
	12-18-54	1" = 400'



LEGEND

- Monzonite  4
- Diorite  3
- Black Argillite  2
- Siltstone + Quartzite  1b
- Thin-bedded Arg. + Siltstone  1a
- Outcrop

#104 MAP 2

NORTHWESTERN EXPLORATIONS LIMITED

ST. JOSEPH PROPERTY  
 CROSS SECTION 'A'  
 FT. STEELE M.D., B.C.

Date: Nov 30 '54 Drawn by: C.S.N. Plate No. 5

Revised by \_\_\_\_\_ Date \_\_\_\_\_ Scale \_\_\_\_\_

1 in. = 400 ft.