

GEOLOGICAL AND GEOCHEMICAL REPORT

on the

FRED CLAIM GROUP

SLOCAN MINING DIVISION

BRITISH COLUMBIA

824/E

- f o r -

UNITED BATA RESOURCES (CANADA) LTD.

1050 - Three Calgary Place  
355 - 4th Avenue S.W.  
Calgary 1, Alberta

Covering: Fred Claims 1-16, inclusive  
Work Performed: May 18 - June 14, 1971  
Located: 1)  $50^{\circ}04'$ ,  $118^{\circ}14'$   
2) N.T.S. Map 82 L/1 E  
3) On Barnes Creek, 16 miles NW of Needles, B.C.

- PREPARED BY -



James M. Dawson, P. Eng.

June, 1971

3074

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT

NO. 3074 MAP

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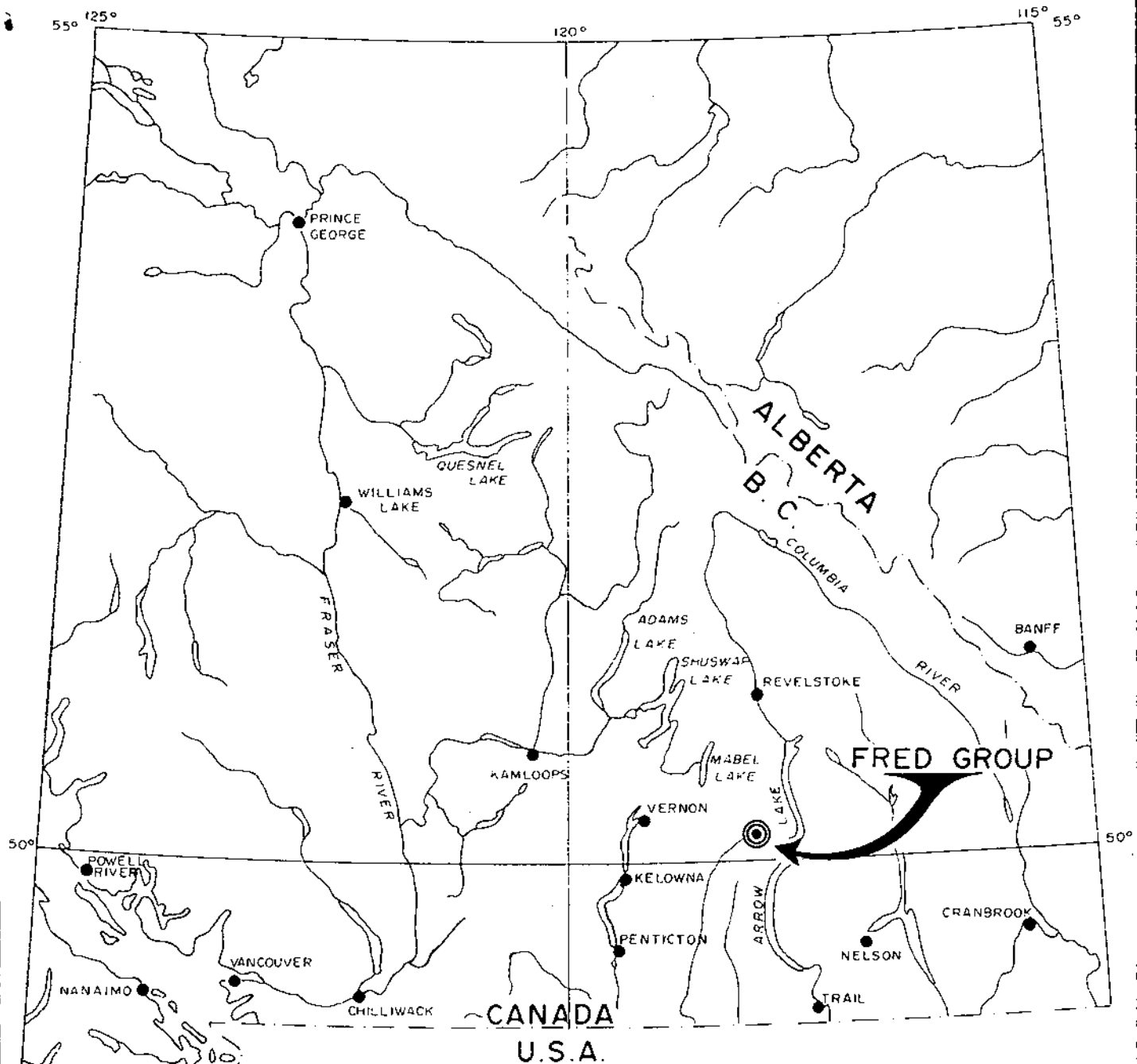
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Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT

UNITED BATA RESOURCES (CAN.)  
CALGARY ALBERTA

LOCATION MAP  
FRED CLAIM GROUP  
SLOCAN MINING DIVISION  
BRITISH COLUMBIA

VERSATILE NO. 3074 MAP #1



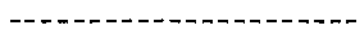
Date	JUNE 1971	Scale	1" to 64 miles
Drawn by		Drawing no.	160-21

INTRODUCTION

The Fred claims were staked during the 1970 field season to cover zinc occurrences found along logging roads in the upper Barnes Creek area.

The present report describes the results of an exploration programme carried out on these claims. This work was done between May 18 and June 3, 1971 and consisted of soil sampling and geological mapping.

Maps showing surface geology and zinc content of soils were prepared and are included in this report.



PROPERTY

The property consists of 16 claims in one group as follows:

<u>CLAIM NAME</u>	<u>RECORD NO.</u>	<u>TAG NO.</u>	<u>RECORD DATE</u>
Fred #1 to Fred #4	14834 to 14837	973959 to 973962	July 2
Fred #5 to Fred #8	14838 to 14841	973943 to 973946	July 2
Fred #9 to Fred #16	15120 to 15127	973963 to 939670	August 10

Owner: J.M. Dawson  
104 - 423 Arrowstone Drive  
Kamloops, B.C.

F.M.C.: 100770



LOCATION & ACCESS

The property is located in southeastern British Columbia about 16 miles by road northwest of the Needles ferry on Upper Arrow Lake. The approximate geographic center of the claims is at 50°04' north latitude and 118°14' west longitude.

It is accessible from Vernon by taking Highway #6 to Needles and thence 16 miles along the Barnes Creek road to the claims. Except for the southeast end of the claims where there are a few old logging roads, access to the rest of the property is only gained by traversing through heavy bush and fording Barnes Creek.

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### PHYSIOGRAPHY AND VEGETATION

The claims are located on parts of the southwesterly and northeasterly facing slopes of the valley which contains Barnes Creek. Relief is moderate to steep in places; however, there are no inaccessible areas. Elevations vary from 4,800 feet A.S.L. on the ridges to 4,000 feet A.S.L. at Barnes Creek.

Except for the southwest corner of the property where some logging has taken place, the property is covered with a heavy growth of mature cedar, spruce and hemlock with dense underbrush of willows, alders and devils club. Outcrops are extremely scarce except in road cuts or in the creek bottoms.

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SCOPE OF THE PRESENT WORK

The present work was undertaken in an effort to evaluate the mineralization occurring on the Fred group. To this end, a 500 foot grid was laid out over the property. The area was geologically mapped in a reconnaissance fashion at a scale of 200 feet equals one inch; the grid lines being used for control. Soil samples were taken at 200 foot intervals on the cross lines (see Figure 160-23). These samples were analyzed for zinc in the Vancouver laboratories of Bondar-Clegg and Company.

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## GEOLOGY

The property is underlain by a sequence of medium to high-grade metamorphic rocks of the Shuswap Metamorphic Complex which have been intruded by granitic rocks of the Nelson Batholith.

The metamorphic rocks consist predominantly of impure micaceous quartzites, quartz-feldspar-biotite schist, minor amphibolite and quartz-feldspar-biotite-hornblende gneiss. In many cases, it can be seen that the original rocks were a sequence of thinly interbedded detrital sandstones and shales. These rocks are frequently intruded (?) by sills of quartzo-feldspathic material which is sometimes pegmatitic.

Most outcrops of the metasediments are stained with limonite due to alteration of contained pyrite and pyrrhotite. This staining is particularly apparent in the exposures seen along logging roads in the southwestern part of the property.

The granitic rocks generally range in composition from granodiorite to quartz diorite and are commonly porphyritic-euhedral plagioclase crystals up to 2 inches long and are frequently seen in

outcrops. In places, the biotite and hornblende crystals tend to be aligned and give the rock a slightly gneissic appearance. Xenoliths of metasediments, thermally altered to hornfels are also common in the intrusive rocks. Lenses of very coarse quartzo-feldspathic, pegmatitic material were noted in a number of places in the intrusive rocks in the southeastern corner of the property.

Schistosity and foliations in the metasediments generally trend easterly and dip steeply north and south. The scarcity of exposures precludes definition of any folds; however, a series of prominent ESE-trending draws southwest of Barnes Creek are interpreted as being faults or shear zones.

---

### MINERALIZATION

Pyrite and pyrrhotite can be found in varying amounts in almost every outcrop of the metasediments and probably accounts for the very prominent gossan which occurs on the property. Pyrrhotite is much more common in the southwestern portion of the claims and in some outcrops along the Barnes Creek road it makes up as much as five per cent of the rock. It occurs as fine-grained disseminated blebs and also as streaks and lenses which parallel the schistosity.

A number of occurrences of sphalerite were found in outcrop, principally along the Barnes Creek road in heavily limonite-stained metasediments containing appreciable amounts of pyrrhotite. The sphalerite occurs as discrete grains and small stringers which parallel the schistosity. Coatings of white hydrozincite are sometimes noted on the exterior of sphalerite bearing rock. It appears to be confined to areas of the outcrops which are highest in pyrrhotite content and which have a characteristic dark brown to black, iridescent coating of limonite. From the few exposures seen, these areas appear to be lense-like, of varying width (zones up to 20 feet wide were seen) and to parallel the general strike of the schistosity.

No zones of massive pyrrhotite - sphalerite were encountered, such as occur at the Big Ledge deposit about 20 miles north-northwest of the Fred claims.

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## GEOCHEMISTRY

Sampling was conducted on lines 500 feet apart, samples being taken every 200 feet along these lines (see Figure 160-23). Sample stations were marked on the ground by red flagging. B-horizon soils were collected where possible.

A total of 388 soil samples were collected and analyzed for zinc by Bondar-Clegg and Company. The samples were dried at 40<sup>o</sup>-50<sup>o</sup> C in infra-red ovens and sieved to -80 mesh in Tyler sieves. An aliquot of the -80 mesh fraction was digested in hot aqua regia to extract the zinc and the metal was then analyzed by atomic absorption spectrophotometry at a detection limit of 1 P.P.M.

A histogram was plotted for zinc and indicates an essentially unimodal distribution. The mean and standard deviation were calculated and the data were classified into the following categories:

negative	0 -- mean
possible anomalous	mean -- (mean + 1 std. dev.)
probably anomalous	(mean + 1 std. dev.) -- (mean + 2x std. dev.)
definitely anomalous	> (mean + 2x std. dev.)



The values were plotted on a 200 scale plan of the property and definitely anomalous and probably anomalous areas were outlined.

In general, the results indicate a series of lense-like anomalous zones which parallel the general trend of the schistosity in bedrock. Most of them occur in an area about 4,000 feet wide (NW-SE) by about 3,000 feet long (NE-SW) within the central part of the claim block. This area lies between the Barnes Creek road and Barnes Creek and contains very little outcrop. However, the lense-like outline of the anomalies and the fact that they conform to the general trend of the rocks indicates that the source of the zinc values is probably similar to that observed in outcrop along the Barnes Creek road.

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ECONOMIC POTENTIAL

A number of occurrences of low-grade zinc mineralization were noted in outcrops along logging roads on the Fred claims. Soil sampling has indicated a zone of anomalies along strike with the known mineralization and it is probable that the mineralization underlying them is similar though perhaps higher in grade.

It is possible that the mineralization indicated by the anomalous soils in the central part of the claim block could be of economic significance if sufficient tonnages of low grade zinc were found to occur there. However, the probability of finding such tonnages and grades is considered to be low and further work is given low priority.

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SUMMARY AND CONCLUSIONS

1. The Fred claim group consists of 16 full-sized, contiguous claims located in the Barnes Creek area, Slocan Mining Division, British Columbia.
2. The property was staked during the 1970 field season as the result of discovery of occurrences of sphalerite in a similar environment to the several known, low grade, stratabound zinc deposits which occur in the Shuswap Terrane.
3. No evidence of previous work was seen; however, a couple of old claim posts were found on the property. A large block of claims were staked immediately to the west of the Fred claims last summer and a number of these claims were over-staked on the Fred property.
4. Geological mapping has located several areas of low grade zinc mineralization in exposures along the Barnes Creek road and a zone of geochemical anomalies was found to occur along strike with this known mineralization in an area which is essentially overburden-covered.

5. The exposed zinc mineralization is low grade and it is probable that the source of zinc soil anomalies is similar type mineralization, though possibly of higher grade. The probability of finding extensive tonnages of mineralized rock of economic grades is considered to be low and further exploration work is rated as low priority.
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RECOMMENDATIONS

In view of the fact that a large block of claims adjoins the Fred group to the west, that the zone of zinc soil anomalies is not well exposed, and that the area is covered by an extensive gossan, it is recommended that the ground be retained and that consideration be given to further fill-in sampling and possibly some cat trenching.



Respectfully submitted,  
VERSATILE MINING SERVICES LTD.

*James M. Dawson*  
James M. Dawson, M.Sc., P. Eng.,  
Geologist

A P P E N D I X    A

P E R S O N N E L

PERSONNEL

FIELD:

J.M. Dawson	Geologist	May 26, June 1, 2, 3	4 days
N. Thiessen	Geologist	May 18-26	9 days
G. Sutherland	Prospector	May 18-26	9 days

OFFICE:

J.M. Dawson	Geologist	June 8, 9, 10, 14	4 days
T. ValJean	Draftsman	June 9, 10, 11, 14	4 days

APPENDIX B

STATEMENT OF EXPENDITURES



PROGRAMME COSTS ON FRED CLAIMS

1. LABOUR:

1 Geologist (P.Eng.) 8 days @ \$150.00 per day	\$1,200.00	
1 Geologist 9 days @ \$64.00 per day	576.00	
1 Field Assistant 9 days @ \$32.00 per day	288.00	
1 Draftsman 4 days @ \$80.00 per day	<u>320.00</u>	
		\$2,384.00

2. EXPENSES & RENTALS:

(a) 1 Truck 13 days @ \$20.00 per day	260.00	
(b) Assays and Geochemical Analysis	573.10	
(c) Food, Camp Rental, Equipment Rental, Motel, & Miscellaneous Expenses	214.70	
(d) Typing, Photocopying, and Blueprinting	<u>37.40</u>	
		<u>1,085.20</u>

TOTAL

\$3,469.20

A P P E N D I X C

A F F I D A V I T I N S U P P O R T O F S T A T E M E N T  
O F E X P E N D I T U R E S

CANADA

Province of British Columbia

TO WIT:

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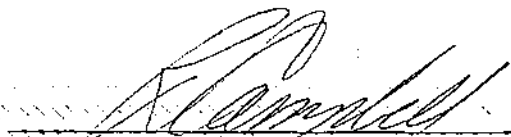
IN THE MATTER of the Statement of Expenditures for geological and geochemical exploration of the Fred Claims in the Slocan Mining Division.

I, JAMES M. DAWSON, Geologist of 104 - 423 Arrowstone Drive in the City of Kamloops, in the Province of British Columbia, DO SOLEMNLY DECLARE:

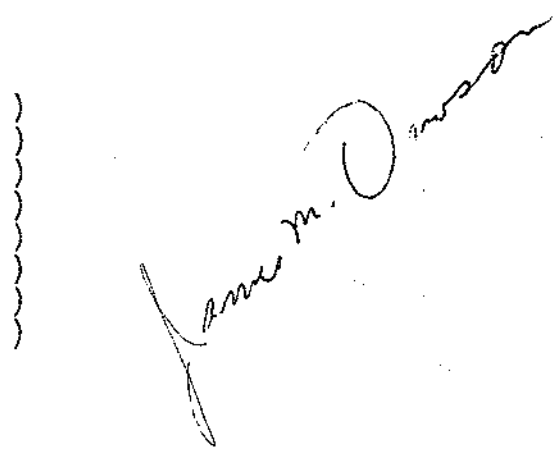
- 1. THAT the geological and geochemical investigation of the Fred Claims was carried out under my direction.
- 2. THAT the Statement of Expenditures set out in Appendix B of my report entitled "Geological and Geochemical Report on the Fred Claim Group", dated May 18 to June 15, 1971, truly represents the amounts expended on geological and geochemical surveys of the said claims.

AND I make this solemn Declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath, and by virtue of the Canada Evidence Act.

DECLARED before me at the City of Kamloops in the Province of British Columbia this 14th day of June, A.D. 1971.



A Commissioner for taking Affidavits for British Columbia



APPENDIX D

REFERENCES

## REFERENCES

- JONES, A.G. (1959): Vernon Map Area; G.S.C. Memoir 296.
- HYNDMAN, D.W. (1968): Petrology and Structure of the Nakusp Map Area -- British Columbia; G.S.C. Bulletin 161.
- WHEELER, J.O. et al (1970): Structure of the Southern Canadian Cordillera; Geological Association of Canada, Special Paper No. 6.
- MORRIS, A. (1948): Genesis of the Sulphide Mineralization at the Big Ledge Property, British Columbia; unpublished Bachelor's Thesis, University of B.C.

A P P E N D I X E

ASSAY RESULTS



**BONDAR-CLEGG & COMPANY LTD.**

geochemists • assayers • analytical chemists

1500 PEMBERTON AVENUE, NORTH VANCOUVER, B.C.  
PHONE: 988-5315 TELEX: 04-54554

**CERTIFICATE OF ASSAY**

TO **Versatile Mining Services Ltd.**

Report No: A21-256

Samples Rec'd: June 6, 1971

Results Completed: June 8, 1971

P.O. Box 609

Kamloops, B.C.

I hereby certify that the following are the results of assays made by us upon the herein described **Ore** samples.

MARKED	GOLD		SILVER	Cu	Pb	Zn	Ni				TOTAL VALUE PER TON (2000 LBS.)
	Ounces per Ton	Value per Ton	Ounces per Ton	Percent	Percent	Percent	Percent	Percent	Percent		
Ore											
48901	Trace		0.10	Trace	Trace	0.23	Trace				
48902	0.005		0.05	Trace	Trace	0.19	trace				
48903	0.005		0.10	0.01	Trace	0.01	Trace				
48904	0.005		0.05	Trace	Trace	0.68	Trace				
48905	0.005		0.05	0.02	Trace	0.02	Trace				

NOTE:  
Rejects retained two weeks  
Pulps retained three months  
unless otherwise arranged.

Gold & Silver values reported on these sheets  
have not been adjusted to compensate losses and  
gains inherent in fire assay methods.

Gold calculated at \$.....per ounce

Registered Assayer, Province of British Columbia

APPENDIX F

WRITER'S CERTIFICATE





TELEPHONE 374-6263  
TELEX 048-8191

VANCOUVER ADDRESS:  
1575 TWO BENTALL CENTRE, VANCOUVER 1, B.C.

## C E R T I F I C A T E

I, JAMES M. DAWSON, of Kamloops, B.C., HEREBY CERTIFY THAT:

1. I am a geologist residing at 104 - 423 Arrowstone Drive, Kamloops, and employed by Versatile Mining Services Ltd. of P.O. Box 609, Kamloops, B.C.
2. I am a graduate of the Memorial University of Newfoundland -- B.Sc. (1960), M.Sc. (1963), a fellow of the Geological Association of Canada and a member of the Association of Professional Engineers of B.C. I have practiced my profession for eight years.
3. I am the author of this report which is based on an exploration programme that included geological mapping and a geochemical soil sampling survey, as well as a study of various government and private reports.
4. I have no beneficial interest in United Bata Resources (Canada) Ltd. or in the property discussed in this report, nor do I expect to receive any.



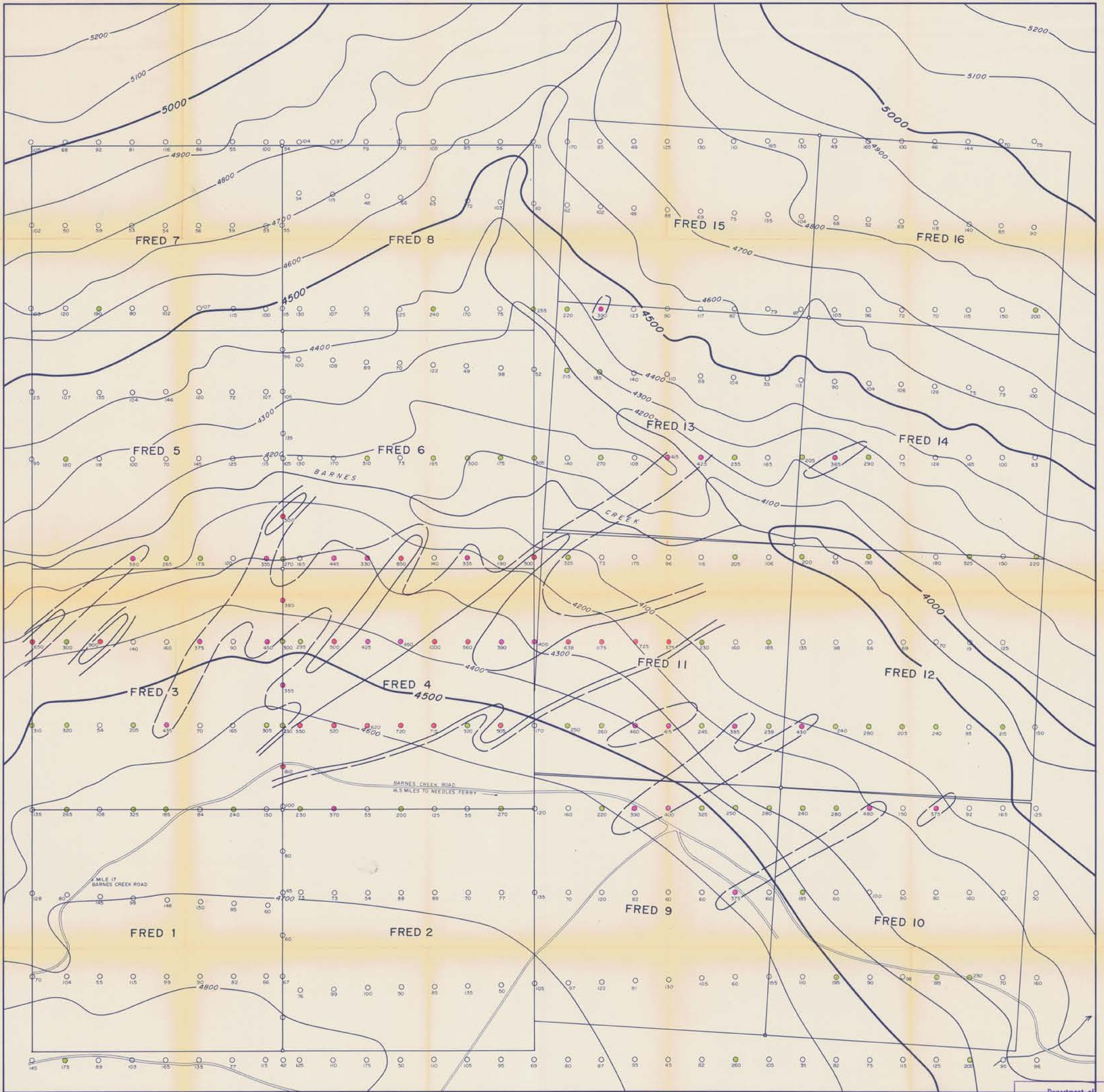
VERSATILE MINING SERVICES LTD.

*James M. Dawson*  
James M. Dawson, M.Sc., P. Eng.,  
Geologist

June 14th, 1971.  
Kamloops, B.C.

A P P E N D I X G

MAPS



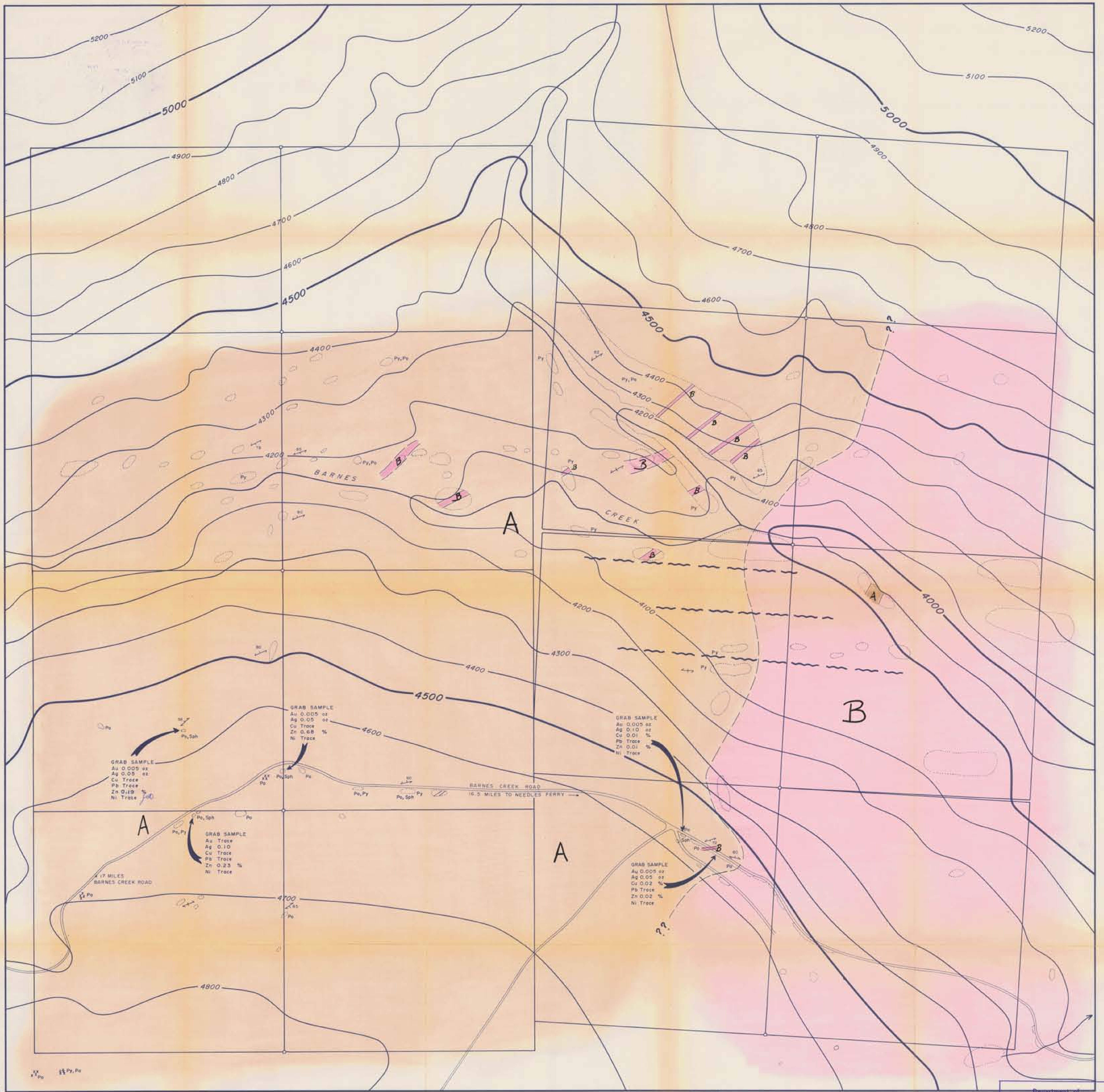
Department of  
 Mines and Petroleum Resources  
 ASSESSMENT REPORT  
 NO. 3074 MAP #15

— LEGEND —

- 0 - 171 ppm Zinc Negative
- 172 - 325 ppm Zinc Possibly Anomalous
- 326 - 479 ppm Zinc Probably Anomalous
- > 479 ppm Zinc Definitely Anomalous
- (70) Sample Location (values expressed in parts per million Zinc)
- Claim Post
- Road
- Area Outline Of Probable Anomaly
- Area Outline Of Definite Anomaly

To Accompany A Report By J.M. DAWSON P. Eng.

UNITED BATA RESOURCES LTD. CALGARY ALBERTA		VERSATILE MINING SERVICES LTD.
GEOCHEMICAL SURVEY SOIL SAMPLING PLAN FRED CLAIM GROUP SLOCAN MINING DIVISION BRITISH COLUMBIA		
Versatile Mining Services Ltd. 175 200 - 8000 J.M. Dawson June 1971 J.W. Dawson 160 - 33		PROFESSIONAL ENGINEER



— LEGEND —

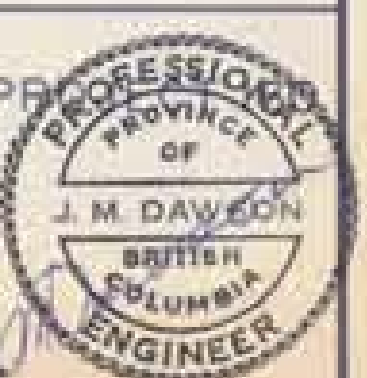
- B** COARSELY PORPHYRITIC GRANODIORITE TO QUARTZ DIORITE, SOMETIMES FOLIATED & FREQUENTLY WITH PEGMATITIC PHASES & XENOLITHS OF METASEDIMENTS.
- A** MICACEOUS QUARTZITE, QUARTZ - FELDSPAR - BIOTITE SCHIST & GNEISS FREQUENTLY STAINED WITH LIMONITE.
- GEOLOGICAL CONTACT APPROXIMATE
- ~~~~~ FAULT INFERRED
- OUTCRIP AREA
- △ FLOAT
- ↗ ATTITUDE OF FOLIATION OR SCHISTOSITY
- Po, Py, Sp MINERAL OCCURRENCE: PYRRHOTITE, PYRITE, SPHALERITE

3074

M-2

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO 3074 MAP #2

UNITED BATA RESOURCES LTD.  
CALGARY ALBERTA  
PLAN OF SURFACE GEOLOGY  
FRED CLAIM GROUP  
SLOCAN MINING DIVISION  
BRITISH COLUMBIA



Prepared by  
Versatile Mining Services Ltd. 1" x 200' Apprx.  
E. B. Velocan June 1987  
J. M. Dawson 100 - 22