Geological and Geochemical Report
on the
Au Claims
in the Whitehorse Mining District
26 miles southwest of Ross River
105 F 14
Coordinates: Longitude: 133° 14'W
Latitude: 61° 51'N

RECEIVED
2 JAN 1976
MINING
RECORDERS OFFICE
WHITEHORSE, Y.T.

Owned by: P. Risby, Ross River, Yukon

Work done by: Utah Mines Ltd.
Vancouver, B.C.

JAN 07 1976
MINING
INSPECTORS OFFICE
WHITEHORSE, Y.T.

By

D.G. Cargill, Phd. P.Eng
Utah Mines Ltd.
December, 1975

Work Performed August 26, 27, 1975

Office of The Territorial Mining Recorder

JAN - 7 1976

Yukon Territory

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 $600.00

D. B. Craig

Resident Geologist

~~Resident Mining Engineer~~

Considered as representation work under Section 53 (6) Yukon Quartz Mining Act.

R.R. BAXTER

Territorial Mining Recorder

for Commissioner of Yukon Territory

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INTRODUCTION

On August 26 and 27, 1975, prospecting, geological mapping and geochemical sampling were conducted on the Au claims. This claim group consists of the following:

Claim	Record Number
Au 1	Y91929
Au 2	Y91930
Au 3	Y91931
Au 4	Y91932
Au 5	Y91933
Au 6	Y91934

The field work was undertaken by D.G. Cargill, geologist and R. Willson, field assistant.

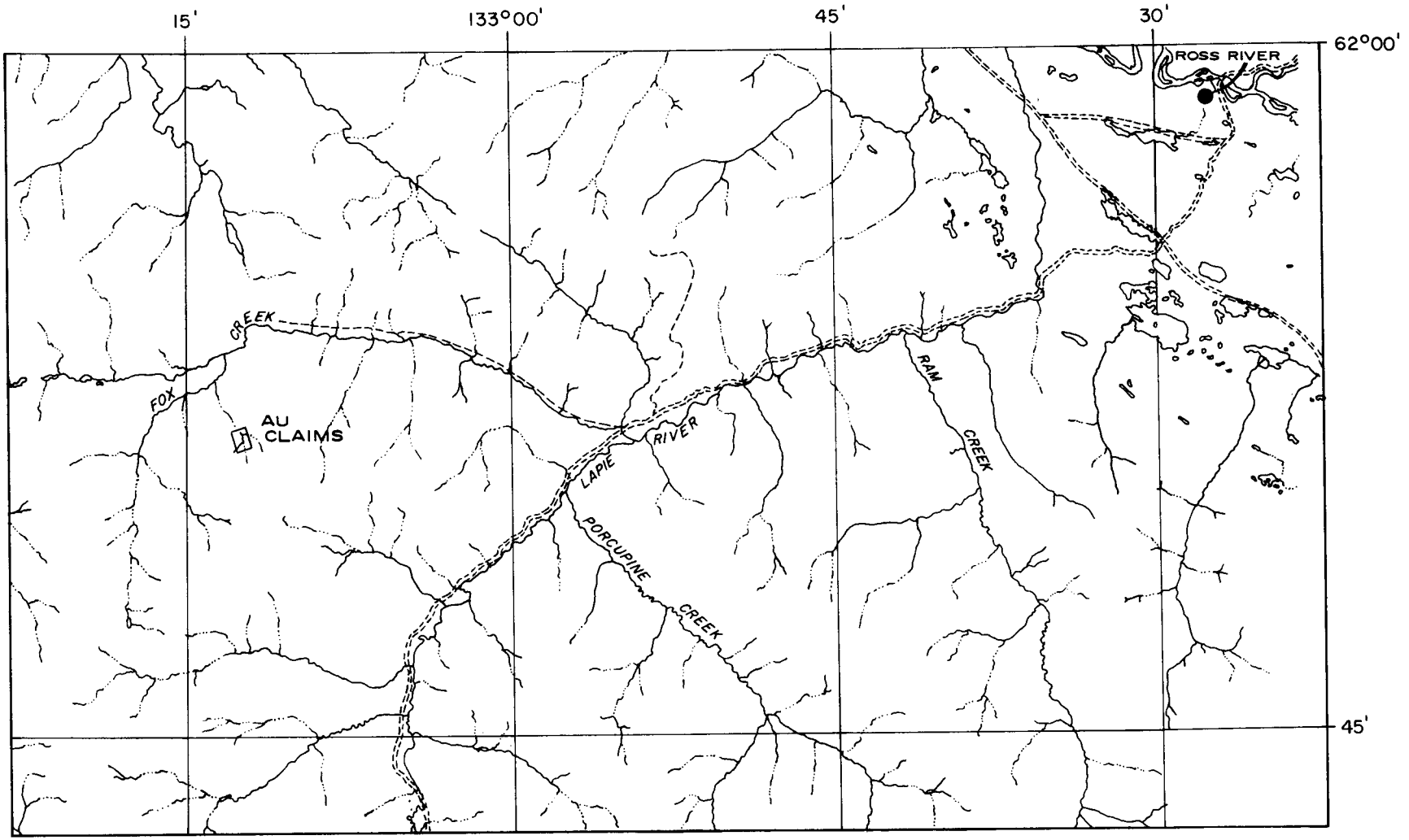
LOCATION AND ACCESS

The Au claims are twenty-six (26) miles southwest of the village of Ross River. (Figure 1) They are approximately fifteen (15) miles from the South Canal Road along Fox Creek.

Access to the claims is by helicopter either from Ross River or from the South Canal Road. The claims can also be reached by foot from the end of a winter road up Fox Creek. (Figure 1)

HISTORY

The property was staked as TUB claims (Y62689) in October 1971 by P. Risby and optioned later in the year by Arrow Inter-America Corporation. Arrow staked an additional one hundred MURPH etc claims (Y66330) in June 1972 and explored them with geochemistry and prospecting later in the same year. P. Risby restaked the property as the Au claims in January 1975.



N.T.S. 105 F

FIGURE 1

AU CLAIMS
LOCATION MAP

1 0 1 2 3 4
MILES

ROAD
WINTER ROAD

WORK BY: D.G. CARGILL
DRAWN BY: G.Y. SMEETON

GEOLOGIC SETTING

General

The Au property is in a belt of Cambrian metamorphic rocks including lustrous phyllite, gray and orange weathering phyllite limestone, chert and phyllitic quartzite. These rocks form unit #2 on GSC map 7-1960. Although the rocks are on the south side of the Tintina trench, Dr. Templeman-Kluit of the GSC (personal communication) believes them stratigraphically equivalent to the phyllites of the Anvil belt. The regional foliation strikes northwest and dips thirty degrees northeast. However, the rocks are locally very contorted so there is a wide variation of attitudes of the foliation.

Property

The Au claims are underlain by gray and black phyllites. The best developed foliation (S-1) strikes northwest and dips twenty (20) to thirty (30) degrees to the northeast. Another foliation (S-2) which appears to be bedding, trends N5E and dips 75 degrees west. In two outcrops in the immediate area of the Au claims, the S-1 foliation forms axial plane foliation on minor folds defined by the S-2 foliation.

There are many quartz-carbonate (ankerite?)-green mica (mariposite?) veins in the phyllites. These veins parallel the S-1 foliation. They are usually two (2) to six (6) inches wide but sometimes thicken to two (2) to three (3) feet. These veins contain pyrite and traces of sphalerite, galena and chalcopyrite.

The best mineralization on the Au property is found in boulders in the stream. The train of mineralized boulders is approximately 4,500 feet long. It consists of angular boulders two (2) to five (5) feet in diameter. These boulders are much larger than other boulders in the stream bed which are rounded and 0.5 to 1.0 feet in diameter. There are two (2) types of mineralized boulders:

MESOZOIC

JURASSIC AND/OR CRETACEOUS

9 Medium- to coarse-grained, biotite granodiorite and quartz monzonite, in part porphyritic; minor diorite, granite, and gneiss

PALAEOZOIC

MISSISSIPPIAN (?)

8 Current-bedded, ripple-marked, dark grey limestone; minor dark grey and brown argillite, and dolomite

MISSISSIPPIAN (?) OR EARLIER

7 Heterogeneous, shattered hornblende syenite, associated with unit 6

6 6a, partly altered green volcanic rocks, greenstone, meta-diorite; minor serpentine and amphibolite; 6b, green and maroon breccias, tuffs, and flows; minor meta-diorite, slate, chert, and greywacke; 6c, buff, rusty, and pale green felsic breccias and tuffs; minor chert and brown crinoidal limestone; 6d, massive grey and cream limestone

5 Brown and black-weathering, siliceous slate and shale, thin-bedded varicoloured cherts with shaly partings, speckled grey and brownish grey greywacke; minor chert pebble conglomerate

SILURIAN AND DEVONIAN

4 Grey and buff-weathering, thick-bedded dolomite with local lenses of chert; buff to reddish weathering, well-bedded, dark grey dolomite, and sandy and silty dolomites; buff, grey and white, lichen-covered quartzite

ORDOVICIAN AND SILURIAN

3 Black slate, platy black limestone, grey and pink siltstone; 3a, minor volcanic breccia

CAMBRIAN

MIDDLE AND UPPER CAMBRIAN (?)

2 Lustrous phyllite; grey and orange-weathering phyllite, in part limy and dolomitic, and locally changed to hornfels; minor greenstone, limestone, chert, greywacke, and phyllitic quartzite (perhaps younger); 2a, greenstone breccia and tuff

LOWER CAMBRIAN

1 1a, massive grey and buff quartzite; 1b, grey and brownish grey phyllite; 1c, grey, buff, and orange-weathering, grey limestone, locally oolitic; 1d, limestone, quartzite, and phyllite, undivided

FIGURE 2

GEOLOGY OF AU CLAIMS

0 600 MI

105 F

QUIET LAKE SHEET

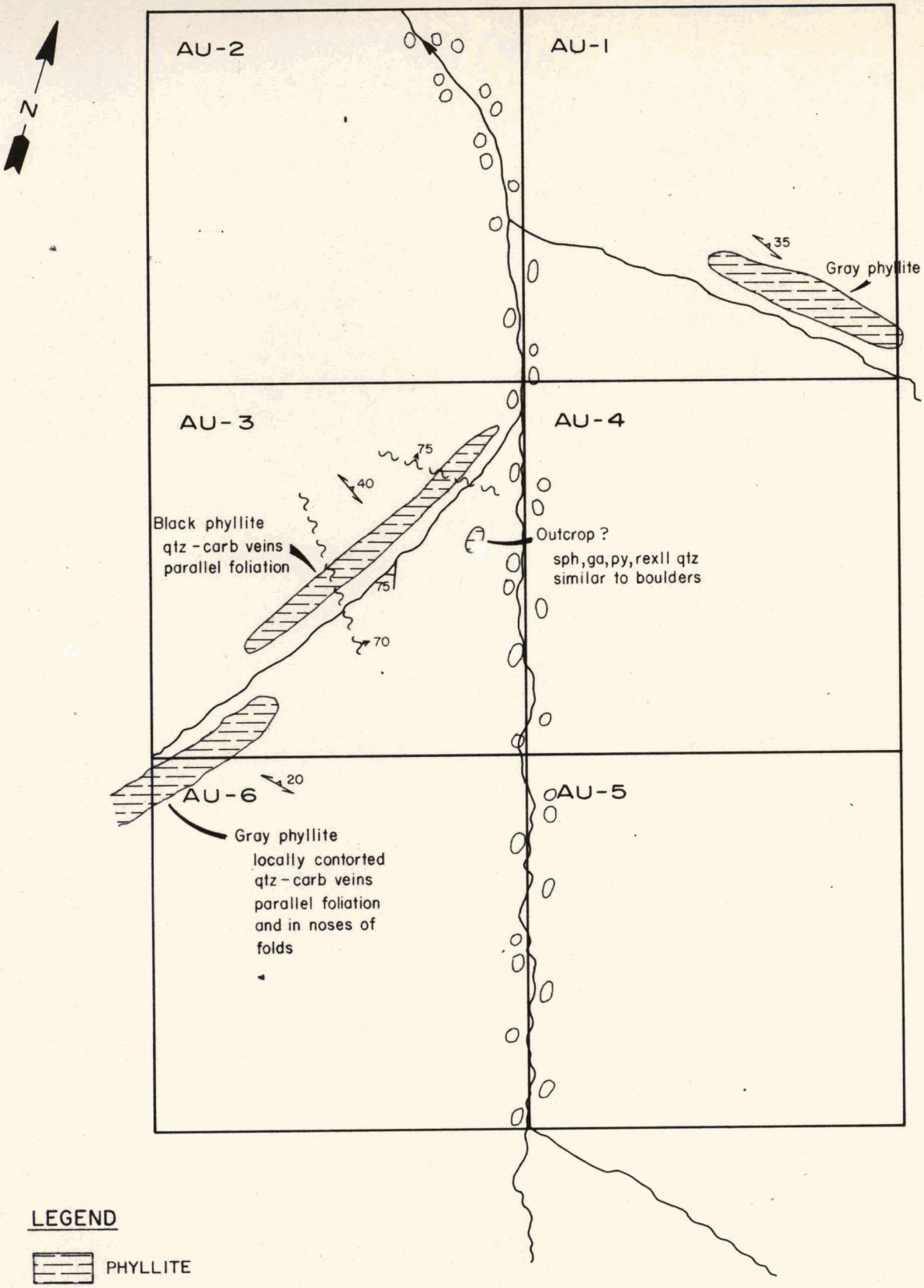
GSC MAP 7-1960

DATE: SEPTEMBER 12, 1975

WORK BY: D.G. CARGILL

MINERALIZED BOULDER

MINERALIZED OUTCROP



LEGEND

PHYLLITE

SYMBOLS

FOLIATION S-1

BEDDING S-2

FAULT

BOULDER TRAIN

UTAH MINES LTD.

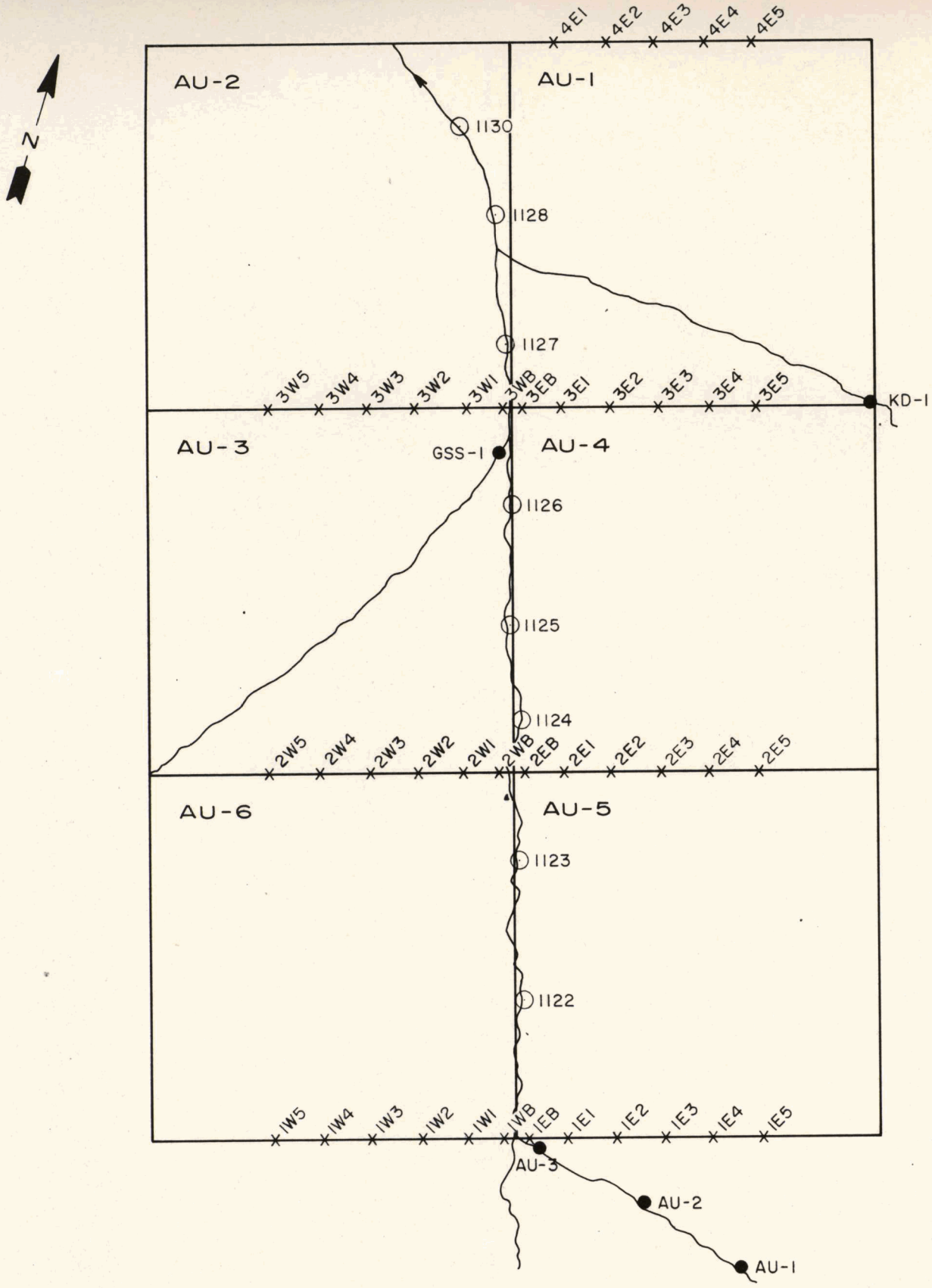
FIGURE 3

AU CLAIMS

SKETCH MAP OF GEOLOGY

NTS: 105 F/14

0 600 FT



LEGEND

X SOIL GEOCHEM SAMPLES

● STREAM SILT SAMPLES

⊙ CHIP SAMPLED BOULDER

UTAH MINES LTD.

FIGURE 4

AU CLAIMS

SAMPLE NUMBERS

NTS: 105 F/14

0 600 FT

Property - Continued

1) massive pyrite with some chalcopyrite and 2) banded sphalerite and galena in a very siliceous matrix.

The first type of boulder is covered with brown limonite and is very distinctive. The second type weathers to a white rock with bands of a light brown gossan speckled with hydrozincite. The matrix is fine grained recrystallized quartz. In rare boulders galena and sphalerite occur as bands in a lustrous phyllite.

There is one possible outcrop of galena and sphalerite similar to the material in the boulder train. It is in the northeast corner of Au#4. Here, angular rocks are exposed in a bush covered slope so that it is difficult to establish whether or not they are outcrops or large frost heaved fragments.

GEOCHEMICAL SURVEY

Introduction

This survey was undertaken to establish where the mineralized boulders were coming from. Prospecting in a cirque at the headwaters of the stream suggested that they originated from one or both sides of the stream rather than from upstream.

In addition, eight boulders were chip sampled to obtain some idea of gold and silver values associated with the sulphide mineralization.

Methods

Soil samples were taken along claim lines at 200 foot intervals for a distance of 1000 feet. (Figure 4) In addition, on three of the lines, samples were taken of the bank on both sides of the stream (eg IEB Figure 4). Samples consisted of approximately four (4) ounces of material from the "B" soil horizon obtained by digging a shallow pit with a mattock. Each sample was placed in a

Methods - Continued

brown kraft paper soil sample bag, air dried and shipped to Chemex Labs (212 Brooksbank, N. Vancouver) for analysis. Each of the forty (40) samples was analysed for copper, lead and zinc, using standard A.A. methods.

Five silt samples were taken. They were also sent to Chemex Labs for analysis (five for copper and four for copper, lead and zinc).

Eight chip samples were taken from boulders. In each case, approximately two pounds of material was collected. Samples were sent to Chemex Labs for assay.

RESULTS AND INTERPRETATION

Results of geochemical analyses and assays are given on the certificates of analysis (Table One) and the certificate of assay (Table Two). Means and standard deviations were calculated for geochemical analyses for copper, lead and zinc, both for raw numbers and numbers transformed to logarithms.

Results of these calculations are presented in Table Three. Threshold between anomalous and background values is placed at mean + 2 standard deviations as outlined by Hawkes and Webb (1962).

Using this criteria one sample is anomalous for zinc. All other samples have background values for copper, lead and zinc.

There are two (2) possible interpretations of the survey. First is that the boulders have been transported into the creek from somewhere other than the banks. Second is that solifluction of phyllite fragments from the adjoining ridges has buried the zone which the mineralized boulders came from preventing a geochemical response.

RESULTS AND INTERPRETATION - Continued

There are too few stream silt samples for any form of statistical analysis but none of the values appear anomalous.

Assays of chip samples from the boulders indicate that good silver values accompany high lead values and that there is no significant gold associated with pyrite.

TABLE ONE

CHEMEX LABS LTD.

2 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: 985-0648
AREA CODE: 604
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 35925

INVOICE NO. 14975

RECEIVED Aug. 31/75

ANALYSED Sept. 3/75

TO: Utah Mines Ltd.,
1600 - 1050 W. Pender,
Vancouver, B. C.

ATTN:

SAMPLE NO. :	PPM Copper	PPM Lead	PPM Zinc
1 E B	35	40	83
1 E 1	36	34	77
1 E 2	22	32	60
1 E 3	23	30	65
1 E 4	24	28	62
1 E 5	27	28	75
1 W B	25	22	65
1 W 1	24	24	67
1 W 2	25	24	70
1 W 3	28	24	67
1 W 4	32	26	70
1 W 5	28	24	75
2 E B	29	30	89
2 E 1	30	28	105
2 E 2	24	20	75
2 E 3	28	28	80
2 E 4	25	18	83
2 E 5	26	26	86
2 W B	32	34	75
2 W 1	29	42	70
2 W 2	37	24	83
2 W 3	42	30	67
2 W 4	37	24	127
2 W 5	28	16	72
3 E B	34	28	218
3 E 1	34	26	225
3 E 3	36	30	152
3 E 4	34	34	112
3 E 5	31	28	174
3 W B	29	30	102
3 W 1	27	24	135
3 W 2	22	18	89
3 W 3	31	20	105
3 W 4	27	24	75
3 W 5	35	24	108
4 E 1	29	28	127
4 E 2	39	32	900
4 E 3	41	30	148
4 E 4	38	32	155
4 E 5	32	38	123
Std.	70	58	47

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: [signature]

TABLE ONE - CONTINUED

CHEMEX LABS LTD.

2 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: 985-0648
AREA CODE: 604
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 35926

INVOICE NO. 14975

RECEIVED Aug. 31/75

ANALYSED Sept. 3/75

TO: Utah Mines Ltd.,
1600 - 1050 W. Pender,
Vancouver, B. C.

ATTN:

SAMPLE NO. :	PPM Copper	PPM Lead	PPM Zinc
Au #1	30	24	72
Au #2	27	24	70
Au#3	30	24	92
KD #1	30		
GSS 1	31	24	75

GSS 1 - was not noted on shipment notice, therefore we have elected to analyze for all 3 elements, if this is not correct we will be pleased to credit your account on your advice.

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: Len Amanini

TABLE TWO

CHEMEX LABS LTD.

2 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: 985-0648
AREA CODE: 604
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 35926
INVOICE NO. 14975
RECEIVED Aug. 31/75
ANALYSED Sept. 3/75

TO: Utah Mines Ltd.,
1600 - 1050 W. Pender,
Vancouver, B. C.

ATTN:

SAMPLE NO. :	PPM Copper	PPM Lead	PPM Zinc
Au #1	30	24	72
Au #2	27	24	70
Au#3	30	24	92
KD #1	30		
GSS 1	31	24	75

GSS 1 - was not noted on shipment notice, therefore we have elected to analyze for all 3 elements, if this is not correct we will be pleased to credit your account on your advice.

CERTIFIED BY: [signature]

CTA MEMBER CANADIAN TESTING ASSOCIATION

TABLE THREE

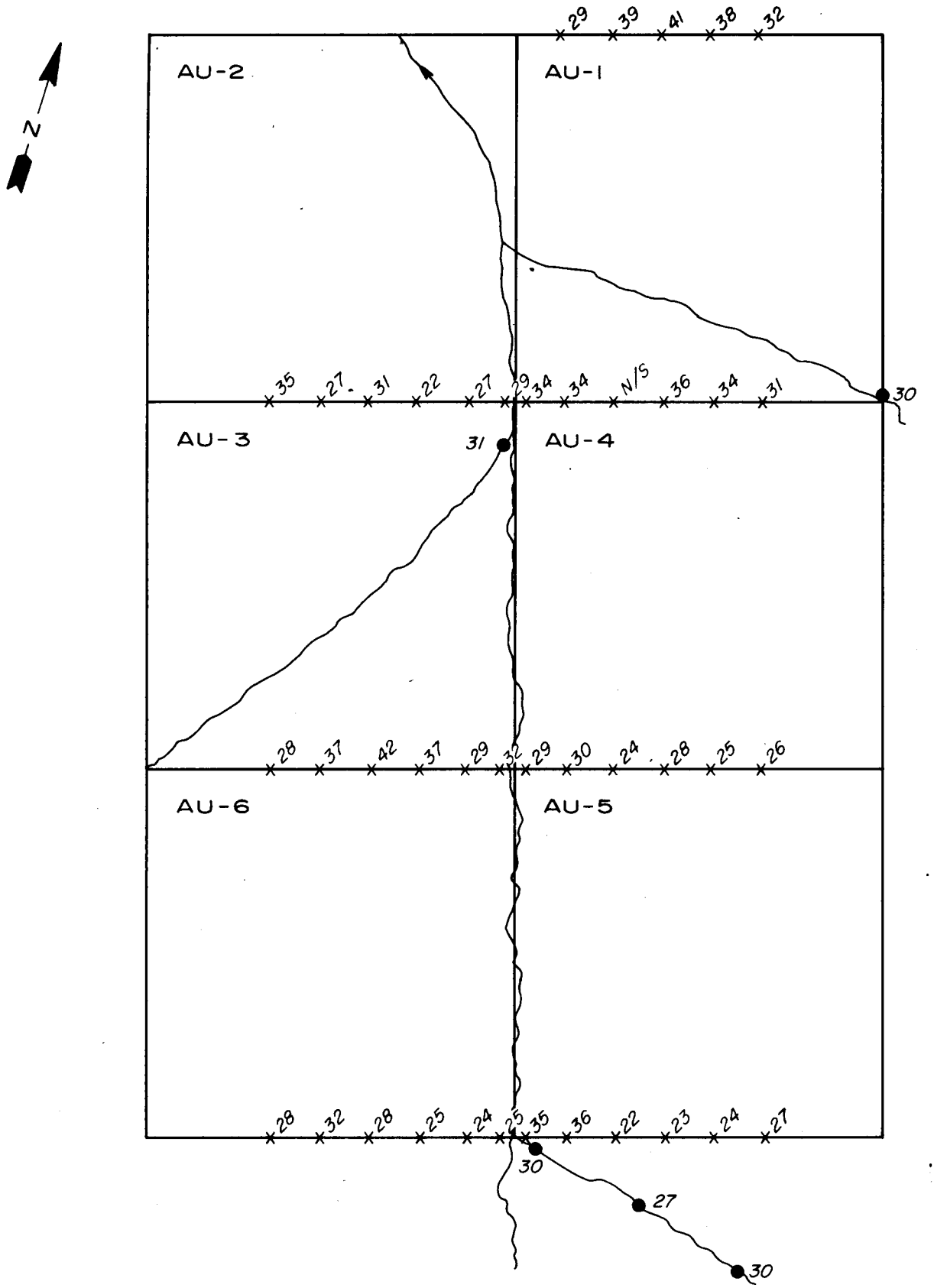
STATISTICAL TREATMENT OF SOIL GEOCHEM ANALYSES

Raw Data

	Mean	Standard Deviation	Mean & 2 S.P.
Copper	30.4	5.3	41.0
Lead	27.8	5.9	39.6
Zinc	119.9	132.9	386.7

Logged Data

	Mean	Standard Deviation	Mean & 2 S.P.
Copper	1.476	0.076	42.5
Lead	1.430	0.092	40.7
Zinc	1.995	0.217	268.5



LEGEND

N/S NO SAMPLE

UTAH MINES LTD.

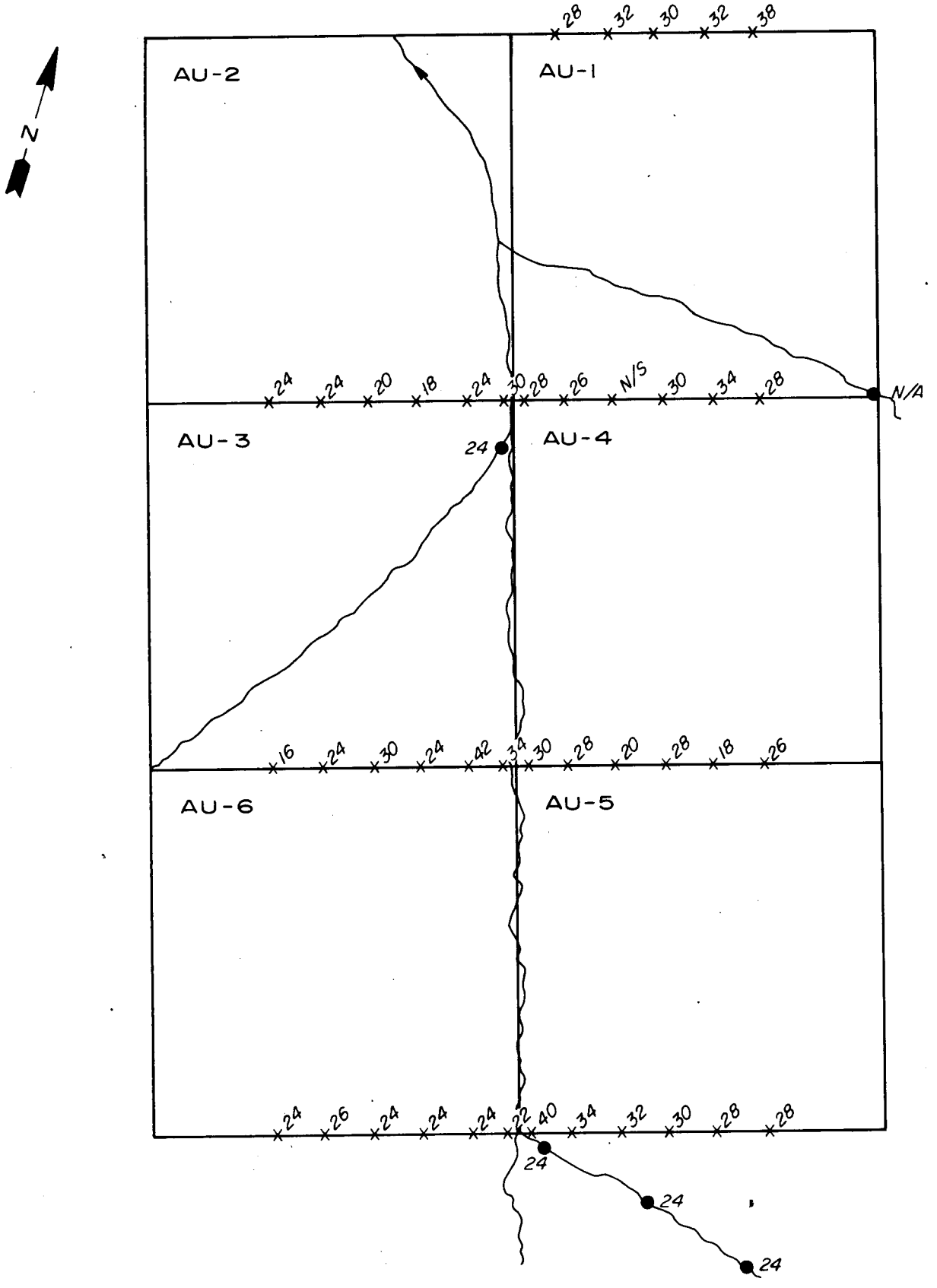
FIGURE 5

AU CLAIMS

COPPER ANALYSES ppm

NTS: 105 F/14

0 600 FT



LEGEND

N/S NO SAMPLE

N/A NOT ASSAYED

UTAH MINES LTD.

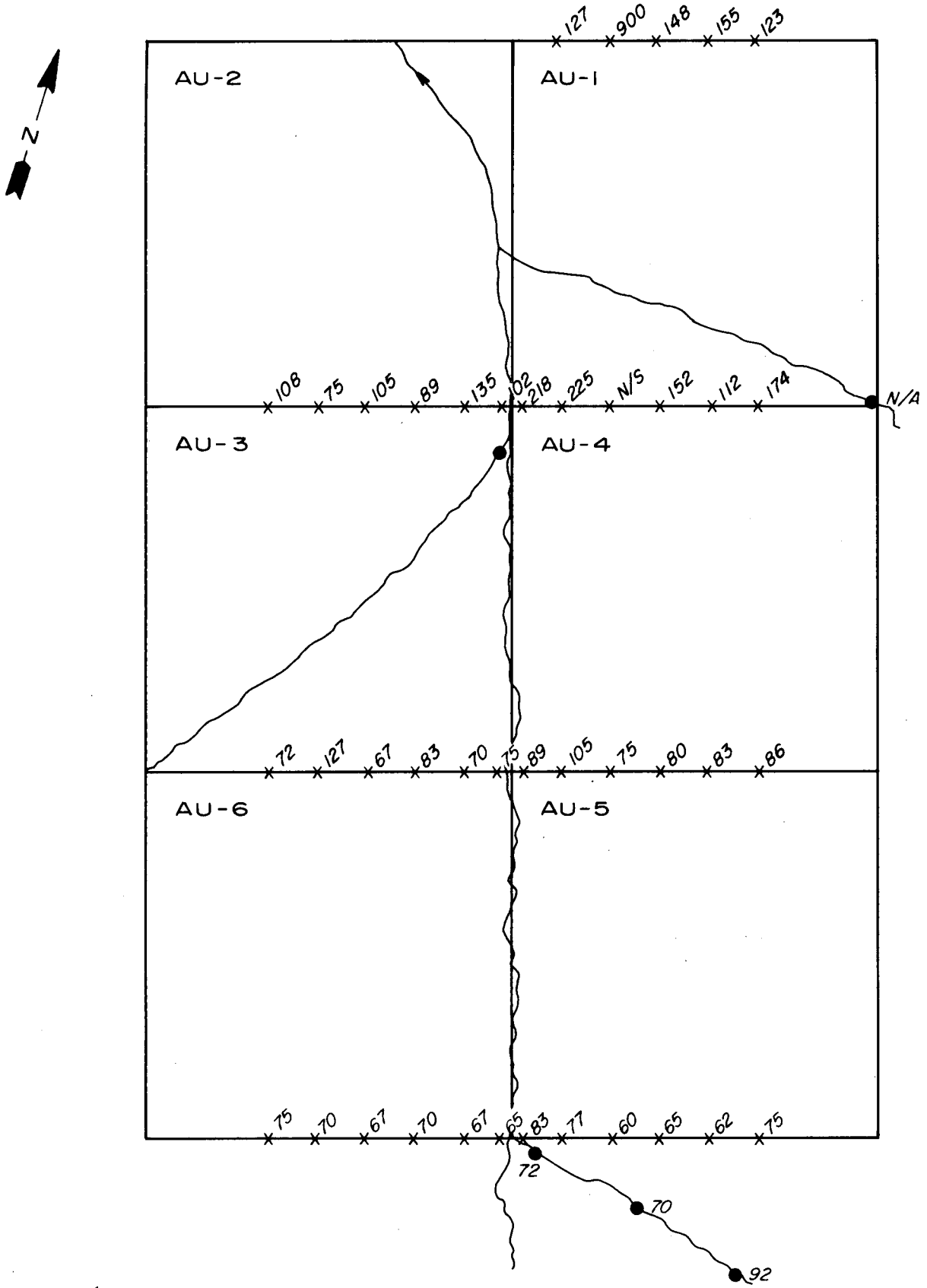
FIGURE 6

AU CLAIMS

LEAD ANALYSES ppm

NTS: 105 F/14

0 600 FT



LEGEND

N/S NO SAMPLE

N/A NOT ASSAYED

UTAH MINES LTD.

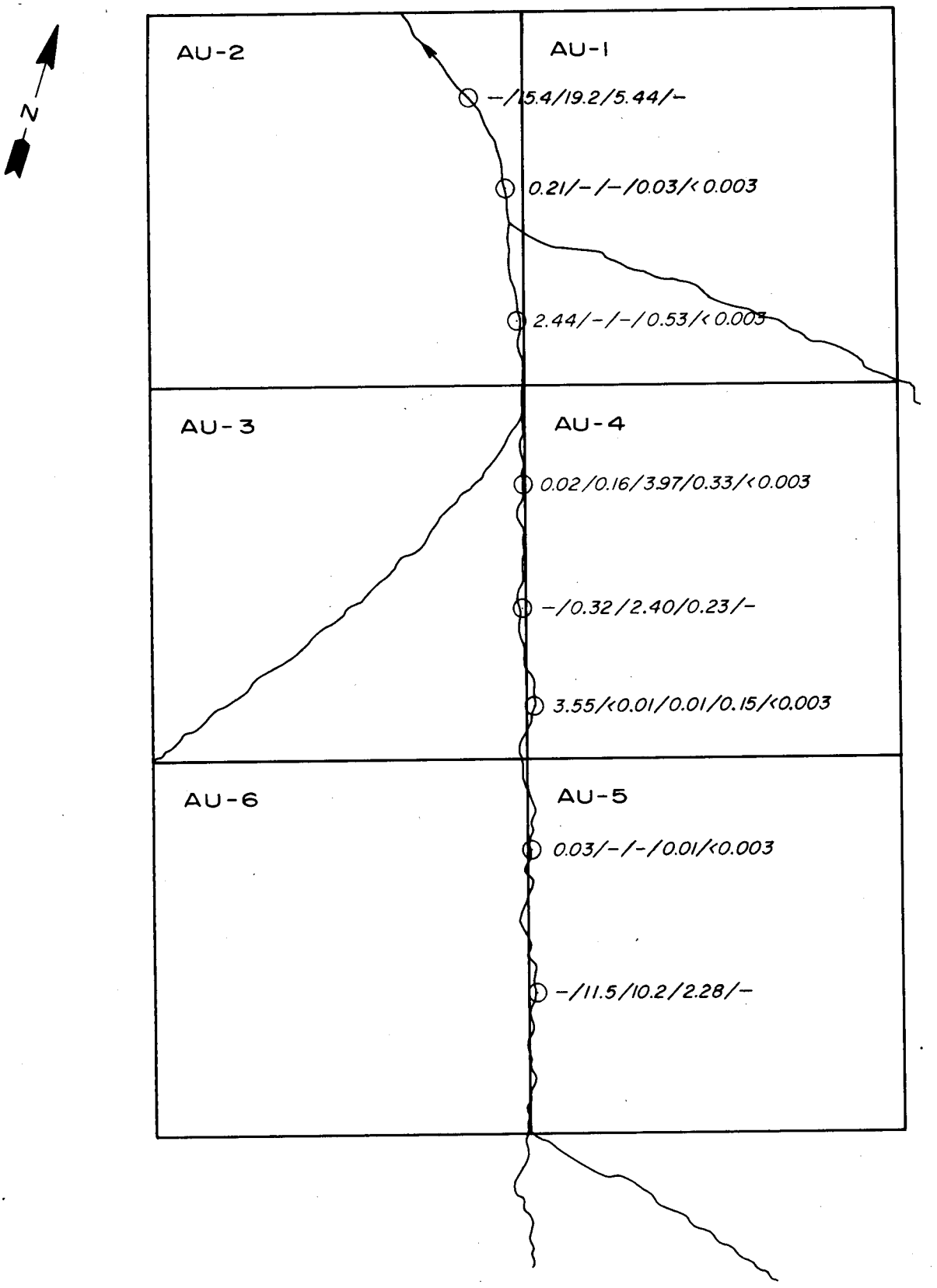
FIGURE 7

AU CLAIMS

ZINC ANALYSES ppm

NTS: 105 F/14

0 600 FT



LEGEND

⊙ Cu/Pb/Zn/Ag/Ag
% oz/T
-/ NOT ASSAYED

UTAH MINES LTD.

FIGURE 8

AU CLAIMS

ASSAYS

NTS: 105 F/14

0 600 FT

APPENDIX A

STATEMENT OF QUALIFICATIONS

D.G. Cargill, Senior Geologist for Utah Mines Ltd., Vancouver B.C.

Completed BASc (Applied Geology) at the University of Toronto in 1967. M Sc (English) at Queens University, Kingston, Ontario in 1970 and Phd (Economic Geology) at the University of B.C. 1975.

Registered as a Professional Engineer in Ontario and British Columbia.

Worked for Utah Mines since June, 1973 on field work involving regional and property development work in Alaska, B.C., Yukon, Quebec and Ontario.

APPENDIX B

STATEMENT OF COSTS

1. Salaries

Geologist: August 26, 27 @ $75.00/day	=	150.00
Assistant: August 26, 27 @ $40.00/day	=	80.00
		$230.00

2. Room and Board (Welcome Inn, Ross River)

Two men for two days @ $26.00/day	=	107.00

3. Analytical Costs

Silt and soil samples - Geochems	=	98.60
Rock samples - Assays	=	99.45
		$198.05

4. Helicopter Access

1.5 hours @ $280.00/hour	=	420.00
Fuel for 1.5 hours	=	27.00
		$447.00

TOTAL	=	$982.00

THE WELCOME INN
ROSS RIVER, Y.T.

SEP 12 1975

074 50-0

DATE Aug 31 19 75

Utah Mines Limited
1050 W. Pender St.
Vancouver, B.C. V6E 3S7

DATE	DETAILS	DEBIT	CREDIT	BALANCE
1975 Aug 31	Sheet enclosed	614 90		614 90

UTAH MINES LTD. -- EXPLORATION DEPT.
DISTRIBUTION

Location	Major	Minor	Act.	Exp.	Amount
~~00~~	~~0103~~	~~000 0~~	~~0~~	~~0~~	~~614 90~~
3000	3000	1480	40	50	614 90
		0	0		
		0	0		
		0	0	0	

Date Received
Ext. & Prices
Approved by
Invoice Amount 614 90
Discount
Amount Payable
Check No.

2 PER CENT INTEREST PER MONTH
CHARGED ON ALL OVERDUE ACCOUNTS

614 90

Rediform 8M101

PAGE NO. 1

NET AMOUNT
.00 614.90
.00 614.90

V6E 3T6 (604) 683-6921

016532 16532

THE IMPERIAL BANK OF COMMERCE
VANCOUVER B.C. CANADA

DOLLARS	CENTS
******614	.90

UTAH MINES LTD.
GENERAL ACCOUNT

NOT NEGOTIABLE

INVOICE

9/27 016 62-4

CHEMEX LABS LTD. 212 BROOKSBANK AVE., NORTH VANCOUVER, B.C. V7J 2C1 TELEPHONE (604) 985-0648

Utah Mines Ltd.,
1600 - 1050 W. Pender
Vancouver, B. C.
V

RECEIVED SEP 08 1975

DATE Sept. 5/75
INVOICE NO. 14975
CERTIFICATE NO. 35925 & 35926
ATTN:

ITEM	DESCRIPTION	SUB-TOTAL	TOTAL
44	Analyzed for Cu, Pb, Zn @ $2.25	$99.00	
1	Analyzed for Cu	1.25	
45	Prepared @ $0.35	15.75	
		116.00	
	Less 15%	17.40	
			$98.60

UTAH MINES LTD. - EXPLORATION DEPT.

DISTRIBUTION

Location	Major	Minor	Act.	Exp	Amount
30 00	3000	148 0	4 0	6 0	98.60
00		0	0		
00		0	0		
00		0	0		
00		0	0		

Date Received	Invoice Amount	98.60
Ext. & Prices	Discount	
Approved by	Amount Payable	
	Check No.	

TERMS — NET 30 DAYS

1½% Per Month (18%) Per Annum Charged on Overdue Accounts.

75-040

INVOICE

016 6204

CHEMEX LABS LTD. 212 BROOKSBANK AVE., NORTH VANCOUVER, B.C. V7J 2C1 TELEPHONE (604) 985-0648

Utah Mines Ltd.
1600 - 1050 W. Pender
Vancouver, B.C.

RECEIVED SEP 26 1975

DATE Sept.25/75
INVOICE NO. 30558
CERTIFICATE NO. 15238
ATTN:

ITEM	DESCRIPTION	SUB-TOTAL	TOTAL
3	Samples analyzed for Cu,Ag & Au @ $11.50	34.50	
2	Samples analyzed for Cu,Pb,Zn,Ag & Au @ $21.00	42.00	
3	Samples analyzed for Pb,Zn & Ag @ $13.50	40.50	
		117.00	
	Less 15%	17.55	
			$ 99.45

Location	Major	Minor	Au	Ag	Amount
30 00	3000	148 0	4 0	6 0	99.45
00		0	0	0	
0		0	0	0	
00		0	0	0	
00		0	0	0	

Date Received
Ext. & Prices
Approved by

Invoice Amount 99.45
Discount
Amount Payable
Check No.

TERMS — NET 30 DAYS

1½% Per Month (18%) Per Annum Charged on Overdue Accounts.

75-040

CHARTER TICKET

MAYO HELICOPTERS

MAYO, Y.T. /BOX 5/ PHONE 996-3291 | WHITEHORSE, Y.T. /BOX 2295/ PHONE 633-2214

A/C Hughes 500 CF ZXD DATE Aug 25 197 5

NAME Utah Mines 1600 1050 W Pender St

ADD. VANCOUVER V6E 3S7

FROM: Ross River	MILES	HOURS	CARGO	PASS.	REMARKS
TO: Local					
Aug 25		2.0			
Aug 26		1.5			
Aug 28		1.3			
Aug 29		1.4			
Aug 30		2.3			
					PILOT'S SIGNATURE

SPECIAL INSTRUCTIONS

OUR FUEL	170 GALS.	
THEIR FUEL	GALS.	
AREA		
PICK UP DATE		
LOCATION		

8.5	@ $280	PER HOUR	$2380	00
	@	PER MILE		
WAITING TIME	@	PER HOUR		
EXTRA LANDINGS	@	PER LANDING		
OTHER Fuel 170 gal @ .90/gal			153	00
SEE REVERSE FOR CONDITIONS		TOTAL	$2533	00

WESTERN BUSINESS FORMS LIMITED

3733 Ross River
BASE

CHARTER'S AUTHORIZATION

CUSTOMER COPY