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GEOCHEMICAL REPORT ON THE

POP AND POP 1 MINERAL CLAIMS

RECORD NOS. 2282(11), 2318(1)

BRIDAL FALLS - CHEAM PEAK AREA

NEW WESTMINSTER MINING DIVISION, B.C.

NTS 92 H / 4 E

49°13'N latitude / 121° 42'W longitude

FOR

ROY W. ROBINSON AND

SATURN ENERGY & RESOURCES LTD.

BY **GEOLOGICAL BRANCH**
ASSESSMENT REPORT

TRM ENGINEERING LTD.

13,222

November 5, 1984

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INTRODUCTION

This report is prepared by TRM Engineering Ltd. at the request of Mr. R. Robinson of Saturn Energy & Resources Ltd. The report describes the results of a geochemical sampling program undertaken October 21 through 25th, 1984 on the Pop and Pop 1 mineral claims located near Cheam Mountain in the New Westminster Mining Division. The cost of this program is to be applied to 2 years assessment work credit for all units of POP and POP 1.

SUMMARY

The contiguous Pop and Pop 1 mineral claims are located in a geologic environment in which there is an intrusive contact between a granitic body and older hornfelsed and skarnified sedimentary country rocks. Previous exploration reportedly located quartz veins up to seven feet wide containing chalcopyrite and pyrrhotite mineralization.

Silt, soil and rock sampling collected by TRM Engineering Ltd. and analyzed for Cu, Pb, Zn, Ag, As and Au by ICP methods has identified an area 300 metres by 1500 metres showing anomalous metal values.

The geological setting has the potential to harbour precious metal mineralization and further, more detailed exploration is warranted to determine if an economic precious metal deposit is present on the POP and POP 1 claims.

MINERAL CLAIMS

The Pop and Pop 1 mineral claims are staked under the modified grid system.

<u>Claim Name</u>	<u>Record No.</u>	<u>Units</u>	<u>Record Date</u>
Pop	2282	9	November 16
Pop 1	2318	6	January 6

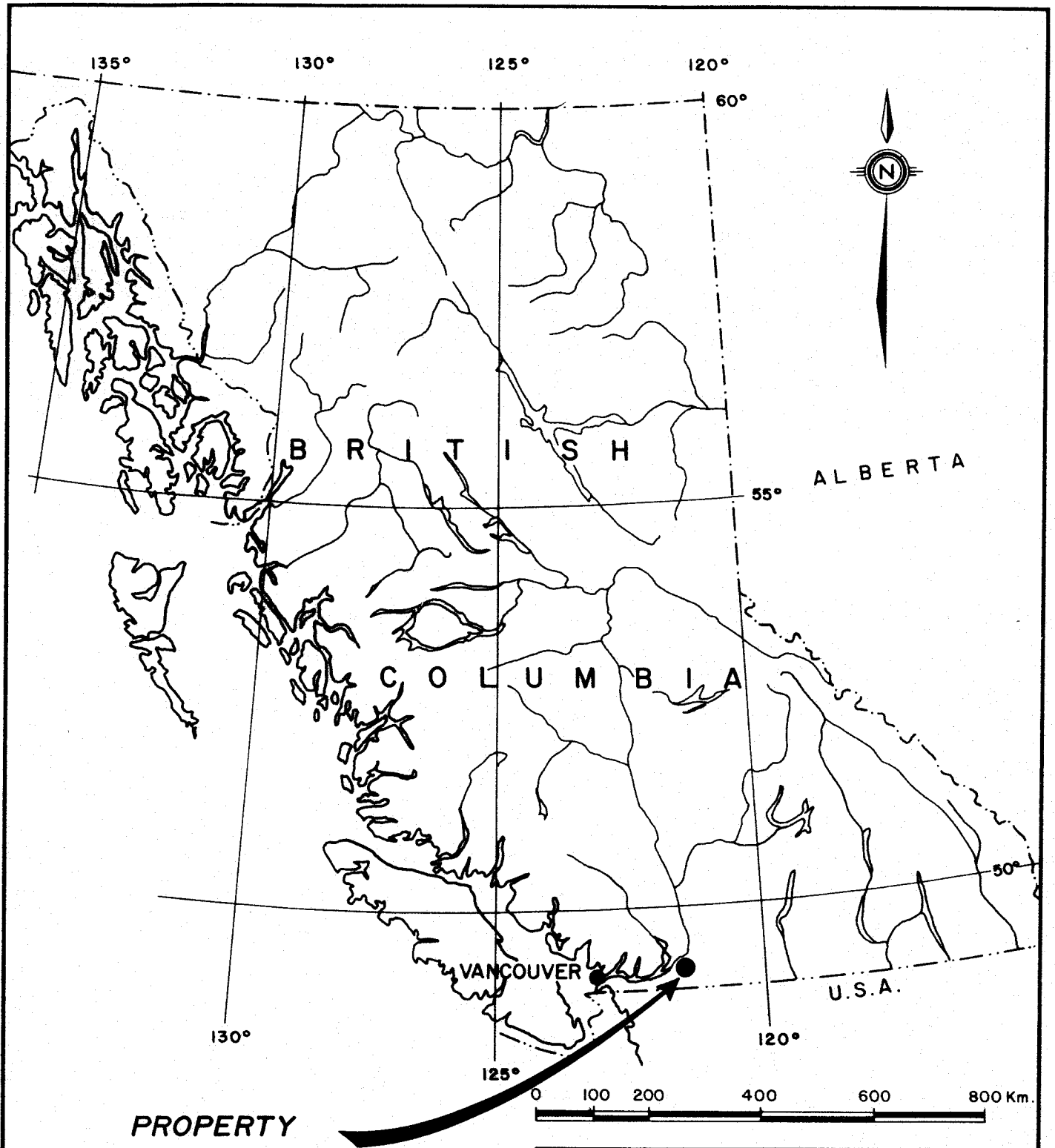
Four previously located 2-post claims, the "Hopecum 1 to 4", appear to occupy about 150 acres of the northwest portion of the Pop Mineral Claim. The inscription on the

LCP claim tags for both the Pop and Pop 1 mineral claims has been found to coincide with that shown on the Form G records.

LOCATION AND ACCESS

The property is reached via Trans Canada Highway No. 1, which parallels the steep northwesterly facing slope of Cheam Mountain in the vicinity of Bridal Falls, a road distance of approximately 150 km east of Vancouver, B.C. (see Figure 1). A power line service road traverses the northwest corner of the Pop mineral claim and is accessed from the Trans Canada Highway No. 1 approximately 2,000 meters west of the village of Popkum, B.C. Cheam Peak is a prominent geographical feature that lies approximately 1,000 meters to the south of the southeast corner of the Pop Mineral Claim.

The mineral claim group is centered at latitude $49^{\circ}13'N$, longitude $121^{\circ}42'W$ at an elevation that ranges from 60 meters in the northwestern portion of the claims to 1,600 meters in the southeastern portion of the claims (see Figure 2).



**PROPERTY
LOCATION**

SATURN ENERGY & RESOURCES LTD.	
GENERAL LOCATION MAP	
PROJECT :	POP MINERAL CLAIM
ENG. :	TRM ENGINEERING LTD.
DWG. NUMBER :	Figure 1

R. D. D.

HOPECUM
MINERAL CLAIMS
#1 TO #4

HOPECUM INDIAN
RESERVE 1

POP
MINERAL CLAIM
9 UNITS

POP I
MINERAL CLAIM
6 UNITS

TB 587

180

1160

2

920

1857

Onbeam

Peak

21129

350 175 0 350 700 1050 Metres

SATURN ENERGY & RESOURCES LTD.

CLAIM MAP

PORTION OF 92 H / 4 E

PROJECT: POP & POP I MINERAL CLAIMS

ENG: TRM ENGINEERING LTD.

DWG. NUMBER: FIGURE 2

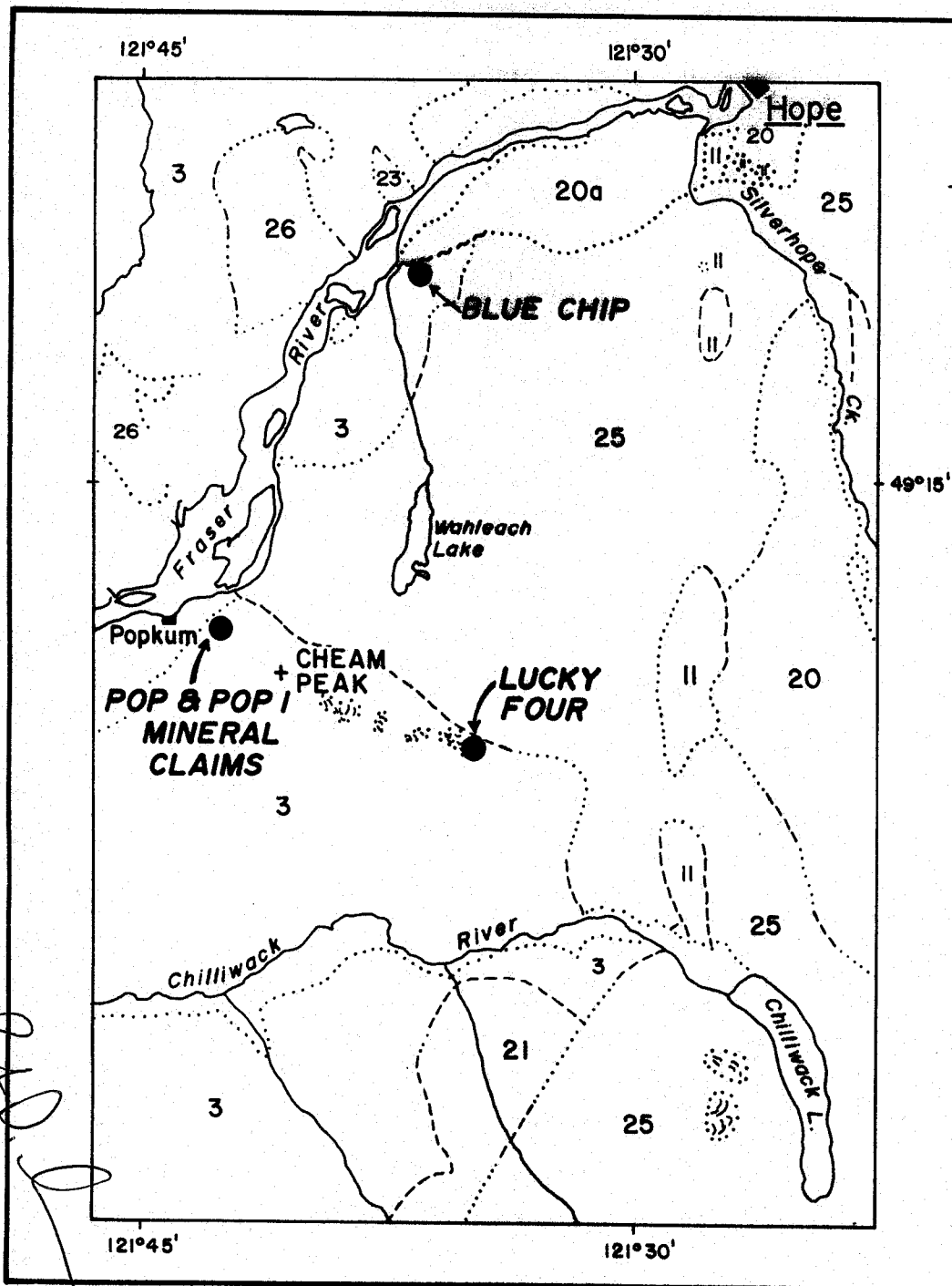
HISTORY AND PREVIOUS WORK

Mineralization found on the property was first described in 1966 (MMAR 1966, p. 61). Southward trending quartz veins containing chalcopyrite and pyrrhotite occur in limestone that is most probably a member of the Chilliwack Group of Permian to Pennsylvanian age. Development work reportedly consisted of a single test pit twenty feet wide and five feet deep located on one of the better developed quartz veins. Work carried out on the property has been hampered by relatively poor access to higher or more rugged portions of the property. The property was visited and a report prepared by J.J. McDougall, P.Eng., in January 1984. This report describes the results of a geochemical work program carried out in October 1984.

GENERAL GEOLOGY

The Cheam Mountain area is underlain by pelites and sandstone of the Cultus Formation of probable Upper Triassic, Lower and Upper Jurassic age which reportedly (Monger, J.W.H., 1970) overlies volcanoclastic sediments, limestones and volcanics of the Chilliwack Group of Pennsylvanian and Permian age. These rocks are cut by intrusives of the Tertiary "Mount Barr" plutonic complex which is composed of granodiorite and quartz diorite.

Several mineral deposits occur in proximity to the contact of the Tertiary intrusive rocks and intruded lithologies. These include the Lucky Four and the Blue Chip properties (see Figure 3). Mineralization at these deposits consists of pyrrhotite, arsenopyrite, chalcopyrite and minor molybdenite along with precious metal values found in quartz veins and contact metamorphosed rock of the Chilliwack Group.



LEGEND

- OLDER SEDIMENTARY ROCKS
CRETACEOUS AND/OR TERTIARY
- II · Conglomerate, Sandstone
- TRIASSIC AND JURASSIC
- Cultus Formation ; Pelite, Sandstone
- 3 · PENNSYLVANIAN AND PERMIAN
CHILLIWACK GROUP
- Basic Volcanic Rocks, Pelites
 - Limestone And Acidic Tuff
- INTRUSIVE ROCKS
TERTIARY
- 25/26 · Granodiorite, Quartz Diorite
- JURASSIC (?) AND LATER
- 23 · Chiefly Serpentine
 - 21 · Slesse Hornblende Diorite
- CRETACEOUS
- 20/20a · Quartz Diorite



SATURN ENERGY & RESOURCES LTD.

REGIONAL GEOLOGICAL SETTING
G.S.C. MAP 737 A AND
G.S.C. MAP 12-1969

PROJECT: POP MINERAL CLAIM

ENG.: TRM ENGINEERING LTD.

DWG. NUMBER: FIGURE 3

GEOCHEMICAL WORK PROGRAM

Two field technicians employed by TRM Engineering Ltd. collected, during the period October 21 through October 25th, 1984, 41 soil and silt samples within the major drainages of POP and POP 1 claims. Seven rock samples were also collected. Descriptions of all samples are presented as Appendix A.

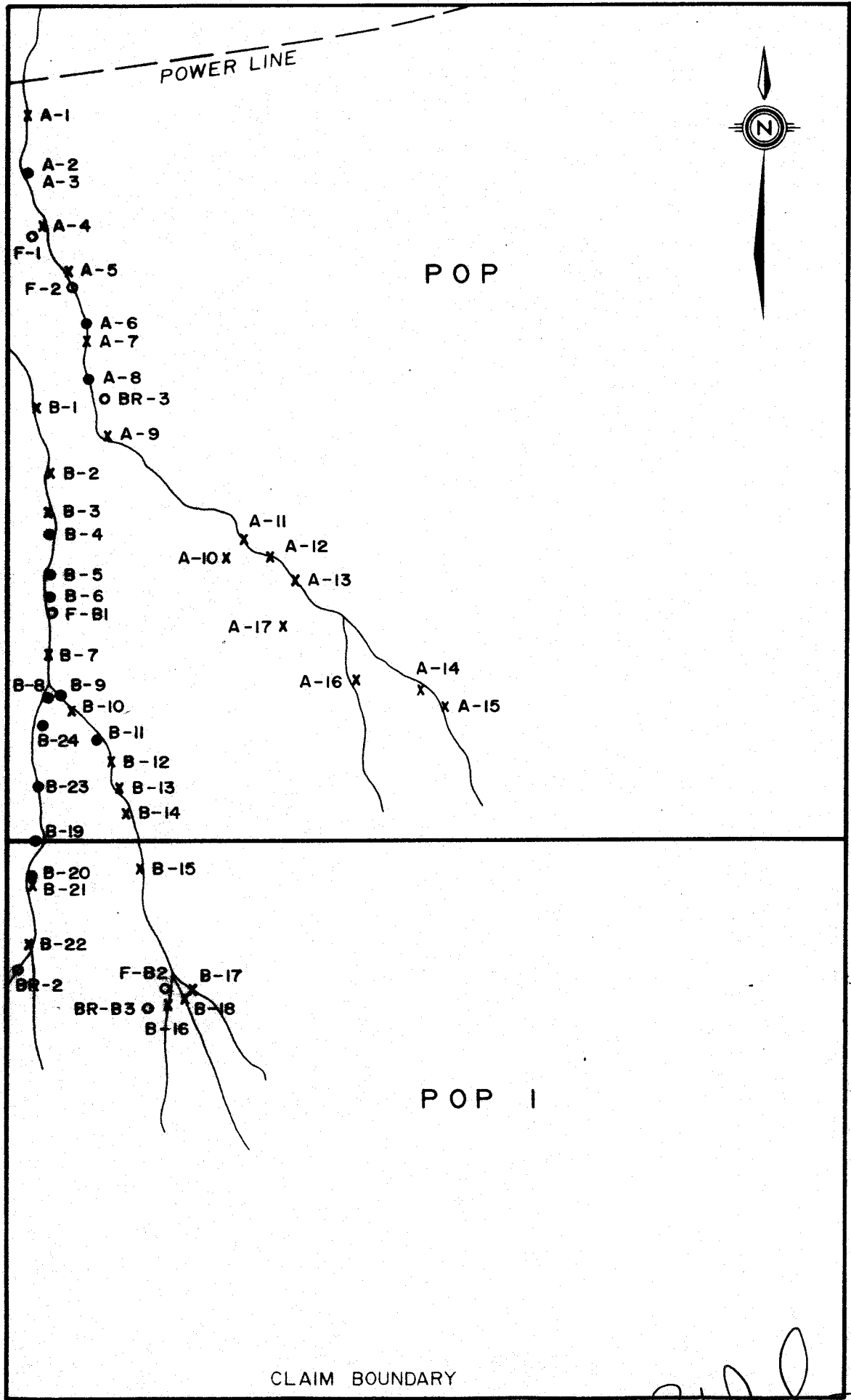
All samples are located on Figure 4.

All samples were analyzed for Cu, Pb, Zn, Ag, As and Au content using ICP analysis by Acme Analytical Laboratories Ltd. in Vancouver, B.C. The results of the analysis are compiled as Appendix B and the location of these results are shown on Figures 5, 6, 7, 8, 9 and 10.

The ICP analysis procedure is described on the head page of the compiled analysis.

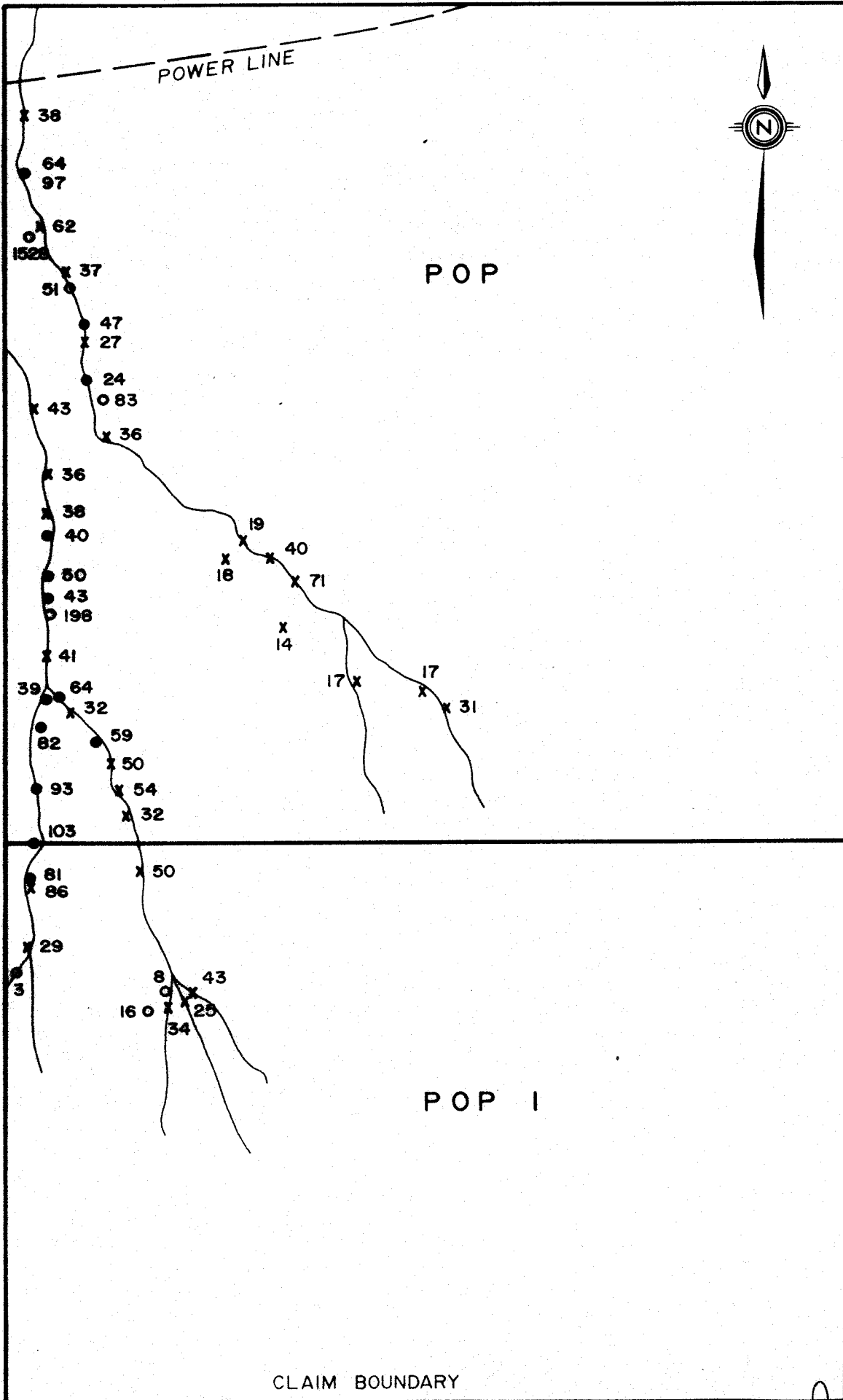
Robert A. Dickinson, geologist, has reported on the data, collected by TRM Engineering Ltd.

SATURN ENERGY & RESOURCES LTD.	
SAMPLE LOCATION	
Project:	POP
Eng:	TRM ENGINEERING LTD.
Figure:	4



LEGEND

- Soil Sample Site
- × Silt Sample Site
- Rock Sample Site



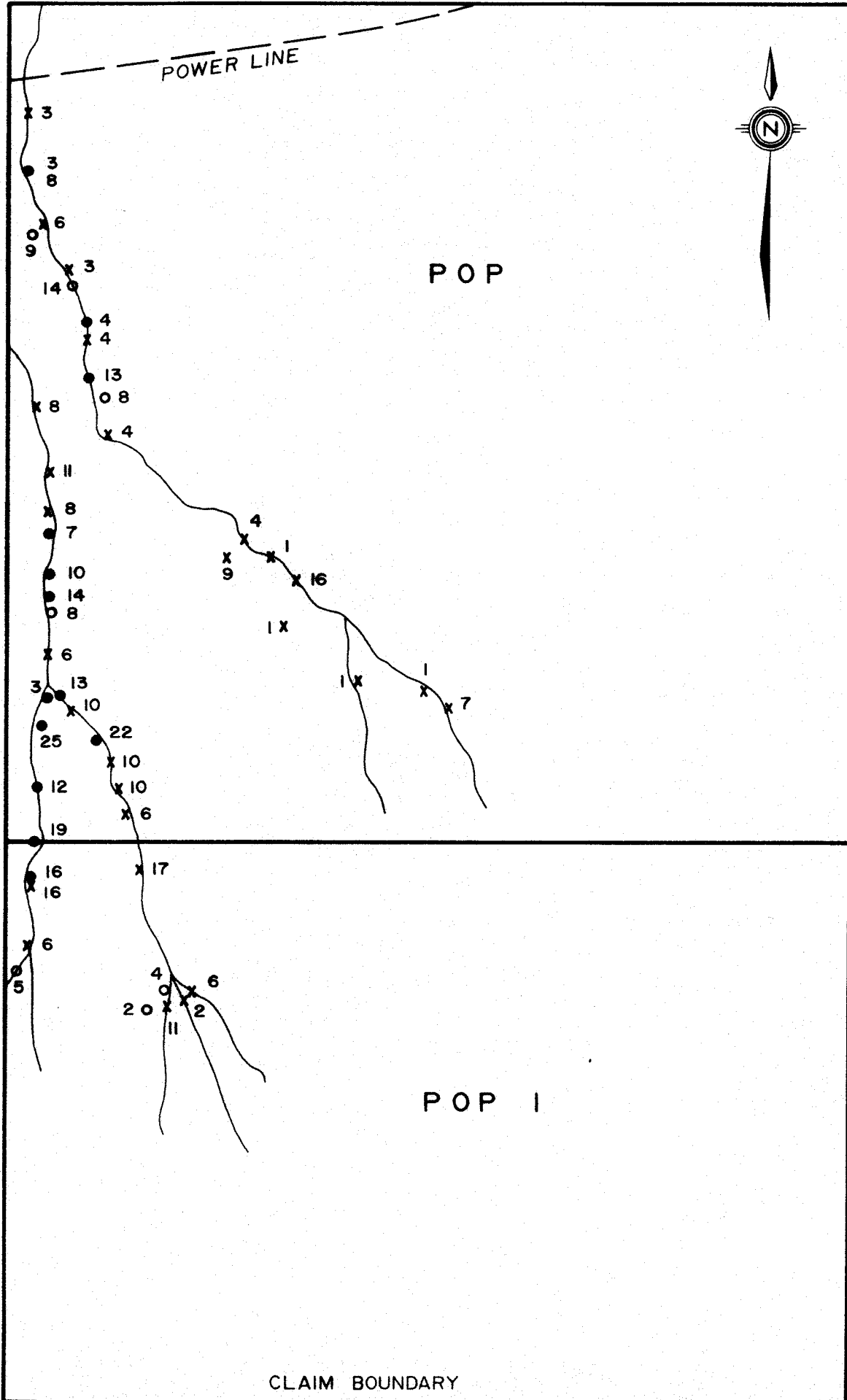
SATURN ENERGY & RESOURCES LTD.	
Cu ppm	
Project:	POP
Eng:	TRM ENGINEERING LTD.
Figure:	5



LEGEND

- Soil Sample Site
- x Silt Sample Site
- o Rock Sample Site

Handwritten signature/initials

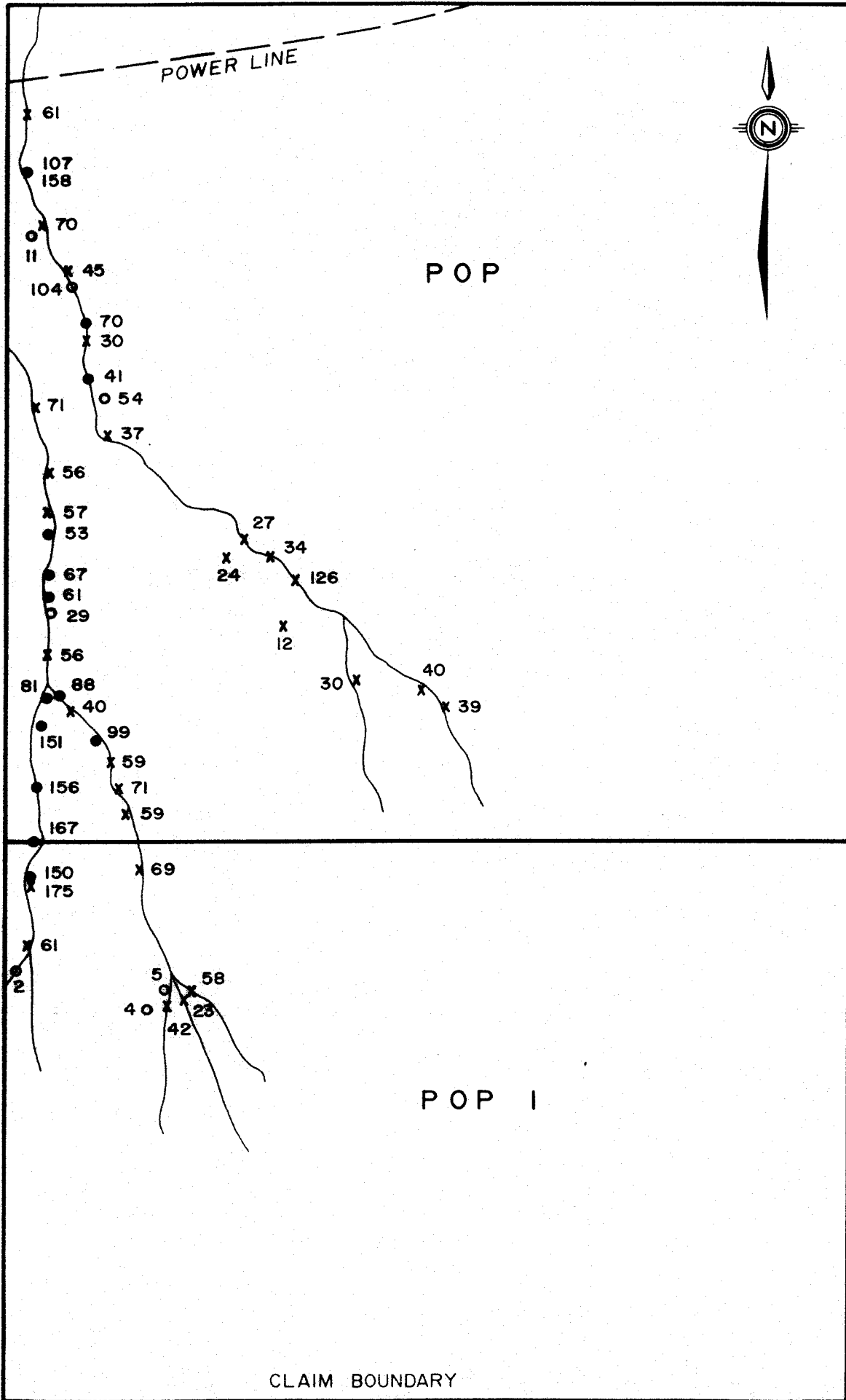


SATURN ENERGY & RESOURCES LTD.	
Pb ppm	
Project:	POP
Eng:	TRM ENGINEERING LTD.
Figure:	6

LEGEND

- Soil Sample Site
- × Silt Sample Site
- Rock Sample Site

R.A.D.



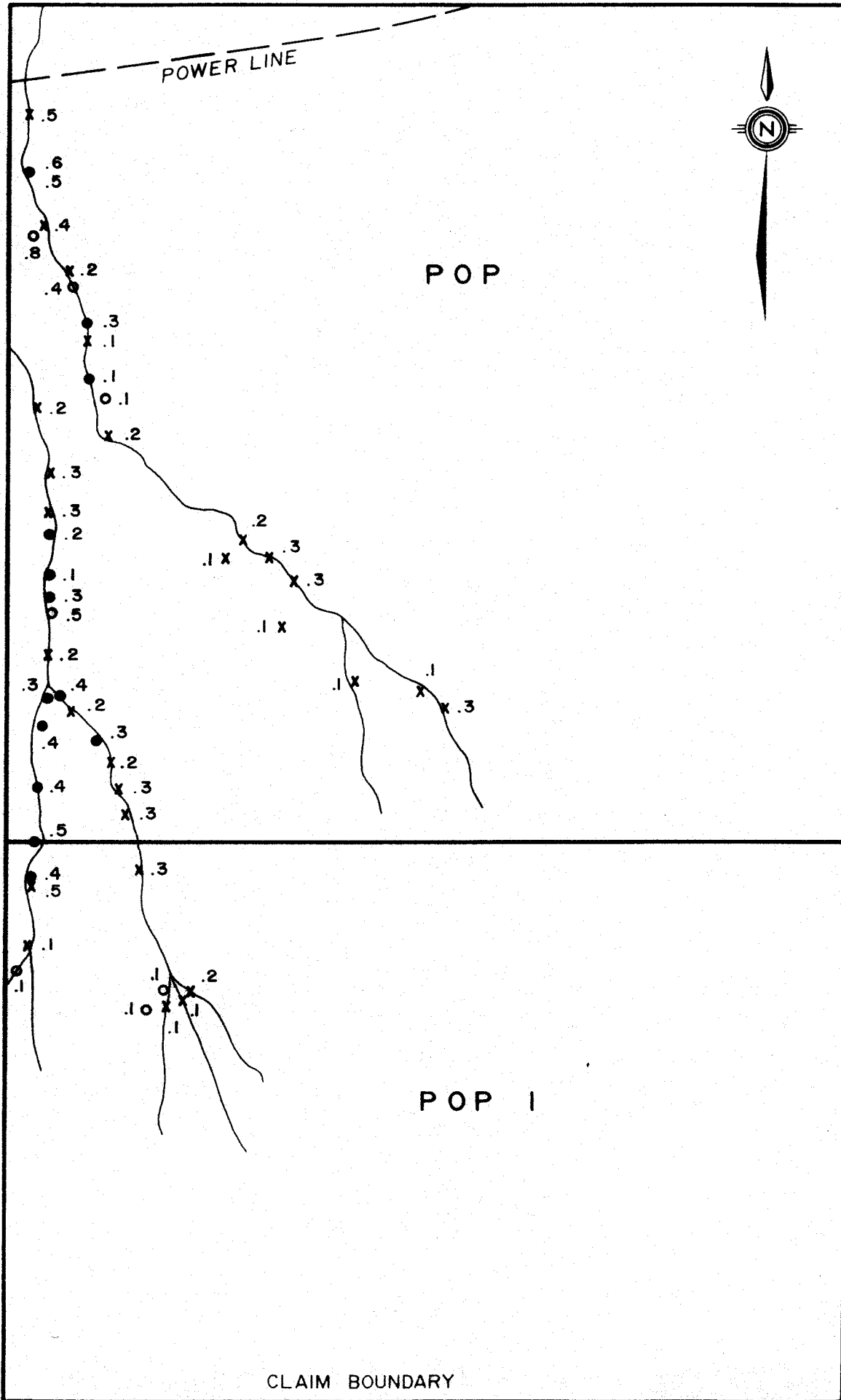
SATURN ENERGY & RESOURCES LTD.
Zn ppm
Project: POP
Eng: TRM ENGINEERING LTD.
Figure: 7



LEGEND

- Soil Sample Site
- x Silt Sample Site
- Rock Sample Site

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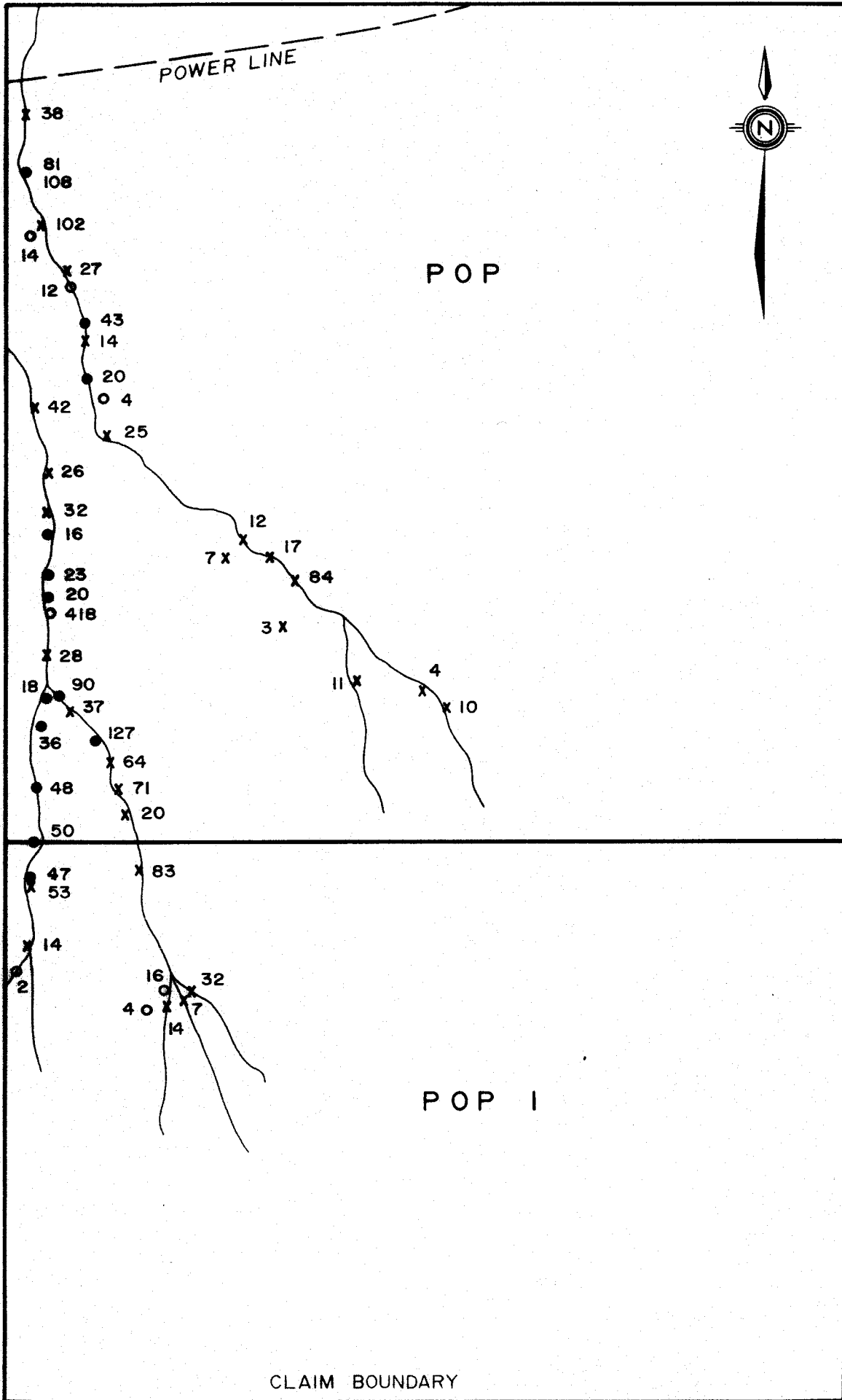
SATURN ENERGY & RESOURCES LTD.
 Ag ppm
 Project: P O P
 Eng: TRM ENGINEERING LTD.
 Figure: 8



LEGEND

- Soil Sample Site
- x Silt Sample Site
- o Rock Sample Site

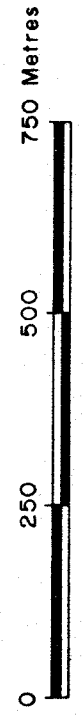
R.D.



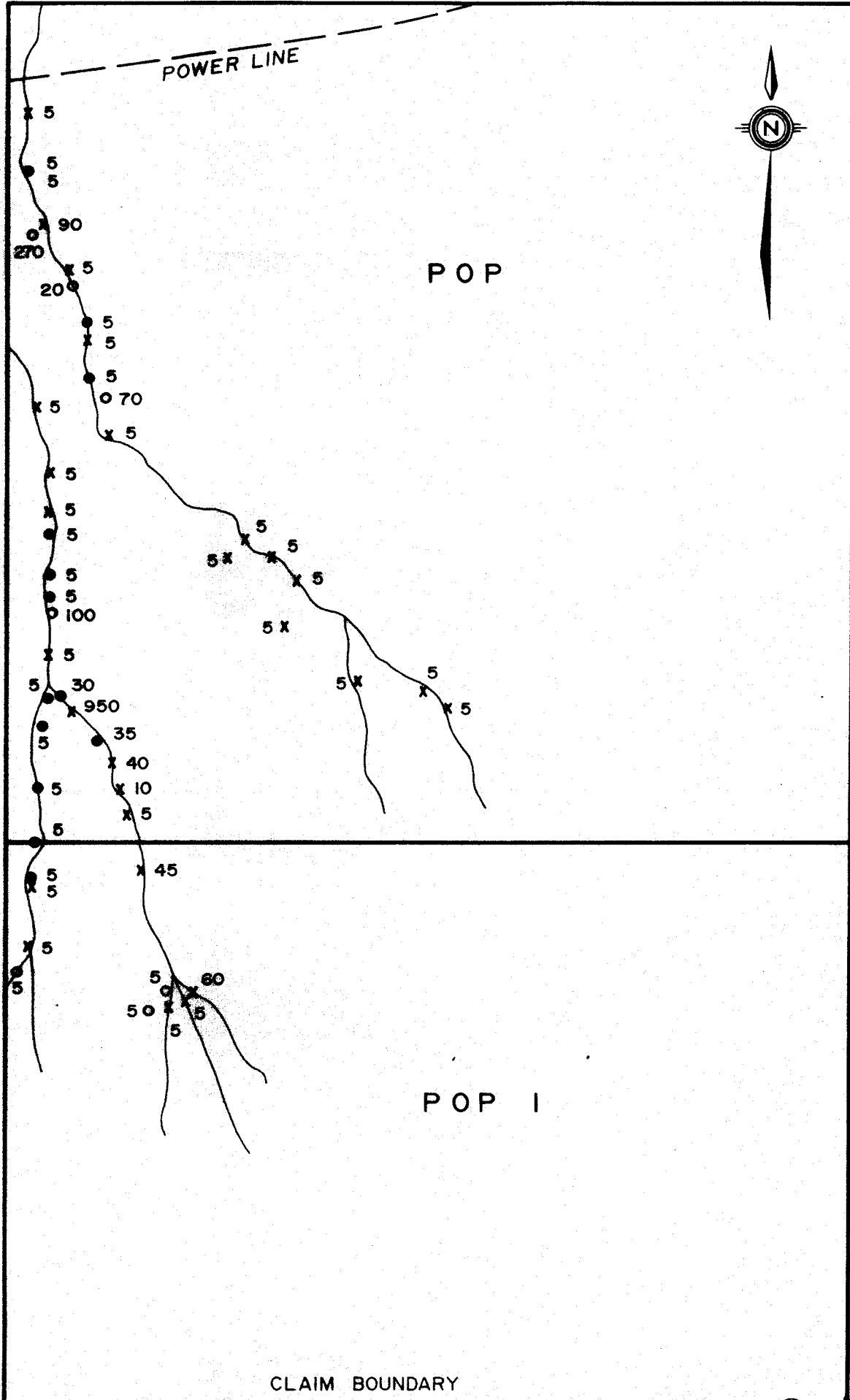
SATURN ENERGY & RESOURCES LTD.	
As ppm	
Project:	POP
Eng:	TRM ENGINEERING LTD.
Figure:	9

LEGEND

- Soil Sample Site
- × Silt Sample Site
- Rock Sample Site



RA D. D.



SATURN ENERGY & RESOURCES LTD.	
Au ppb	
Project:	POP
Eng:	TRM ENGINEERING LTD.
Figure:	10

LEGEND

- Soil Sample Site
- x Silt Sample Site
- Rock Sample Site

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CONCLUSIONS

The analytical results obtained for both silt and rock samples collected yielded encouraging results in gold (sample nos. A4; B10; B17; for silt) and (sample nos. F1, FB1 and FB3 for rock). In addition to anomalous gold values, rock sample F1 returned a significant value in copper (1528 ppm or .153% copper) with an accompanying gold geochemical anomaly.

From the results obtained to date, there appears to be no specific correlation between the various base (Cu, Pb, Zn) and semi-metals (As) and the precious metals (Ag and Au). Although the sampling was essentially of a reconnaissance nature, it has shown anomalous metal values in rock and silt occupying an area of approximately 300 metres by 1500 metres. This area encompassed by recent exploration efforts is approximately 2/10ths of the area covered by the total claim block and has returned encouraging results that suggested the presence of mineralization in those areas proximal to a sedimentary-intrusive contact. Several other deposits within the region display similar element associations within a geological environment that closely parallels that found on the Pop and Pop 1 mineral claims.

Further work is warranted to fully explore the potential of the Pop and Pop 1 mineral and to further define the geological setting of these claims.

RECOMMENDATIONS

The Pop and Pop 1 mineral claims have silts and rocks that yield metal values that can be expected in areas in which mineral deposits are localized at the contacts of intrusive rocks and sedimentary lithologies. Within the district the Lucky Four Group, Blue Chip property and also the Nagy gold deposit are known to occur.

It is recommended that a program be undertaken such that the geology of the Pop and Pop 1 mineral claim is more precisely defined. In conjunction with this geological undertaking, an airphotographic analysis could be of benefit in order to ascertain areas of different lithologies and their contact relationship as well as any structural features.

The use of multi-element analysis in silts and rocks has been proven to be beneficial in the first phase program. A larger soil and silt sampling program should be initiated in order to locate the source of the anomalous metal bearing silts and rocks. A rock chip geochem program is a necessity in dealing with low amounts of gold in this particular geological environment. This technique can be ably employed at the time of geological mapping and in conjunction with a grid organized silt and soil program.

COST STATEMENT

1.	Wages	\$1,800.00
	2 Field Prospectors	
	(10 man days @ \$180/day)	
	October 21 - October 15, 1984	
2.	Analysis	
	48 samples for Cu, Pb, Zn, Ag, As, Au	480.00
3.	Room and Board	
	10 man days @ \$50/day	500.00
4.	4 X 4 Vehicle	
	700km @ \$0.40/km	280.00
5.	Expendables, flanging, monofil, bags, etc.	40.00
6.	Engineering supervision, drafting, report writing	<u>500.00</u>
		\$3,600.00

Approved,
R. D. L.

REFERENCES

Monger, J.W.H., 1970

Hope Map-Area, West Half, British Columbia
G.S.C. Paper 69-47

Ray, G.E., 1982

The Nagy Gold Occurrences
Doctor Point
Geological Fieldwork 1982,
B.C. Department of Mines Paper 1983-1

Minister of Mines, B.C.

Annual Report, 1966, p. 61.

J.J. McDougall, P.Eng., Company Report

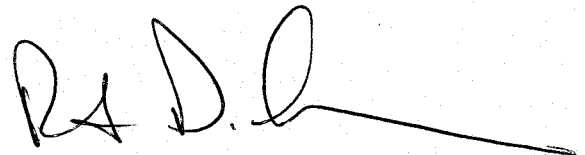
Report of the Pop and Pop 1 Claims, Bridal Falls, - Cheam Peak Area,
September 10, 1984.

CERTIFICATE

I, Robert A. Dickinson, Do Hereby Certify:

- 1) I am a principal and consulting geologist employed by TRM Engineering Ltd. with business office at 701 - 744 West Hastings Street, Vancouver, B.C., V6C 1A5.
- 2) I am a graduate in geology of University of British Columbia (B.Sc., 1972) and a graduate in Business Administration (M.Sc., 1974).
- 3) I am a Fellow of the Geological Association of Canada.
- 4) I have practiced my profession as a geologist for the past 12 years.
- 5) The information, opinions and recommendations in the attached report are based on studies of the available literature on the area occupied by the Pop and Pop 1 mineral claims and on data obtained by field technicians employed by TRM Engineering Ltd.
- 6) I own no interest in the Pop and Pop 1 mineral claims nor in Saturn Energy & Resources Ltd., nor do I expect to receive any such interest.

Dated at Vancouver, B.C., this 5th day of November, 1984.

A handwritten signature in black ink, appearing to read 'R.A. Dickinson', with a long horizontal line extending to the right.

Robert A. Dickinson, Geologist

APPENDIX "A"

APPENDIX "B"

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	Ag ppm	As ppm	Au* ppb
B21	86	16	175	.5	53	5
B22	29	6	61	.1	14	5
B23	93	12	156	.4	48	5
B24	82	25	151	.4	36	5
F1 ROCK	✓ 1528	9	11	.8	14	270
F2 ROCK	✓ 51	14	104	.4	12	20
F-B1 ROCK	✓ 198	8	29	.5	418	100
F-B2 ROCK	✓ 8	4	5	.1	16	5
BR-3 ROCK	✓ 83	8	54	.1	4	70
BR-B3 ROCK	✓ 16	2	4	.1	4	5
R-B2 ROCK	✓ 3	5	2	.1	2	5
STD C/AU 0.5	58	37	122	6.7	41	500

ACME ANALYTICAL LABORATORIES LTD.
 100 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6
 PHONE 253-3158 DATA LINE 251-1011

DATE RECEIVED: OCT 29 1984

DATE REPORT MAILED: *1 Nov 1984*

GEOCHEMICAL ICP ANALYSIS

.500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-3 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
 THIS LEACH IS PARTIAL FOR Mn, Fe, Ca, P, Cr, Mg, Ba, Ti, B, Al, Na, K, W, Si, Zr, Ce, Sn, Y, Nb and Ta. Au DETECTION LIMIT BY ICP IS 3 ppm.
 - SAMPLE TYPE: SOILS AND ROCKS Au% ANALYSIS BY AA FROM 10 GRAM SAMPLE.

ASSAYER: *B. Jeung for* DEAN TOYE. CERTIFIED B.C. ASSAYER

TRM ENGINEERING

FILE # 84-3194

PAGE 1

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	Ag ppm	As ppm	Au* ppb
A1	38	3	61	.5	38	5
A2	64	3	107	.6	81	5
A3	97	8	158	.5	108	5
A4	62	6	70	.4	102	90
A5	37	3	45	.2	27	5
A6	47	4	70	.3	43	5
A7	27	4	30	.1	14	5
A8	24	13	41	.1	20	5
A9	36	4	37	.2	25	5
A10	18	9	24	.1	7	5
A11	19	4	27	.2	12	5
A12	40	1	34	.3	17	5
A13	71	16	126	.3	84	5
A14	17	1	40	.1	4	5
A15	31	7	39	.3	10	5
A16	17	1	30	.1	11	5
A17	14	1	12	.1	3	5
B1	43	8	71	.2	42	5
B2	36	11	56	.3	26	5
B3	38	8	57	.3	32	5
B4	40	7	53	.2	16	5
B5	50	10	67	.1	23	5
B6	43	14	61	.3	20	5
B7	41	6	56	.2	28	5
B8	39	3	81	.3	18	5
B9	64	13	88	.4	90	30
B10	32	10	40	.2	37	950
B11	59	22	99	.3	127	35
B12	50	10	59	.2	64	40
B13	54	10	71	.3	71	10
B14	32	6	59	.3	20	5
B15	50	17	69	.3	83	45
B16	34	11	42	.1	14	5
B17	43	6	58	.2	32	60
B18	25	2	23	.1	7	5
B19	103	19	167	.5	50	5
B20	81	16	150	.4	47	5
STD C/AU 0.5	59	37	118	6.4	40	510