

COMINCO LTD.

EXPLORATION
N.T.S. 104N/10W

WESTERN DISTRICT

GEOLOGICAL AND GEOCHEMICAL ASSESSMENT REPORT

ON THE FAR CLAIM

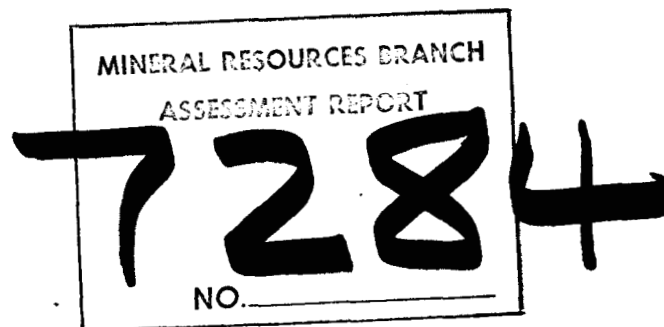
ATLIN MINING DIVISION

59°30'N 133°00'W

OWNED BY COMINCO LTD.

WORK PERFORMED:

AUGUST 21 TO 23, 1978



NOVEMBER 1978

UDAYAN DAS GUPTA

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COMINCO LTD.

EXPLORATION
NTS: 104N/10W

WESTERN DISTRICT
April 6, 1979

GEOLOGICAL AND GEOCHEMICAL ASSESSMENT REPORT

FAR CLAIM

ATLIN MINING DIVISION

INTRODUCTION

Three days (August 21 to 23, 1978) were spent in the field to geologically map the claim. The aim of the field work was to carry out geochemical sampling and to evaluate the area for potential uranium mineralization associated with a potential fault zone in Cache Creek metasediments. Geologist in the field was U. Das Gupta assisted by D.A. Perkins. Mapping was carried out with the help of 1:15,000 airphotographs and a 1:12,500 enlargement of a 1:250,000 topographical map.

SUMMARY

The Far claim was staked to cover a minor uranium anomaly northeast of Mount Farnsworth in the Atlin Mining District. The area is underlain by metasediments and "greenstones" of the Cache Creek Group. There is no known mineralization in the area apart from rare chalcopyrite and malachite staining in cherty argillites. Geochemical sampling of stream silts and waters show that the samples taken in the vicinity of a proposed fault have mildly anomalous uranium contents.

PROPERTY

Date recorded:	June 22, 1978
Date due:	June 22, 1979
Far claims:	20 units

LOCATION

NTS:	104 N/10W
Latitude:	59°30'N
Longitude:	133°00'W
Mining Division:	Atlin Mining Division, B.C.

The claim is located on Mount Farnsworth approximately 20 airmiles east of Atlin in northern B.C. Access to the area is by helicopter from Atlin. The property lies in an area of moderate relief above the tree-line and between elevations of 4,200 feet and 5,500 feet. Outcrops are limited to stream cuts or along ridges.

HISTORY

There is no record of any previous exploration on the claim.

In June 1978, the G.S.C. released geochemical data on the Atlin map sheet (104N). On basis of this release, the Far claims were staked to cover an area with a marginal uranium anomaly with coincident Zn, Cu, Co, Hg and Mo values apparently related to a fault extending from alaskite intrusives exposed to the north.

GEOLOGY

The area covered by the Far claim is underlain by metasediments of the Cache Creek Group. The units are highly folded. The lowermost unit appears to be a generally massive buff to cream coloured chert with occasional quartzite members. This unit appears to be overlain by a dark grey well banded chert with 1 cm to 4 cm thick bands or "ribbons" of relatively lighter coloured chert in a darker matrix. Occasional interbeds of dark grey to black cherty argillites also occur. This unit is highly folded with chevron-type folds; brittle failure along axial planes is a characteristic mode of deformation. Overlying this "ribbon" chert unit is an interbedded sequence of chert, cherty argillite and carbonaceous argillite generally pyritic and rusty weathering. The chert unit is well banded with 2 cm to 4 cm thick bands of dark grey and lighter coloured chert and cherty argillite. These chert bands, in rare places, are stained by malachite. A light-green weathering chert pebble conglomerate overlain by interbedded cherty argillite and greenish weathering greywacke occurs in the sequence. Also occurring within the sequence is a 20 metre to 30 metre thick unit of predominantly grey weathering marble. This marble varies from a light grey and buff weathering black limestone breccia to a steel grey weathering coarsely crystalline limestone. The breccia is irregular in outline and contains limestone fragments of various sizes and shapes in a coarsely crystalline calcite matrix. The coarsely crystalline limestone unit is also generally dark grey in colour and, though re-crystallized appears to contain possible crinoid oscicles. This unit could represent a fore-reef deposit. Overlying and underlying the carbonate unit is an interbedded sequence of dark grey chert and rusty carbonaceous argillites.

STRUCTURAL GEOLOGY

The sequence is folded with a northeasterly trending synformal axis coinciding with the ridge and an antiformal axis to the west of it. Minor folds in the "ribbon-chert" unit have moderate plunges to the southwest. There is a major lineament coinciding with a fault. This fault trends northeast-southwest and probably has a steep dip. A smaller northwesterly trending fault displaces the carbonate unit east of the property.

GEOCHEMISTRY

Creeks with flowing water are confined to the eastern part of the area. A total of 7 water samples, 2 stream sediment samples and 2 rock samples were collected from the claim. Waters were analysed for Co, U and F; sediments were analysed for Co, U and Mo; rock samples were analysed for Cu, Pb, Au, U and Th. (See Appendix D for analytical technique.) Some of the sediment samples are weakly anomalous in Co and U. The creeks from which these samples were taken appear to drain either the area covered by the fault zone or the black carbonaceous argillite units. This carbonaceous argillite has a higher radioactivity than the rest of the units (150 cps compared to 80-100 cps).

The Mo content of the silt fraction is also anomalous and appears to increase towards the southern boundary of the property.

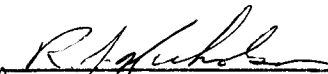
MINERALIZATION

No uranium mineralization was observed in the area. Sulphide mineralization was limited to bedded pyrite in the carbonaceous argillite and rare chalcopyrite associated with malachite stains in cherty units. A sample of carbonaceous argillite analysed 12 ppm Pb and 10 ppm U while a sample of cherty argillite with malachite stains analysed 1170 ppm Cu with no uranium or lead values.

CONCLUSIONS

No mineralization of note was found on the claim. Geological mapping during the field season of 1978 indicates that the area is underlain by cherts, argillites and carbonates of the Cache Creek Group. The sequence is folded about a northeasterly trending axis. A northeasterly trending fault is weakly anomalous in Co and U. However, the property has little potential for uranium mineralization.

Report by:

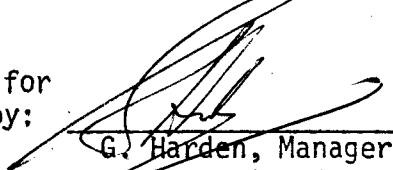

Udayan Das Gupta

Supervised by:


R.J. Nicholson, P. Eng.

UDG/pc1

Endorsed for
Release by:


G. Harden, Manager
Western District

Reference

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

Distribution

Mining Recorder (2)
Western District
RJN

APPENDIX "A"

STATEMENT OF EXPENDITURES

FAR CLAIM

SALARIES

U. Das Gupta	: August 21 to 23, 1978; 3 days @ \$88.70/day	\$266.10	
D.A. Perkins	: August 21 to 23, 1978; 3 days @ \$71.13/day	213.39	
R.J. Nicholson:	August 8, 1978; 1 day organization @ \$99.36/day August 16, 1978; 1 day field supervision @ \$136.40/day	<u>235.76</u>	\$ 715.25

FOOD AND ACCOMMODATION

7 man-days, apportioned costs during period August 14 to September 12, 1978			182.63
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TRANSPORTATION

Truck rental: apportioned cost during period August 14 to September 12, 1978		37.55	
U-Drive: apportioned cost during period August 14 to September 12, 1978		17.39	
Helicopter: apportioned cost of Hughes 500 helicopter during period August 14 to September 12, 1978 @ \$255/hour plus fuel		406.13	
Mobilization: apportioned costs during period August 14 to September 12, 1978		<u>132.79</u>	593.86

GEOCHEMICAL SUPPLIES & ANALYSES

7 water samples analysed for Co, U, and F; 2 stream sediment samples analysed for Co, U, and Mo; and 2 rock samples analysed for Cu, Pb, Au, U, and Th. Total cost -			91.85
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MISCELLANEOUS

Field Supplies: apportioned cost of airphotos, flagging, hip chain thread, sample bags, etc.		26.33	
Communications: apportioned radio rental and long distance telephone charges		<u>36.19</u>	62.52

REPORT PREPARATION

U. Das Gupta: 6 days writing and draughting
@ \$76.12/day

\$ 456.72

\$2,102.83

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/14W), 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/10E) AND ON THE FAR MINERAL CLAIM (NTS 104N/10W) ALL LOCATED IN THE ATLIN MINING DIVISION OF THE PROVINCE OF BRITISH COLUMBIA.

S T A T E M E N T

I, ROBERT JOHN NICHOLSON, OF THE DISTRICT OF NORTH VANCOUVER IN THE PROVINCE OF BRITISH COLUMBIA, HEREBY DECLARE:

1. 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;
2. 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 Far mineral claim;
3. THAT the said expenditures were incurred for the purpose of mineral exploration of the above noted mineral claim between the 14th of August and 12th of September, 1978.

Signed: _____


R.J. NICHOLSON, P.Eng.

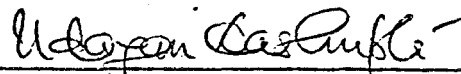
APPENDIX "C"

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.
3. THAT I GRADUATED WITH A PhD DEGREE IN GEOLOGY FROM THE UNIVERSITY OF TORONTO, ONTARIO, IN 1978.

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



UDAYAN DAS GUPTA, PhD.

APPENDIX "D"

1. ALL ANALYSIS DONE BY COMINCO LAB IN VANCOUVER,
2. ALL WATER SAMPLES WERE FILTERED AND ACIDIFIED IN THE FIELD USING 5 MILLILITRES HNO₃ (25%) AND SENT FOR ANALYSIS.
3. ALL SILT SAMPLES WERE SCREENED AND THE -80 MESH FRACTION SENT FOR ANALYSIS.
4. WATER SAMPLES WERE ANALYSED FOR U BY FLUORIMETRIC METHOD, Co BY ATOMIC ABSORPTION, AND F BY FUSION AND SPECIFIC ION DETERMINATION.
5. SILT SAMPLES WERE ANALYSED FOR U, Co AND Mo:
 - (a) URANIUM ANALYSIS BY FLUORIMETRIC METHOD,
 - (b) Co ANALYSIS BY HOT ACID DIGESTION AND ATOMIC ABSORPTION,
 - (c) Mo ANALYSIS BY FUSION AND COLORIMETRY.
6. ROCK SAMPLES WERE ANALYSED FOR Cu, Pb, Au, U AND Th.
 - (a) U AND Th BY FLUORIMETRIC METHOD,
 - (b) Cu and Pb BY HOT ACID DIGESTION AND ATOMIC ABSORPTION,
 - (c) Au BY HOT ACID DIGESTION, DIBK AND ATOMIC ABSORPTION.

GEOCHEMICAL RESULTS

WATER SAMPLES -

<u>SAMPLE NUMBER</u>	<u>Co (ppm)</u>	<u>U (ppb)</u>	<u>F (ppb)</u>
AU-D-34	<10	0.15	17
AU-D-35	<10	1.2	18
AU-D-36	<10	1.0	34
AU-D-37	<10	1.5	58
AU-D-40	<10	<0.5	21
AU-D-41	<10	<0.5	18
AU-D-42	<10	<0.5	17

SILT SAMPLES -

<u>SAMPLE NUMBER</u>	<u>Co (ppm)</u>	<u>U (ppm)</u>	<u>Mo (ppm)</u>
AU-D-35	18	2.0	35
AU-D-42	15	2.2	15

	<u>Co (ppm)</u>	<u>U in water (ppb)</u>	<u>U in silt (ppm)</u>	<u>Mo (ppm)</u>	<u>F in water (ppb)</u>
<u>BACKGROUND</u>	10	0.4	5.0	5	300

ROCK SAMPLES -

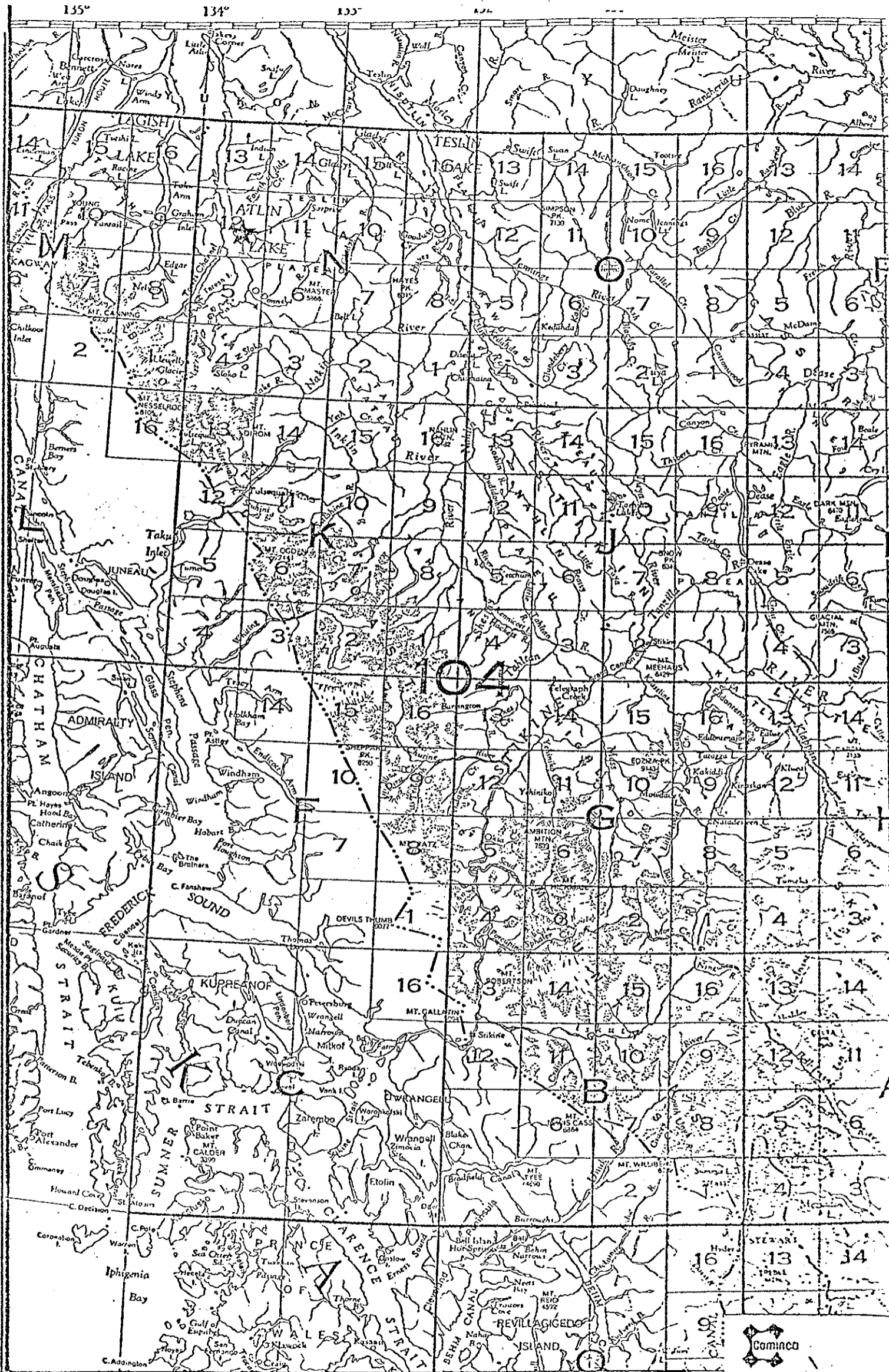
<u>SAMPLE NUMBER</u>	<u>Cu (ppm)</u>	<u>Pb (ppm)</u>	<u>Au (ppb)</u>	<u>U (ppm)</u>	<u>Th (ppm)</u>
AU-UR-4	---	12	<10	10	20
AU-UR-5	1170	---	---	---	20

135°

134°

133°

A.P.L.



Drawn by:		Traced by:	
Revised by	Date	Revised by	Date

LOCATION MAP
Atlin, Northern B.C., NTS 104N

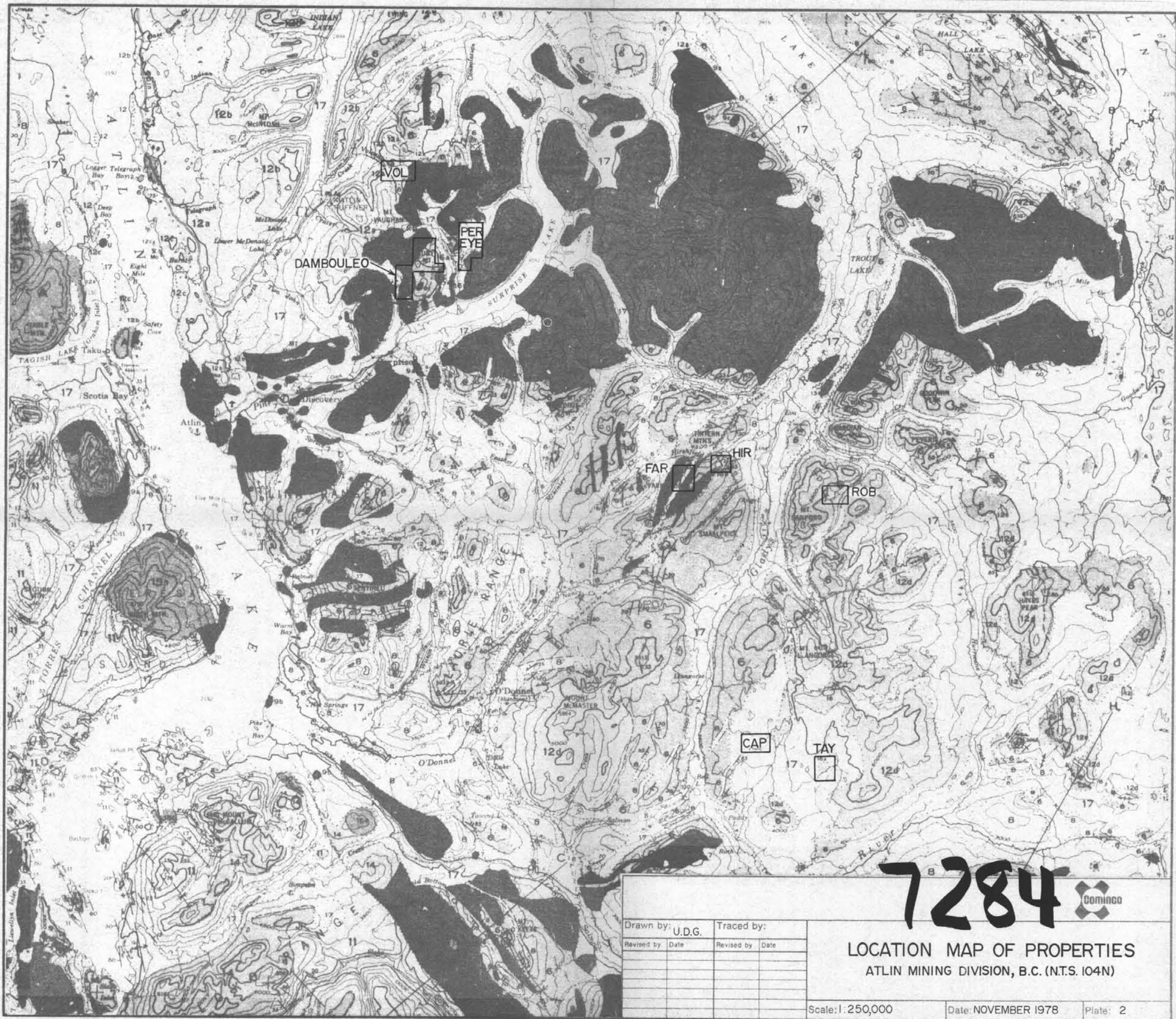
7284

Scale: 1:900,800

Date: Nov. 1978

Plate:





7284



Drawn by:	U.D.G.	Traced by:	
Revised by:	Date	Revised by:	Date

LOCATION MAP OF PROPERTIES
ATLIN MINING DIVISION, B.C. (N.T.S. 104N)

Scale: 1:250,000

Date: NOVEMBER 1978

Plate: 2



Terrahina Creek

Tintern Creek

EVA

Eva Lake

Hirschfeld Creek

Rapid Roy Creek

Line Lake

HIR

36832

JENNIFER

WIND

14614

ROB

FAR

† Mt. Farnsworth
14613

SAL1

SAL2

Angel Lake

† Mt. Sandford

FIRE

FIRE

FIRE

59°30' -

1
133°00'

7284x

Cominco

HIR CLAIM

Drawn by: U.D.G.		Traced by:	
Revised by	Date	Revised by	Date

PROPERTY MAP
N.T.S. 104-N/10W, 11E

Scale: 1:50,000

Date: Nov. 1978

Plate: 3

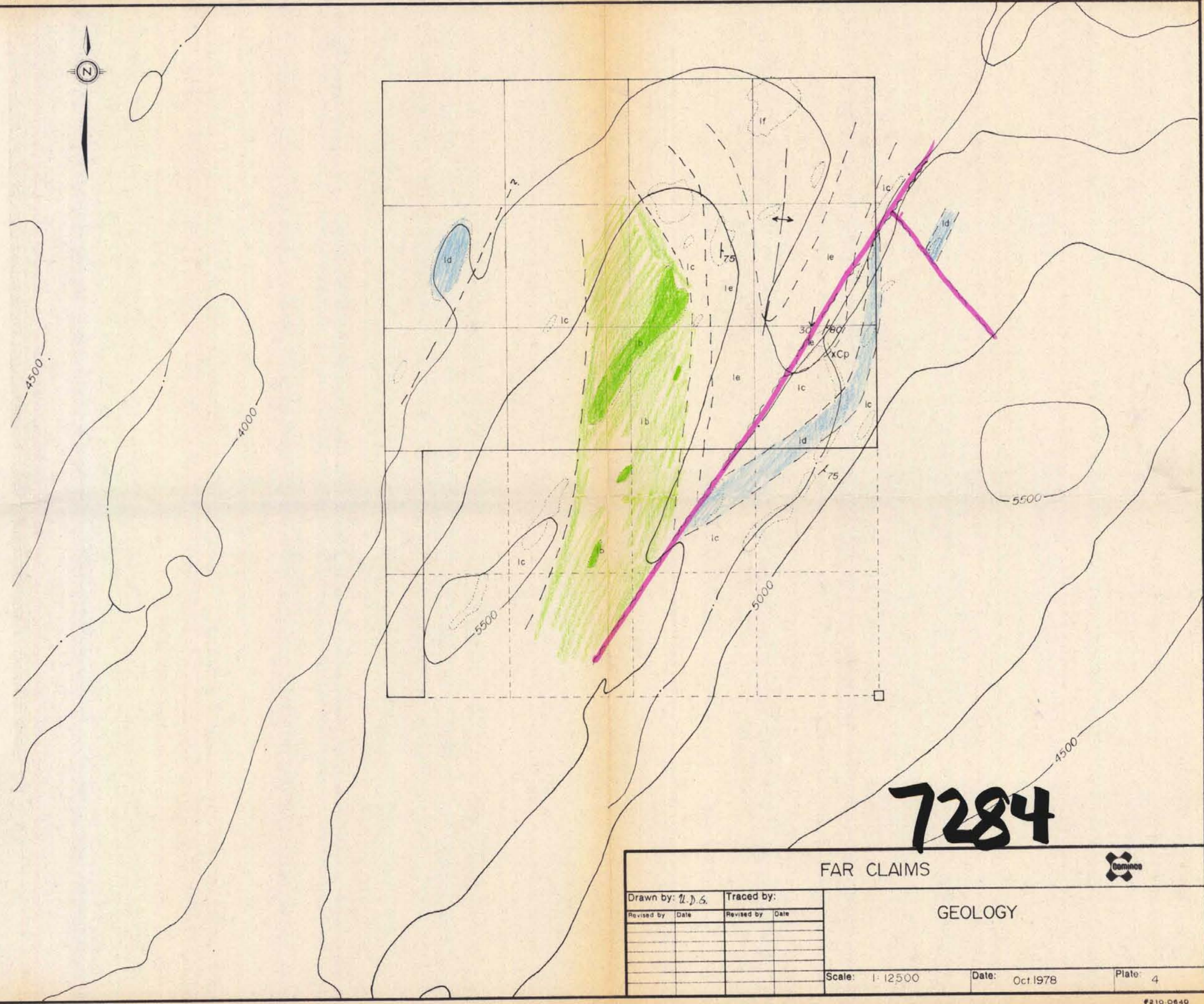
LEGEND

- 5 Glacial drift and alluvium Quaternary
- 4 Olivine basalt and scoria Tertiary and Quaternary
- 3b Alaskite Cretaceous
- 3a Granitoid intrusives Jurassic
- 2 Ultramafics Pennsylvanian and Permian
- 1 Cache Creek Group:
 - 1a undifferentiated metasediments
 - 1b chert-pebble conglomerate, greywacke
 - 1c grey chert and argillite
 - 1d grey marble
 - 1e dark grey "ribbon" chert
 - 1f buff to light grey chert, quartzite
 - 1g skarn, amphibolite

- foliation: strike/dip
- bedding: strike/dip
- fault: observed, inferred
- fold axis: plunge
- axial trace: antiform, synform
- outcrop
- contact: observed, inferred
- claim boundary
- sample site: water, silt rock, soil

x S,W,Cp,Sp, F,Zu,Mo Mineralization: scheelite, wolframite, chalcopyrite, sphalerite, fluorite, zeunerite, molybdenite

legal corner post



FAR CLAIMS



Drawn by: <i>U.D.S.</i>	Traced by:
Revised by: _____ Date: _____	Revised by: _____ Date: _____

GEOLOGY

Scale: 1:12500

Date: Oct 1978

Plate: 4

LEGEND

- 5 Glacial drift and alluvium Quaternary
- 4 Olivine basalt and scoria Tertiary and Quaternary
- 3b Alaskite Cretaceous
- 3a Granitoid intrusive Jurassic
- 2 Ultramafics Pennsylvanian and Permian
- 1 Cache Creek Group

- 1a undifferentiated metabasalts
- 1b chert, pebbles, conglomerate, grey siltstone
- 1c grey chert and argillite
- 1d grey siltstone
- 1e dark grey "ribbon" chert
- 1f buff to light grey best quartzite
- 1g skarn, amphibolite

- foliation: strike/dip
- bedding: strike/dip
- fault: observed, inferred
- fold axis: plunge
- axial trace: antiform, synform
- outcrop
- contact: observed, inferred
- claim boundary

△ □ • ○ sample: U, water, soil, silt, rock
 x S, W, Co, Sp, Mineralization: scheelite, wolframite, chalenopyrite, sphalerite, fluorite, zirconite, stibnite
 F, Zn, Mo

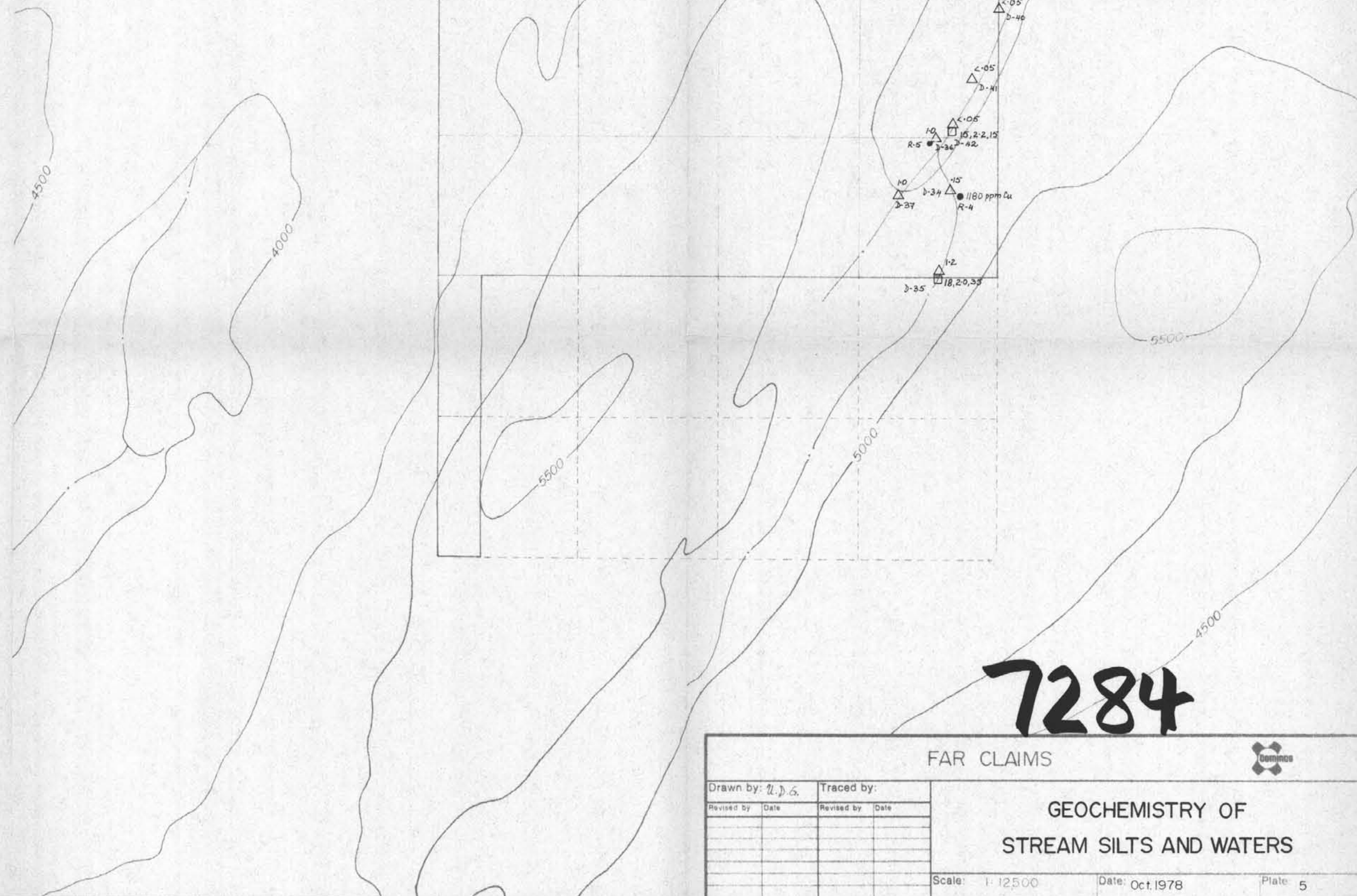
□ legal corner post

△^{1/2} Uranium in water (ppb)

□_{18,20,35} Co, U, Mo in silt (ppm)

D-39 sample no.

	U(water)	U(silt)	Co	Mo
Background	<0.4	<5.0	<10	<5
Anomalous	>0.4	>5.0	>10	>5



7284

FAR CLAIMS



Drawn by: <i>R.D.G.</i>	Traced by:
Revised by: _____	Revised by: _____
Date: _____	Date: _____

GEOCHEMISTRY OF
STREAM SILTS AND WATERS

Scale: 1:12500

Date: Oct. 1978

Plate: 5