81-#592.9309

ASSESSMENT REPORT

GEOCHEMICAL AND GEOLOGICAL REPORT

ON THE

ACAPULCO, ACA AND PUL CLAIMS (39 UNITS)

TOODOGGONE RIVER AREA

by

SHEILA A. CRAWFORD AND MOHAN R. VULIMIRI

LOCATION: N.T.S. 94E/2W
57°11' N to 57°13' N Latitude
126°52' W to 126°57' W Longitude

OWNER: SEREM LTD.

OPERATOR: SEREM LTD.

DATES WORK PERFORMED: July 7, 8, 25, 1980
August 20, 21, 27, 28, 1980

DATE: March 10, 1981

ABSTRACT

Geochemical silt and soil sampling, along with minor mapping and prospecting, were carried out on the Acapulco, Aca and Pul claims during the 1980 field season. The claims are located in the Toodoggone River Area (N.T.S. 94E/2W), 280 kilometres north of Smithers, B.C. A total of 35 silt and 190 soils were analysed for gold, silver, copper, lead, zinc with 152 of these also analysed for molybdenum. Several rock grab samples were analysed or assayed.

The area is underlain by marble and mafic to felsic volcanics intruded by a multiple phase pluton. The rocks are extensively altered and a skarn occurs along the intrusive-marble contact.

Several anomalous areas are indicated by soils and silts. Most can be traced to outcrops with visible copper, lead, zinc and/or molybdenum sulphide mineralization. Trends outlined by contouring soil grid values are similar to mineralized fracture trends in outcrop.

Extensive fracture-controlled alteration and sulphide deposition indicate that a mineralizing magmatic hydrothermal system was active. Geochemical and assay results warrant further exploration. Detailed prospecting, trenching, a systematic study of fractures and extension of the soil grid are recommended.

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LIST OF ILLUSTRATIONS

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INTRODUCTION

The Acapulco, Aca and Pul claim groups are located between $57^{o}11'$ N and $57^{o}13'$ N latitude, and $126^{o}52'$ W and $126^{o}57'$ W longitude in the Toodoggone River map sheet area, N.T.S. 94E/2W, Omineca Mining Division (see Figures 1 and 2). Elevation ranges from about 1400 metres (4600') to 2065 metres (6774') above sea level. Treeline is between 1520 metres (5000') and 1650 metres (5400') above sea level. Glacial till forms undulating topography in the valleys; outcrop is confined to a few small canyons. Bedrock exposure varies from 50 to 100 percent on the mountains.

Access to the property is by fixed wing plane from Smithers to Sturdee Airstrip, a distance of about 280 kilometres; and from Sturdee Airstrip to the property by helicopter, a distance of about 6 kilometres.

The Acapulco group consists of 15 claim units, staked July 6th, 1980; the Aca and Pul groups consist of 12 claim units each, staked July 20th, 1980. These claim groups are owned and operated by Serem Ltd.

Cominco Ltd. holds four claim units overlapping the southwest corner of the Pul claims (Figure 2), called the Amigo claim (Assessment Report No. 6762).

The Acapulco and Aca claims include an area that has been previously explored for copper and molybdenum, originally staked in 1966 as the Watt claims by Mr. T. Doubt and restaked in 1968 as the Riga claims by Cordilleran Engineering for the Quebec-Cartier Mining Company (Assessment Report No. 1802). In 1973, the claims were restaked and renamed the RN claims by Minas De Cerro

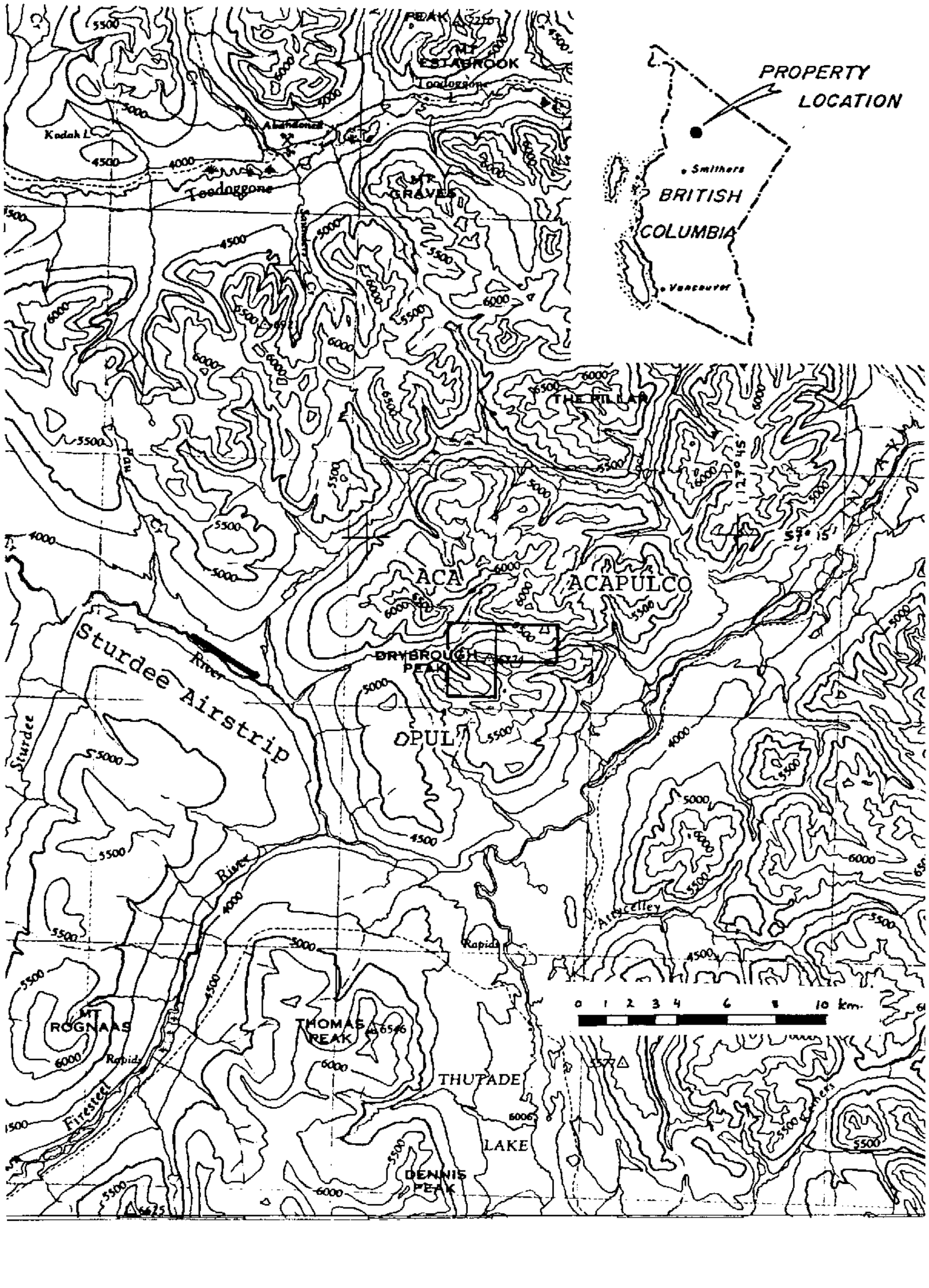


Fig. 1. Location of Acapulco, Aca and Pul Claim Groups.

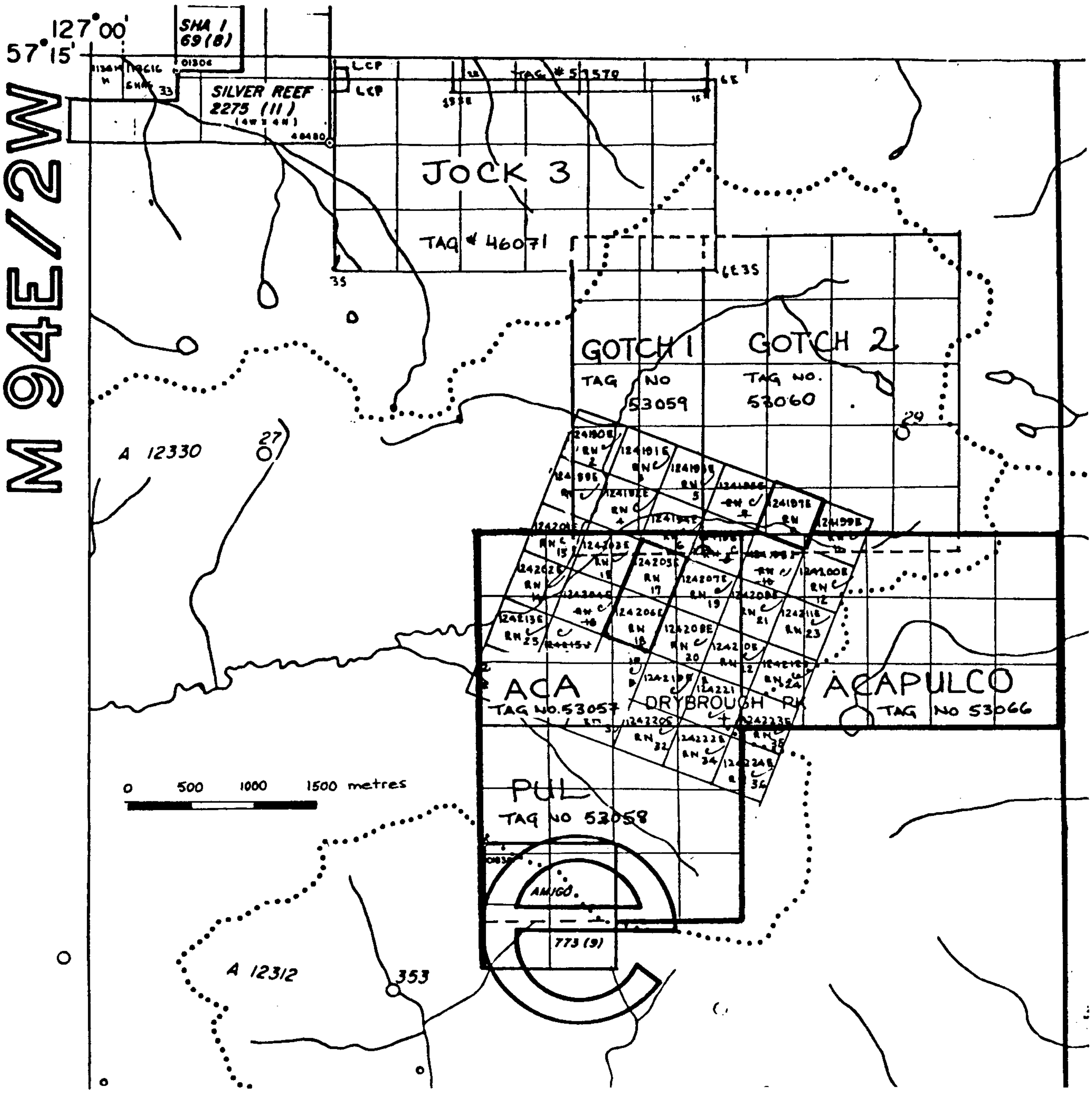


Fig. 2. Claims Map: Acapulco, Aca and Pul Claims.

Dorado Ltd. (Assessment Report No. 5854). They currently retain three 1500' claim units.

Work performed in 1980 by Serem Ltd. includes silt sampling of streams draining the property; soil sampling along treeline and on one grid; preliminary mapping of the property and minor prospecting of approximately 2.1 square kilometres. Table I details the number of geochemical or assay samples taken in each claim group.

The purpose of work in 1980 was to determine the extent and nature of mineralization described by reports on the area.

TABLE I. Detailed list of samples taken in each claim group.

Sample type; area	Claim Group	No. of Samples
Silt; streams	Acapulco	19
	Aca	6
	Pul	10
	Total	35
Soil, contour traverses	Acapulco	23
	Aca	15
	Pul	44
	Total	82
Soil; grid	Acapulco	84
	Aca	21
	Total	105
Rock; prospected area	Acapulco	12
	Aca	6
	Pul	8
	Total	25

GEOLOGY

The claims are underlain by mafic to felsic volcanics intruded by a multiple phase pluton (Figure 3). Marble outcrops in the southwest portion of the claims.

Mafic volcanics include pyroclastic breccias, tuffs, flows and derived greywacke and conglomerate. Chlorite is ubiquitous and specularite and magnetite have been developed at the intrusive contact. The sequence strikes approximately 110°, dipping about 25° to the south. Felsic and intermediate pyroclastics overlie the mafic volcanics to the northeast. The volcanics are highly fractured.

Coarse-grained quartz monzonite composes the main mass of the pluton. Syenite, monzonite and granite dikes and stocks, including pegmatites with less than two percent mafic minerals, border the intrusion.

The marble is composed of crystalline calcite and minor dolomite. It is tilted and partially draped over the quartz monzonite. A skarn zone, consisting of massive magnetite bordered by actinolite and Fe-Mg carbonates, is exposed along the eastern intruded contact. Rhodonite and manganese oxide veins occur along the northern contact.

Aphanitic to fine-grained mafic dikes cut all other rock types.

Gabrielse et al (1975) assign marbles in the area to the Permian Asitka Group; mafic volcanics, sills and the cherts to the Upper Triassic Takla Group; similar felsic pyroclastics to the Jurassic Toodoggone Group and intrusions to the Lower to Middle Jurassic.

ALTERATION AND MINERALIZATION

Two major types of alteration are recognized in the rocks (Insert, Figure 3). Propylitic alteration, consisting of chlorite, epidote and calcite enveloping fractures, is developed in the volcanics adjacent to the intrusive and within the intrusive. Pyrite is disseminated in pervasively altered zones. Potassic alteration occurs along abundant fractures in the intrusive: small amounts of chalcopyrite are common in zones of intense alteration. Quartz-sericite alteration occurs rarely in fractures within the potassic zone.

Vuggy to massive quartz fracture fillings are common around the intrusive contact. Many of these are coloured green with chlorite or grey with specularite and lesser amounts of galena, sphalerite and manganese oxides. Chalcopyrite, bornite and minor amounts of gold and silver are associated with the quartz. Molybdenite is concentrated along shear zones and is rare elsewhere.

Chalcopyrite, bornite, galena and sphalerite are associated with magnetite in the skarn zone.

GEOCHEMICAL SILT SAMPLING

Silt samples were collected along streams at 150 to 250 metre intervals, depending on where suitable silt could be found. Samples were taken from active material, that is, under flowing water, and placed in brown paper envelopes. The sample site and number were plotted on a map with a scale of 1 centimetre to 500 metres. Stream gradient and flow rate were noted.

GEOCHEMICAL SOIL SAMPLING

Samples were taken at 100 to 150 metre intervals on traverses at approximately constant elevation - treeline elevation on most of the traverses. Topofil or pacing was used to control distance and the locations were plotted at a scale of 1 centimetre to 500 metres.

A soil grid was set up in an area of poor rock exposure on the Aca and Acapulco claims. The baseline was laid out with a surveyor's chain and compass and marked every 50 metres with flagged pickets. Samples were collected at 100 metre intervals along lines 100 metres apart, using compass, Topofil and the baseline as control.

Samples were collected from the B horizon where developed, the top of the C horizon if a B horizon was not present, and the A horizon in swampy areas. Most of the contour samples were taken from B horizons; those from the grid were almost all from the C horizon. Depth of sampling averaged 20 cm, ranging from 10 to 35 cm. The soil was placed in brown paper envelopes and the locality, depth of sampling, horizon, colour, grain size and amount of organic material were noted. All sample sites were marked with surveyor's flagging.

Soil is poorly developed on the glacial till covered areas in the valleys. Thin soils on the mountain slopes have developed a B horizon in most of the area.

GEOCHEMICAL ROCK SAMPLING

Grab samples were selected from outcrops or talus of favourable geology. Half of each sample was sent for geochemical analysis. Sample locality, rock type and presence of sulphides were recorded.

GEOCHEMICAL ANALYSIS

Samples were sent to Min-En Laboratories and were analysed for gold, silver, lead, zinc and copper. The analytical procedure for each element is briefly described below:

The samples are dried at 95° C. Soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed and pulverized by ceramic plated pulverizer.

For gold, a suitable sample, weight 5 or 10 grams, is pretreated with HNO_3 and $HClO_4$ mixture.

After pretreatment the samples are digested with Aqua Regia solution, and after digestion the samples are taken up with 25% HCl to suitable volume.

Sample solutions are prepared with Methyl Iso-Butyl Ketone for the extraction of gold.

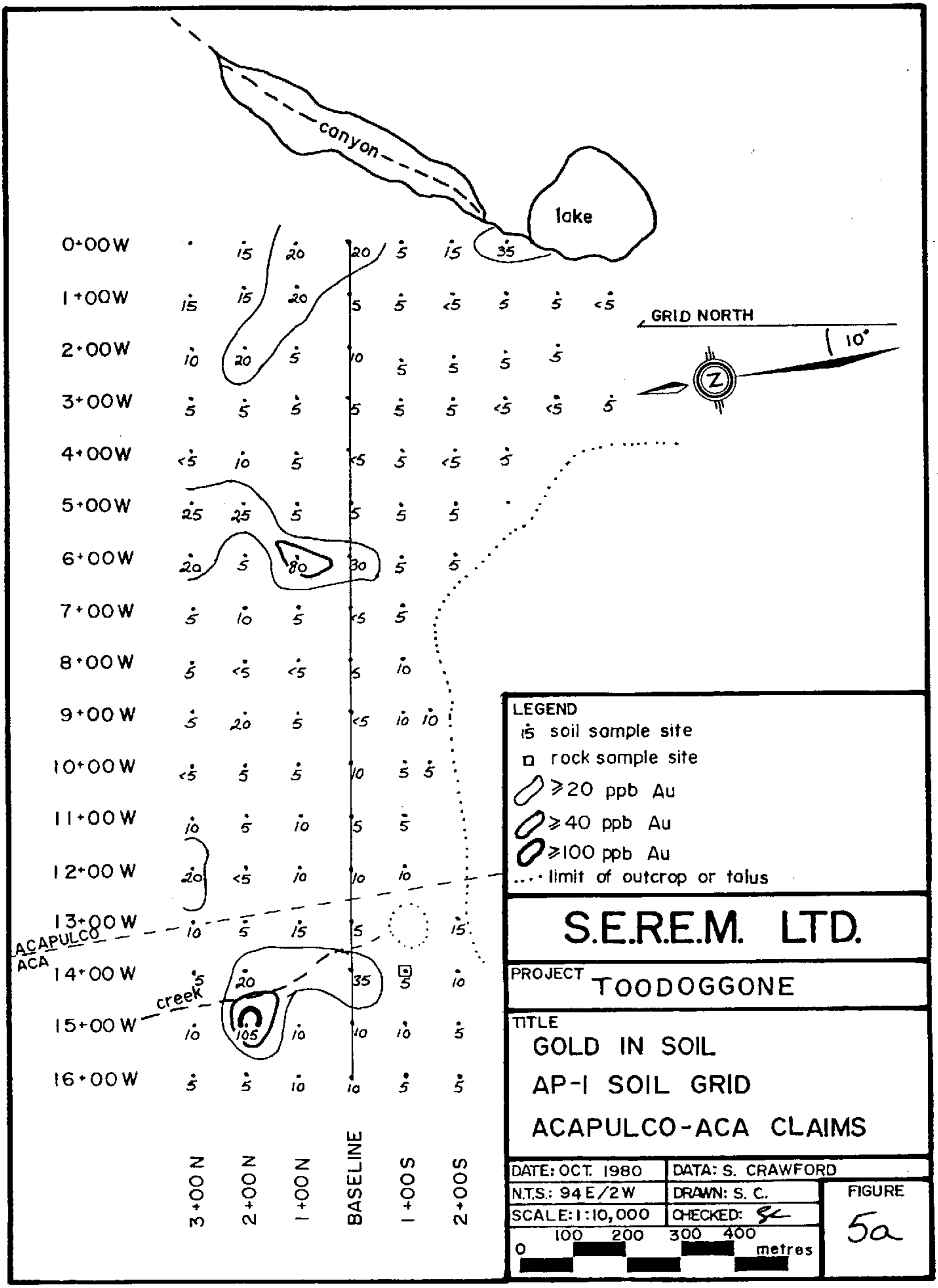
With a set of suitable standard solutions, gold is analysed by Atomic Absorption instruments. The obtained detection limit is 5 ppb.

For silver, lead, zinc, copper and molybdenum, samples weighing 1.0 gram are digested for 6 hours with HNO_3 and $HClO_4$ mixture.

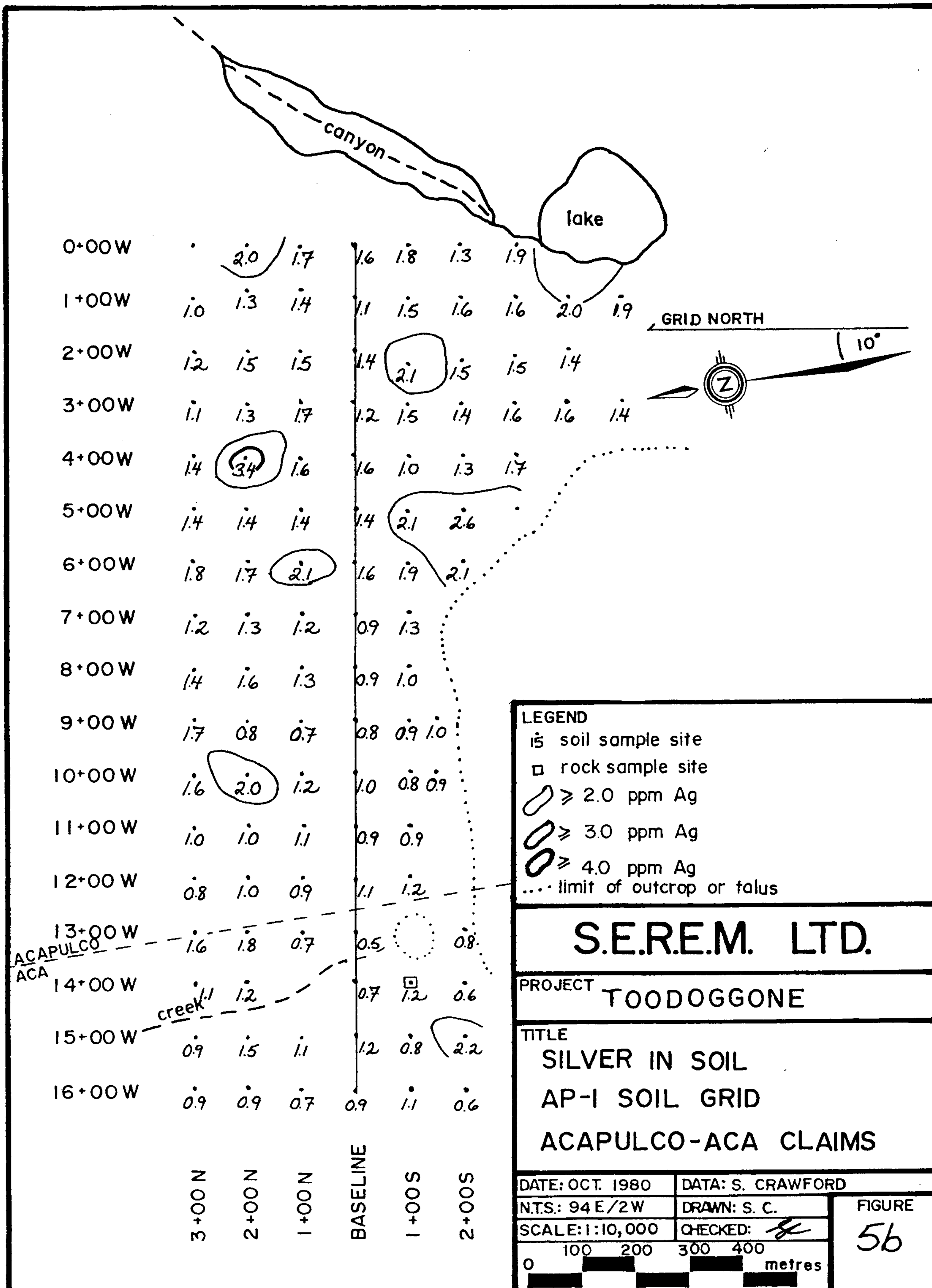
After cooling, the samples are diluted to standard volume. The solutions are analysed by Atomic Absorption Spectrophotometers using the CH_2H_2-Air Flame combination for silver, copper, lead and zinc. The C_2H_2-NO_2 mixture is used for molybdenum.

ASSAYS

Grab samples were selected from outcrop, frost heave or float with visible sulphides (such as chalcopyrite, bornite, galena, sphalerite, molybdenite) and/or numerous quartz fracture fillings. Half of each sample was sent to Min-En Laboratories in North Vancouver for assay. Sample locality, rock type and presence of sulphides were recorded.



canyon
lake
GRID NORTH
10°
0+00W
1+00W
2+00W
3+00W
4+00W
5+00W
6+00W
7+00W
8+00W
9+00W
10+00W
11+00W
12+00W
13+00W
14+00W
15+00W
16+00W
ACAPULCO
ACA
creek
3+00N
2+00N
1+00N
BASELINE
1+00S
2+00S
LEGEND
soil sample site
rock sample site
≥20 ppb Au
≥40 ppb Au
≥100 ppb Au
limit of outcrop or talus
S.E.R.E.M. LTD.
PROJECT TOODOGGONE
TITLE GOLD IN SOIL
AP-I SOIL GRID
ACAPULCO-ACA CLAIMS
DATE: OCT. 1980
DATA: S. CRAWFORD
N.T.S.: 94 E/2W
DRAWN: S. C.
SCALE: 1:10,000
CHECKED:
0 100 200 300 400 metres
FIGURE
5a



LEGEND
1.5 soil sample site
□ rock sample site
≥ 2.0 ppm Ag
≥ 3.0 ppm Ag
≥ 4.0 ppm Ag
.... limit of outcrop or talus

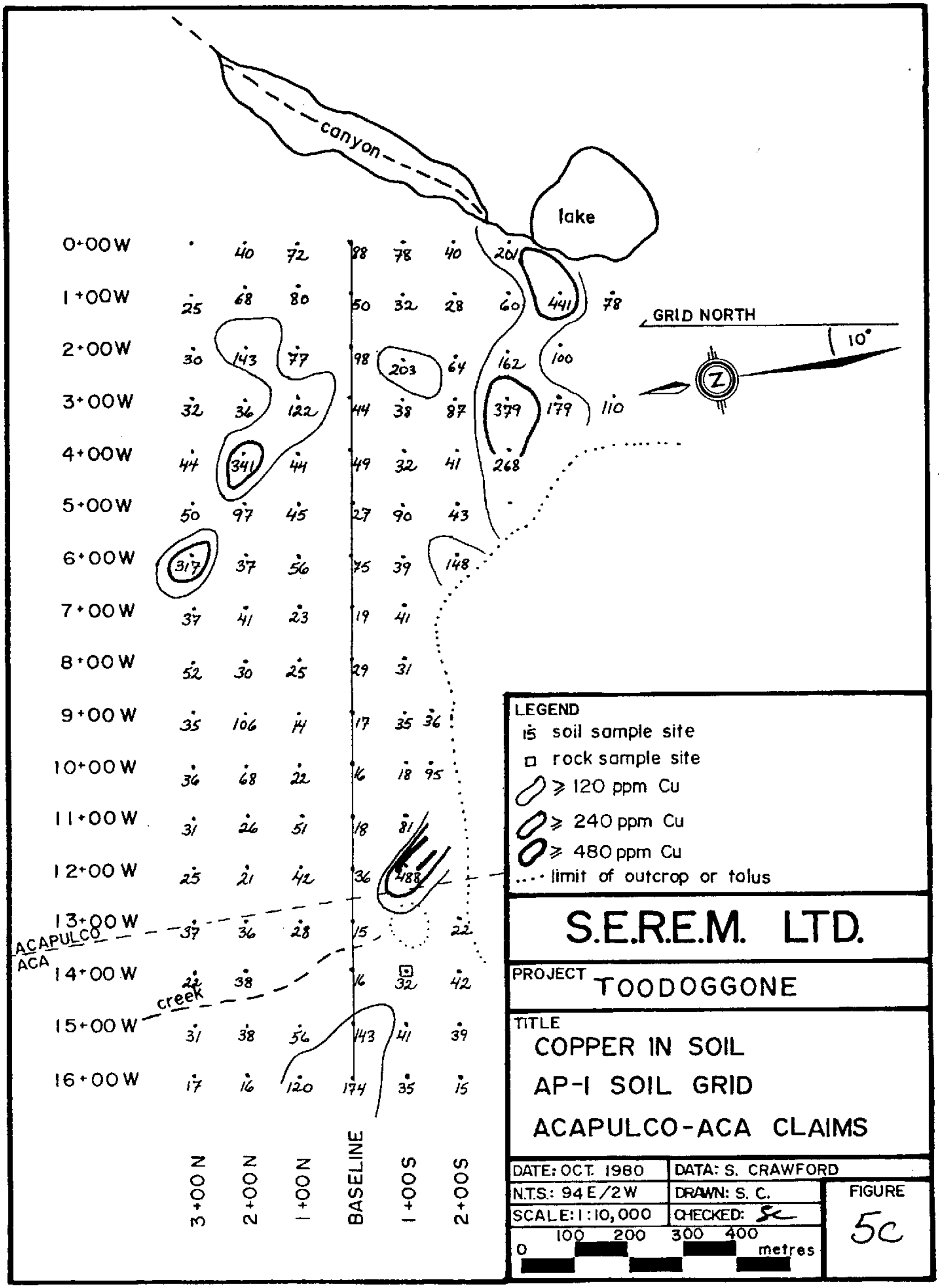
S.E.R.E.M. LTD.

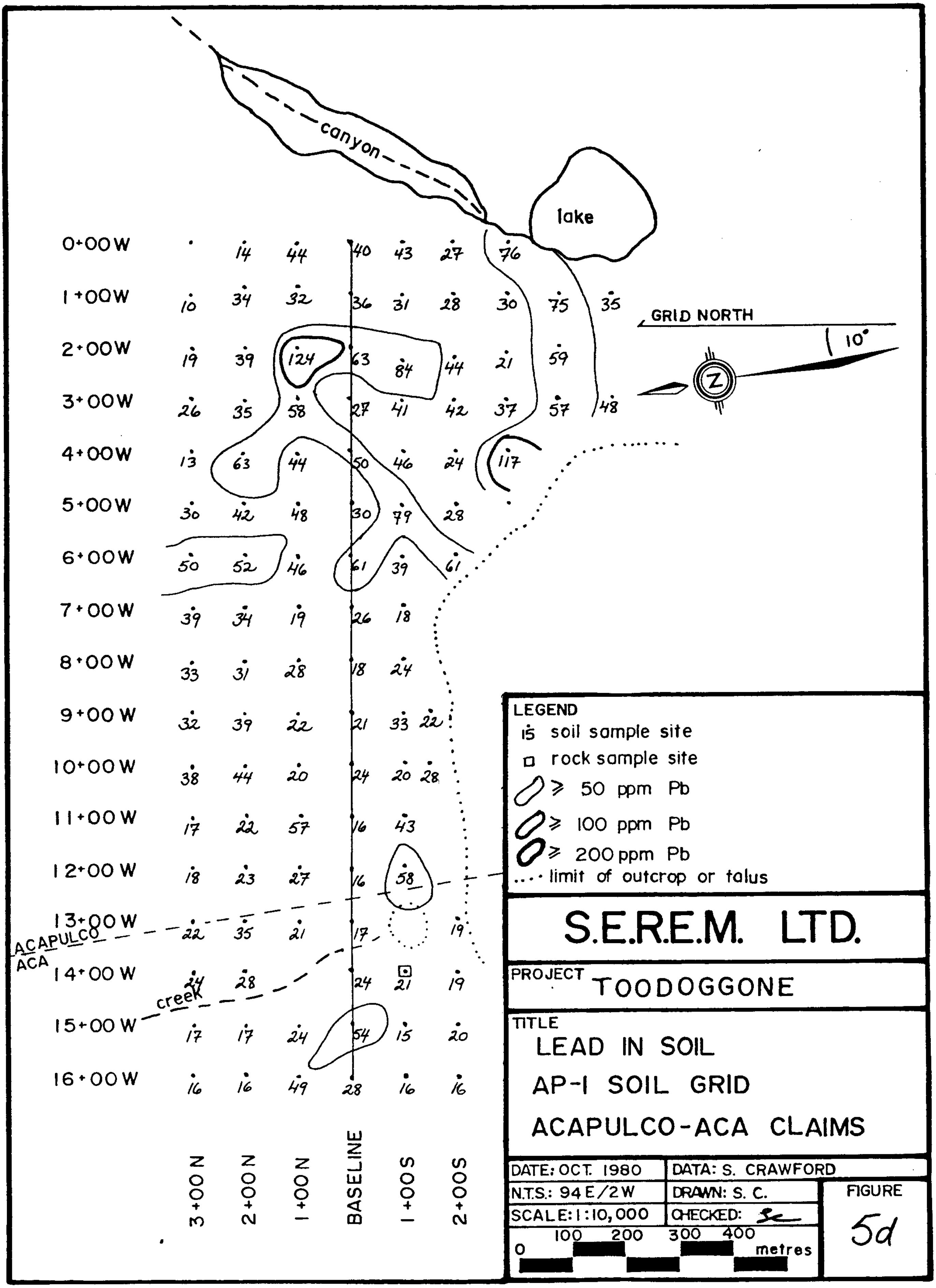
PROJECT TOODOGGONE

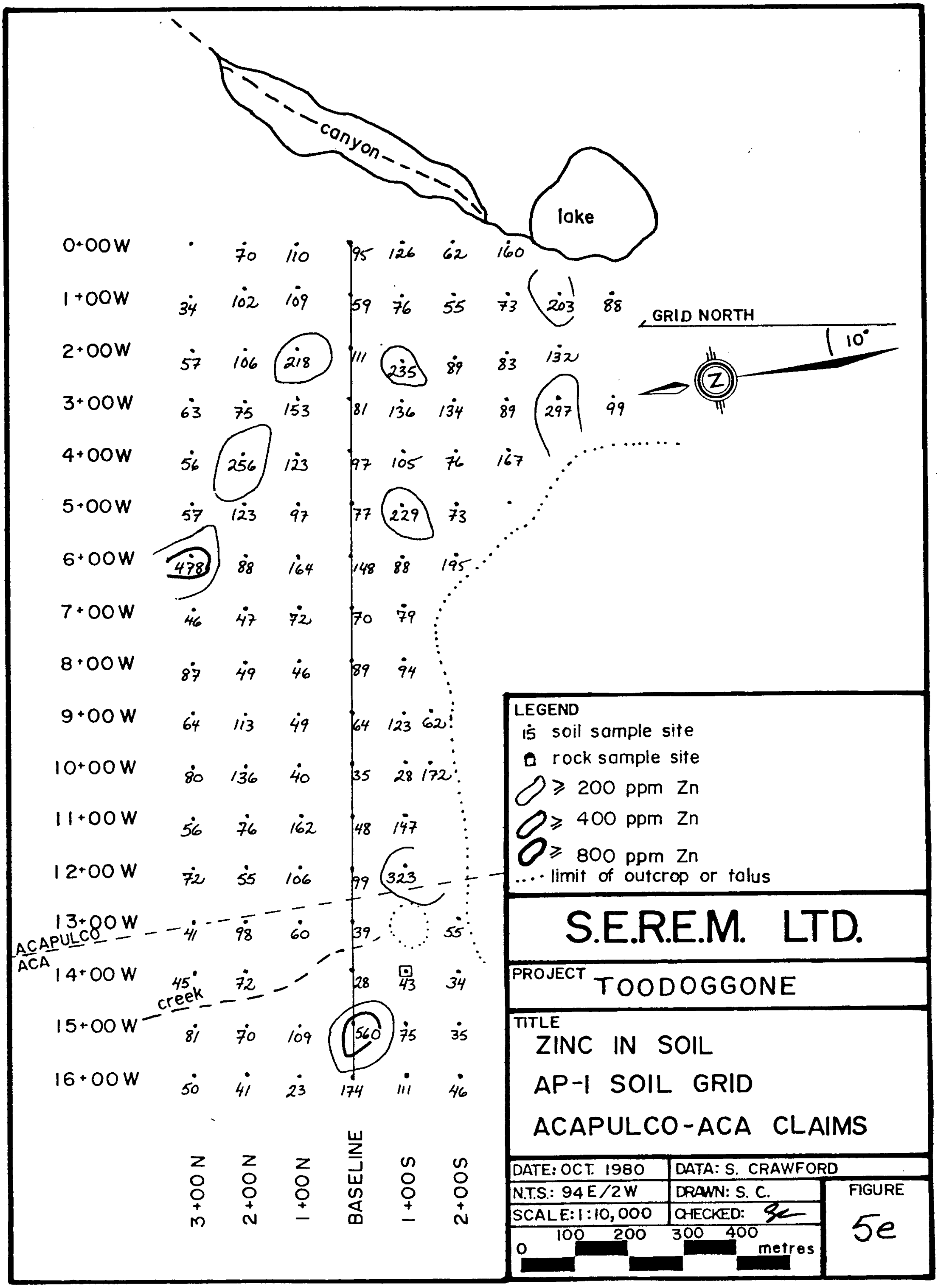
TITLE
SILVER IN SOIL
AP-1 SOIL GRID
ACAPULCO-ACA CLAIMS

DATE: OCT. 1980	DATA: S. CRAWFORD	FIGURE
N.T.S.: 94 E/2 W	DRAWN: S. C.	5b
SCALE: 1:10,000	CHECKED:	

0 100 200 300 400 metres


canyon
lake
GRID NORTH
10°
0+00W
1+00W
2+00W
3+00W
4+00W
5+00W
6+00W
7+00W
8+00W
9+00W
10+00W
11+00W
12+00W
13+00W
14+00W
15+00W
16+00W
40 72 88 78 40 261
25 68 80 50 32 28 60 441 78
30 143 77 98 203 64 162 100
32 36 122 44 38 87 379 179 110
44 341 44 49 32 41 268
50 97 45 27 90 43
317 37 56 75 39 148
37 41 23 19 41
52 30 25 29 31
35 106 14 17 35 36
36 68 22 16 18 95
31 26 51 18 81
25 21 42 36 488
37 36 28 15 22
22 38 16 32 42
31 38 56 143 41 39
17 16 120 174 35 15
ACAPULCO
ACA
creek
3+00N
2+00N
1+00N
BASELINE
1+00S
2+00S
LEGEND
15 soil sample site
rock sample site
≥ 120 ppm Cu
≥ 240 ppm Cu
≥ 480 ppm Cu
limit of outcrop or talus
S.E.R.E.M. LTD.
PROJECT TOODOGGONE
TITLE
COPPER IN SOIL
AP-I SOIL GRID
ACAPULCO-ACA CLAIMS
DATE: OCT. 1980
DATA: S. CRAWFORD
N.T.S.: 94E/2W
DRAWN: S. C.
SCALE: 1:10,000
CHECKED: SC
0 100 200 300 400 metres
FIGURE
5c


canyon
lake
GRID NORTH
10°
Z
0+00W
1+00W
2+00W
3+00W
4+00W
5+00W
6+00W
7+00W
8+00W
9+00W
10+00W
11+00W
12+00W
13+00W
14+00W
15+00W
16+00W
ACAPULCO
ACA
creek
3+00N
2+00N
1+00N
BASELINE
1+00S
2+00S
LEGEND
15 soil sample site
rock sample site
≥ 50 ppm Pb
≥ 100 ppm Pb
≥ 200 ppm Pb
limit of outcrop or talus
S.E.R.E.M. LTD.
PROJECT TOODOGGONE
TITLE
LEAD IN SOIL
AP-I SOIL GRID
ACAPULCO-ACA CLAIMS
DATE: OCT. 1980
DATA: S. CRAWFORD
N.T.S.: 94 E/2W
DRAWN: S. C.
SCALE: 1:10,000
CHECKED:
0 100 200 300 400 metres
FIGURE
5d


canyon
lake
GRID NORTH
10°
Z
0+00W 70 110 95 126 62 160
1+00W 34 102 109 59 76 55 73 203 88
2+00W 57 106 218 111 235 89 83 132
3+00W 63 75 153 81 136 134 89 297 99
4+00W 56 256 123 97 105 76 167
5+00W 57 123 97 77 229 73
6+00W 478 88 164 148 88 195
7+00W 46 47 72 70 79
8+00W 87 49 46 89 94
9+00W 64 113 49 64 123 62
10+00W 80 136 40 35 28 172
11+00W 56 76 162 48 147
12+00W 72 55 106 99 323
13+00W 41 98 60 39 55
14+00W 45 72 28 43 34
15+00W 81 70 109 560 75 35
16+00W 50 41 23 174 111 46
ACAPULCO
ACA
creek
3+00N
2+00N
1+00N
BASELINE
1+00S
2+00S
LEGEND
15 soil sample site
rock sample site
≥ 200 ppm Zn
≥ 400 ppm Zn
≥ 800 ppm Zn
limit of outcrop or talus
S.E.R.E.M. LTD.
PROJECT TOODOGGONE
TITLE
ZINC IN SOIL
AP-I SOIL GRID
ACAPULCO-ACA CLAIMS
DATE: OCT. 1980
DATA: S. CRAWFORD
N.T.S.: 94 E/2W
DRAWN: S. C.
SCALE: 1:10,000
CHECKED:
0 100 200 300 400 metres
FIGURE
5e

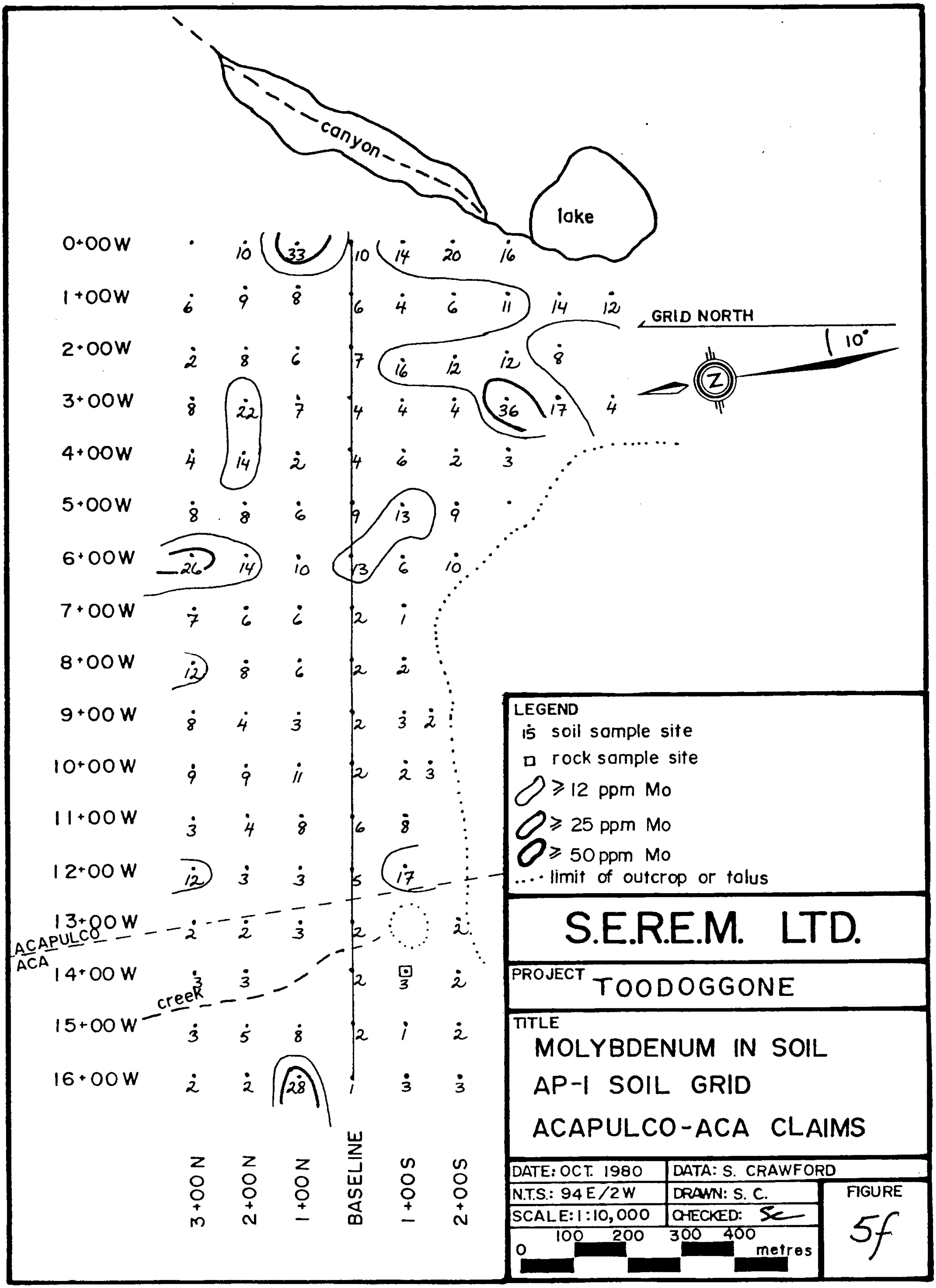

canyon
lake
GRID NORTH
10°
Z
0+00W
1+00W
2+00W
3+00W
4+00W
5+00W
6+00W
7+00W
8+00W
9+00W
10+00W
11+00W
12+00W
13+00W
14+00W
15+00W
16+00W
ACAPULCO
ACA
creek
3+00N
2+00N
1+00N
BASELINE
1+00S
2+00S
LEGEND
15 soil sample site
rock sample site
≥ 12 ppm Mo
≥ 25 ppm Mo
≥ 50 ppm Mo
limit of outcrop or talus
S.E.R.E.M. LTD.
PROJECT TOODOGGONE
TITLE
MOLYBDENUM IN SOIL
AP-1 SOIL GRID
ACAPULCO-ACA CLAIMS
DATE: OCT. 1980
DATA: S. CRAWFORD
N.T.S.: 94 E/2 W
DRAWN: S. C.
SCALE: 1:10,000
CHECKED: SC
0 100 200 300 400 metres
FIGURE
5f

TABLE IIa. ROCK GEOCHEMICAL ANALYSES

Sample No.	Number on Map (Fig. 3)	Rock Type	Gold ppb	Silver	Copper	Lead	Zinc
				ppm			
PUL-4W-1S	1	Quartz chalcopyrite vein in potassic-altered granite	120	50.0	20,500	159	5490
HA-1-80-8	2	Skarn with manganese minerals	5	3.0	13	650	2100
SC-48-80-1	6	Quartz pyrite vein in intrusive	260	6.5	508	1230	345
GP-17-80-4R	12	Potassic, argillic-altered volcanic; disseminated pyrite	5	1.1			
GP-17-80-7R	13	"	5	2.3			
GP-17-80-10R	14	Volcanic with disseminated pyrite	5	1.0	193		
GP-16-80-R	21	Quartz carbonate vein in volcanic	40	5.0	61	11	22
SC-43-80-7	22	Quartz vein in intrusive	10	1.5		92	67
SC-43-80-10	23	"	5	6.8	168	155	1940
SC-22-80-1	32	Intrusive with disseminated pyrite and chalcopyrite	10	1.0	390		

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TABLE IIb. ASSAYS

Sample No.	Number on map (Fig. 3)	Rock Type	Gold		Silver		Copper	Lead	Zinc	Molyb- denum
			Oz/Ton	Gm/Tonne	Oz/Ton	Gm/Tonne	%	%	%	
SC-48-80-4	7	Magnetite chalcopyrite vein	.009	.30	8.15	279.4	2.580	.82	.11	
SC-48-80-7	8	Intrusive with chalcopyrite in fractures	.002	.07	.09	3.1	.068			.003
SC-48-80-8	9	"	.003	.10	1.49	51.1	.465			
SC-48-80-10	10	"	.002	.07	4.28	146.7	2.480			.010
SC-48-80-11	11	"	.001	.03	.09	3.1	.171			.004
GP-17-80-2R	15	Intrusive with disseminated chalcopyrite	.002	.07	.14	4.8	.536			.008
GP-17-80-5R	16	"	.002	.07	1.07	36.7	1.350			.004
GP-17-80-19R	19	Chalcopyrite-bornite-sphalerite vein	.031	1.06	5.99	205.3	5.410	.76	.41	.002
GP-17-80-20R	20	Quartz vein, minor chalco-pyrite in volcanic	.003	.10	.40	13.7	1.080			.038
SC-27-80-7	24	Quartz chalcopyrite vein	.049	1.68	4.20	144.0	.172	.35	.22	
SC-27-80-9	25	"	.010	.34	2.09	71.7	1.482	.36	.76	
SC-27-80-16	26	Quartz vein, minor chalco-pyrite	.001	.03	.15	5.1	.082	.68	.23	
SC-43-80-4	27	Quartz vein, pyrite and specularite	.017	.58	.88	30.2	.003	.03	.08	
SC-43-80-6	28	"	.001	.03	.08	2.7	.002	.01	.01	
SC-43-80-9	29	"	.003	.10	.10	3.4	.034	.01	.01	
SC-43-80-12	31	Grey quartz vein	.002	.07	.26	8.9			.008	
AP-14W-1S	33	"	.002	.07	.03	1.0	.022	.01	.068	

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INTERPRETATION

Gold, silver, copper, lead, zinc and molybdenum analyses for stream silt and contour soil samples are individually plotted on Figures 4a to 4f respectively. Circles are completely blackened for anomalous values and partially for threshold values.

Several silt samples returned anomalous gold values, ranging up to 800 ppb gold. A few were slightly anomalous in silver, copper, lead and zinc.

Anomalous contour traverse soils correspond to areas of visible sulphide mineralization in rocks either on or upslope from the contour traverses.

Results from the soil grid are plotted on Figures 5a to 5f for gold, silver, copper, lead, zinc and molybdenum respectively. The values are contoured.

The highest values obtained from the grid are 105 ppb gold, 3.4 ppm silver, 488 ppm copper, 124 ppm lead, 560 ppm zinc and 36 ppm molybdenum. Contours indicate strong 120-125^{o} and 010^{o} trends. The 120-125^{o} trend is within the 100-140^{o} range of mineralized fractures noted in outcrop (Figure 3). The 010^{o} trend is perpendicular to slope and may in part be an effect of downslope dispersion; it may also indicate another fracture system.

Rock geochemical analyses and assays are listed in Table II with corresponding rock descriptions. Sample localities are plotted on Figure 3. Several chalcopyrite-bearing samples have significant amounts of gold and silver.

CONCLUSIONS AND RECOMMENDATIONS

Visible sulphide mineralization and precious metal values warrant a more detailed investigation of the property. Extensive fracture-controlled alteration and sulphide deposition indicate that a mineralizing hydrothermal system was active. The skarn zone may also contain economic quantities of sulphides.

Detailed prospecting and trenching is required to delineate mineralized areas. A systematic study of fractures should be carried out to determine mineralization trends. Close-spaced sampling of anomalous areas on the soil grid and extension of the grid to the north and west is recommended.

REFERENCES

Gabrielse, H.; Dodds, C.J.; Mansy, J.L.; and Eisbacher, G.H. 1975: Geology of Toodoggone River (94E) and Ware West-half; G.S.C. Open File 483, Geological Survey of Canada.

Assessment Reports 1802, 5834, 6762; British Columbia Ministry of Energy, Mines and Petroleum Resources.

STATEMENT OF EXPENDITURES

Geochemical Analyses and Assays

Soils and silts:			
152 analysed for Au, Ag, Cu, Pb, Zn, Mo	@ $ 9.60		$1,459.20
69 " " Au, Ag, Cu, Pb, Zn	@ $ 8.85		610.65
Rocks:			
5 analysed for Au, Ag, Cu, Pb, Zn	@ $10.25		51.25
1 " " Au, Ag, Pb, Zn	@ $ 9.50		9.50
2 " " Au, Ag, Cu	@ $ 8.75		17.50
2 " " Au, Ag	@ $ 8.00		16.00
1 assayed for Au, Ag, Cu, Pb, Zn, Mo	@ $40.50		40.50
7 " " Au, Ag, Cu, Pb, Zn	@ $33.50		234.50
6 " " Au, Ag, Cu, Mo	@ $29.00		174.00
1 " " Au, Ag, Cu, Pb	@ $27.50		27.50
1 " " Au, Ag, Cu	@ $22.00		22.00
1 " " Au, Ag	@ $16.50		16.50
Shipping cost from Smithers to North Vancouver Lab.			
248 samples @ 0.30			74.40
			$2,753.50

Wages

Geochemical Sampling:			
H. Awmack	August 28, 1980; Pul		
	½ day @ $ 60	$ 30.00	
R. MacRae	July 25, 1980; Aca		
	August 21, 28, 1980; Aca and Acapulco		
	2½ days @ $ 40	100.00	
J. Rushton	July 8, 1980; Acapulco		
	½ day @ $ 50	25.00	
R. Stowe	July 8, 1980; Acapulco		
	½ day @ $ 40	20.00	
L. Uher	August 28, 1980; Aca, Pul		
	1 day @ $ 60	60.00	
P. Tegart	July 18, 20; August 23 , 25,		
	4 days @ $180	720.00	

(continued)

STATEMENT OF EXPENDITURES (Continued)

Wages (Continued)

Prospecting and Geology:			
H. Awmack	August 27, 1980; Pul		
	1 day @ $ 60	60.00	
S. Crawford	July 7, August 20, 1980; Acapulco		
	August 27; Pul		
	2½ days @ $ 70	175.00	
G. Price	July 7, August 20, 1980; Acapulco		
	August 21, 1980; Aca		
	2½ days @ $ 55	137.50	
M. Vulimiri	July 25, 1980; Acapulco, Aca, Pul		
	½ day @ $100	50.00	
Report Writing:			
S. Crawford	2 days @ $ 70	140.00	
Drafting:			
S. Crawford	4 days @ $ 70	280.00	
			$1,797.50

Board, Lodging and Field Expenses

	Per Man Day	
Food	$10.80	
Expediting	3.00	
Equipment (lumber, hardware, generator, radio telephone)	10.43	
Fixed wing support (does not include mobilization or JP-4 fuel hauls)	13.19	
Helicopter support "	5.50	
Fuel (propane, oil stoves)	4.12	
	$47.04	
11½ man days @ $47.04		$ 540.96

Transportation

Helicopter	2:40 hrs @ $310 + $102 fuel	1,100.04
Total		$6,192.00

CERTIFICATE OF QUALIFICATIONS

I, Sheila A. Crawford, certify that:

1. I am a geologist, employed by Serem Ltd.
2. I have an Honours Bachelor of Science Degree (First Class) in Geology from Carleton University in Ottawa, Ontario.
3. I have worked in mineral exploration or geological mapping since 1975 and have acted in responsible positions since 1979.
4. I personally examined the property and directed the geochemical survey.
5. I have no financial interest, either direct or indirect, in the property.

Vancouver, B.C.

Sheila A. Crawford.

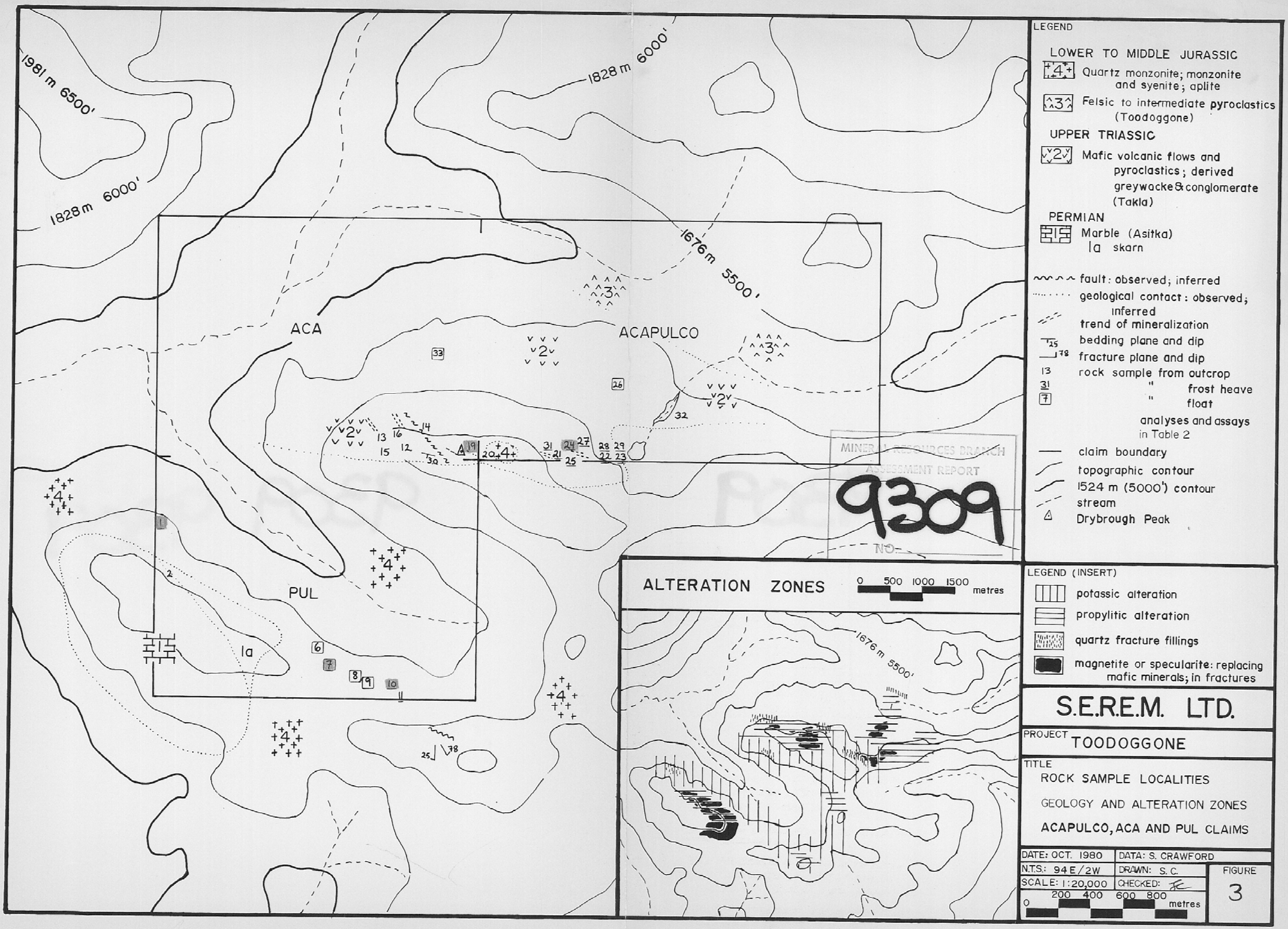
CERTIFICATE OF QUALIFICATIONS

I, Mohan R. Vulimiri, certify that:

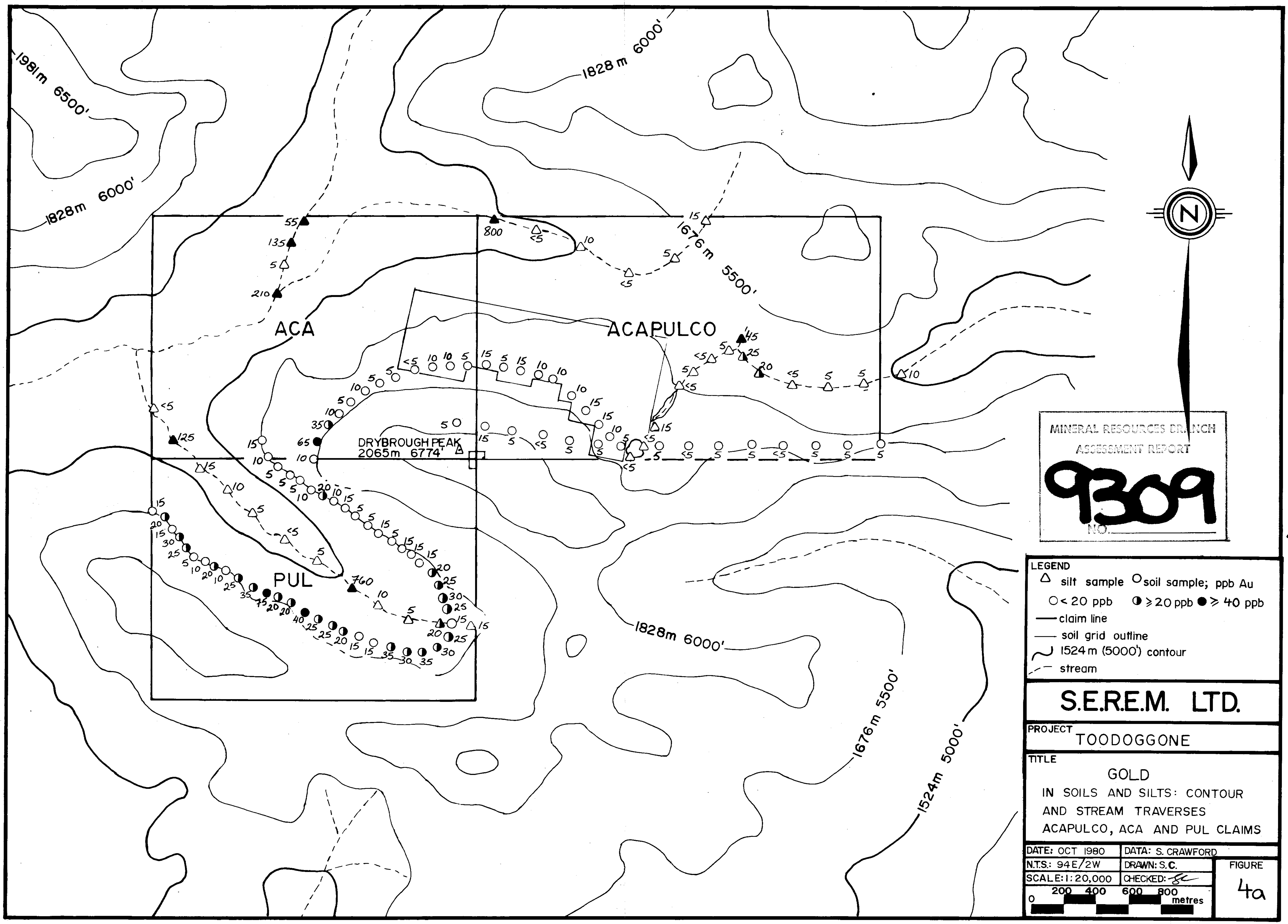
1. I am a geologist, employed by Serem Ltd.
2. I am a graduate with a Master of Science Degree in Economic Geology from the University of Washington.
3. I have been involved in mineral exploration in British Columbia since 1970 and have acted in responsible positions since 1974.
4. I have no financial interest, either direct or indirect, in the property.
5. I personally examined the property.
6. The information contained in this report was obtained under my supervision.

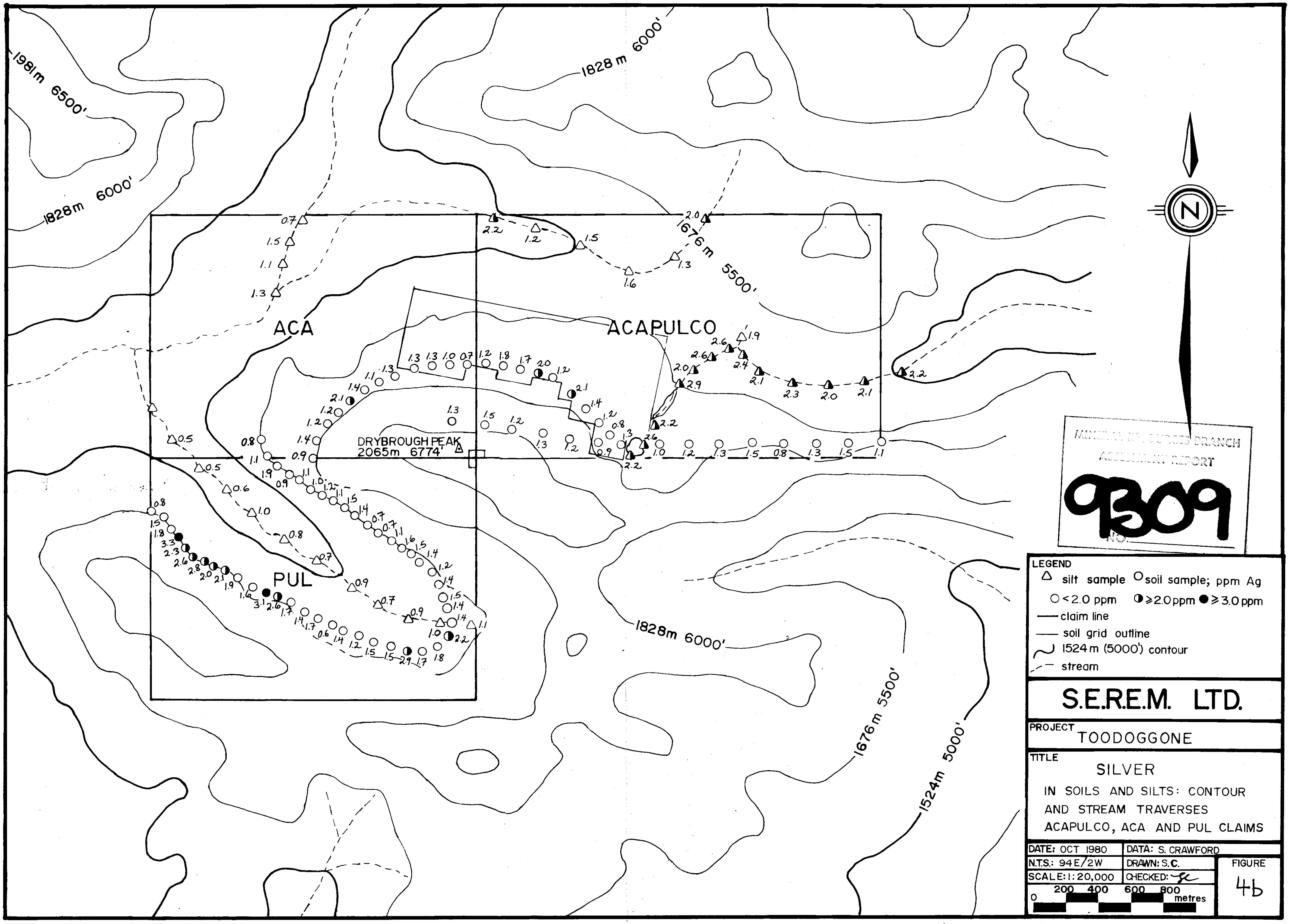
Vancouver, B.C.

Mohan R. Vulimiri.

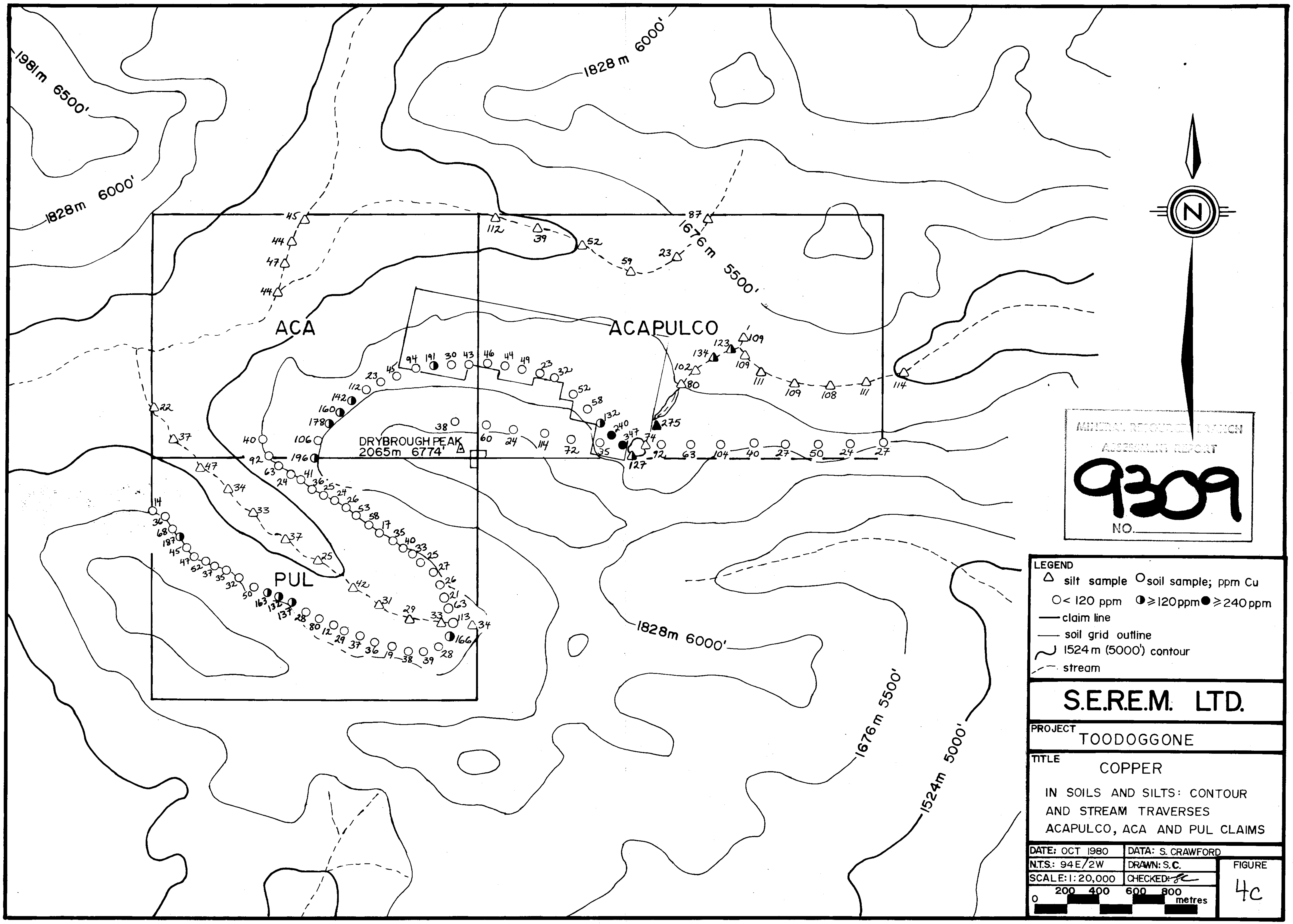


1981 m 6500'
1828 m 6000'
1828 m 6000'
1676 m 5500'
ACA
ACAPULCO
PUL
Ia
LEGEND
LOWER TO MIDDLE JURASSIC
4 Quartz monzonite; monzonite and syenite; aplite
3 Felsic to intermediate pyroclastics (Toodoggone)
UPPER TRIASSIC
2 Mafic volcanic flows and pyroclastics; derived greywacke & conglomerate (Takla)
PERMIAN
Marble (Asitka)
Ia skarn
fault: observed; inferred
geological contact: observed; inferred
trend of mineralization
bedding plane and dip
fracture plane and dip
13 rock sample from outcrop
31 " frost heave
7 " float
analyses and assays in Table 2
claim boundary
topographic contour
1524 m (5000') contour
stream
Drybrough Peak
MINERAL RESOURCES BRANCH ASSESSMENT REPORT
9309
NO.
ALTERATION ZONES
0 500 1000 1500 metres
1676 m 5500'
LEGEND (INSERT)
potassic alteration
propylitic alteration
quartz fracture fillings
magnetite or specularite: replacing mafic minerals; in fractures
S.E.R.E.M. LTD.
PROJECT TOODOGGONE
TITLE
ROCK SAMPLE LOCALITIES
GEOLOGY AND ALTERATION ZONES
ACAPULCO, ACA AND PUL CLAIMS
DATE: OCT. 1980
DATA: S. CRAWFORD
N.T.S.: 94 E/2W
DRAWN: S. C.
SCALE: 1:20,000
CHECKED:
FIGURE 3
0 200 400 600 800 metres

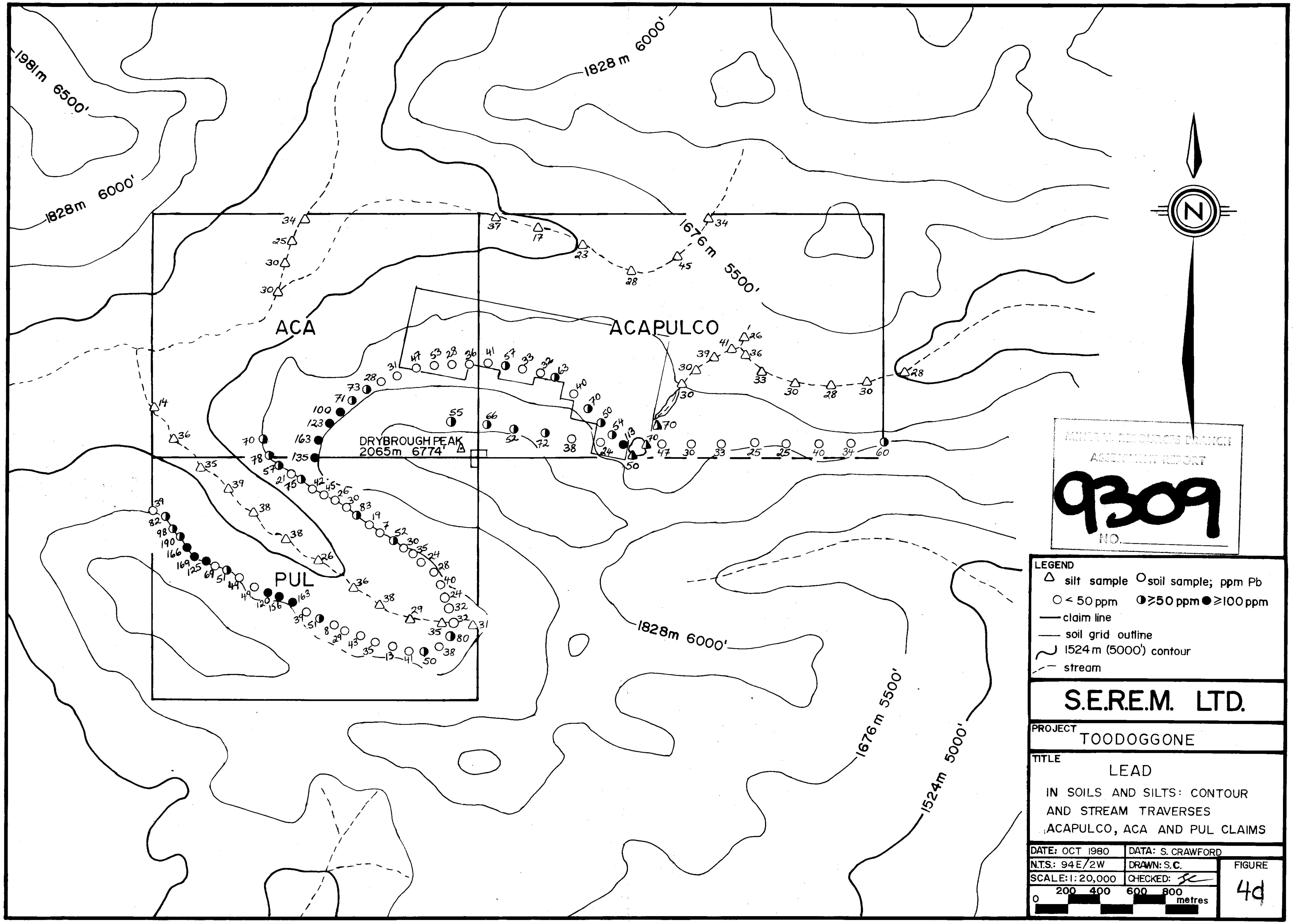

1981m 6500'
1828m 6000'
1828 m 6000'
1676 m 5500'
1828m 6000'
1676 m 5500'
1524m 5000'
ACA
ACAPULCO
PUL
DRYBROUGH PEAK
2065m 6774'
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
9309
NO.
LEGEND
silt sample
soil sample; ppb Au
< 20 ppb
≥ 20 ppb
≥ 40 ppb
claim line
soil grid outline
1524 m (5000') contour
stream
S.E.R.E.M. LTD.
PROJECT
TOODOGGONE
TITLE
GOLD
IN SOILS AND SILTS: CONTOUR
AND STREAM TRAVERSES
ACAPULCO, ACA AND PUL CLAIMS
DATE: OCT 1980
DATA: S. CRAWFORD
N.T.S.: 94E/2W
DRAWN: S.C.
SCALE: 1:20,000
CHECKED:
FIGURE
4a
0
200
400
600
800
metres

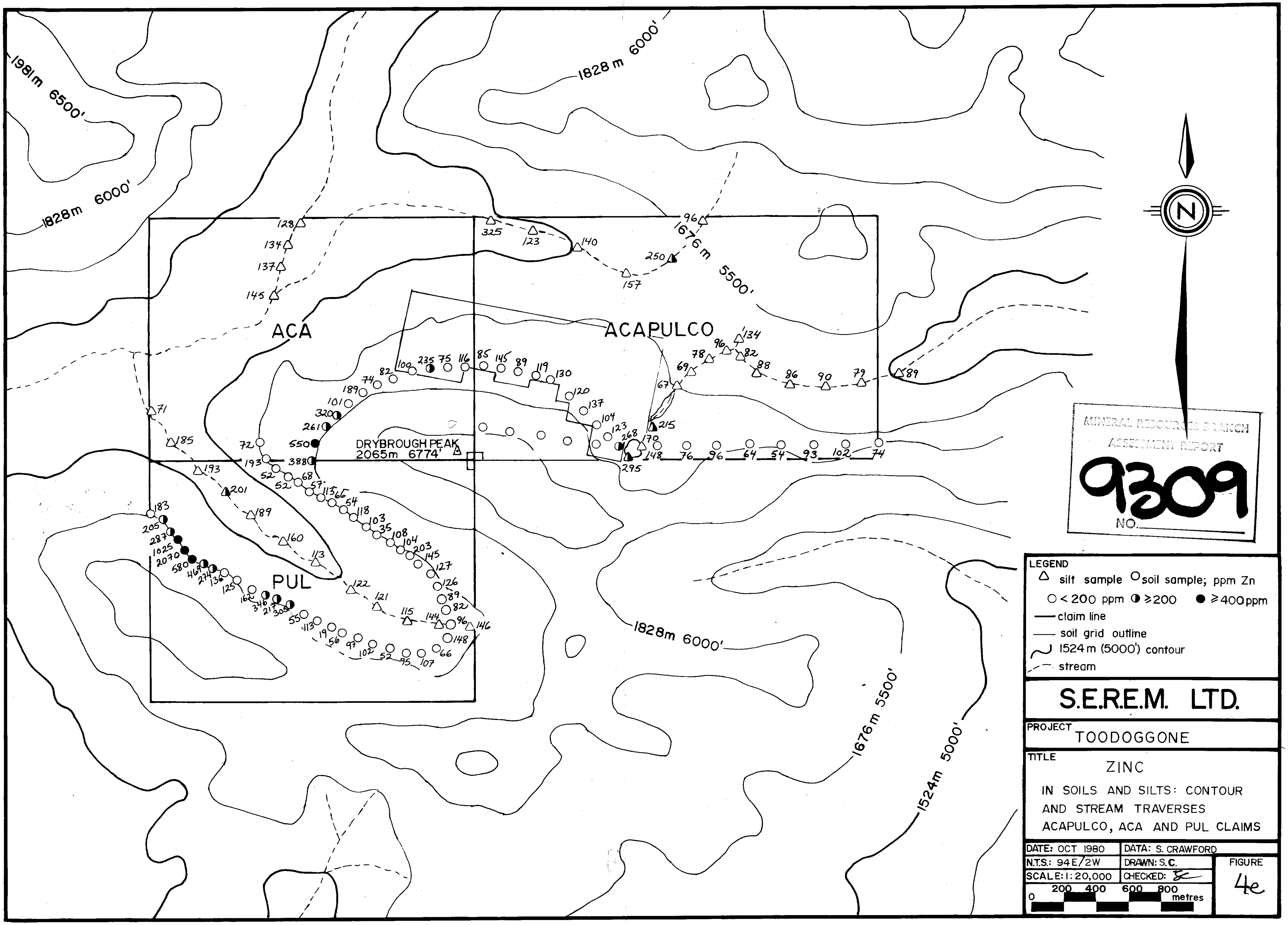


1981m 6500'
1828m 6000'
1828m 6000'
1676m 5500'
ACA
ACAPULCO
PUL
DRYBROUGH PEAK
2065m 6774'
1828m 6000'
1676m 5500'
1524m 5000'
N
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
9309
LEGEND
silt sample
soil sample; ppm Ag
<2.0 ppm
≥2.0 ppm
≥3.0 ppm
claim line
soil grid outline
1524m (5000') contour
stream
S.E.R.E.M. LTD.
PROJECT
TOODOGGONE
TITLE
SILVER
IN SOILS AND SILTS: CONTOUR
AND STREAM TRAVERSES
ACAPULCO, ACA AND PUL CLAIMS
DATE: OCT 1980
DATA: S. CRAWFORD
N.T.S.: 94 E/2W
DRAWN: S.C.
SCALE: 1:20,000
CHECKED:
FIGURE
4b
0 200 400 600 800 metres

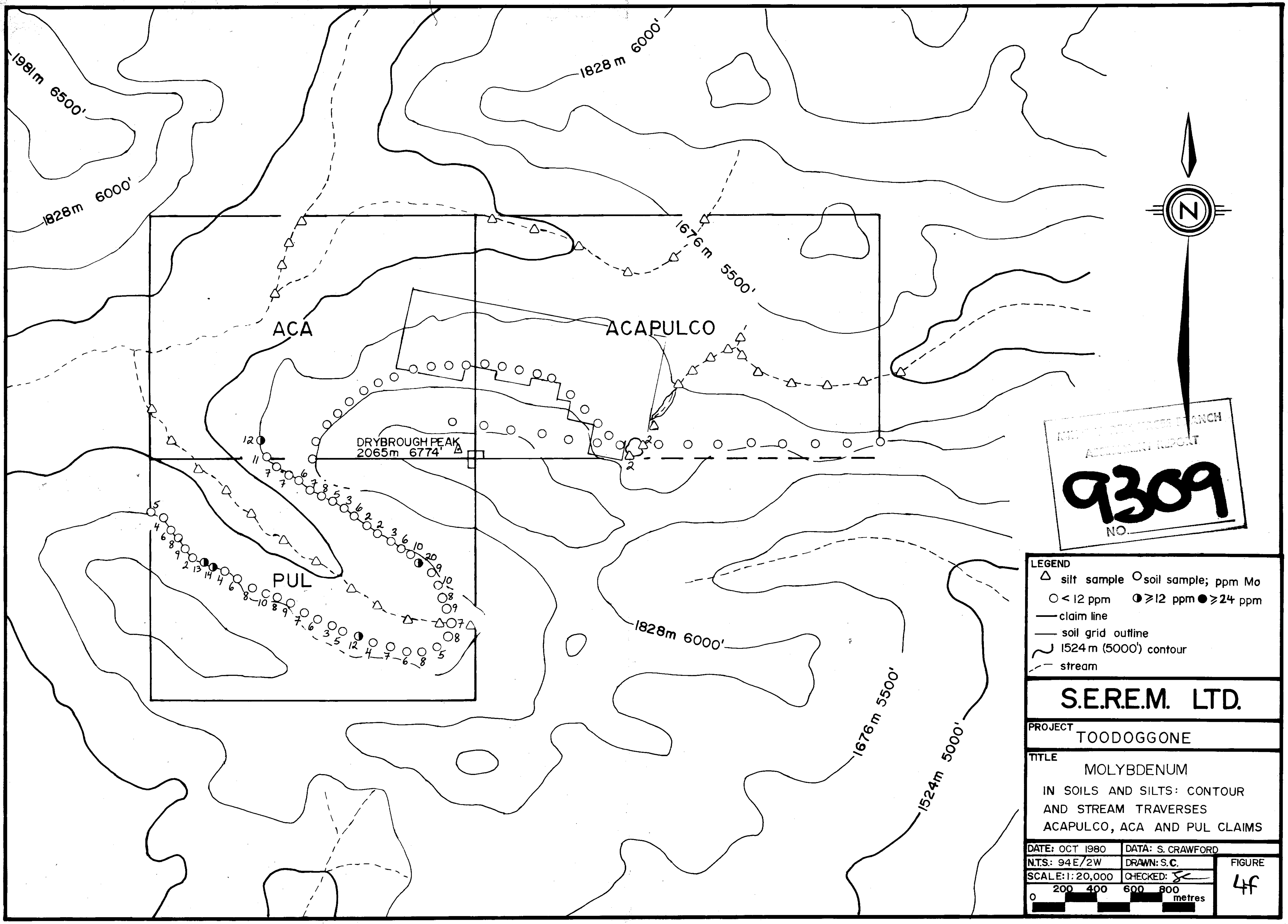


ACA
ACAPULCO
PUL
DRYBROUGH PEAK
2065m 6774'
1981m 6500'
1828m 6000'
1676m 5500'
1524m 5000'
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
9309
NO.
LEGEND
silt sample
soil sample; ppm Cu
< 120 ppm
≥120ppm
≥240ppm
claim line
soil grid outline
1524m (5000') contour
stream
S.E.R.E.M. LTD.
PROJECT TOODOGGONE
TITLE COPPER
IN SOILS AND SILTS: CONTOUR AND STREAM TRAVERSES
ACAPULCO, ACA AND PUL CLAIMS
DATE: OCT 1980
DATA: S. CRAWFORD
N.T.S.: 94E/2W
DRAWN: S.C.
SCALE: 1:20,000
CHECKED:
FIGURE 4c
0 200 400 600 800 metres


1981m 6500'
1828m 6000'
1828 m 6000'
1676 m 5500'
ACA
ACAPULCO
PUL
DRYBROUGH PEAK
2065m 6774'
1828m 6000'
1676 m 5500'
1524m 5000'
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
9309
NO.
LEGEND
silt sample
soil sample; ppm Pb
< 50 ppm
≥50 ppm
≥100 ppm
claim line
soil grid outline
1524 m (5000') contour
stream
S.E.R.E.M. LTD.
PROJECT
TOODOGGONE
TITLE
LEAD
IN SOILS AND SILTS: CONTOUR
AND STREAM TRAVERSES
ACAPULCO, ACA AND PUL CLAIMS
DATE: OCT 1980
DATA: S. CRAWFORD
N.T.S.: 94E/2W
DRAWN: S.C.
SCALE: 1:20,000
CHECKED:
FIGURE
4d
0 200 400 600 800 metres



1981m 6500'
1828m 6000'
1676m 5500'
1524m 5000'
ACA
ACAPULCO
PUL
DRYBROUGH PEAK
2065m 6774'
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
9309
NO.
LEGEND
silt sample
soil sample; ppm Zn
< 200 ppm
≥ 200
≥ 400 ppm
claim line
soil grid outline
1524 m (5000') contour
stream
S.E.R.E.M. LTD.
PROJECT TOODOGGONE
TITLE ZINC
IN SOILS AND SILTS: CONTOUR AND STREAM TRAVERSES ACAPULCO, ACA AND PUL CLAIMS
DATE: OCT 1980
DATA: S. CRAWFORD
N.T.S.: 94E/2W
DRAWN: S.C.
SCALE: 1:20,000
CHECKED:
FIGURE 4e
0 200 400 600 800 metres



1981m 6500'
1828m 6000'
1828m 6000'
1676m 5500'
ACA
ACAPULCO
PUL
DRYBROUGH PEAK
2065m 6774'
1828m 6000'
1676m 5500'
1524m 5000'
N
9309
NO.
LEGEND
silt sample
soil sample; ppm Mo
< 12 ppm
≥12 ppm
≥24 ppm
claim line
soil grid outline
1524m (5000') contour
stream
S.E.R.E.M. LTD.
PROJECT TOODOGGONE
TITLE MOLYBDENUM
IN SOILS AND SILTS: CONTOUR
AND STREAM TRAVERSES
ACAPULCO, ACA AND PUL CLAIMS
DATE: OCT 1980
DATA: S. CRAWFORD
N.T.S.: 94E/2W
DRAWN: S.C.
SCALE: 1:20,000
CHECKED:
FIGURE
4f
0 200 400 600 800 metres