

DMD

ASSESSMENT REPORTS

MAP No. 116-C-8 TYPE OF WORK: EXPLORATION: Roadbuilding, Trenching

REPORT FILED UNDER	Cominco Ltd.	090686
DATE PERFORMED	7 June - 31 August '80	DATE FILED: 24 October 1980
LOCATION - LAT.	64°20'N	<i>Clinton Creek, Yukon</i>
LONG.	140°21'W	
CLAIM Nos.	PLUTO 1-74 & 76-106	
	YA32612-YA32665	PLUTO 1-54
	YA47610-YA47629	PLUTO 55-74
	YA47630-YA47642	PLUTO 76-88
	YA50007-YA50024	PLUTO 89-106
WORK DONE BY	Ian A. Paterson, Geologist	
WORK DONE FOR	Cominco Ltd.	
REMARKS	<i>See Over</i>	

090686

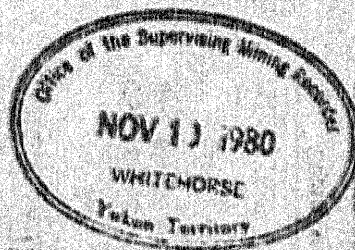
STAR PRINTING WHITEHORSE

The pluto showing was discovered in 1978 through stream sediment geochemical sampling of tributaries to Yukon River. The claim group is underlain by quartz-mica schist intruded by a northeast trending quartz porphyry stock, about 1.5 km long and 0.5 km wide. Mineralization discovered in the southwest part of the quartz porphyry plug and in the adjacent host rocks consists of planar, variously oriented veinlets of quartz and sericite with molybdenite, wolframite and pyrite. During 1980 part of the property was trenched by bulldozer. The trenches were cut about 1 km north of the main quartz feldspar porphyry stock and exposed two smaller mineralized plugs or stocks.

COMINCO LTD.

EXPLORATION  
NTS: 116C/8

WESTERN DISTRICT  
16 October 1980



REPORT ON ROADBUILDING AND TRENCHING ON THE  
PLUTO CLAIM GROUP

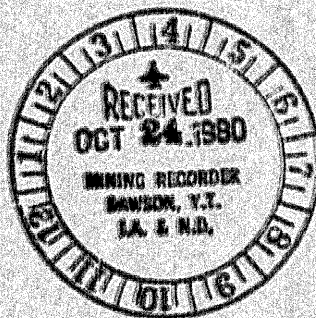
DAWSON MINING DISTRICT, Y.T.

situated at:

LATITUDE: 64°20'N; LONGITUDE: 140°21'W

PERIOD OF WORK

JUNE 7 TO AUGUST 31, 1980



090688

OCTOBER 1980

I.A. PATERSON

not  
neg'd.

This report has been reviewed by the Geological Evaluation Staff and is recommended to the Director of the Department of the Interior for the amount of \$ \_\_\_\_\_.

*Sturges*  
 Resident Mining Engineer

Consolidated or representation work under Section 53 (4) Yukon Quartz Mining Act

DECEMBER 1930

Completions of Yukon Testings

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ATTACHMENTS

APPENDIX I : Affidavit and Copy of Expenditures

APPENDIX II: Statement of Qualifications

MAP 1 : Pluto Claims - Location Map of Claims and Access Trails

MAP 2 : Pluto Claims - 1980 Trenching and Rock Geochemistry

FIG. 1: Pluto Claims - Location Map

FIG. 2: Pluto Claims - Access Roads and Trenches

REPORT ON ROADBUILDING AND TRENCHING ON THE

PLUTO CLAIM GROUP

DAWSON MINING DISTRICT, Y.T.

SUMMARY

The Pluto claims are located 54 km northwest of Dawson City, Yukon Territory and 7 km northeast of a gravel road to Clinton Creek.

The claim group is underlain by a metamorphosed sequence of quartzites, skarn rocks and argillaceous phyllites of Proterozoic and Paleozoic age intruded by three quartz-feldspar porphyry stocks. Molybdenite and wolframite mineralization are associated with quartz and quartz + muscovite + pyrite + fluorite stockworks in the intrusions and adjacent metasediments.

The 1980 trenching programme concentrated on the two poorly exposed quartz-feldspar porphyry intrusions in the northern part of the claim group. The southern intrusion is about 100 m in diameter and is kaolinized and altered to quartz-muscovite rock. Molybdenite was seen in some samples. The northern intrusive is much fresher and contains quartz veins but molybdenite was not observed. The area between the two intrusives contains veins of quartz, wolframite, fluorite, pyrite and muscovite.

Two access trails to the claim group were constructed. The first trail 4.2 km in length was constructed along a ridge on the southwestern part of the claim group. The second trail, 14 km in length, started near Clinton Creek and proceeded along a ridge to the southeast. The latter was used as access for the trenching programme.

INTRODUCTION

The purpose of the 1980 project on the Pluto claims was to build an access route for a bulldozer and to explore the bedrock on the northern poorly exposed part of the claim group by trenching. Work in 1979 in this area had indicated the presence of a Mo/W geochemical anomaly and boulders of quartz-feldspar porphyry.

Work was carried out on the claim group between 7 June and 11 June, 1980 (line cutting), between 16 June and 21 June, 1980 (bulldozer work on access road) and finally between 13 and 31 August, 1980 (access road and trenching). Work done included cutting 5.8 km of line on the northern part of the property, building 18 km of access trail for bulldozer and 1.8 km of trenching.

## LOCATION AND ACCESS

The Pluto claims are located 54 km northwest of Dawson City, Y.T. and 7 km northeast of a gravel road to the recently closed Clinton Creek asbestos mine (Fig. 1).

The topography is mountainous with a maximum elevation of 4,400' at Cassiar Dome and is characterized by peaks with rounded tops, and valleys which are narrow and steep sided. The Yukon River lies at the 1000' level, 1.5 km north of the claim group. (Map 1).

## TENURE

The following claims wholly owned by Cominco constitute the Pluto claim group:

<u>Claim</u>	<u>Tag Number</u>	<u>Due Date</u>
Pluto 1 - 54	YA32612 - dA32665	10 Dec. 1983 to 1986
Pluto 55 - 74	YA47610 - YA47629	9 Dec. 1982
Pluto 76 - 88	YA47630 - YA47642	9 Dec. 1982
Pluto 89 - 106	YA50007 - YA50024	9 June 1981

## ROADBUILDING AND TRENCHING

### Introduction

The main purpose of the trenching programme was to expose rock on the northern part of the claim group. This area (Map 2) is very poorly exposed: no outcrops are present and one has to dig through a thick moss cover to expose float boulders. A grid geochemical soil survey carried out in 1979 indicated that much of the area was anomalous in Mo and W. Mo values ranged between 5 and 26 ppm and W values between 10 and 220 ppm. The Mo values were subdued compared with those found further south in the Pluto Creek area but the W values were comparable. The 1979 work also indicated that a few quartz-feldspar porphyry boulders occurred in the northern area and two areas of porphyry were inferred on the geology 1979 map. At that time, two rock geochemical samples of altered porphyry indicated Mo values in the range 500 - 600 ppm but no visible molybdenite was seen. W values in the same rocks were 2 and 15 ppm.

### Road Building and Trenching

The first attempt at construction of an access road to the northern part of the claim group was carried out between the 16th and 21st of June. A DB bulldozer equipped with a 12' angulating blade and a back mounted hydraulic ripper was used on the job. The operator was R.D. Gillespie of Dawson City. The access road commenced a point 7.4 km along the road to Cassiar Creek asbestos pit (Map 1, Fig. 2) and proceeded northwards along a ridge for 4.2 km. At this point, the bulldozer was faced with a 20° - 30° north-facing slope underlain by permafrost. Construction proved to be time consuming and dangerous and it was decided to abandon this route and concentrate on an alternative access route from the Clinton Creek area.

### Road Building (Continued)

Construction of the alternative route commenced at a point where the Clinton Creek road crosses Mickey Creek and proceeded southeastwards along a ridge for about 14 km to the claim group. The first two kilometres of road angled up a steep hillside and were completed in two days. The next three kilometres proved to be heavy going because of the flat terrane, presence of patchy permafrost and areas of soft ground. Because this section proved to be time consuming, it was decided to give up the idea of building a trail along which the bulldozer could haul a caboose and fuel wagon. It was resolved to walk the bulldozer in directly to the property and fly in camp and fuel by helicopter.

The trenching programme commenced on the 23rd of August and was completed on the 31st of August when the bulldozer returned to Clinton Creek. Five trenches were dug with a total length of 1.8 km. Trenches A and E and test pits F, G and H (see Map 2) are approximately 1.7 m deep. Trenches B, C and D are each 0.7 m deep. Bedrock was not reached in any of the trenches but angular boulders considered representative of the bedrock are numerous especially in trenches A, E and the test pits. Volume calculations are given in Map 2.

### GEOLOGY, ROCK GEOCHEMISTRY AND MINERALIZATION

Geological mapping of the float in the trenches indicated the presence of two small quartz-feldspar porphyry plugs (Map 2). The southern plug, delineated by trench E and test pits F, G and H appears to be 100m in diameter. The boulders consist of quartz-feldspar porphyry locally altered to quartz-muscovite rock and containing quartz veins. Seven samples of intrusive rock submitted for rock geochemical work were found to contain the following molybdenum values: 540, 15, 60, 183, 193, 520, 96 ppm. Tungsten values were respectively 15, 2, 1000, 25, 500, 40 and 415 ppm. Neither wolframite nor molybdenite were observed in any of these rock samples. Molybdenite was, however, observed in quartz veins within and adjacent to the plug.

The northern quartz-feldspar porphyry plug lies 600 metres northwest of the southern plug and measures 200 x 350 m. The plug was crossed by trenches C and D and appears to differ from the one to the south in that the quartz-feldspar porphyry appears fairly fresh and alteration to quartz-muscovite rock is minor. Quartz veins are, however, common. Nine samples from this plug gave molybdenum values of 86, 14, 8, 167, 6, 4, 370 and 14 ppm and tungsten values of 15, 1600, 40, 150, 150, 125, 40, 40 and 75 ppm. Tin values in the northern plug are less than 20 ppm whereas in the southern plug values range between less than 20 ppm up to 70 ppm.

Trench A traversed the area between the two plugs. This area is underlain by metasedimentary gneisses, containing numerous veins of quartz + wolframite, fluorite, pyrite, muscovite and dykes of quartz-muscovite or quartz-feldspar porphyry. Molybdenum values of rock samples range between 7 and 280 ppm; tungsten values range between 6 and 4000 ppm.

CONCLUSIONS

Two quartz-feldspar porphyry plugs were approximately delineated by the trenching. The southern plug was crossed by the access road and trench E. It appears to be about 100 m in diameter. The northern plug was crossed by trenches C and D and measures 200 x 350 m.

The southern plug differs from the northern plug in that it is highly altered. The feldspars have been kaolinized (by weathering?) and the porphyry contains patches and veins of quartz-muscovite rock. Visible molybdenite was seen only in areas where it was enveloped by quartz. Some brown weathered samples with no visible molybdenite contain up to 600 ppm Mo suggesting that molybdenite has been oxidized. The northern porphyry appears much fresher and contains numerous quartz veins.

RECOMMENDATIONS

Drilling should be carried out in the area of the southern plug.

Report by:

I.A. Paterson

I.A. Paterson  
Project Geologist  
Western District

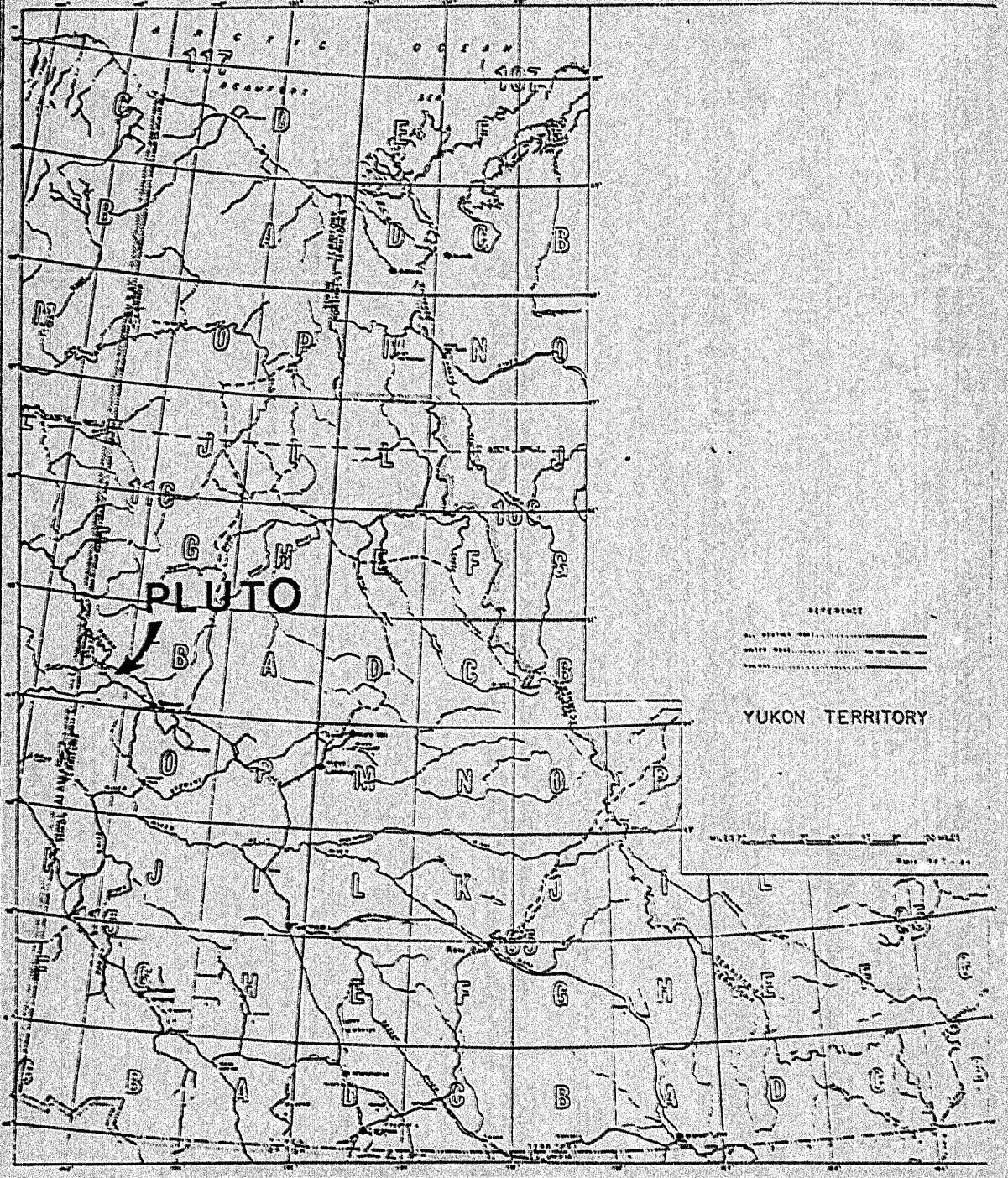
Endorsed by:

M. J. Moeke

Approved for  
Release by:

M. J. Moeke





**PLUTO**

REFERENCE  
 ALL DISTRICT BOUNDARIES  
 WATER BOUNDARIES  
 MOUNTAIN BOUNDARIES

YUKON TERRITORY

0 10 20 MILES  
 1:50,000

11

Drawn by:	Traced by:
Checked by: Date	Reviewed by: Date

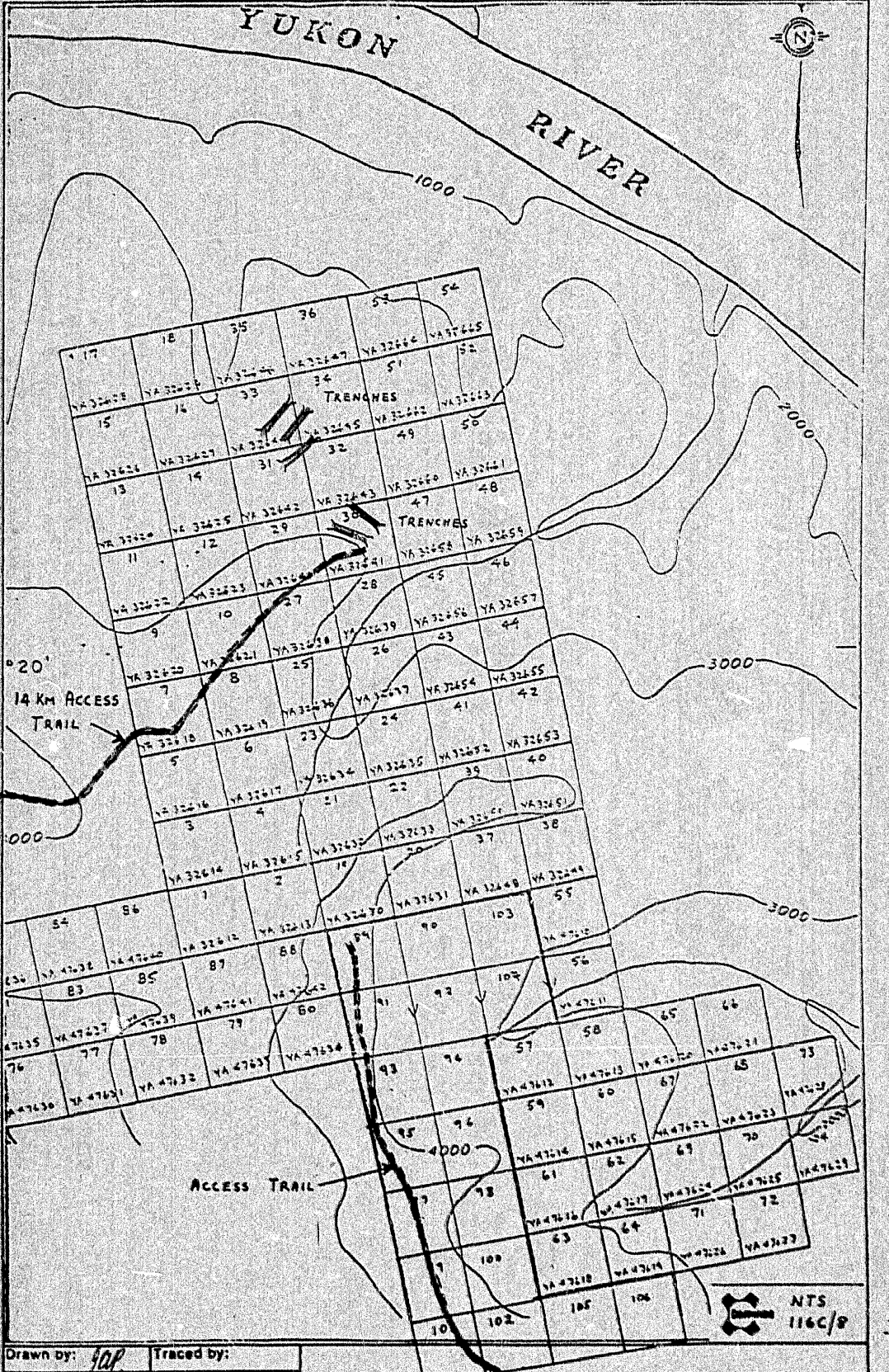
**Pluto claims - Location**



PLUTO CLAIMS		NTS 116-C/7.8	
Drawn by: <i>MAP</i>	Traced by:	<b>Location Map: Claims, access trails</b> <b>To accompany assessment report by</b> <b>I.A. Paterson</b>	
Revised by: _____	Date: _____		
Revised by: _____	Date: _____		
Scale: 1:50,000		Date: 16-10-1980	Plate: 1

YUKON

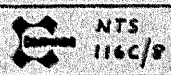
RIVER

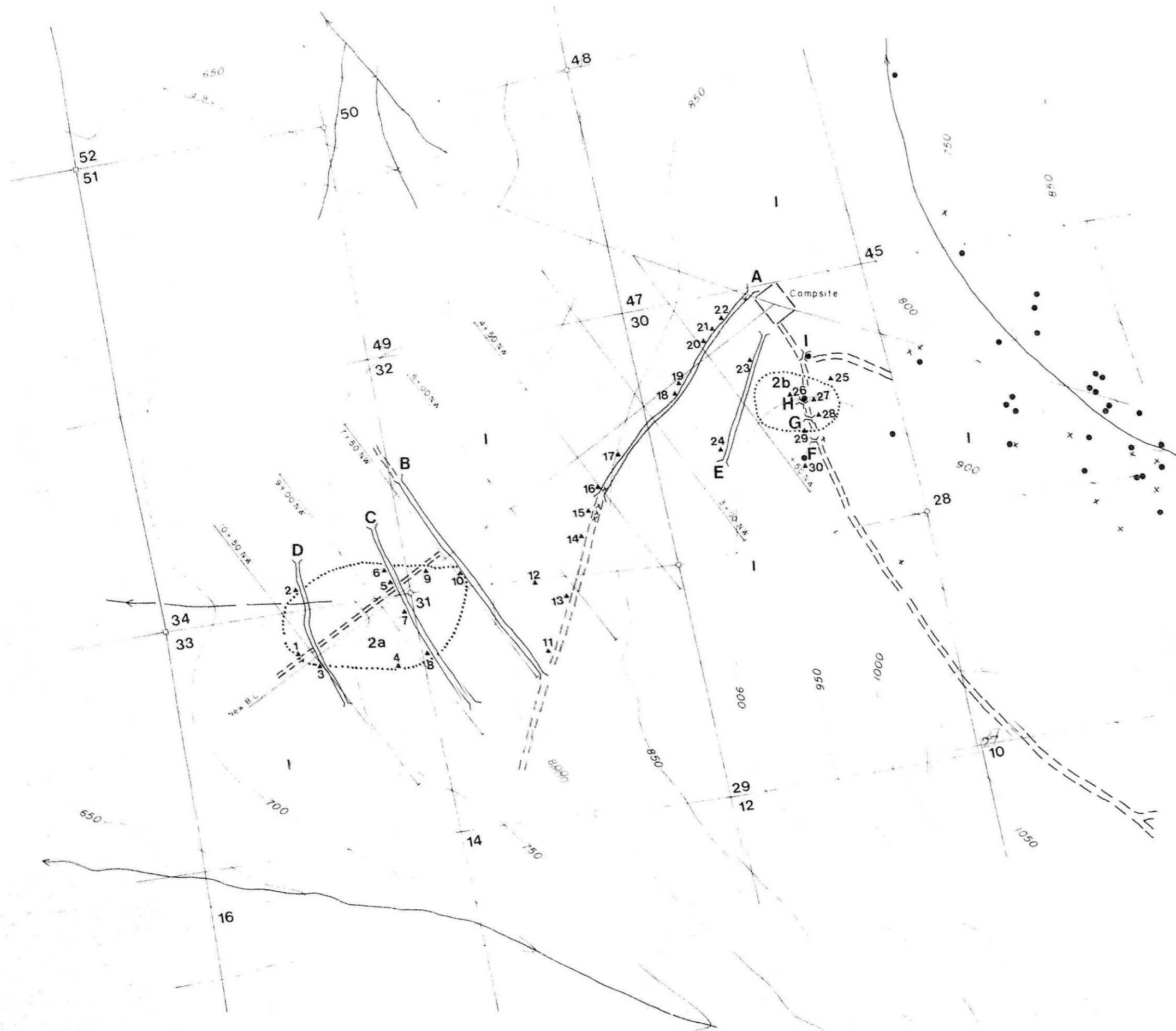
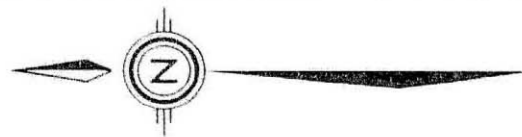


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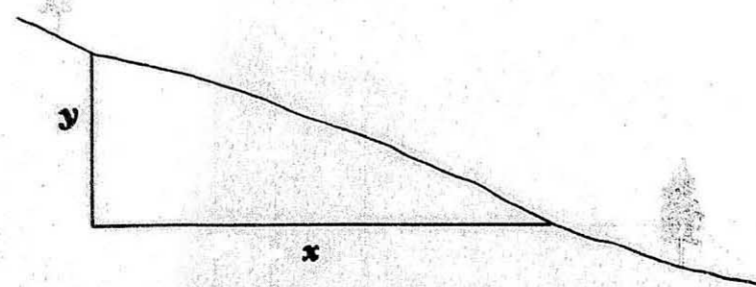
PLUTO CLAIMS  
ACCESS ROADS AND TRENCHES

Scale: 1" = 1/2 MILE      Date: OCT. 1980      Plate 2





TRENCHING				
Trench	Length (m)	Width (m)	Depth (m)	Volume (1x2x3x4) (cu. m)
A	450	5	1.7	1912
B	450	5	0.7	787
C	380	5	0.7	665
D	290	5	0.7	507
E	250	5	1.7	1062
F	8	5	1.0	30
G	8	5	1.0	30
H	8	5	1.0	30
I	8	5	1.0	30
Total				5053 cu. m



TRENCH CROSS SECTION

ROCK GEOCHEMISTRY RESULTS

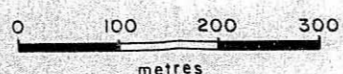
Sample No.	Mo-ppm	W-ppm	Sr-ppm
1	14	75	<20
2	4	40	<20
3	6	125	<20
4	26	-	-
5	14	40	<20
6	107	150	<20
7	8	150	<20
8	6	1500	<20
9	370	175	<20
10	8	15	<20
11	12	35	<20
12	600	2	-
13	9	6	<20
14	8	165	<20
15	53	25	54
16	280	4000	78
17	193	500	50
18	140	400	-
19	187	225	83
20	16	10	<20
21	7	30	<20
22	137	20	53
23	193	500	52
24	183	25	59
25	60	1000	-
26	18	2	-
27	520	40	48
28	96	415	<20
29	540	15	-
30	650	25	-

SYMBOLS

- Trench
- Shallow trench or access trail
- Inferred contact
- Visible molybdenite
- Visible wolframite
- Rock geochemical sample - see table
- Claim line and number

LEGEND

- 2a: quartz-feldspar porphyry, 2b: quartz-feldspar porphyry, locally altered to quartz muscovite rock
- quartzite, biotite-muscovite schist, skarn, chlorite schist



N.T.S. 116-C/8

PLUTO CLAIMS

Drawn by: <i>[Signature]</i>	Traced by:	1980 TRENCHING & ROCK GEOCHEMISTRY To accompany assessment report by I.A. Paterson
Revised by: _____	Revised by: _____	
Date: _____	Date: _____	Scale: 1:5000 Date: 16-10-1980 Plate: 2