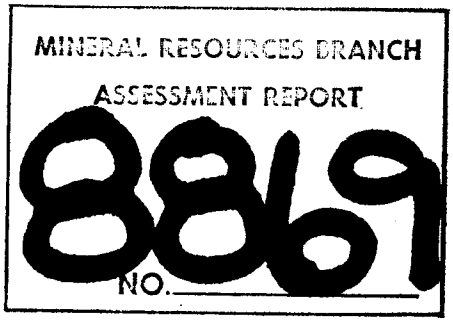
ROCK GEOCHEMICAL SURVEY

on

THE FLAME 1 MINERAL CLAIM

OMINECA MINING DIVISION
N.T.S. 93M/16E
55°59' North 126°20' West



Owner: J.C. Stephen

Operator: Dome Exploration (Canada) Ltd.

by

Bryan M. Fraser, B.Sc. (Geol)

December 16, 1980
North Vancouver, B.C.

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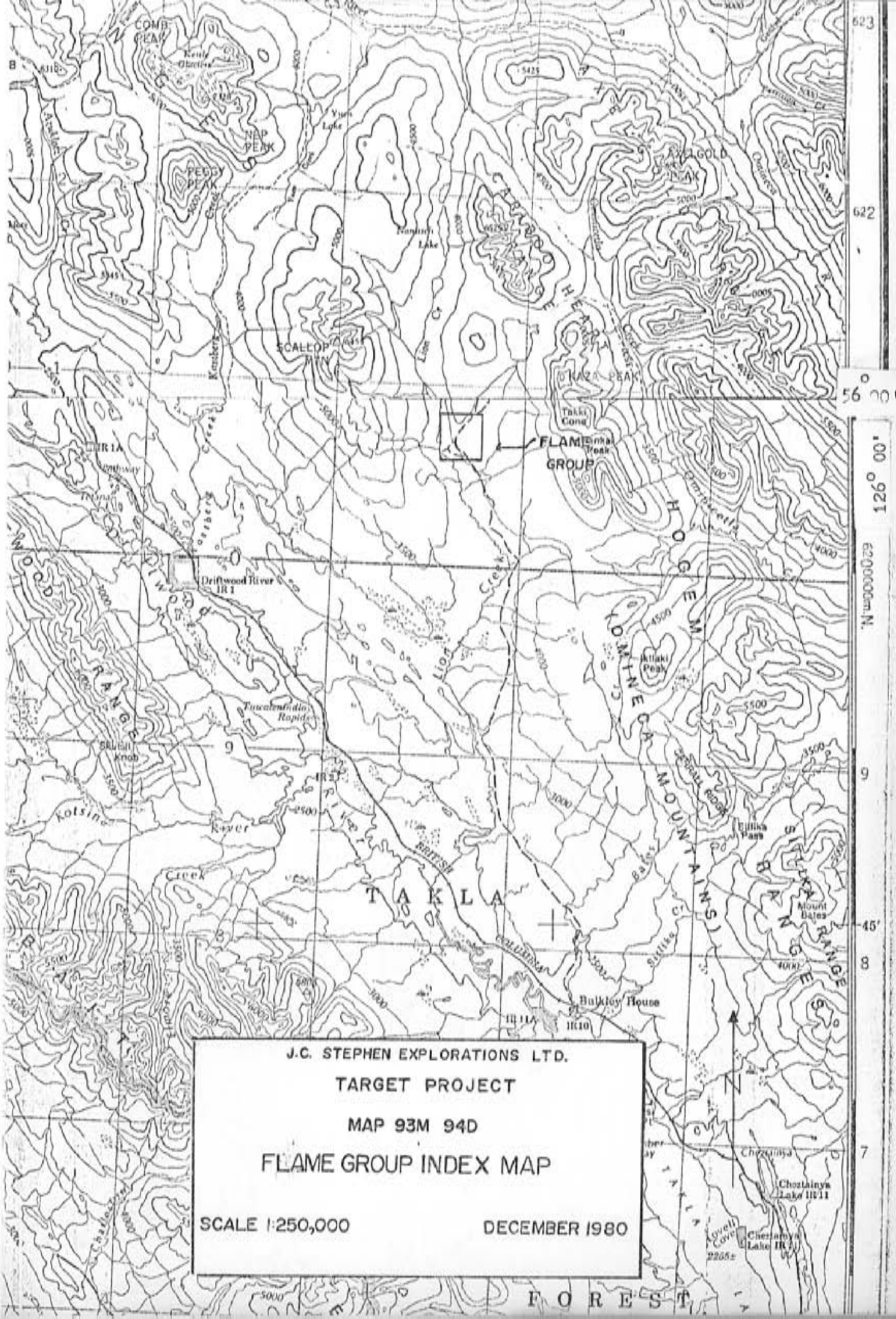

J.C. STEPHEN EXPLORATIONS LTD.
TARGET PROJECT
MAP 93M 94D
FLAME GROUP INDEX MAP
SCALE 1:250,000
DECEMBER 1980

INTRODUCTION

The FLAME 1 Mineral Claim of J.C. Stephen Explorations Ltd. is situated in the Omineca Mining Division. It is 30 kilometers north of Takla Lake and consists of 20 units lying immediately east of Lion Creek. Relief is gentle with overall elevation change less than 100 metres.

Access to the property during this program was via helicopter stationed at Northern Mountain Helicopters base at Lovell Cove on Takla Lake. However, a 4-wheel drive road does lead from Bulkley house through the property and beyond to Kaza Lake.

There is a 1:50,000 scale map available for this area - N.T.S. 93M/16W. However, 1:5000 scale enlargements of 1" = 1/4 mile scale air photos were used for control. In particular, the claim is well covered by B.C. 7166 - 162.

Originally the area was staked by R. Tait in 1968 as the Fire Group to cover copper showings in hornblendite. Subsequently 10,000 lineal feet of trenching and 2164 feet of diamond drilling in 11 holes were used to explore the main zones. Dynasty optioned the property and conducted a reconnaissance geology and soil geochem program in 1973.

The purpose of the present program was to assess the gold potential of this area. From August 14 to August 30, a two man crew performed detailed mapping and rock geochem on the main showings and prospected the surrounding area. This report deals mainly with rock geochemical work on the main showings and a small soil grid run at the southern edge of the property. In total, 111 chip samples and 52 soil samples were collected and analyzed for gold, arsenic, and silver on the property.

CLAIM REGISTRATION

Claim Name	Record No.	Owner	Record Date
FLAME 1	2650	J.C. Stephen	March 21, 1980

PROCEDURE

Rock exposure for detailed work was excellent with extensive trenching having been done by previous owners interested in copper. Rock samples of 13 to 15 kg were taken mainly as chips across widths of mineral zones. Where rock exposures were poor, grab samples were taken. All rock samples were collected in plastic bags.

Soil samples were obtained using grub-hoe or small trenching shovel at a depth of from 20 to 40 cm. An effort was made to sample the B horizon wherever possible. Soil samples of from 200 grams to 400 grams in weight were collected in kraft paper envelopes.

All samples were transported via helicopter to Takla Landing and thence via truck to Chemex Labs Ltd., 212 Brooksbank Avenue, North Vancouver, B.C. In total, 111 rock samples and 52 soils were analyzed geochemically for Au, As, Ag. 16 of the rock samples were chosen for re-analysis by fire assay. For details of analysis procedure, consult the appendix.

LOCAL GEOLOGY

Mapping of rock types was done during sampling and rock types are shown on Figures 2 to 8 and 11 with sample results. The local geological legend accompanies these figures.

REGIONAL GEOLOGY

The property is underlain mainly by the Savage Mountain Formation, a sub-division of the Takla Group Volcanics of Upper Triassic age. Major rock types of this unit observed in the field were augite basalt, augite-feldspar basalt and feldspar basalt. Minor occurrences of coarse (up to 2 cm) bladed feldspar basalt appear to be restricted to dykes intruding the other basalts. There is one occurrence of marble on the FLAME property (see Figure 4). It appeared to be a fault sliver but has been grouped with the Savage Mountain Formation. A distinctive dyke rock contains most of the higher grade copper mineralization, usually as chalcopyrite but with minor bornite. Composed almost entirely of hornblende, it occurs in close proximity to felsite dykes. Cross-cutting the older volcanics in a north to northwest swarm are intermediate dykes varying in texture from aphanitic felsite to k-spar porphyry to quartz porphyry. K-spar porphyry consists of 2 to 8 mm k-spar phenocrysts in a tan to salmon coloured felsic matrix with scattered hornblende microlites to the order of 1 mm. Quartz porphyry has a similar matrix but has distinctive rounded quartz eyes of from 2 to 5 mm. Individual dykes can assume to 10 m in width. Regionally the dykes are similar to the Kastberg Intrusions of Early Tertiary Age.

ROCK GEOCHEMICAL RESULTS

In total 111 rock samples were taken for analysis of gold, arsenic and silver content. Locations of rock samples and their geochemical values are shown on Figures 1 through 8. Statistical analysis of the geochemical data is given in Table 1.

Several of the samples with significant geochemical gold content were later fire assayed and results are shown and compared in Table 2.

Copper values have not been determined as the deposit does not presently appear to be economic without very substantial precious metal content. Some material of about 1% copper content is present.

TABLE 1

STATISTICAL ANALYSIS OF ROCK GEOCHEM

Gold (values in ppb)

Range	No.	Mean	S.
< 500	98	60.5	±84.9
> 500	13	1536.5	±1507.2

Silver (values in ppm)

Range	No.	Mean	S.
< 6	95	.87	±1.32
6 - 20	14	11.39	±4.54
> 20	1	-	

Arsenic (values in ppm)

Range	No.	Mean	S.
< 80	91	13.1	±16.5
80 - 500	13	141.5	±73.5
> 500	7	-	-

INTERPRETATION

A summary of the most interesting samples is contained in Table 2 with reference to the appropriate figures. Geochemical equivalents in ounces per ton were derived from rock geochemical values expressed in ppb by using the relationship 1000 ppb equals 0.029 Troy ounce.

It is interesting to compare values for gold concentration derived from rock geochemical analysis with subsequent gold concentration obtained by fire assay of the same samples. (column 2 versus column 3). There is a general agreement but it is clear from examples such as #73580 where geochem equivalent is .045 ounces per ton and fire assay returns .096 ounces per ton, that relying on simple spot results could be misleading.

It was found that weighted means for zones using both methods of analysis were surprisingly close. To obtain these weighted means, totals from column 5 or column 6 were divided by totals from column 4 to yield weighted mean geochems or weighted mean assays, respectively.

TABLE 2

ROCK ANALYSIS DATA FROM ZONES OF INTEREST

Column Sample No.	GOLD VALUES 1 Geochem (ppb)	2 Equivalent (oz/T)	3 Assay (oz/T)	4 Width (m)	5 Geochem x width (m-ppb)	6 Assay x width (m-oz)	Figure	SILVER ASSAYS oz/ton
73561	1600	0.055	0.066	1.6			2	0.13
73563	680	0.023	0.042	1.2	816	.050	2	0.42
73564	6250	0.216	0.190	1.1	6875	.209	2	0.53
73565	1300	0.045	0.096	1.3	1690	.125	2	0.66
73566	1680	0.058	0.030	1.4	2352	.042	2	0.73
73572	1040	0.036	0.050	1.0	1040		2	0.45
73573	180			1.0	180		2	
73574	180			1.1	198		2	
73575	1500	0.052	0.030	0.9	1350	.027	2	0.43
73576	2200	0.076	0.062	0.9	1980	.056	2	0.80
73577	600	0.021	0.012	1.0	600	.012	2	0.33
73580	1300	0.045	0.096	1.0	1300	.096	5	0.74
73581	580	0.020	0.010	1.0	580	.010	5	0.51
73582	540	0.019	0.026	1.0	540	.026	5	0.43
73591	700	0.024	0.003	1.0			5	0.12
73604	50	0.002	<0.003	1.0			3	0.44
73627	300	0.010	0.024	1.0			4	2.87
73632	300	0.010	0.005	1.0			4	0.48

In particular, the strongest zone, shown on Figure 2, extends for at least 80 meters and appears related to a northwest trending fracture set. For sample numbers 73563 to 73566 the weighted mean geochem is 2347 ppb gold over a 5 meter width. i.e. an equivalent of .081 ounces per ton average over 5 meters. Using fire assay results, the weighted mean fire assay is .085 ounces per ton over 5 meters, a very close agreement. A second sample intersection of this zone contains samples 73572 to 73577. Weighted mean geochem for this width returned 891 ppb gold over 5.9 meters. i.e. an equivalent of .031 ounces per ton. Samples 73575 to 73577 were selected for fire assay. The weighted mean assay for this interval is .034 ounces per ton gold over a 2.8 meter width. Using rock geochem, the weighted mean geochem is 1404 ppb gold over 28 meters. i.e. an equivalent of .048 ounces per ton. In this case assay results are lower by 30% than original rock geochem. It is important to note that this fracture zone appears to cross-cut the local rock units and does not appear to bear any direct relationship with exposed felsite dyke.

A second interesting zone is shown on Figure 5. Length is unknown but highest gold values appeared to come from hornblendite. In particular, samples 73580 to 73582 give weighted mean geochem of 807 ppb over 3.0 meters. i.e. an equivalent of .028 ounces over 3.0 meters. The weighted mean assay of these same samples is .044 ounces over 3.0 meters. In this case, assay results are 57% higher than corresponding geochem.

Silver assays are tabulated in Table 2. The highest value reported is 2.87 oz/ton. The Ag/Au ratio for samples 73561 - 73582 as listed in the Table is 15.4 with the highest silver value among these samples being 0.80 oz/ton. These silver values do not alter the conclusion that precious metal contents are too low to be economic.

CONCLUSIONS

Two marginally interesting gold bearing zones were determined on the FLAME 1 Mineral Claim. The best assay returned from chip samples across these zones was .19 ounces per ton over 1.1 meter. Grades on the whole appear to be of the order of 0.02 to 0.10 ounces per ton. gold in these areas. Unfortunately, with widths of less than 6 meters (in the best intersection) and lengths less than 80 meters there is insufficient tonnage indicated to consider further development of this property as a gold prospect.

SOIL GEOCHEMICAL RESULTS

One hundred soil samples were taken on the FLAME property and in adjacent areas. Results are shown on Figures 9 to 11. Several rock samples were also collected where alteration or mineralization was evident. Results for these rocks are shown on the same figures.

Only the 52 soil samples taken on the property are included for calculation of costs for purposes of assessment work.

Procedure

Sample holes were dug by grub hoe and samples collected at 20 to 40 cm depth, generally from the B horizon. Two to four hundred grams of fine material was collected in kraft paper envelopes to be forwarded to Chemex Labs Ltd. Data on individual samples showing depth, colour, horizon, type material etc. was recorded on standard forms.

Results

A grid of samples were collected at the south edge of the property on strike of the mineralized zones. Soil values are shown on Figure 9. A single gold value of 60 ppb was obtained. All others ran less than 10 ppb Au. Of the 52 samples on this grid five returned values of 20 to 45 ppm arsenic while three returned values of .6 and .8 ppm silver. These are considered only threshold values and no anomaly is indicated.

The grid area is covered by extensive glacial till which might prevent development of gold or silver anomalies. The area had been covered by a soil survey in 1973 (Assessment Report #4477). Results of that survey indicate only spotty copper values with the highest value in this grid area apparently being 190 ppm copper.

Samples were collected in the north portion of the property as well as along the north boundary and on air photo linear zones further north. Several rock geochem samples were collected southeast of the property. Results are shown on Figure 10.

Of the soil samples, one on the north boundary returned 40 ppb Au. The highest values in arsenic are 10 and 11 ppm. One sample ran 1.0 ppm Ag. No anomaly is indicated. All rock geochem values were less than 10 ppb Au.

Soil samples were taken southwest of the property in the vicinity of Kastberg feldspar porphyry intrusives. Results are shown on Figure 11.

No significantly anomalous results were obtained.

Conclusions

Soil and rock geochemical sampling in the vicinity of the FLAME property has failed to indicate additional anomalous areas.

Figure 12 shows the trend of air photo linears in the area. Most of the mineralization on the FLAME and FIRE claims appears to be at least spatially associated with these linears. Careful detailed prospecting might locate similar mineralization in other locations but sample results on the main showings do not indicate ore grade material and as a result no further work is recommended on this property.

Respectfully submitted,

Bryan Fraser

Bryan Fraser, B.Sc. (Geol)

ITEMIZED COST STATEMENT FOR 1980 ASSESSMENT WORK

on

FLAME 1 Mineral Claim

Wages August 14 to 30			
1) B. Fraser	17 days @ 1600.00 per month	$906.67	
2) D. Guglielmin	17 days @ 1332.00 per month	754.80	
			$ 1,661.47
Food and Accomodations			
2 men x 16 days			549.13
Transportation			
1) Helicopter August 14 to 30		$ 1,579.00	
2) Truck rental 17 days @ 752.00 per month		426.13	
			2,005.13
Chemical Analyses (for Ag, As, Au)			
111 rocks @ $10.40 per sample per inv.#38883		1,154.40	
52 soils @ $ 9.40 per sample per inv.#38882		488.80	
		1,643.20	
	less 15%	246.51	
			1,396.69
	Total		$ 5,858.93

LEGEND FOR FIGURES

ROCK TYPES

1. SAVAGE MOUNTAIN FORMATION

aphanitic basalt	b.
augite porphyry basaly	ab.
feldspar prophyry basalt	fb.
coarse feldspar porphyry basalt	cfb.
bladed feldspar prophyry basalt	bfb.
hornblendite	hb.
marble (skarn etc.)	m.

2. KASTBERG INTRUSIONS

quartz porphyry	qp
k-spar porphyry	kp
felsite	fel

ALTERATION, MINERALIZATION

calcite veinlets	cv.	quartz veinlets	q.v
ankerite	ank.	chalcopyrite	cpy.
pyrite	py.	bornite	bo.
tetrahedrite	tet.	strong	str.
moderate	mod.	weak	wk.
trace	tr.		

GEOCHEM

sample no. / width / Au ppb / As ppm / Ag ppm / description

FIGURE 3
FIGURE 2
FIGURE 4
FIGURE 5
FIGURE 6
FIGURE 7
FIGURE 8
FIGURE 9

FLAME 1 M.C.

FIRE GROUP
(R. TAIT)

CAMP

LEGAL CORNER POST

1:5000
0 50 100 150 200
meters

1:15,840
0 250 500 750 1000
meters

N

J.C. STEPHEN EXPLORATIONS
TARGET PROJECT
FLAME PROPERTY
INDEX MAP
ROCK, SOIL GEOCHEM
MAP SHEET 33F/16W
WORK BY: S.F., D.G. DRAWN BY: B.F.
OCTOBER, 1980

FIGURE 1

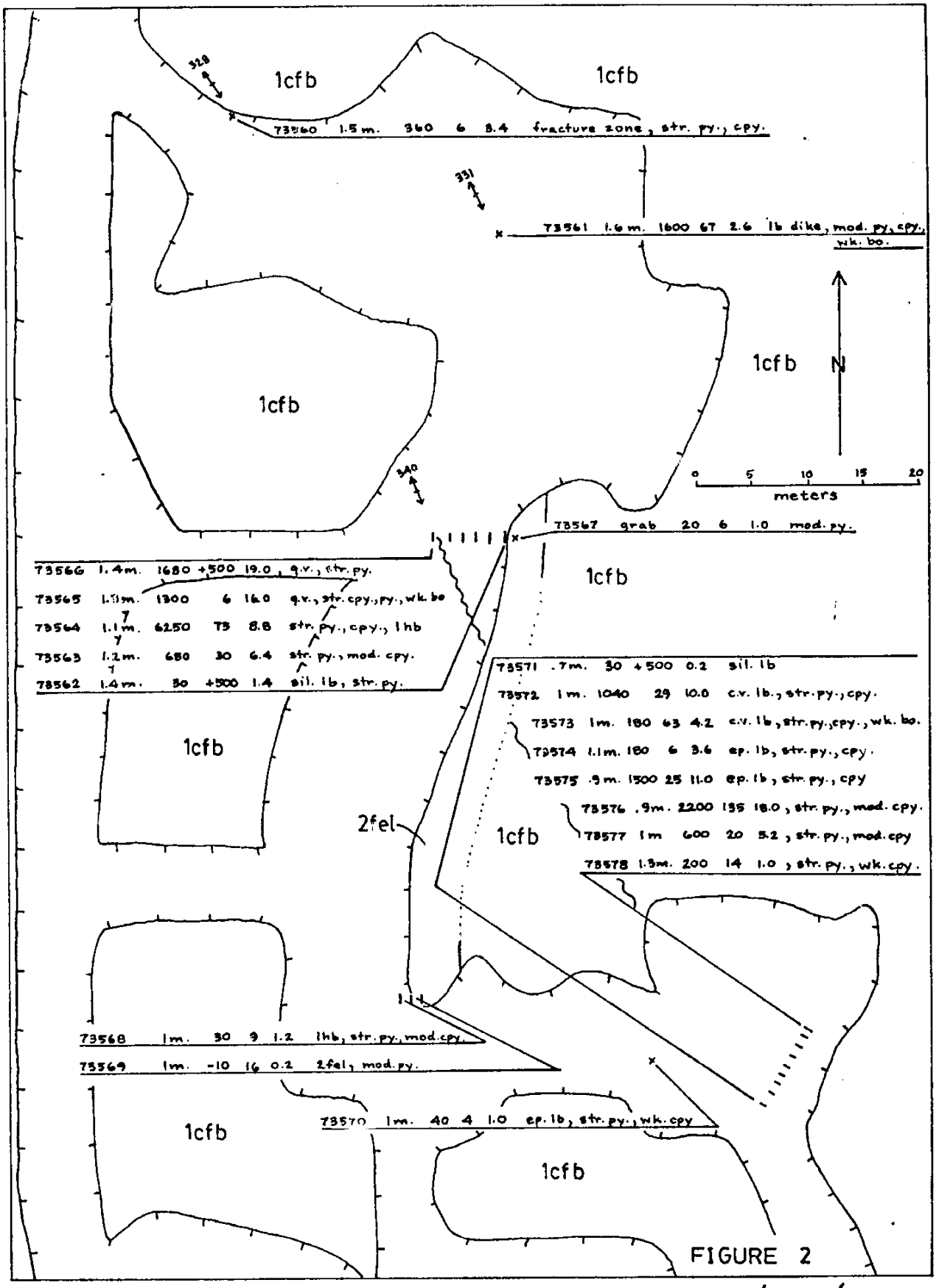


FIGURE 2

Rock Geochem - Width. Au ppb/As ppm/Ag ppm

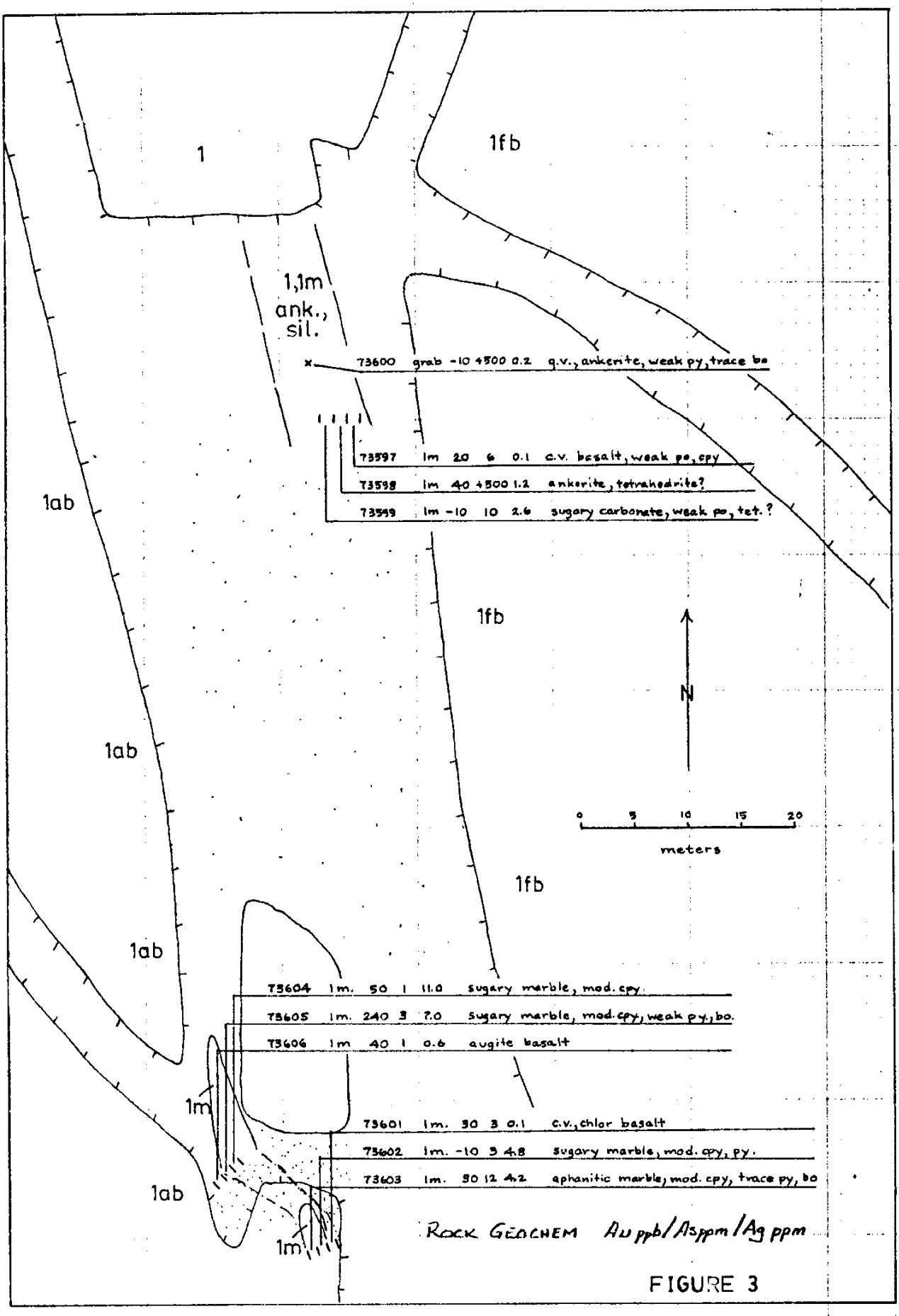
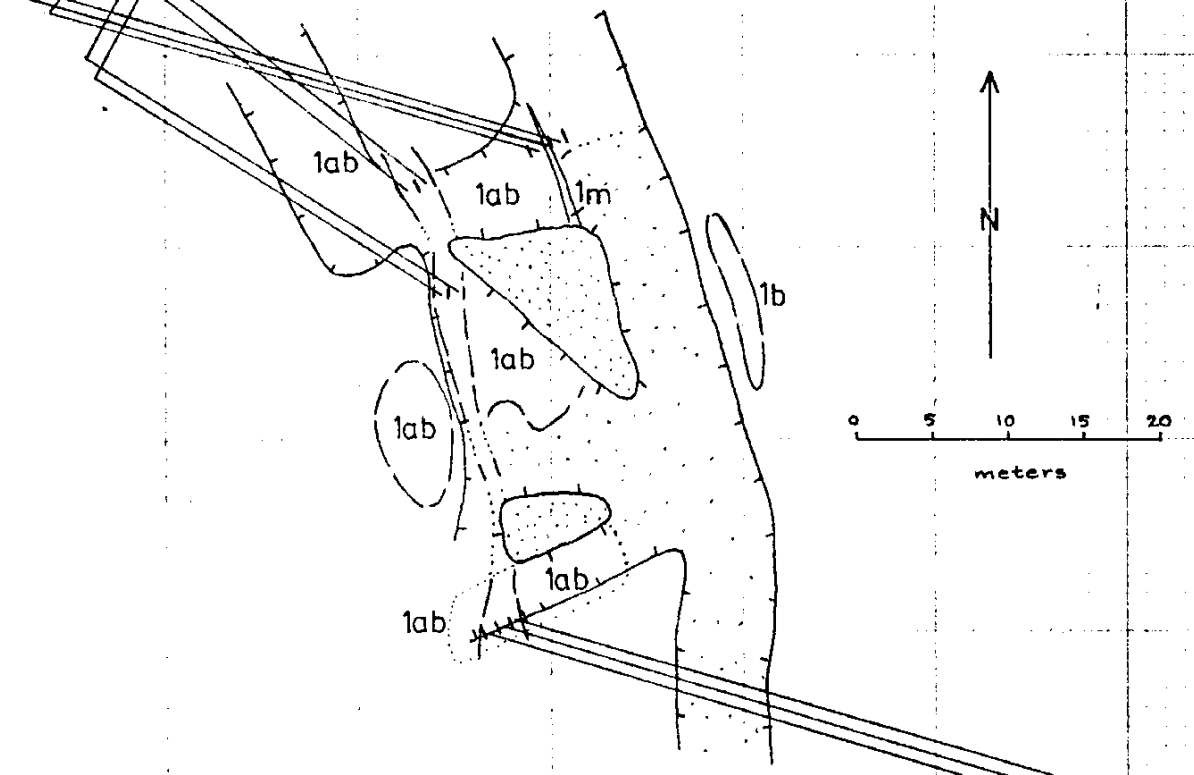

1
1fb
1,1m
ank.,
sil.
73600 grab -10 4500 0.2 q.v., ankerite, weak py, trace bo
73597 1m 20 6 0.1 c.v. basalt, weak po, cpy
73598 1m 40 4500 1.2 ankerite, tetrahedrite?
73599 1m -10 10 2.6 sugary carbonate, weak po, tet.?
1ab
1fb
N
0 5 10 15 20
meters
1ab
1fb
1ab
73604 1m. 50 1 11.0 sugary marble, mod. cpy.
73605 1m. 240 3 7.0 sugary marble, mod. cpy, weak py, bo.
73606 1m 40 1 0.6 augite basalt
1m
73601 1m. 30 3 0.1 c.v., chlor basalt
73602 1m. -10 3 4.8 sugary marble, mod. cpy, py.
73603 1m. 30 12 4.2 aphanitic marble, mod. cpy, trace py, bo
1ab
1m
ROCK GEOCHEM Au ppb/As ppm/Ag ppm

FIGURE 3

73627	1m.	300	220	+20.0	calc. vd. basalt, strong py., mod cpy., tr. bo
73628	1m.	10	120	0.1	calc. vd. basalt, weak py, weak cpy.
73629	1m.	40	4	0.1	sil., epid., basalt, weak py, weak cpy.
73630	.5m	20	10	0.1	highly calc. vd. basalt, mod. py.
73631	1m	80	180	0.1	sil. basalt, weak py.
73632	1m.	300	+500	10.0	strongly sil. basalt, very strong py.
73633	1m.	400	+500	4.8	mod. sil. basalt, mod. py., weak cpy.



73634	1m.	40	73	0.6	finegnd. hnbdite, very strong py.
73635	1m	50	110	1.0	fine gnd. hnbdite, very strong py.
73636	grab	50	19	0.1	fine gnd. hnbdite, very strong py.

ROCK GEOCHEM Au ppb/As ppm/Ag ppm

FIGURE 4

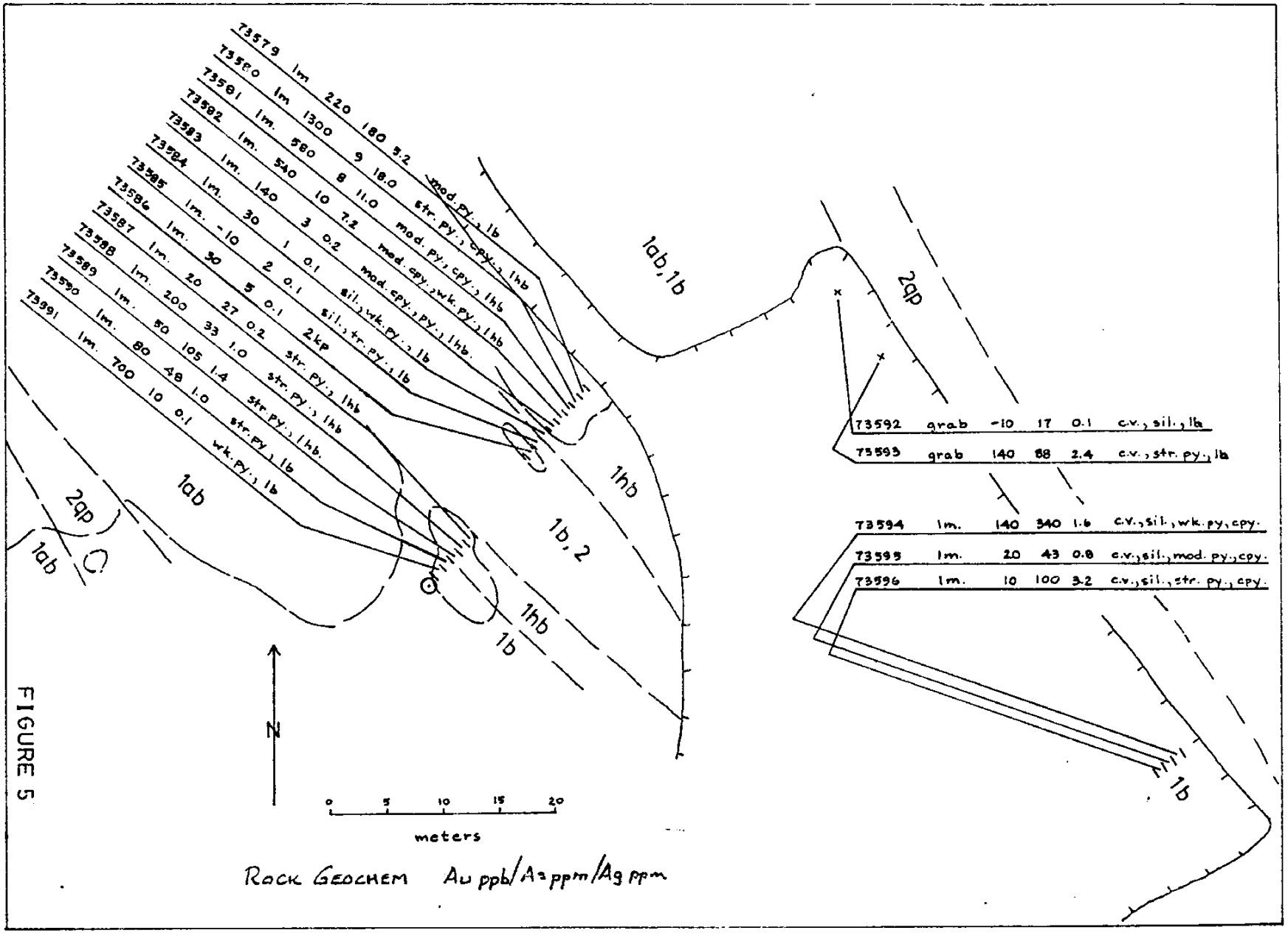
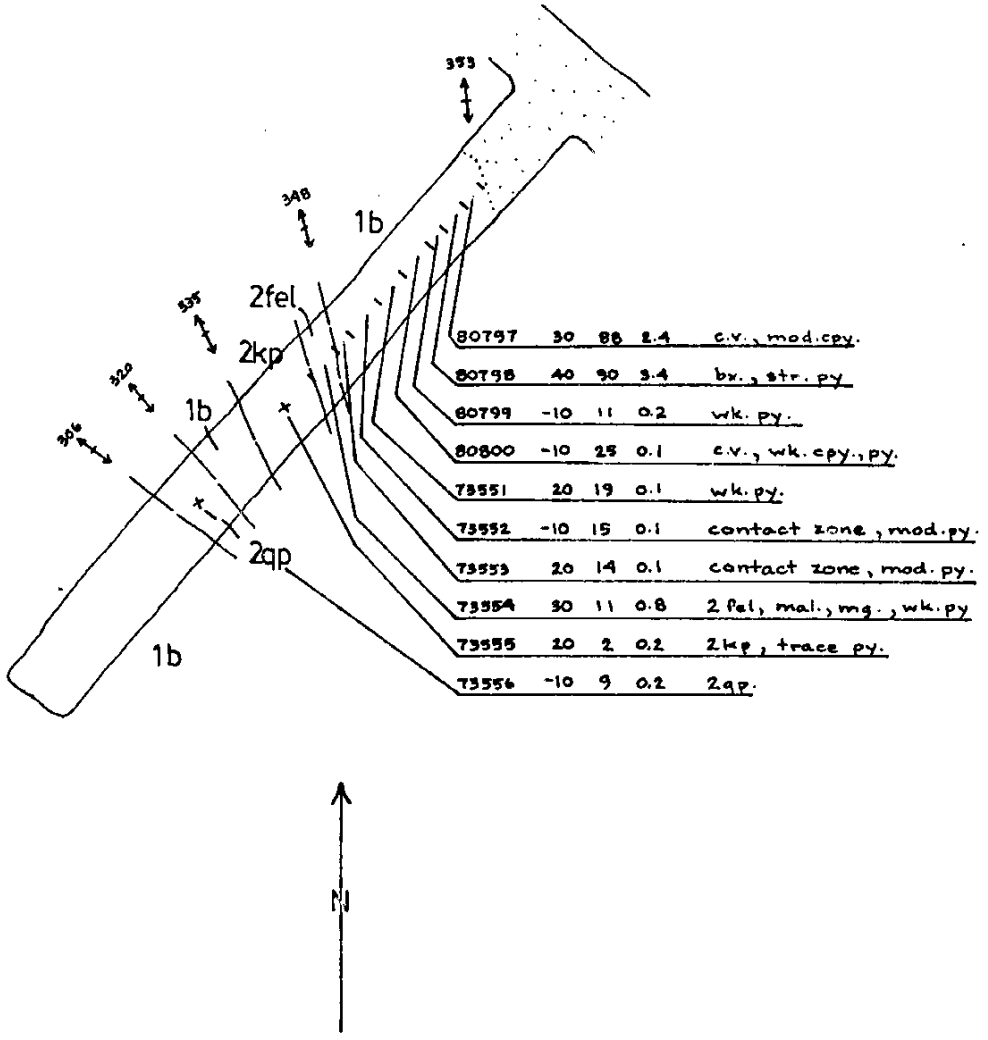

73579 lm 220 180 5.2 mod. py., lb
73580 lm 1300 9 18.0 str. py., cpy., lhb
73581 lm. 580 8 11.0 mod. py., cpy., lhb
73582 lm. 540 10 7.2 mod. cpy., wk. py., lhb
73583 lm. 140 3 0.2 mod. cpy., py., lhb.
73584 lm. 30 1 0.1 sil., wk. py., lb
73585 lm. -10 2 0.1 sil., str. py., lb
73586 lm. 30 5 0.1 2kp
73587 lm. 20 27 0.2 str. py., lhb
73588 lm. 200 33 1.0 str. py., lhb.
73589 lm. 50 105 1.4 str. py., lhb.
73590 lm. 80 48 1.0 str. py., lb
73591 lm. 700 10 0.1 wk. py., lb
1ab, 1b
2qp
1hb
1b, 2
1ab
1b
73592 grab -10 17 0.1 c.v., sil., lb
73593 grab 140 88 2.4 c.v., str. py., lb
73594 lm. 140 340 1.6 c.v., sil., wk. py., cpy.
73595 lm. 20 43 0.8 c.v., sil., mod. py., cpy.
73596 lm. 10 100 3.2 c.v., sil., str. py., cpy.
N
0 5 10 15 20
meters
Rock Geochem Au ppb/As ppm/Ag ppm

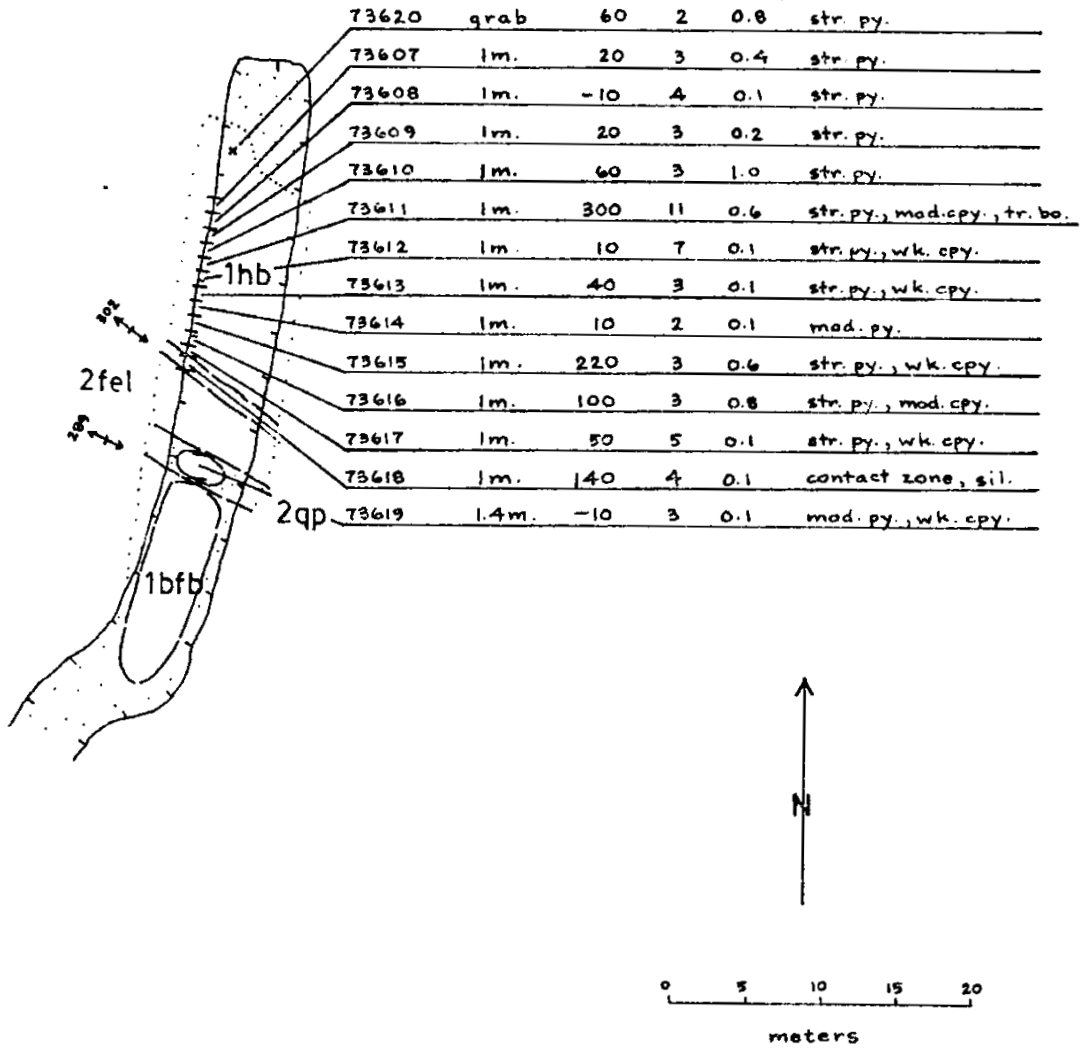
FIGURE 5



80797	30	88	8.4	c.v., mod.cpy.
80798	40	90	3.4	bx., str. py
80799	-10	11	0.2	wk. py.
80800	-10	25	0.1	c.v., wk. cpy., py.
73551	20	19	0.1	wk. py.
73552	-10	15	0.1	contact zone, mod. py.
73553	20	14	0.1	contact zone, mod. py.
73554	30	11	0.8	2 fel, mal., mg., wk. py
73555	20	2	0.2	2kp, trace py.
73556	-10	9	0.2	2qp.

ROCK GEOCHEM Au ppb / As ppm / Ag ppm

FIGURE 6



ROCK GEOCHEM Au ppb/As ppm/Ag ppm

FIGURE 7

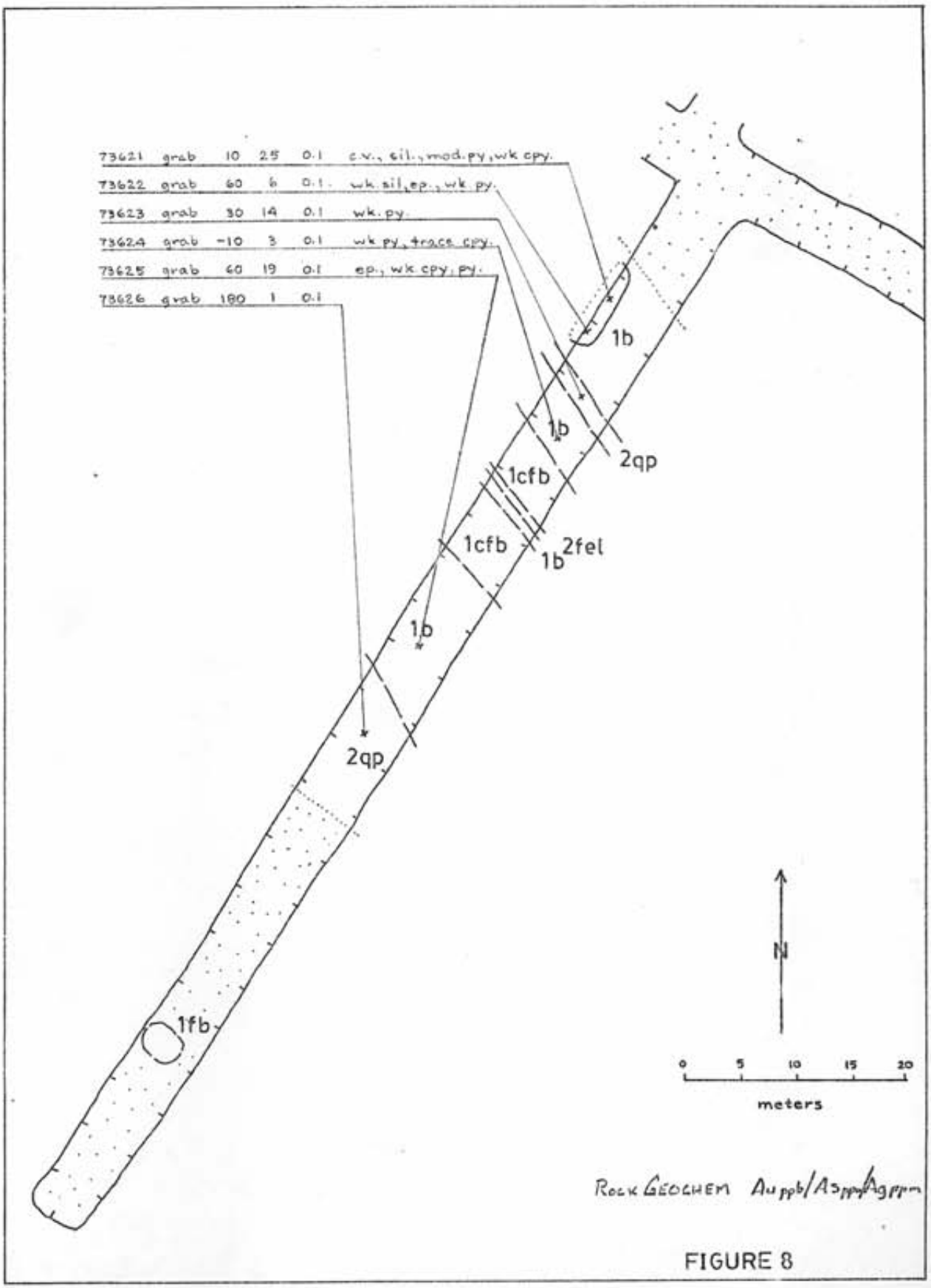

73621 grab 10 25 0.1 c.v., sil., mod. py, wk cpy.
73622 grab 60 6 0.1 wk sil, ep., wk py.
73623 grab 30 14 0.1 wk. py.
73624 grab -10 3 0.1 wk py, trace cpy.
73625 grab 60 19 0.1 ep., wk cpy, py.
73626 grab 180 1 0.1
1b
1b
2qp
1cfb
1cfb
1b
2fel
1b
2qp
1fb
N
0 5 10 15 20
meters
Rock Geochem Au ppb/As ppm/Ag ppm

FIGURE 8

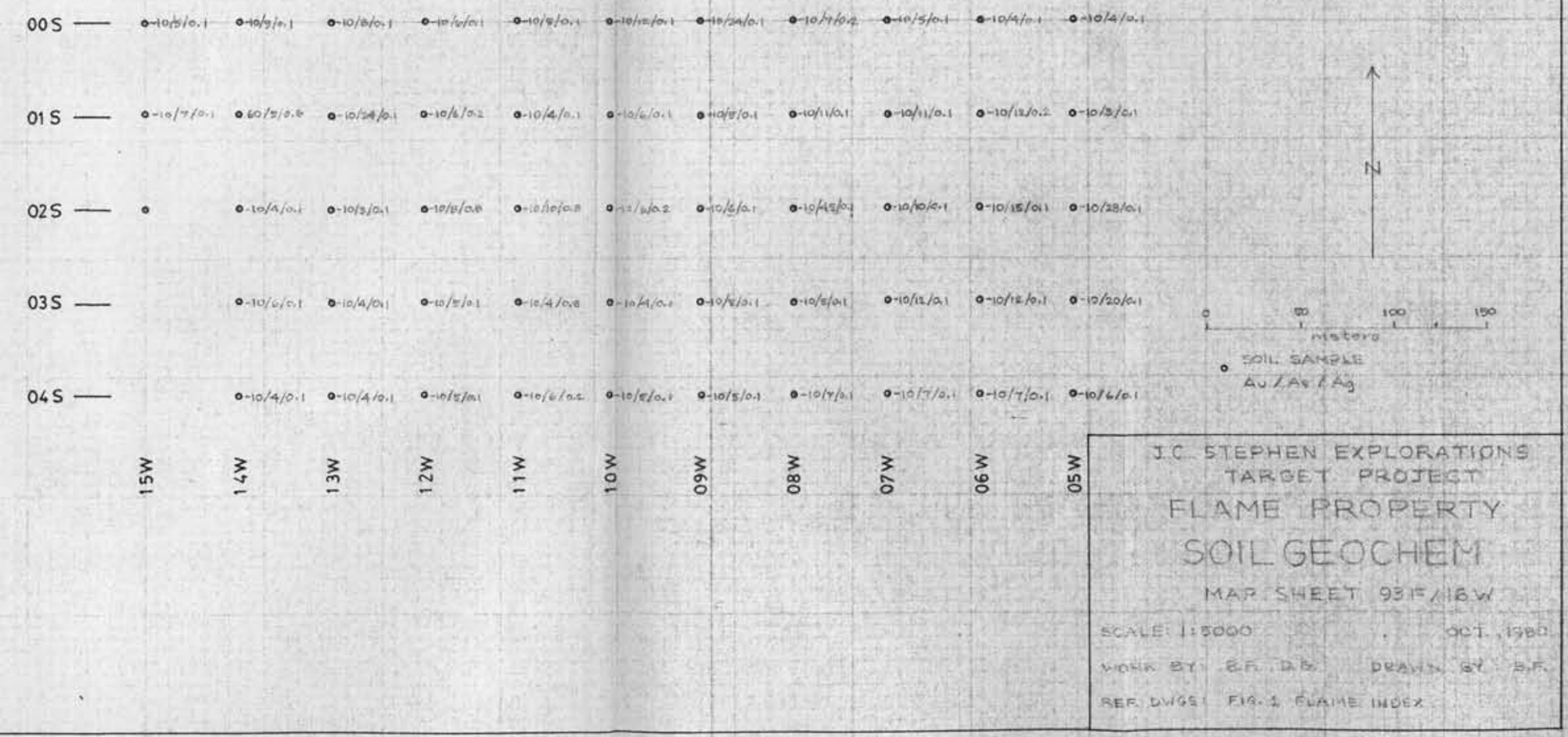


FIGURE 9

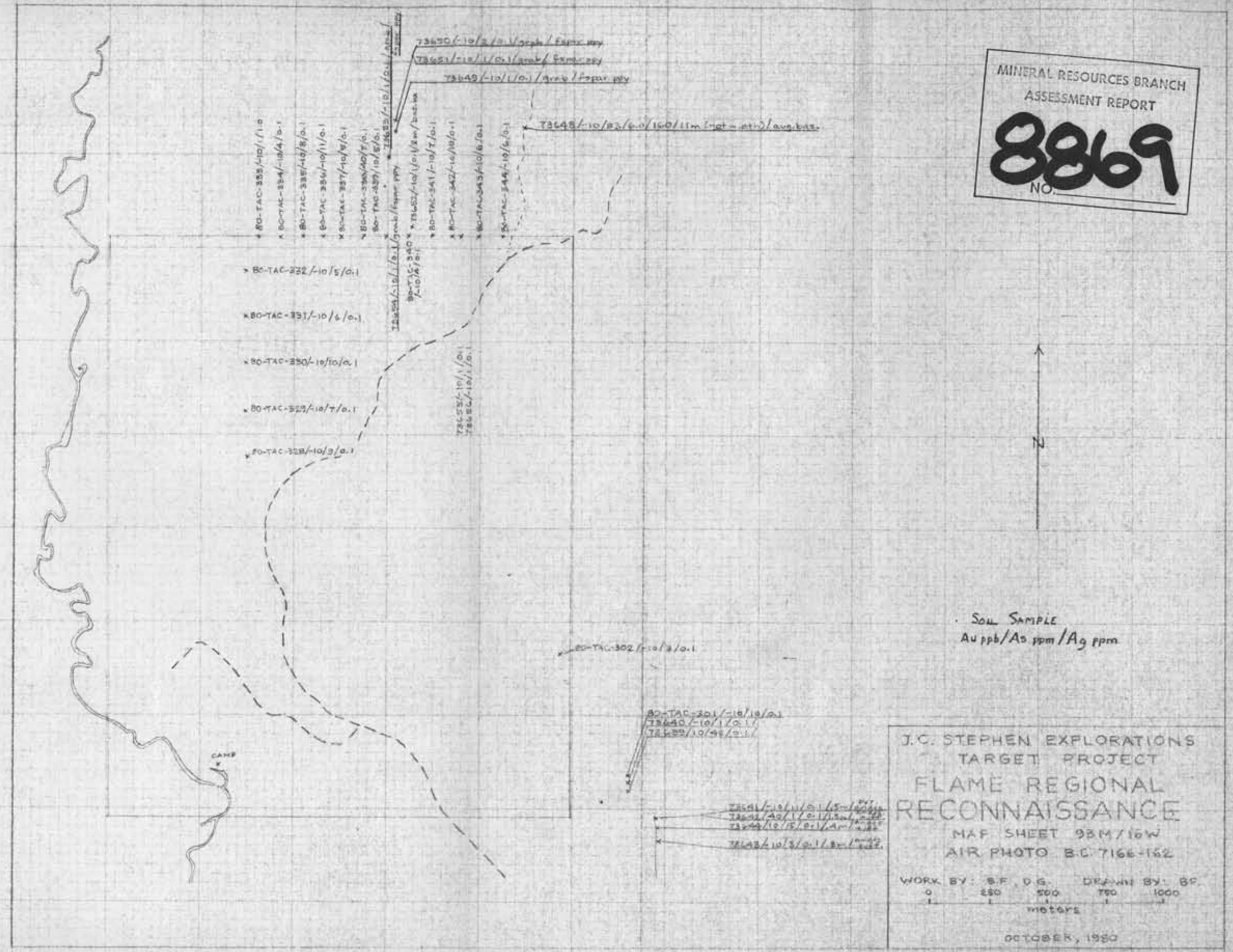
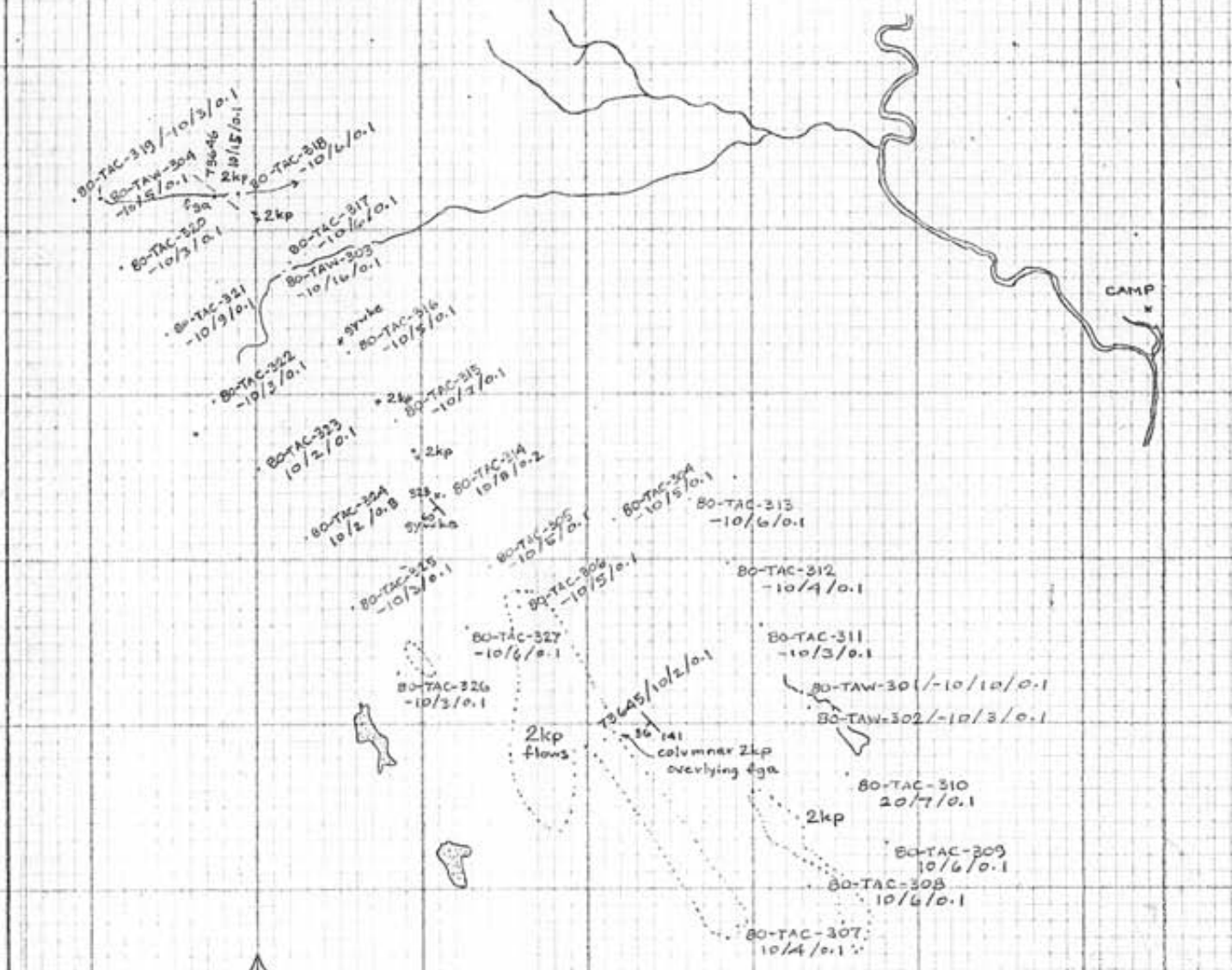


FIGURE 10



JC STEPHEN EXPLORATIONS
TARGET PROJECT

FLAME REGIONAL RECONNAISSANCE

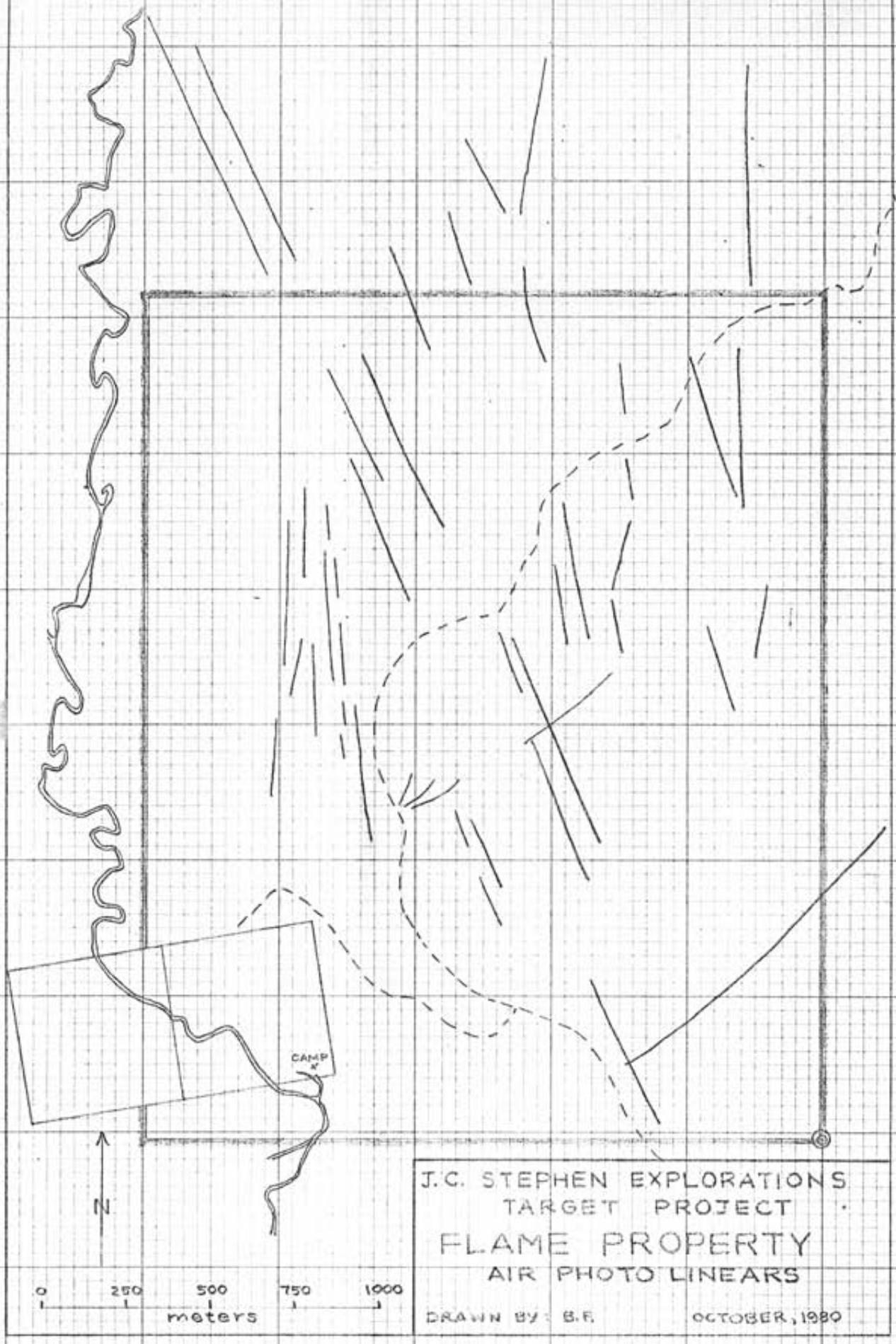
MAP SHEET 93M/16W
AIR PHOTO BC 7166-103

WORK BY: B.F., D.G. DRAWN BY: B.F.

0 250 500 750 1000
meters

REF. DWGS.: FIG. 1, FLAME INDEX. OCT., 1980

FIGURE 11



J.C. STEPHEN EXPLORATIONS
TARGET PROJECT
FLAME PROPERTY
AIR PHOTO LINEARS
DRAWN BY: B.F. OCTOBER, 1980

FIGURE 12

APPENDIX I

STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I, Bryan M. Fraser, of 201 - 8625 Osler Street, Vancouver B.C. do certify that:

1) I am a graduate geologist of the University of B.C. with a Bachelor of Science degree in geology obtained in 1976.

2) I have actively been involved in mineral exploration in British Columbia since graduation.

3) I do hold a prospector's interest in the HALO 1 Mineral Claim.

APPENDIX II

GEOCHEMICAL PREPARATION & PROCEDURES

GEOCHEMICAL PREPARATION
AND
ANALYTICAL PROCEDURES

1. Geochemical samples (soils, silts) are dried at 50°C for a period of 12 to 24 hours. The dried sample is sieved to -80 mesh fraction through a nylon and stainless steel sieve. Rock geochemical materials are crushed, dried and pulverized to -100 mesh.

2. A 1.00 gram portion of the sample is weighed into a calibrated test tube. The sample is digested using hot 70% $HClO_4$ and concentrated HNO_3. Digestion time = 2 hours.

3. Sample volume is adjusted to 25 mls. using demineralized water. Sample solutions are homogenized and allowed to settle before being analyzed by atomic absorption procedures.

4. Detection limits using Techtron A.A.5 atomic absorption unit.

Copper - 1 ppm
Molybdenum - 1 ppm
Zinc - 1 ppm
*Silver - 0.2 ppm
*Lead - 1 ppm
*Nickel - 1 ppm
Chromium - 5 ppm

*Ag, Pb & Ni are corrected for background absorption.

5. Elements present in concentrations below the detection limits are reported as one half the detection limit, ie. Ag - 0.1 ppm

GEOCHEM PROCEDURES

PPM Antimony: a 1.0 gm sample digested with conc. HCl in hot water bath. The iron is reduced to Fe^{+2} state and the Sb complexed with I^-. The complex is extracted with TOPO-MIBK and analyzed via A.A. Correcting for background absorption 0.2 ppm ± 0.2 Detection limit.

PPM Arsenic: a 1.0 gram sample is digested with a misture of perchloric and nitric acid to strong fumes of perchloric acid. The digested solution is diluted to volume and mixed. An aliquot of the digest is acidified, reduced with KI and mixed. A portion of the reduced solution is converted to arsine with $NaBH_4$ and the arsenic content determined using flameless atomic absorption.
Detection limit - 1 PPM

PPB Gold: 5 gm samples ashed @800°C for one hour, digested with aqua regia - twice to dryness - taken up in 25% HCl^-, the gold then extracted as the bromide complex into MIBK and analyzed via A.A.
Detection limit - 10 PPB

ASSAY PROCEDURES

Gold: - Fire Assay Method.

0.5 assay ton sub samples are fused in litharge, carbonate and silicious fluxes. The lead button containing the precious metals is cupelled in a muffle furnace. The combined Ag & Au is weighed on a microbalance, parted, annealed and again weighed as Au. The difference in the two weighing is Ag.