EXPLORATION N.T.S. 104N/11W

WESTERN DISTRICT 3 APRIL 1979

# ASSESSMENT REPORT DAMBOULEO CLAIM GROUP, ATLIN M.D.

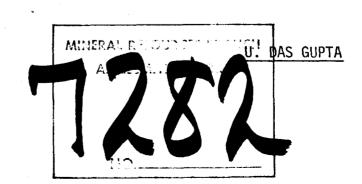
59<sup>0</sup>41'N 133<sup>0</sup>22'W

Owned by Cominco Ltd.

Work Performed

August 29 to 31, September 7, 8, 10 to 12, 1978

NOVEMBER, 1978



# TABLE OF CONTENTS

	PAGE
INTRODUCTION	1
SUMMARY	1
PROPERTY	1
LOCATION	., 1
HISTORY	2
GEOLOGY	2
Cache Creek Group Alaskite Basalt Recent Sediments	3
STRUCTURAL GEOLOGY	4
GEOCHEMISTRY	4
MINERALIZATION	4
(a) Copper-Zinc-Tungsten	
CONCLUSIONS	5
LIST OF ATTACHMENTS	
Plate 1 Location Map	(1:900,800)
Plate 2 Location Map	(1:250,000)
Plate 3 Claim Map	(1:50,000)
Plate 4 Geology	(1:12,000)
Plate 5 Geochemistry of stream silts and waters	(1:12,000)
Appendix "A" Statement of Expenditures Appendix "B" Statement Appendix "C" Statement of Qualifications Appendix "D" Geochemical Results	

#### COMINCO LTD.

EXPLORATION N.T.S. 104N/11W

WESTERN DISTRICT
3 APRIL 1979

#### GEOLOGICAL AND GEOCHEMICAL

#### ASSESSMENT REPORT

## DAMBOULEO CLAIM GROUP, ATLIN M.D.

#### INTRODUCTION

This report is based on eight days of field work done on August 29, 30, and 31 and September 7, 8, and 10 to 12, 1978 undertaken with the objective of carrying out geological mapping and geochemical sampling of stream waters and sediments in order to evaluate the claim and provide a basis for work in 1979. Geologist in the field was U. Das Gupta assisted by D.A. Perkins and M.D.J. Waskett-Myers. Mapping was carried out with the help of 1:15,000 airphotographs and a 1:12,000 scale topographical map.

#### SUMMARY

Three claims, the Dam, Bou, and Leo claims, were staked to cover a large cinder-cone with associated basaltic flows and part of an alaskite batholith exposed between Boulder Creek and Ruby Creek approximately 20 miles east of Atlin in northern B.C. Mapping indicates metasediments of the Cache Creek group intruded by a Cretaceous alaskite body. In topographically lower areas the metasediments and the intrusive are capped by unconsolidated auriferous gravels and minor glacial till. In the eastern half of the area, these units are capped by olivine basalt flows and scoria ejected from a large cinder-cone that forms Ruby Mountain. Old showings in the area include uranium mineralization in the alaskite, wolframite and cassiterite associated with quartz veins in the alaskite, molybdenite with minor chalcopyrite in the alaskite and copper-lead-zinc-tungsten mineralization in skarn zones. No new mineralization of note was found.

#### PROPERTY

Date Recorded : June 8, 1978 Date Due : July 8, 1979

Leo Claim : 12 units 100% Cominco through staking
Dam Claim : 10 units 100% Cominco through staking
Bou Claim : 15 units 100% Cominco through staking

## LOCATION

Latitude : 59°41'N Longitude : 133°22'W N.T.S. : 104N/11W

Mining Division: Atlin Mining Division, B.C.

The claim group covers a part of the ground north of Surprise Lake between Boulder Creek and Ruby Creek approximately 20 road miles east of Atlin in northern B.C. Access is by road from Atlin to either Boulder Creek and along Boulder Creek to the Bou claim, or to Ruby Creek where the road encircles the eastern boundary of the Leo and Dam claims. The terrain is one of moderate relief and the claims lie between elevations of 3800 feet and 6000 feet. There is little outcrop on the Bou claim and moderate outcrop on the Dam and Leo claims.

#### HISTORY

Parts of the area have been held previously by a number of operators. Boulder Creeek was the site of a placer operation by Cominco Ltd. in 1935. The northeastern portion of the Bou claim and the western portion of the Leo claim include parts of the old Silver Diamond group of claims and the Black Diamond Tungsten Mine (optioned by Cominco in 1954). In addition an area along the northern boundary of the Leo claim covers portions of the old Nu and Olsen-Mattson group of claims. All these latter groups were extensively trenched for wolframite mineralization in quartz veins. Barymin Exploration of Toronto prospected the Boulder Creek and Ruby Creek regions on basis of pitchblende float reportedly found by placer operators on Boulder Creek. Subsequent work by other operators failed to verify the existence of such float. However, prospecting by Barymin Exploration led to the discovery of secondary uranium mineralization, associated with shear zones in the alaskite intrusive, such as that on the old Bruce claims (covered, in part, by the Bou claim).

## GEOLOGY

The property is underlain by metasediments, designated as belonging to the Permo-Pennsylvanian Cache Creek group by Aitken (1959), intruded by an alaskite stock and capped, for the most part, by Tertiary and Recent olivine basalt flows and scoria. The sequence exposed is as follows:

Recent - Glacial till and fluvial gravel

Pleistocene and Recent - Basalt and scoria

Pleistocene (?) - Glacial fluvial sediments

Cretaceous - Alaskite

Permian & Pennsylvanian- Cache Creek Group - chert, argillite, impure siliceous carbonate, amphibolite.

#### Cache Creek Group

The Cache Creek group of metasediments comprise the oldest rocks exposed in the area. These metasediments consist of an interbedded sequence of grey to rusty weathering siltstones, dark grey carbonaceous argillites, grey cherty argillite and well bedded impure carbonate. The sequence is not well exposed except along a small area at the corner of the three claims and the observed repetition of the sequence could be due to the original interbedded nature of the different units. The carbonate unit has been metamorphosed to a skarn (50 metres wide in places) at the northern contact with the alaskite. This skarn is comprised of well banded to massive diopside-tremolite-garnet rock and amphibolite with cherty laminations and with lenses of unaltered coarsely crystalline grey limestone (1 metre wide and 2 metres along strike, on the average). It

is possible that some of these amphibolite units could represent metamorphosed volcanics. Towards the south the carbonate content of the sequence decreases and the chert and argillite content increases.

#### Alaskite

Much of the eastern half of the group, including most of the Bou claim, is underlain by a Cretaceous alaskite body that is a part of the Surprise Lake batholith. This unit is poorly exposed except in the northeastern corner of the Bou claim. It is predominantly light coloured and varies in texture from coarse-grained to fine-grained. The fine-grained varieties are most common and consist of phenocrysts of smoky quartz and minor Kfeldspar (up to 1 cm in diameter) in a fine-grained quartzo-feldspathic matrix. The coarse-grained varieties are more equigranular and consist of abundant phenocrysts of K-feldspar and plagioclase and minor quartz in a medium-grained quartzo-feldspathic matrix. All transitions between the two extreme varieties occur. The K-feldspar phenocrysts of the coarsegrained varieties are commonly kaolinized. The predominant mafic mineral observed is biotite which constitutes less than 5% of the rock; rare muscovite is also present. Apatite and rare tourmaline and fluorite are the common accessories. Quartz veins are common near the northeastern part of the Bou claim. These veins occasionally contain arsenopyrite and rare wolframite, and tetrahedrite.

#### Basalt

Pleistocene and Recent basalts and scoria, extruded from the large volcanic cone that forms Ruby Mountain, cover much of the Leo and Dam claims. Flows exposed along Ruby Creek east and south of the Dam claim have been dated as being 100,000 years B.P. (Proudlock and Proudlock, 1976). The geometry of the land surface suggests that these flows probably originated from the crater at Ruby Mountain indicating that the volcanic cone is Recent in age. Much of the eastern part of the claim group is covered by a large slide that had its origin on Ruby Mountain. Landform studies and geometry of the extrusives also suggest that the Pleistocene land surface was similar to the present day surface (minus the cone of Ruby Mountain). It could not be ascertained whether the basalt flows cover paleochannels of tributary streams flowing into Ruby Creek from the west. However, rocks of the Cache Creek group appear to underlie the flows; only in the eastern part of the Dam claim is it probable that the alaskite underlies the basalt.

#### Recent Sediments

Placer workings on Boulder Creek reveal the presence of unconsolidated channel gravels overlying weathered alaskite basement. These channel gravels are overlain by, and often interbedded with, glacial outwash and till. According to old Cominco reports these gravels vary in thickness from 1 to 10 metres and are up to 100 metres wide. In addition, study of the landform suggests that the old channels occupied a location close to the present channel and possibly to the east of it.

The probability of any channel gravels existing below the basalt on the Leo and Dam claims is low. However, it is still possible that gravels, associated with a tributary flowing easterly into Ruby Creek, may be present below the basalt near the northern contact of the basalt flows with the older rocks.

#### STRUCTURAL GEOLOGY

Paucity of in situ outcrops makes it impossible to determine the structure of the area. The metasediments have northeasterly strikes and dip steeply to the northwest. There is no evidence of isoclinal folding in the area and it is suggested that the sequence exposed is a normal one.

#### GEOCHEMISTRY

A total of 24 water samples, 13 stream sediment samples, and 6 rock samples were collected from the property. The water samples were analysed for uranium and fluorine; the stream sediment samples were analysed for cobalt, uranium, mercury and tungsten (see Appendix D for analytical techniques). Of the rock samples, three were analysed for lead, cobalt, molybdenum, and uranium and three were assayed by standard assaying methods for copper, lead, zinc, tungsten and gold (see also Appendix D).

The water samples from creeks and springs draining the alaskite on the Bou claim are mildly anomalous in uranium and fluorine. Stream sediment samples from these creeks do not have anomalous cobalt or uranium values. The lack of an anomaly, as such, can be explained by the presence of a generally high background for the area. Sediment samples from a few of the creeks draining the alaskite along the northern boundary of the Leo claim are moderately to highly anomalous in cobalt and uranium. Samples from creeks draining the area around the Dam claim have highly anomalous cobalt contents, probably indicating the presence of shear zones in the Cache Creek argillites exposed in this region.

The three rock samples analysed geochemically indicate normal background amounts in cobalt, uranium, and lead in those areas of the Bou claim. The three samples assayed by standard methods are described under "Mineralization".

#### MINERALIZATION

## (a) Copper-Zinc-Tungsten

An impure siliceous carbonate unit metamorphosed to a skarn at the contact with alaskite is present on the western portion of the Dam claim. The skarn contains lenses of sulphides up to two metres in width and 15 to 20 metres in length, striking north-northeasterly. Most of the mineralization is low grade, consisting of pyrrhotite, chalcopyrite, sphalerite, scheelite, and minor galena. Small lenses (5 to 20 cm in width and 2 m in length) of higher grade, bedded sphalerite, chalcopyrite and

galena are also present. The skarn zone is at least 200 metres long and 50 metres wide; it is covered by the basaltic flows of Ruby Mountain.

Three rock samples of the Dam claim occurrence show:

<u>Description</u>	<u>WO<sub>3</sub>(%)</u>	<u>Cu(%)</u>	<u>Pb(%)</u>	<u>Zn(%)</u>	Au(oz/ton)
width 2 m	0.16	0.08	1.24	2,32	trace
0.5 m width of bedded pyrite- sphalerite	0.07	0.01	0.01	9.93	0,448
grab sample from pyrrhotite-rich zone	0.23	0.45	0.01	0.33	trace

## (b) Uranium

Known uranium mineralization occurs associated with shear zones in the alaskite just to the northeast of the Bou claim. This mineralization is in the form of zeunerite, a copper-uranium arsenate. No such mineralization was noted on the Bou claim. However, alaskite float on the eastern part of the claim emit higher than background radiation (approximately 600 cps).

#### CONCLUSIONS

No uranium mineralization of note was found on the Dambouleo claim group. The 1978 field work was undertaken primarily to study the uranium potential of possible channel gravels overlying weathered alaskite on the property. Results of the study indicate that such channel gravels exist along Boulder Creek on the Bou claim.

Report by:

Supervised by:

Nicholson, P. Eng.

Endorsed for

Release by:

6. Harden, Manager Western District

UDG/pcl

#### REFERENCE

Aitken, J.D., 1959, Atlin Map area, British Columbia, G.S.C. Memoir 307, 89 p.

Proudlock, P.J., and Proudlock, W.M., 1976, Stratigraphy of the Placers In the Atlin Placer Mining Camp: B.C. Ministry of Mines and Petroleum Resources., 69 p.

# Distribution

Mining Recorder (2) Western District RJN

# APPENDIX "A"

# STATEMENT OF EXPENDITURES

# DAMBOULEO CLAIM GROUP

SA	LΑ	RΙ	ES	:
				•

0.121.172.00			
U. Das Gupta :	August 29 to 31, and September 7, 8 and 10 to 12, 1978; 8 days @ \$88.70/day	\$709.60	
D.A. Perkins :	August 29 to 31, 1978; 3 days @ \$71.13/day	213.39	÷
M.D.J. Waskett-Myers:	August 29 to 31, and September 7, 8 and 10 to 12, 1978; 8 days 0 \$99.44/day	795.52	
R.J. Nicholson :	August 28, 1978; 1 day organiza- tion @ \$99.36/day August 30, 1978; 1 day field supervision @ \$136.40/day	235.76	\$1,954.27
FOOD AND ACCOMMODATION	<u>!</u> :		
20 man-days, apportion August 14 to September	ed costs during period 12, 1978		556.97
TRANSPORTATION:			
Truck Rental: apporti August 14 to September	oned cost during period · 12, 1978	262.81	
U-Drive: apportioned August 14 to September		40.57	
Mobilization: apporti August 14 to September	oned costs during period 12, 1978	392.57	695.95
GEOCHEMICAL SUPPLIES A	ND ANALYSES		
W, and Hg; one soil sa	sed for U and F; ples analysed for Co, U, mple analysed for Au, Co, samples analysed for Cu,		
Pb, Zn, Co, Mo, Au, W,			413.88

## MISCELLANEOUS:

#### APPENDIX "B"

IN THE MATTER OF THE B.C. MINERAL ACT AND IN THE MATTER OF A GEOLOGICAL AND GEOCHEMICAL PROGRAM CARRIED OUT ON THE DAM, BOU AND LEO MINERAL CLAIMS OF THE DAMBOULEO PROPERTY (NTS 104N/11W), ON THE PER AND EYE MINERAL CLAIMS OF THE PEREYE PROPERTY (NTS 104N/11W), ON THE VOL MINERAL CLAIM (NTS 104N/10W), ON THE HIR MINERAL CLAIM (NTS 104N/10W), ON THE CAP MINERAL CLAIM (NTS 104N/7W), ON THE TAY MINERAL CLAIM (NTS 104N/7W), ON THE ROB MINERAL CLAIM (NTS 104N/10W) ALL LOCATED IN THE ATLIN MINING DIVISION OF THE PROVINCE OF BRITISH COLUMBIA.

## STATEMENT

- I, ROBERT JOHN NICHOLSON, OF THE DISTRICT OF NORTH VANCOUVER IN THE PROVINCE OF BRITISH COLUMBIA, HEREBY DECLARE:
- THAT I am employed as a Project Geologist by Cominco Ltd. and, as such, have a personal knowledge of the facts to which I hereinafter depose;
- THAT annexed hereto and marked as Appendix "A" to this statement is a true copy of expenditures incurred on a geological and geochemical program carried out on the Dam, Bou and Leo mineral claims;
- 3. THAT the said expenditures were incurred for the purpose of mineral exploration of the above noted mineral claims between the 14th of August and 12th of September, 1978.

Signed:

V.1 NICHOLSON P Fna

## APPENDIX "C"

## STATEMENT OF QUALIFICATIONS

- I, UDAYAN DAS GUPTA, OF THE CITY OF VANCOUVER, BRITISH COLUMBIA HEREBY CERTIFY:
- 1. THAT I AM A GEOLOGIST PRESENTLY RESIDING AT 1361 ROBSON STREET, VANCOUVER, BRITISH COLUMBIA, WITH A BUSINESS ADDRESS AT 700-409 GRANVILLE STREET, VANCOUVER, BRITISH COLUMBIA.
- 2. THAT I GRADUATED WITH BSc (HONOURS) AND MSc DEGREE IN GEOLOGY FROM THE UNIVERSITY OF CALCUTTA, INDIA, IN 1967 AND 1970 RESPECTIVELY.
- THAT I GRADUATED WITH A PhD DEGREE IN GEOLOGY FROM THE UNIVERSITY OF TORONTO, ONTARIO, IN 1978.

DATED THIS 15 TH DAY OF NOVEMBER 1978 AT VANCOUVER, BRITISH COLUMBIA.

Udayan Casaufa - Udayan DAS GUPTA, PhD.

#### APPENDIX "D"

- All water, silt, and rock analyses done by Cominco Lab in Vancouver.
- 2. All water samples were filtered and acidified in the field using 5 ml  $HNO_3$  (25%) and sent for analyses.
- Silt samples were screened and the -80 mesh fraction sent for analyses.
- Water samples were analysed for U by fluorimetric method and F by fusion and specific ion method.
- 5. Silt samples were analysed for:
  - (a) Uranium by fluorimetric method.
  - (b) Co by hot acid digestion and atomic absorption.
  - (c) W by fusion and colorimetry.
  - (d) Hg by acid digestion, vapour evolution and atomic absorption.
- Rock samples were analysed for:

  - (a) Uranium by fluorimetric method.(b) Pb and Co by hot acid digestion and atomic absorption.
  - (c) Mo by fusion and colorimetry.
- 7. Rock samples for standard assay were sent to Chemex Labs, Vancouver.

#### **GEOCHEMICAL RESULTS:**

#### (a) Water Samples

Sample No.	U (ppb)	F (ppb)
AU-D-65	<0.05	1120
AU-D-69	< 0.04	84
AU-D-70	0.11	580
AU-D-71	0.11	1350
AU-D-72	0.17	90
AU-D-73	< 0.05	270
AU-D-74	0.11	110
AU-D-75	0.17	240
AU-D-77	0.05	400
AU-D-78	< 0.05	600
AU-D-105	< 0.05	540
AU-D-106	0.11	490
AU-D-107	- 0.5	1260
AU-D-108	0.05	190
AU-D-109	0.05	44
AU-D-110	0.05	120
AU-D-111	< 0.05	190
AU-D-112	< 0.05	170

# (a) <u>Water Samples Cont'd.</u>

Sample No.	U (ppb)	F (ppb)
AU-D-113	0.23	800
AU-D-114	0.11	620
AU-D-116	0.36	800
AU-D-118	0.74	40
AU-D-119	0.5	290
AU-D-120	1.1	510

# (b) Silt Samples

Co (ppm)	U (ppm)	Hg (ppb)	W (ppm)
13	24.0	37	200
31	1.0	13	2
46	5.2	17	150
27	2.8	26	15
22	3.5	22	8
26	3.5	21	4
20	3.3	_	22
< 2	4.7		10
< 2	16.0	40	75
< 2	4.9		20
< 2	6.0		15
3	5.4	9	8
< 2	5.0	9	8
	13 31 46 27 22 26 20 < 2 < 2 < 2 < 2 < 2	13 24.0 31 1.0 46 5.2 27 2.8 22 3.5 26 3.5 20 3.3 < 2 4.7 < 2 4.7 < 2 16.0 < 2 4.9 < 2 6.0 3 5.4	13       24.0       37         31       1.0       13         46       5.2       17         27       2.8       26         22       3.5       22         26       3.5       21         20       3.3       36         < 2

# Background:

U(water) (ppb)	U(silt) (ppm)	Co(ppm)	Hg(ppb)	F(water) (ppb)	W (ppm)
0.4	18.0	10.0	65.0	300	5.0

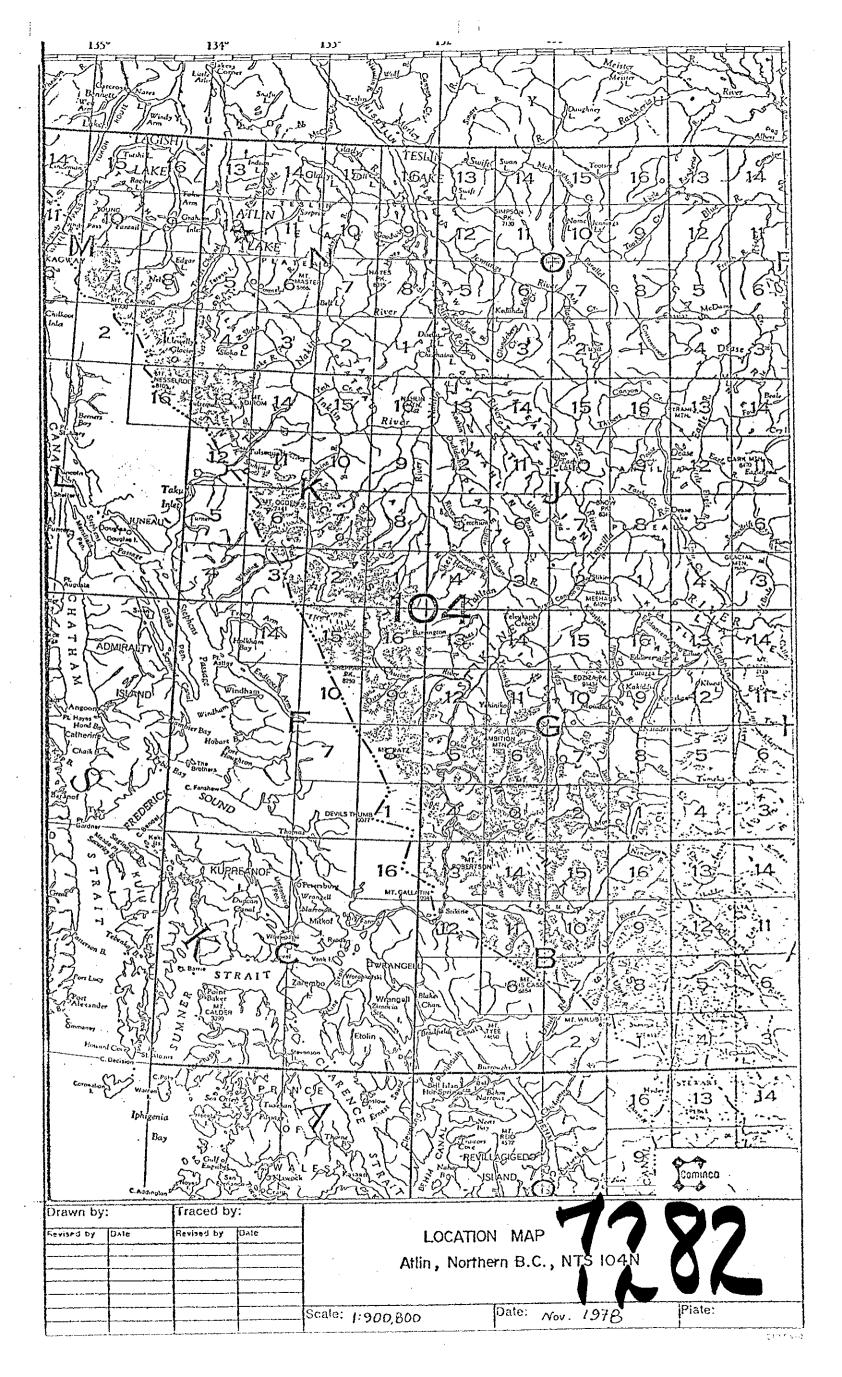
# (c) Rock Samples

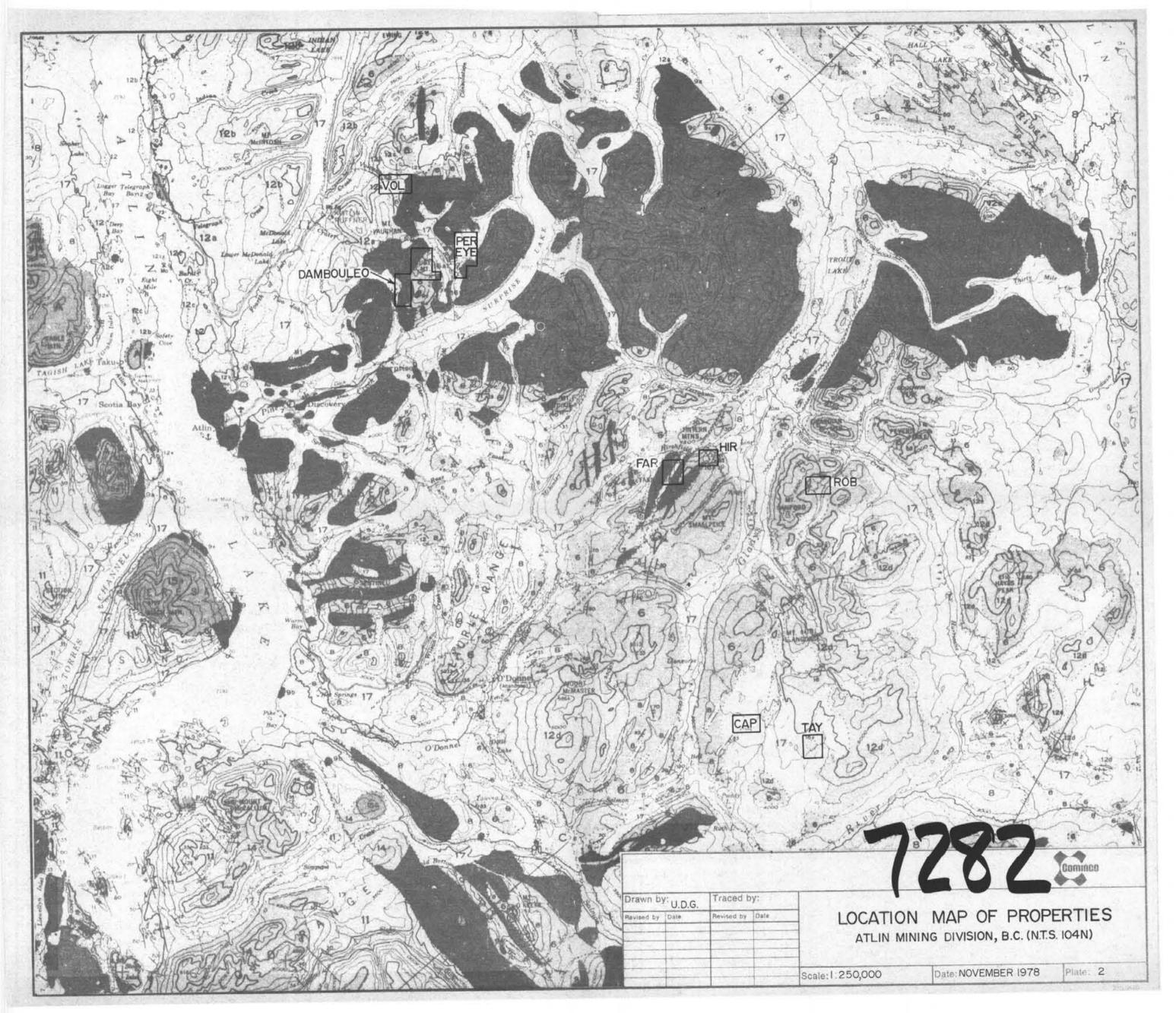
# Geochemical Analyses:

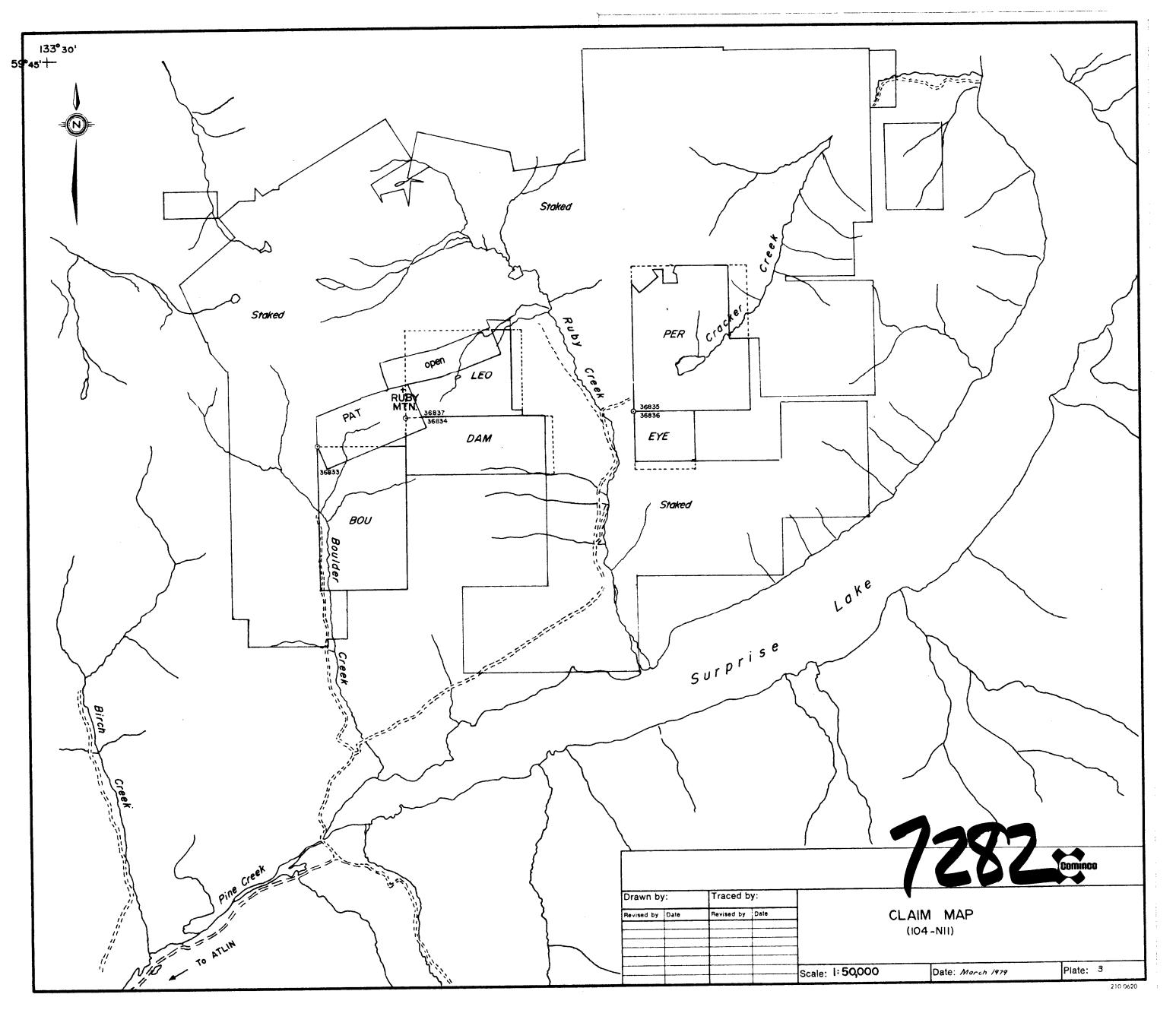
Sample No.	Pb (ppm)	Co (ppm)	Mo (ppm)	U (ppm)
AU-UR-24 AU-UR-25	8	< 2		5.4 3.0
AU-UR-27	<4	5	3	.34

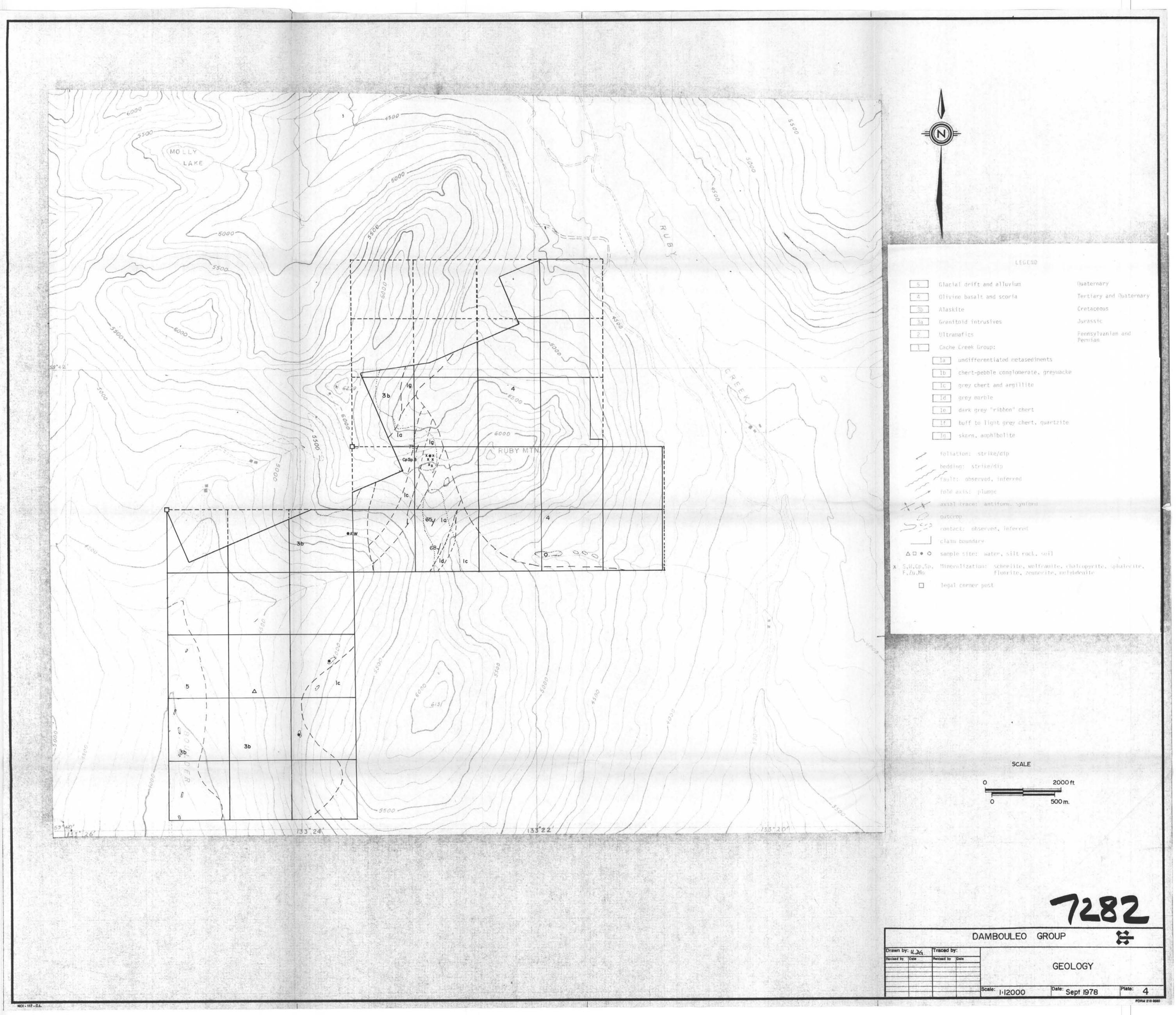
# Standard Assay:

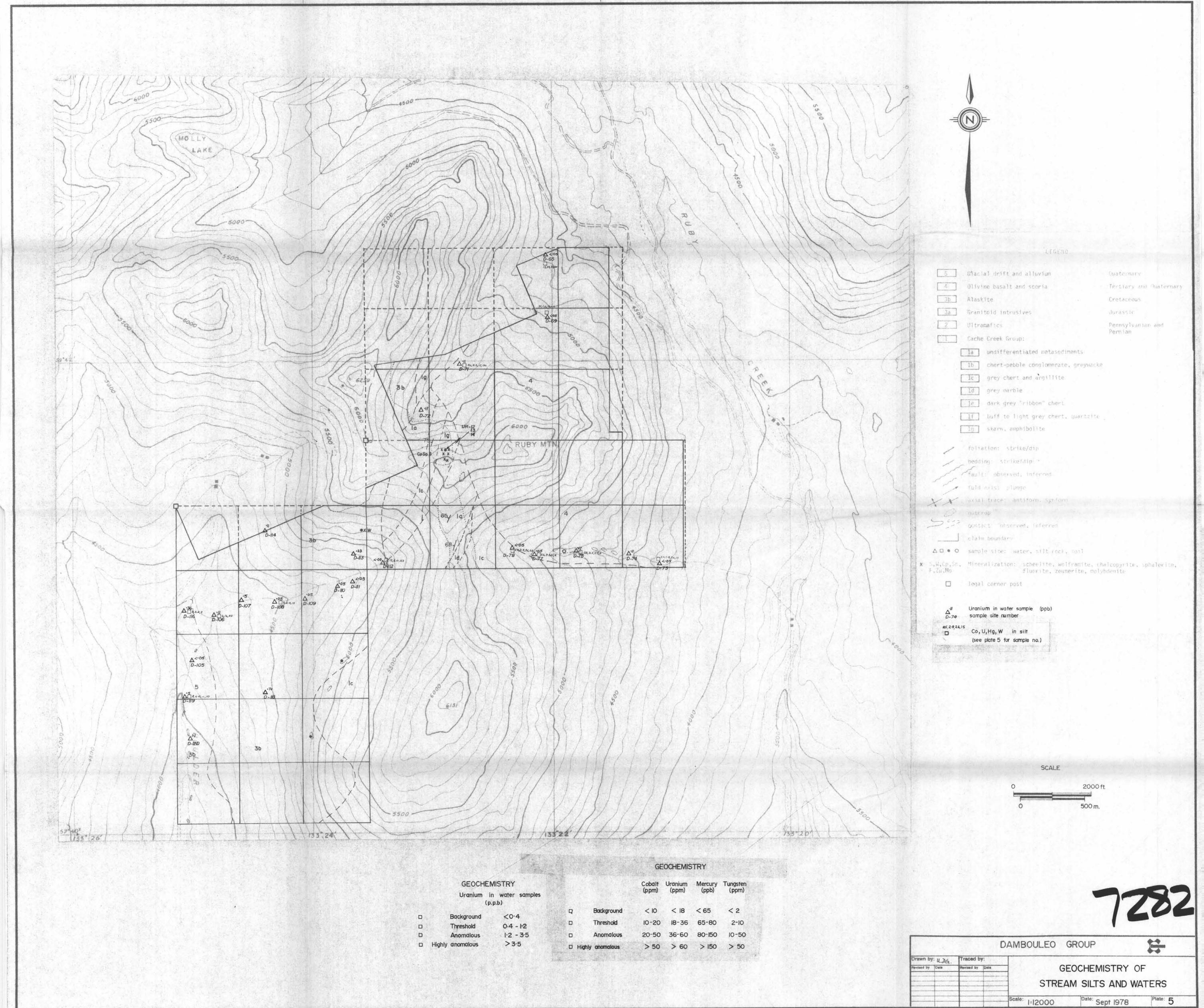
Sample No.	Cu (%)	Pb (%)	<u>Zn (%)</u>	WO3 (%)	Au(oz/ton)
AU-UR-12	0.08	1.24	2.32	0.016	<0.003
AU-UR-13 AU-UR-14	<0.01 0.45	<0.01 0.01	9.93 0.33	0.07 0.23	0.448











NCI - 117 - O.L.

FORM 210 0680