

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**19,290**

LOG NO	1114	RD.
ACTION:		
FILE NO:		

**ENGINEER CLAIMS**

**REPORT ON PRELIMINARY GEOLOGICAL MAPPING**

**AND GEOCHEMICAL SAMPLING**

**ENGINEER 1, 2, 3, & 4 CLAIMS**

**LILLOOET MINING DIVISION**

**NTS MAP SHEET 92J11 E**

MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES	50°35'30"N 123°01'15"W
Rec'd	
NOV 6 1989	
SUBJECT <i>by mail</i>	
FILE _____	
VANCOUVER, B.C.	

AUTHOR: R. Jordan P.Eng.

OPERATOR: R. Jordan and Associates Limited

OWNERS: R. Jordan and Associates Ltd. 50%, P. Jordan 50%

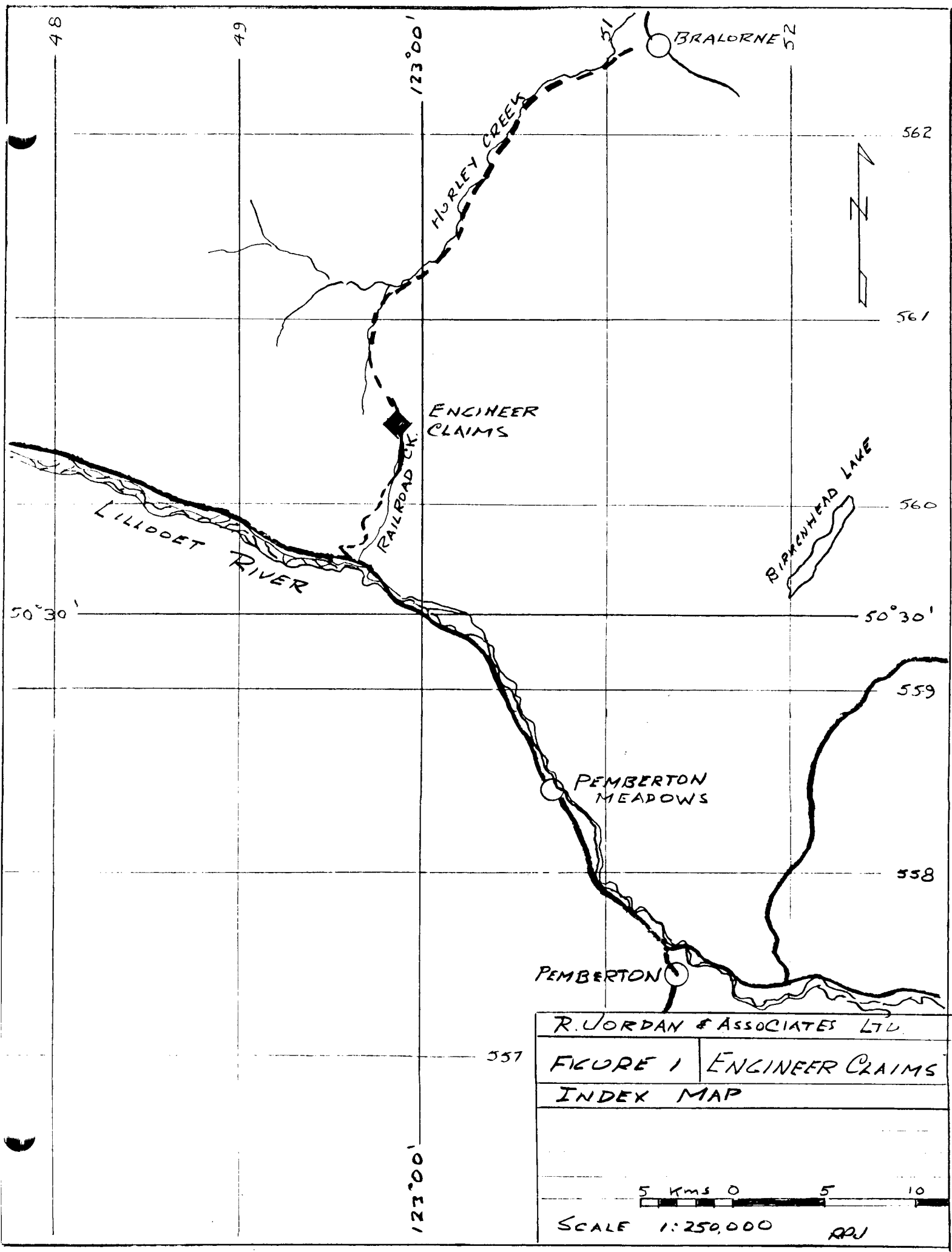
October 25, 1989

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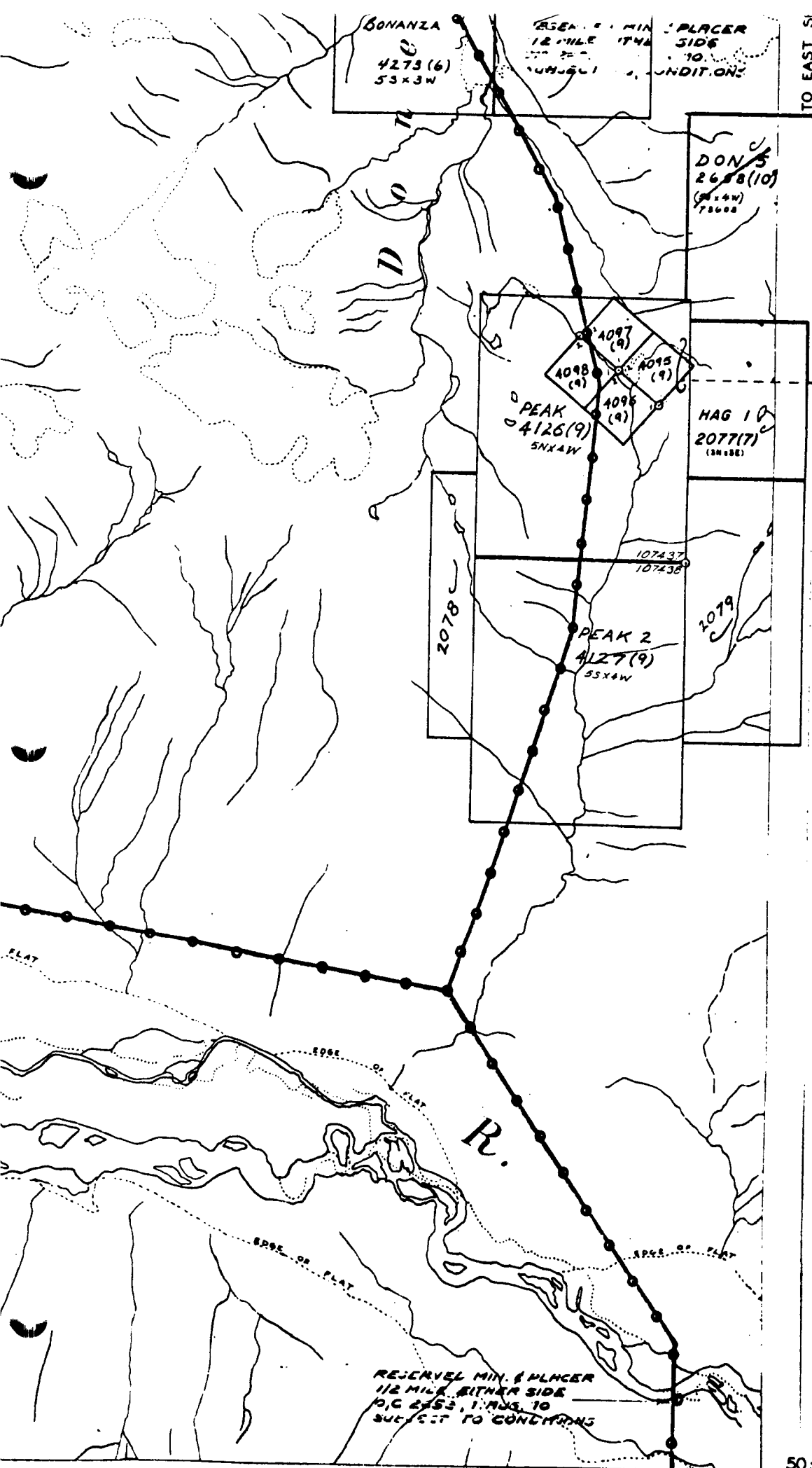
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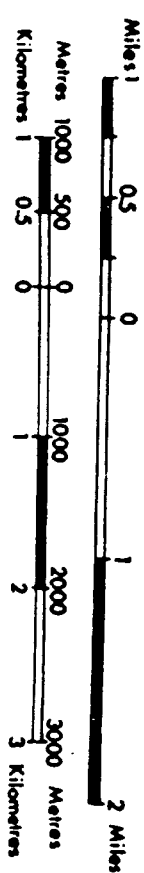
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R. JORDAN & ASSOCIATES LTD.	
FIGURE 1	ENGINEER CLAIMS
INDEX MAP	
5 Kms 0 5 10	
SCALE 1:250,000 RPU	



CROWN GRANTED MINERAL CLAIM  
 REVERTED C.G. MINERAL CLAIM  
 FORFEITED MINERAL CLAIM  
 VERIFIED LEGAL CORNER POST  
 LEGAL SURVEY  
 LEGAL CORNER POST & TAG NUMBER



Province of British Columbia  
 Ministry of Energy, Mines and Petroleum Resources



UNLESS VERIFIED OR SURVEYED, THE MAP POSITION OF A  
 LEGAL CORNER POST IS BASED ON THE LOCATOR'S SKETCH.  
 FOR FURTHER INFORMATION, APPLY TO THE OFFICE OF THE  
 MINING DIVISION CONCERNED.  
 DATE OF MICROFILM : 89. Nov. 02

## **1.0 SUMMARY**

The Engineer claims (four 2 post units) were staked in September 1988 immediately south of Railroad Pass, in the Lillooet Mining Division, adjacent to the Hurley River forestry road, about 35 kilometres northwest of the town of Pemberton.

Pyrite mineralization occurs in silicified and hornfelsed Triassic Cadwallader group volcanics and in post-Cretaceous quartz feldspar porphyry dikes which outcrop in road cuts and in a northwesterly trending gorge at the upper end of Railroad Creek. The claims were staked to cover these mineralized zones.

Soil sampling in the drift covered area between the gorge and the Hurley River road was undertaken to see if there were any indications of better mineralization than those seen in outcrop. Anomalous copper assays were found in samples immediately north of the bottom end of the gorge and in a rock chip sample taken about 275 metres to the northeast. No significant gold assays were encountered.

## **2.0 INTRODUCTION**

This report covers assessment work done on the Engineer claims during the period August 24 to 26 by R. Jordan and P. Jordan from a tent camp located just north of Railroad Pass.

### **2.1 Location, Access and Physiography**

The Engineer claims are located on the south side of Railroad Pass adjacent to the Hurley River forestry road and straddle the upper gorge and outwash fan of the top end of Railroad Creek.

Access to the claims is via the summer use gravelled Hurley River forestry road which connects Pemberton and Goldbridge. A small clearing located on a north flowing tributary of Donnelly Creek just

north of the pass was used as a campsite during the exploration work. Access to the campsite is by a rough 4 wheel drive trail.

Topography on the claims ranges from flat and swampy in the wet meadows below the Railroad Creek gorge to steep rugged and occasionally inaccessible on the Engineer 3 and 4 claims to the west. Elevations range from 1340 metres on the lower part of the creek on the Engineer 2 claim to 1650 metres in the west corner of the Engineer 4 claim. The claims are covered for the most part by a dense growth of sub-alpine spruce and fir trees, rhododendron, alder and huckleberry shrubs and interspersed with numerous windfalls.

## **2.2 Property Description and Previous History**

The Engineer 1 to 4 claims are located in the Lillooet Mining Division in map area 92J11E. P. Jordan and R. Jordan and Associates are co-owners of the claims which are operated by R. Jordan and Associates Ltd. Recording data is listed below:

<u>Claim Name</u>	<u>Units</u>	<u>Rec. No.</u>	<u>Date Staked</u>	<u>Date Recorded</u>
Engineer 1	1	4095(9)	Sept. 06/88	Sept. 08/88
Engineer 2	1	4096(9)	Sept. 06/88	Sept. 08/88
Engineer 3	1	4097(9)	Sept. 06/88	Sept. 08/88
Engineer 4	1	4098(9)	Sept. 06/88	Sept. 08/88

These claims were staked on lands previously held by portions of the Don 1 (Noranda) and Hag 1 (Canadian Nickel) claims which have since been forfeited. Geological Branch Assessment Reports 11474 and 11494 deal with assessment work done on the Don and Hag claims. Assessment Report 11494 includes geological and geochemical work done east of the Hurley River road on the lands now occupied by the Engineer 1 claim and, although some effort was made to locate the posts and flagging for the west boundary of the Hag 1 claim, no posts were found. However, a few flags were found along the N/S line near the LCP for the Hag claims



and it seems likely that the post may have been swept away by rock debris from the steep road cut above the most likely location (about 550 metres south and 50 metres west of the LCP for the Engineer 1 & 2 claims).

Other than signs of sampling along the Hurley River road and in the lower part of the Railroad Creek gorge and a small bulldozer cut at the south end of an ancient jeep road at station 3 on line E-1, there is no evidence of previous work on the Engineer claims.

### **2.3 1989 Exploration**

This program was carried out in two and a half days in the period between August 24 and 26, 1989. Bedrock geology of the rocks exposed along the Hurley River road on and adjacent to the Engineer 1, 2 and 3 claims was mapped. Fifteen soil samples and one rock chip sample were taken at 50 metre intervals along lines E-1 and E-2. Two stream sediment samples were taken from the outwash fan below the gorge of Railroad Creek.

## **3.0 GEOLOGY**

### **3.1 Regional Geology**

The Engineer claims are located along the southern edge of an extensive northwesterly striking assemblage of Triassic Cadwallader Group volcanics which are bounded immediately to the south of the claims by a narrow belt of quartz diorite intrusives related to the Coast Range batholith (ref: GSC Open File 482).

### **3.2 Claim Geology**

On the claims Cadwallader Group volcanics have been extensively intruded, altered and in part, pyritized by numerous quartz-feldspar

dikes. The volcanics mapped along the Hurley River road include relatively unaltered, massive, blocky, fine to medium grained grey to greenish andesites; dark grey medium grained hornfelsed andesites usually fractured and infilled with numerous fine light brownish quartz stringers; a medium to dark grey fine grained andesite with prominent fairly numerous 1 to 2 mm feldspar phenocrysts; and a very fine grained, light grey green siliceous rock which is assumed to be intensely silicified andesite but in fact could be a phase of the quartz-feldspar dikes. Pyritization of these rocks is variable but the heaviest mineralization occurs in a reasonably well defined area where quartz-feldspar dikes are most numerous.

The quartz-feldspar dikes are light grey green in color with a fine grained dense siliceous matrix and containing numerous medium to coarse (2 to 5 mm) phenocrysts of bluish quartz and sub-rounded greyish feldspars. Contacts with the volcanics are not usually obvious but seem to strike roughly northwest and parallel to the obvious dike exposure in the Railroad Creek gorge.

Mineralization occurs to some extent in all units and in hand specimens consists predominantly of pyrite although occasional small and questionable flecks of chalcopyrite and sphalerite were tentatively identified. In the silicified and hornfelsed volcanics mineralization occurs in the groundmass and along minor fractures and fine quartz stringers in amounts varying up to 5 to 10%. Pyrite mineralization is common and relatively abundant, up to 10%, in the dikes exposed in the Railroad Creek gorge and the bulldozer cut at station 3 on line E-1. South of the fault at the east corner of the Engineer 2 claim the dikes appear to carry only very slight pyrite mineralization.

## **4.0 GEOCHEMISTRY**

### **4.1 Field Program**

A total of fifteen soil samples were taken at 50 metre intervals along two lines E-1 and E-2 (ref. Fig. 2). All samples with the exception of E-1-9 were taken from a well defined 'B' layer and consisted of 500 gram samples contained in cloth/plastic sample bags. Sample E-1-9 was taken from a fine talus deposit at the base of a rusty quartz-feldspar outcrop in the south wall of the Railroad Creek gorge. One rock chip sample was taken across one metre of a quartz feldspar porphyry outcrop at station E1-3. Two stream sediment samples about ten metres apart, were taken from the debris fan at the lower end of the Railroad Creek gorge; primarily to confirm the anomalous copper/zinc values encountered at sample 815330 in the National Geochemical Reconnaissance program (GSC Open File 867).

### **4.2 Analytical Techniques**

All samples were submitted to Chemex Labs Ltd. for analysis utilizing their trace level fire assay procedure for gold and their Trace 7 gold related determination for Ag, As, Cu, Mo, Pb, Sb & Zn. Chemex Trace 7 procedures are described in Table III.

### **4.3 Assay Results**

Assay results for copper, zinc, silver and Arsenic are plotted on figures 4, 5, 6 and 7. Assay results for gold, molybdenum, lead and antimony were not considered to be significant but are included in the listing of assay results in Table II. Relatively high copper assays were obtained from samples taken in and immediately north of the Railroad Creek gorge and from the rock chip sample taken at E-1-3, 250 metres northeast of the gorge along the boundary between the Engineer 1 and 3 claims.

## **5.0 CONCLUSIONS AND RECOMMENDATIONS**

Although scattered anomalous assays for copper and zinc were encountered in the projected mineralized zone seen on Map III, no significant gold values were encountered. Future work should be concentrated on systematic soil sampling of drift covered areas, completion of prospecting and mapping of remaining bedrock exposures, and a comprehensive and complete sampling program of the mineralized exposures along the Hurley River road.


## **6.0 REFERENCES**

1. Regional Geochemical Survey, British Columbia, 1981 NTS 92J Pemberton BC RGS-9, 1981, GSC Open File 867.
2. Woodsworth, G.J., 1977. Geology Pemberton (92J) Map Area. GSC Open File 482.
3. Don Claims Report #1, Report on Geology and Geochemistry for Assessment Purposes. Geological Branch Assessment Report 11,474.
4. Geological, Geochemical and Geophysical Report on the Hag 1-3 Claims. Geological Branch Assessment Report 11,496.

**7.0 STATEMENT OF EXPENDITURES**

Transportation Vancouver to site and return 698 kms at .225 x 4/27*		\$ 23.25
Equipment Rental		20.00
Supply Costs		
Meals: 4 man days at \$9.50	\$ 38.00	
Camp Supplies	<u>7.00</u>	45.00
Survey Costs		
Drafting and Map Preparation	\$ 17.00	
Planning and Supervision	52.00	
Labour: 31 hours at \$13.25	424.00	
Assay Costs	<u>343.50</u>	836.50
Report Preparation, Drafting and Typing		<u>175.00</u>
<b>TOTAL</b>		<b><u><u>\$1,099.50</u></u></b>

\* Pro-rated with assessment work done on Angel claims located on Meagre Creek Map Sheet 92J12E 35 kms ESE.

  
\_\_\_\_\_  
R. Jordan, P.Eng.

**8.0 AUTHOR'S QUALIFICATIONS**

I, Robert P. Jordan, resident at R.R.1, Priddis, Alberta, certify that:

I am the current holder of the Association of Professional Engineers of British Columbia Certificate of Registration No. 4707 (Professional Engineer, Geological).

A handwritten signature in black ink, appearing to read 'R. P. Jordan', is positioned to the right of the main text block.

SAMPLE NO.	LOCATION COORDS (APPROX)	ELEV.	TYPE	DEPTH	SAMPLE DESCRIPTION	COMMENTS	DATE
E1-1	5604620 N 498870 E	1370 <sup>m</sup>	S/B	-15cm	Rusty brown soil	Thin soil cover over blocky andesite talus	8/10/25
E1-2	5604585 N 498830 E	1375 <sup>m</sup>	S/B	-25c	Dk. brown silty organic soil	Rusty andesite detritus at base	"
E1-3	550 N 795 E	1380 <sup>m</sup>	S/B	-20c	Lt. brown grey soil	Andesite detritus at base	"
E1-3a	545 N 790 E	1375 <sup>m</sup>	RC	0	Qtz. feld. porphyry	abundant py min, minor sph. (?)	"
E1-3b	555 N 790 E	1375 <sup>m</sup>	S/C	-10c	Rusty, fine detritus	Gossan	"
E1-4	520 N 755 E	1380 <sup>m</sup>	S/B	-20c	Rusty lt. br. soil & till		"
E1-5	480 N 700 E	1385 <sup>m</sup>	S/B	-20c	Dk. brown grey soil w. detritus	- rusty gr. gran. sil. andesite. Abundant py min.	
E1-6	460 N 675 E	1400 <sup>m</sup>	S/B	-20c	Rusty brown soil w. detritus	- rusty qtz. feld. porph. Abundant Py min.	
E1-7	425 N 635 E	1415 <sup>m</sup>	S/B	-25c	Ylw. brn. soil w. detritus	- qtz. feld. porph. Abundant Py min.	
E1-8	395 N 600 E	1410 <sup>m</sup>	S/B	-15c	Dk. brown humic soil w. detritus	" "	
E1-9	5604380 N 498575 E	1402	S/C	0	Rusty qtz. feld. porph. fragments	- at base of rusty cliff on south wall of gorge "	
E2-1	5604495 N 498840 E	1370 <sup>m</sup>	S/B	-25c	Dk. brown sandy soil		
E2-2	535 N 810 E	1387 <sup>m</sup>	S/B	-20c	Rusty dk. brown soil w. detritus	- angular rusty qtz. feld. porph. Scant py min	
E2-3	570 N 780 E	1400 <sup>m</sup>	S/B	-15c	Sli. sandy dk. brown humic soil		
E2-4	610 N 740 E	1420 <sup>m</sup>	S/B	-20c	Rusty brown till w. detritus	- granite pebbles angular andesite fragments.	
E2-5	5604650 N 498705 E	1440 <sup>m</sup>	S/B	-15c	Dk. brown sandy soil w. detritus	- fine qtz. feld. porph. rubble.	
EST 1	5104305 N 498650 E	1390 <sup>m</sup>	SS	0-20	1-20 mm. stream sediment fragments	from debris fan below gorge.	
EST 2	5604275 N 498653 E	1390 <sup>m</sup>	SS	0-20	same		

TYPE LEGEND: S - SOIL S/B 'B' LAYER S/C 'C' LAYER RC ROCK CHIP  
 SS - stream sediment SSP Panmed stream sediment.

TABLE 1



# Chemex Labs Ltd.

Analytical Chemists • Geochemists • Registered Assayers

212 BROOKSBANK AVE., NORTH VANCOUVER,  
BRITISH COLUMBIA, CANADA V7J-2C1

PHONE (604) 984-0221

To: JORDAN, R. & ASSOCIATES LTD.

R.R. 1  
PRIDDIS, AB  
TOL IWO

Project: ENGINEER

Comments: ATTN: ROBERT CRAIG CC: DOUG KUFELD

\* Page No. 1  
Tot. Pages: 1  
Date: 18-SEP-89  
Invoice #: I-8924688  
P.O. #: NONE

## CERTIFICATE OF ANALYSIS A8924688

SAMPLE DESCRIPTION	PREP CODE	Au ppb FA+AA	Cu ppm	Mo ppm	Pb ppm	Zn ppm	Ag ppm Aqua R	As ppm	Sb ppm		
E1-1	201 ---	15	58	< 1	11	28	0.9	9	0.2		
E1-2	201 ---	< 5	73	< 1	23	61	0.5	9	0.2		
E1-3	201 ---	< 5	57	1	3	62	< 0.2	7	< 0.2		
E1-3A	201 ---	< 5	870	1	23	110	0.3	14	9.4		
E1-3B	201 ---	< 5	85	2	37	77	0.2	17	0.4		
E1-4	201 ---	< 5	63	1	28	44	0.4	10	0.2		
E1-5	201 ---	< 5	138	6	7	34	0.3	9	< 0.2		
E1-6	201 ---	< 5	88	22	8	34	0.2	11	0.4		
E1-7	201 ---	< 5	60	3	7	56	< 0.2	12	0.4		
E1-8	201 ---	< 5	400	51	6	65	0.2	11	0.2		
E1-9	201 ---	< 5	440	74	2	42	0.2	16	0.2		
EST-1	201 ---	10	370	45	58	340	0.2	41	1.2		
EST-2	203 ---	< 5	260	21	94	270	0.2	23	1.0		
E2-1	201 ---	< 5	72	2	13	210	< 0.2	15	0.2		
E2-2	201 ---	< 5	45	1	12	44	0.3	9	0.2		
E2-3	201 ---	< 5	50	< 1	6	28	0.7	7	< 0.2		
E2-4	201 ---	< 5	37	2	11	92	0.3	12	0.2		
E2-5	201 ---	< 5	66	< 1	27	34	0.5	9	< 0.2		

P10

P10

CERTIFICATION :

*Hart Buchler*

TABLE II



## Arsenic ppm - Chemex Code 13

A 1.0 gram sample is digested with  $\text{HNO}_3$  - aqua regia acids for approximately 2 hours. The digested solution is diluted to volume and mixed. An aliquot of the digest is acidified and reduced with  $\text{NaBH}_4$  and arsenic content determined using flameless atomic absorption.

Detection limit: 1 ppm

## Bismuth, Selenium, Antimony ppm:

A 2.0 gram sample is digested with concentrated  $\text{HCl}$  and potassium chlorate. The solution is then cooled. After the addition of  $\text{KI}$  and the reduction of iron, the solution is extracted with TOPO-MIBK and analyzed via standard AA procedures, correcting for background absorption.

Detection limits:

Bi - 0.1 ppm  
 Se - 0.2 ppm  
 Sb - 0.2 ppm

## Copper, Molybdenum, Lead, Zinc, Silver, Nickel, Cobalt, Cadmium, Manganese and Iron ppm:

A 1.0 gram sample is digested with nitric - aqua regia for approximately 2 hours. The digested sample is cooled and made up to 25 ml with distilled water. The solution is mixed and solids are allowed to settle. The metals are determined by atomic absorption techniques correcting for background absorption when necessary.

Detection limits: Cu, Pb, Zn, Mo, Ni, Co - 1 ppm  
 Ag- 0.2 ppm  
 Cd- 0.1 ppm  
 Mn- 5 ppm  
 Fe- 0.05%

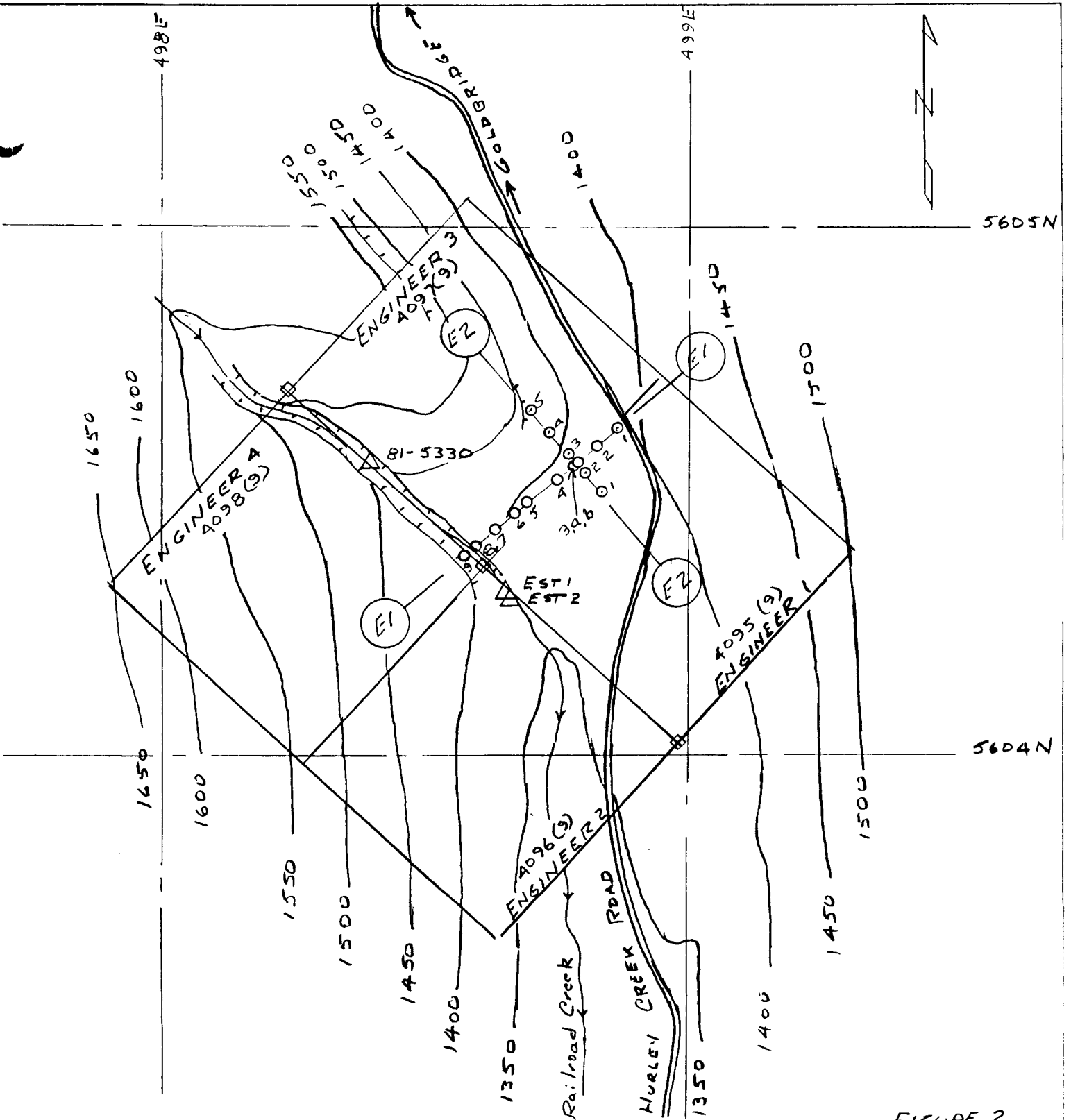


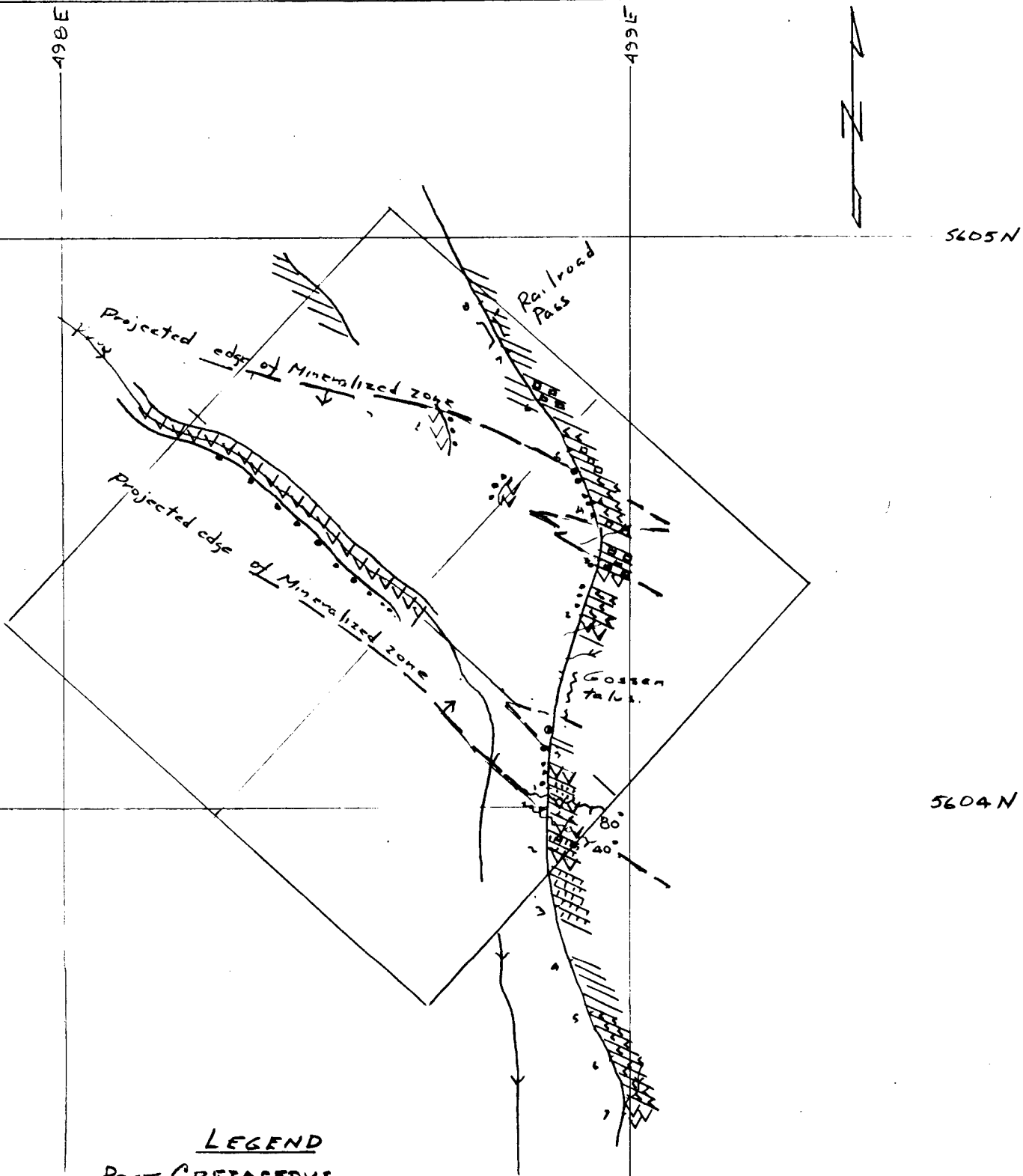
FIGURE 2

NOTE: - CONTOURS & UTM GRID FROM AIR PHOTOS & EMER 1:50,000 TOPOG.

- CLAIM POSTS & SAMPLE LOCATIONS FROM COMPASS CHAIN & ALTIMETER SURVEY.

- == ROAD
- ▲ CLIFF
- ↘ STREAM
- SOIL SAMPLE
- △ STREAM SEDIMENT SAMPLE
- CLAIM POST

R. JORDAN & ASSOCIATES LTD.	
CLAIM & SAMPLE LOCATION MAP	
ENGINEER 1-4 CLAIMS	LILLOUET M.D.
NTS 92 J 11 E	
DRAWN BY: R. JORDAN P. ENG.	
DATE: OCTOBER 1989	
0 50 100 200 300 400 500 metres	
SCALE 1:10,000	<i>RJL</i>



**LEGEND**  
POST CRETACEOUS

Quartz-feldspar porphyry

TRIASSIC CADWALLADER GROUP

Andesite

Hornfels

Feldspar porphyry

Siliceous zones

Fault dip  
 Pyrite mineralization

FIGURE 3

R. JORDAN & ASSOCIATES LTD.

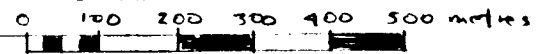
**GEOLOGICAL MAP**

ENGINEER-IN-CHARGE LILLOOET M.D.

NTS 92 III E

DRAWN BY: R. JORDAN PENC

DATE: OCTOBER 1989



SCALE 1:10,000

*R. Jordan*

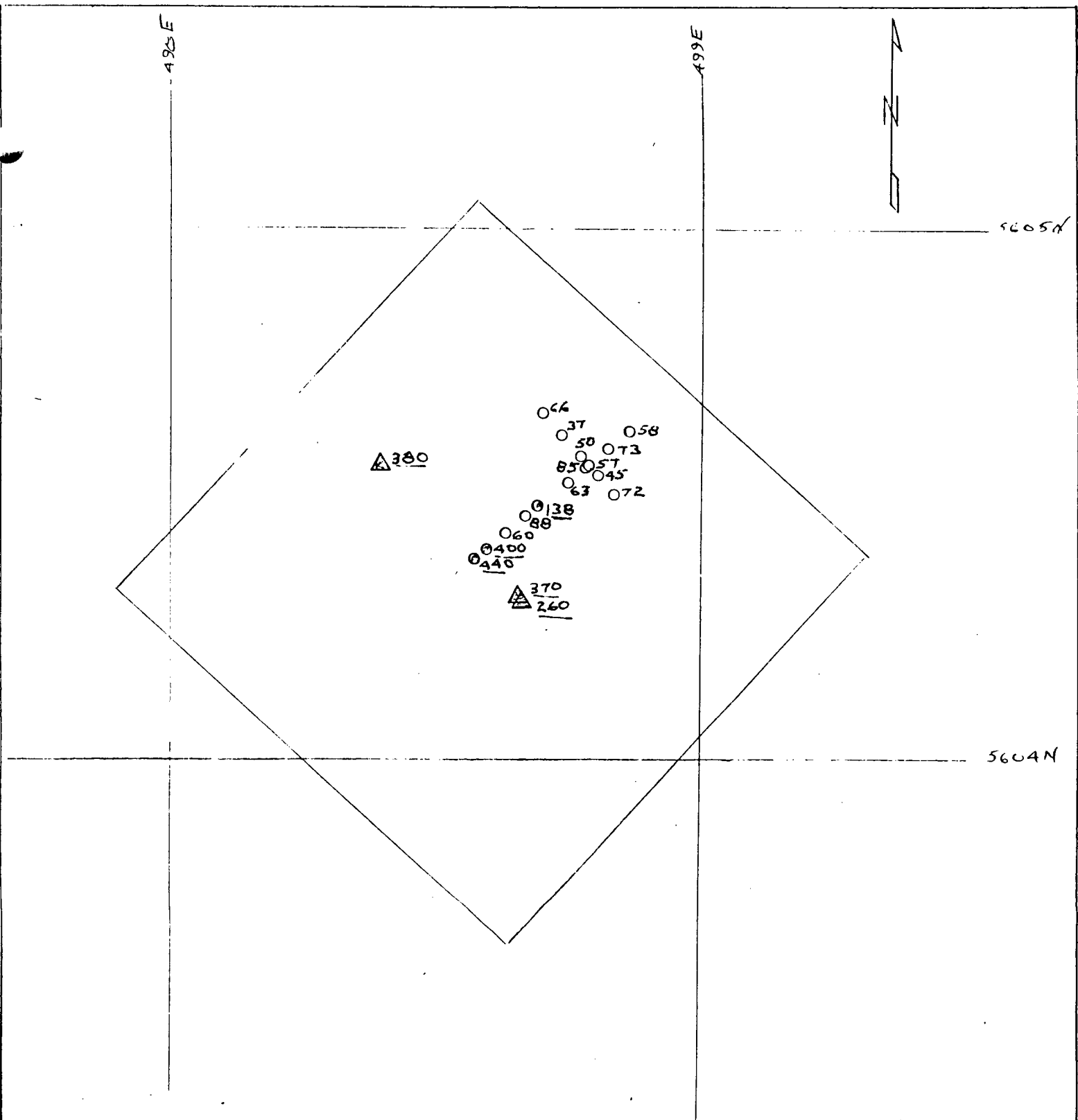


FIGURE 4

R. LOR DAN & ASSOCIATES LTD.	
SOIL & STREAM SEDIMENT SAMPLES	
COPPER ASSAYS PPM	
ENGINEER 1-4 CLAIMS	LILLOOET M.D.
NTS 92 LIII E	
DRAWN BY: R. LOR DAN P. ENG	
DATE: OCTOBER 1989	
0 100 200 300 400 500 METRES	
SCALE 1: 10,000	<i>RLD</i>

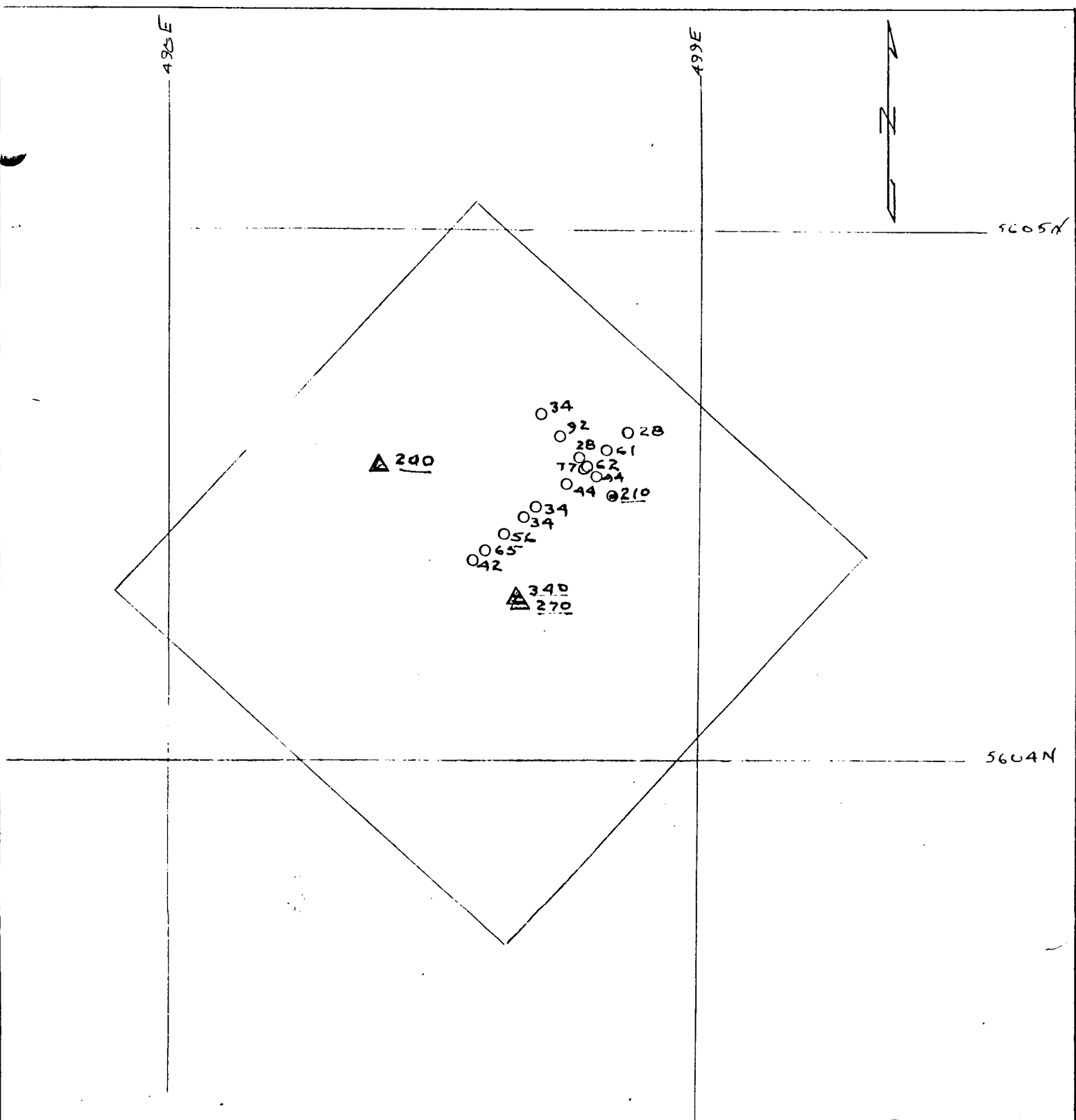


FIGURE 5

R. LOR DAN & ASSOCIATES LTD.	
SOIL & STREAM SEDIMENT SAMPLES	
ZINC ASSAYS PPM	
ENGINEER 1-4 CLAIMS	LILLOOET M.D.
NTS 92 LII E	
DRAWN BY: R. LOR DAN P. ENG	
DATE: OCTOBER 1989	
0 100 200 300 400 500 metres	
SCALE 1: 10,000	<i>RLD</i>



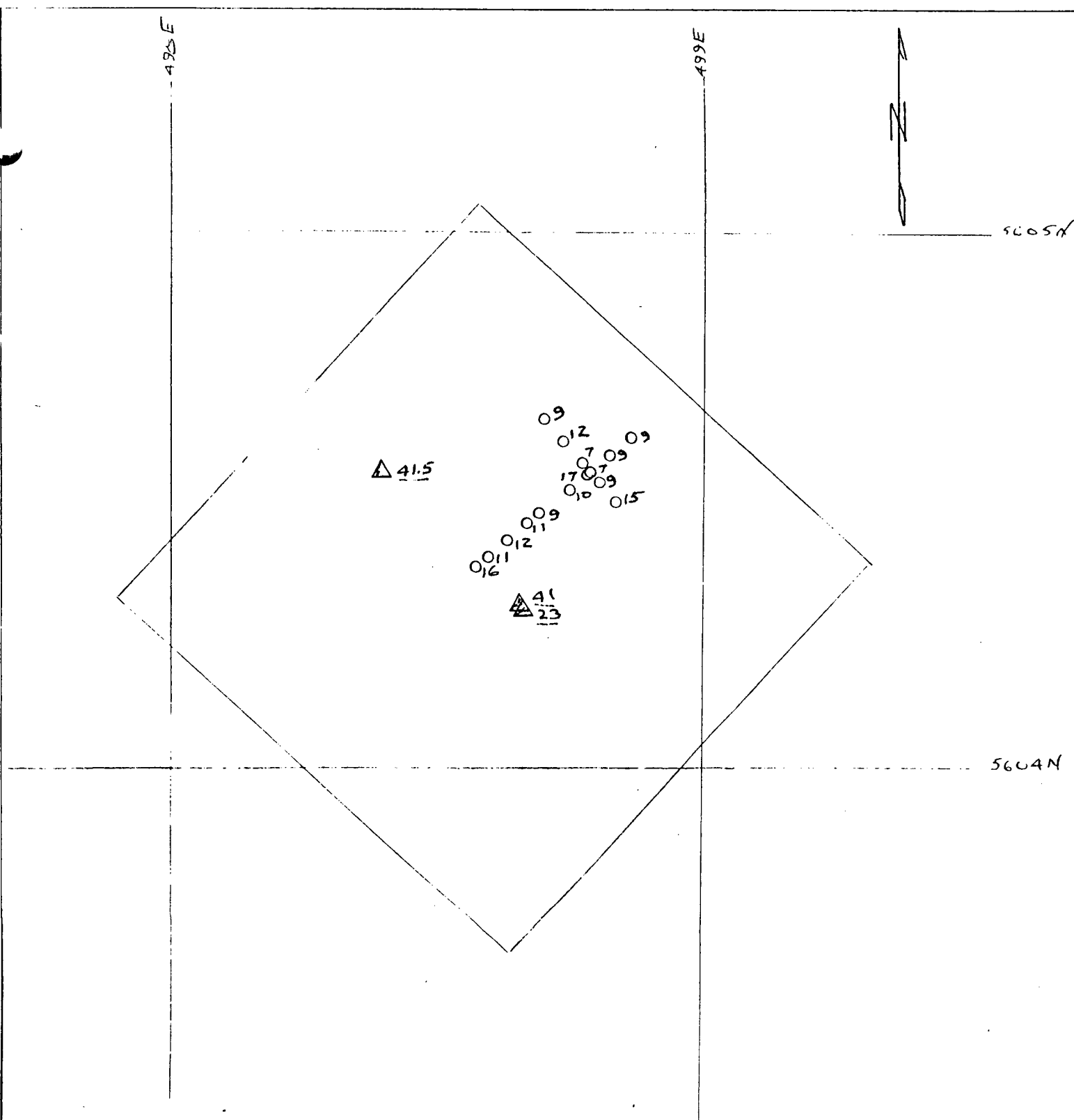


FIGURE 7

R. L. JORDAN & ASSOCIATES LTD.	
SOIL & STREAM SEDIMENT SAMPLES	
ARSENIC ASSAYS PPM	
ENGINEER 1-4 CLAIMS	LILLOOET M.D.
NTS 92 LII E	
DRAWN BY: R. L. JORDAN PENG	
DATE: OCTOBER 1989	
0 100 200 300 400 500 metres	
SCALE 1:10,000	<i>R.L.J.</i>