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RESULTS OF THE GEOCHEMICAL ORIENTATION SURVEY
AT
THE DILLARD AND MABEL AREAS
BRITISH COLUMBIA

Spw 92 H 16

BARRINGER RESEARCH LIMITED
TORONTO, CANADA

RESULTS OF THE GEOCHEMICAL ORIENTATION SURVEY
AT
THE DILLARD AND MABEL AREAS
BRITISH COLUMBIA

92 H 16

PREPARED FOR:
CYPRUS EXPLORATION CORPORATION LIMITED
510 WEST HASTINGS STREET,
VANCOUVER, B. C.

PREPARED BY:
BARRINGER RESEARCH LIMITED
304 CARLINGVIEW DRIVE
REXDALE, ONTARIO.

JUNE - 1969.

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INTRODUCTION

At the request of Cyprus Exploration an orientation survey was carried out around known mineralization at the Dillard and Mabel areas near Princeton, B.C. The purpose of this orientation survey was to provide an indication of the width and strength of geochemical dispersion of the various elements in order that the intervals used during the soil survey would be optimum, and also to provide basic data for the interpretation of the results of the survey and to determine which elements should be analysed for during routine coverage of the area.

Because of basic difference between the two areas, they are described separately.

Geological mapping of the area is being undertaken by Alrae Engineering Limited, and full geological interpretation of the results is not possible until their report is available. The geological observations contained in this report are purely preliminary.

THE MABEL AREA

Mineralization in this area has been uncovered at two locations where pyrite, galena, sphalerite, and possibly chalcopyrite are visible. The mineralization,with generally vein-like dimensions, appears to be controlled by a shear zone, and is seldom more than one foot in width. The mineralization is accompanied by wall rock alteration.

Soil profiles are fairly well developed, with distinct A, B, and C horizons. The soil thickness on the valley slopes averages 1 to 5 feet, but on the valley bottom, generally exceeds 10 feet. Locally there are indications of mechanical movement down-slope, but this dislocation is not thought to be very severe.

RESULTS

The five rock samples (numbers 1, 2, 5, 6 and 7) show concentrations of copper, lead, zinc and silver, (particularly sample 2). Mercury and arsenic are both low. It is commonly observed that mercury in near surface weather rocks is depleted compared with the underlying fresh rock, or the overlying soil, so the observations for mercury are to be expected. The results for arsenic show no samples greater than 5 ppm (the detection limit of the analytical method) and therefore this element is omitted from the following discussions.

In order to establish background and threshold limits for soil samples, five samples were collected, remote from known mineralization. Their description and location is shown on table 2, and the results on table 2A. These results, in conjunction with those from the soil traverses have been used to determine background, threshold and anomalous levels. It is emphasized that these levels should be considered as preliminary and may be adjusted when the results for the whole soil grid and the geological map are available.

The spot samples and the soil traverse over the Mabel area show anomalous copper, lead, zinc, mercury and silver results. The anomalous width of dispersion is not greater than the 200 feet for any metal and is shown best by zinc, lead, and mercury. It should be remembered however, that the mineralization here is sub-economic and a restricted geochemical anomaly may be expected. There is however no knowledge of the mineralization at depth.

THE DILLARD AREA

This area is generally topographically flat. The soil cover is probably generally between one and four feet. The rock exposure is very limited, but the area appears to be largely underlain by quartz monzonite. Soil horizon development is good, with quite clearly distinguishable A, B. and C horizons.

RESULTS

Several spot rock samples were taken and one soil traverse over an area of altered basic rock and quartz monzonite showing iron stain, with pyrite, sphalerite and galena locally. This area has been extensively trenched and the soil traverse was run parallel to the third trench from the west.

The results show a broad, reasonably intense anomaly for lead and zinc, a wide low anomaly for copper and silver, and a very small anomaly for mercury. The width of anomalous dispersion varies from 1600' for zinc to less than 50' in the case of mercury.

CONCLUSIONS

1). From the available geological and geochemical information it would appear that there are two types of mineralization: a) narrow mineralization of vein dimensions in the Mabel area showing anomalous lead, zinc and strongly anomalous mercury. b) Disseminated mineralization of broader dimensions with a very strong zinc anomaly and smaller lead dispersion in the Dillard area.

2). Both types of mineralization can be detected geochemically in the B soil horizon.

3). Mercury is more anomalous over the vein dimension mineralization than the disseminated.

RECOMMENDATIONS

On the basis of the orientation results, in order to assure that anomalies over vein type mineralization are not missed, it is recommended that both the Dillard and Mabel Areas be covered with a soil grid, using a line spacing of 400' and

samples taken at 100' intervals along these lines. This interval should be sufficient to delineate any significant mineralization of either type. The samples should be analysed, in the first instance, for total zinc and anomalous samples further analysed for lead, copper, mercury and silver. In this way it will be possible to gain maximum geochemical information for minimum cost.

If the geology is sufficiently well known to establish that the strike of the vein like mineralization is probably at right angles to the cut grid, then the line spacing can be increased to 800 feet.

CONTRACT

On the basis of these recommendations, Schedule "B" of the contract should now read

SPA MINES LIMITED - SOIL SAMPLING

Orientation Survey 2 man/days @ $70.00 per day	----------	$140.00
Sample Collection on cut grid, 400 feet x 100 feet		
Sample Collection Rate = (Average) 50 samples per man/day at $700.00/day		
Estimated number of samples 4,000 = 80 man days	----------	$5,600.00

ANALYSIS

Orientation:	40 samples analysed for Cu, Pb, Zn, Ag, As, Hg @ $7.20 per sample including sample preparation --	288.00
Survey:	Total Zn at $1.20 per sample including sample preparation ----------	4,800.00
Supervision, Reporting and Draughting	----------	575.00
		11,403.00
	10% Contingency -------	1,140.00
		12,543.00

This contingency will only be used if the number of samples collected exceeds the estimate.

This estimate makes no provision for follow-up of the anomalies.

BARRINGER RESEARCH LIMITED,

Peter M. D. Bradshaw,
Chief Geochemist.

TABLE 1

SPOT SAMPLES -TYPE & LOCATION

MABLE AREA

Sample No.	Location	Type	Comments
Spa 1	In trenched area opposite camp.	Rock	Fine grained basic (igneous) rock with very minor chalco-pyrite & small specular hematite veins.
Spa 2	In trenched area oposite camp	Rock	as for Spa 1, no visible mineralization
Spa 5	In trenched area opposite camp.	Rock	Coarse grained grano-diorite, no visible mineralization.
Spa 3	In trenched area opposite camp.	Soil	B horizon, close to Spa 2.
Spa 4	In trenched area opposite camp.	Soil	B horizon, close to Spa 1.
Spa 6	Near adit ½ mi. north of camp	Rock	Coarse grained grano-diorite, highly altered
Spa 7	Near adit ½ mi. north of camp	Rock	Coarse grained grano-diorite, slightly altered.

DILLARD AREA

Spa 22	Third trench from east	Rock	Highly altered & brecciated
Spa 23	Most westerly trench	Rock	Altered basic igneous rock.
Spa 24	Second trench from west	Rock	Diabase dyke, minor pyrite seen locally.

TABLE 2

BACKGROUND SOIL SAMPLES

Sample No.	Location	Type	Comments
Spa 20	¼ mi. south of camp along road	Soil, B. horizon	overlying quartz monzonite.
Spa 21	2 mi. south of camp along road	Soil, B. horizon	
Spa 38	100' N of soil traverse SPA area	Soil, B. horizon	
Spa 39	1 mi. from trenching SPA area	Soil, B. horizon	
Spa 40	On southern margin of SPA area	Soil, B. horizon	Approximately ½ mi. from drilling on adjoining property.

TABLE 2A

SOIL SAMPLES COLLECTED REMOTE FROM KNOWN MINERALIZATION

	Total Cu	Total Pb	Total Zn	Kcn Ag	Total Hg
Spa 20 ----------	13	31	239	.2	66
21 ----------	7	22	233	.2	33
38 ----------	12	65	389	.3	70
39 ----------	15	49	500	.2	47
40 ----------	15	27	233	.2	78
Background ----------	0-15	0-60	0-500	0-.3	0-80
Threshold ----------	15	60	500	.3	80
Anomalous (3rd order)-	>15	>60	500-1000	3-.6	80-160
Anomalous (2nd order)-			>1000	>.6	>160

BARRINGER RESEARCH

Geochemical Laboratory Report

BARRINGER RESEARCH LIMITED
304 CARLINGVIEW DRIVE
REXDALE, ONTARIO, CANADA
PHONE: 416-677-2491
CABLE: BARESEARCH

DATE June 12, 1969.

Cyprus Exploration
118.34

REPORT NUMBER 114 * = less than

SAMPLE NUMBER	Hg ppb	As ppm		Sample Number	Hg ppb	As ppm		Sample Number	Hg ppb	As ppm
SPA-1	19	*5		SPA-21	33	*5				
2	16	*5		22	41	85				
3	162	*5		23	28	*5				
4	47	*5		24	60	*5				
5	19	*5		25	96	*5				
6	16	*5		26	77	*5				
7	25	*5		27	96	*5				
8	166	*5		28	240	*5				
9	162	*5		29	54	*5				
10	141	*5		30	63	*5				
11	134	*5		31	60	*5				
12	166	*5		32	47	*5				
13	57	*5		33	41	*5				
14	80	*5		34	10	*5				
15	47	*5		35	73	*5				
16	54	*5		36	77	*5				
17	60	*5		37	32	*5				
18	35	*5		38	70	*5				
19	162	*5		39	47	*5				
20	66	*5		40	78	*5				

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Geochemical Laboratory Report

DATE June 16, 1969

Cyprus Explorations.

112-3-4

REPORT NUMBER 26-B

* = less than

SAMPLE NUMBER	Total Cu ppm	Total Pb ppm	Total Zn ppm	KCN Ag ppm		Sample Number	Total Cu ppm	Total Pb ppm	Total Zn ppm	KCN Ag ppm
SPA-1	190	146	4300	3		SPA-21	7	22	125	.2
2	3650	2920	4880	120		22	95	209	222	3
3	16	49	325	.5		23	13	63	12500	.3
4	50	121	1090	2		24	80	37	1250	.3
5	71	85	312	2		25	16	95	457	.6
6	37	2500	8320	1		26	20	91	1660	.4
7	18	387	2050	.8		27	8	69	1090	.2
8	17	111	690	.2		28	13	93	1430	.4
9	13	95	900	.7		29	21	91	1490	.4
10	14	109	860	.4		30	16	57	940	.4
11	6	57	560	.2		31	16	65	1370	.4
12	5	37	325	.1		32	18	61	1370	.3
13	7	41	188	.2		33	16	61	625	.4
14	7	49	275	.3		34	19	45	1130	.4
15	6	27	194	.2		35	14	45	980	.2
16	5	31	216	.2		36	18	41	443	.3
17	5	35	125	.2		37	17	35	402	.1
18	6	29	154	.2		38	12	65	389	.3
19	13	31	239	*.1		39	15	49	500	.2
20	13	31	233	.2		40	15	27	233	.2

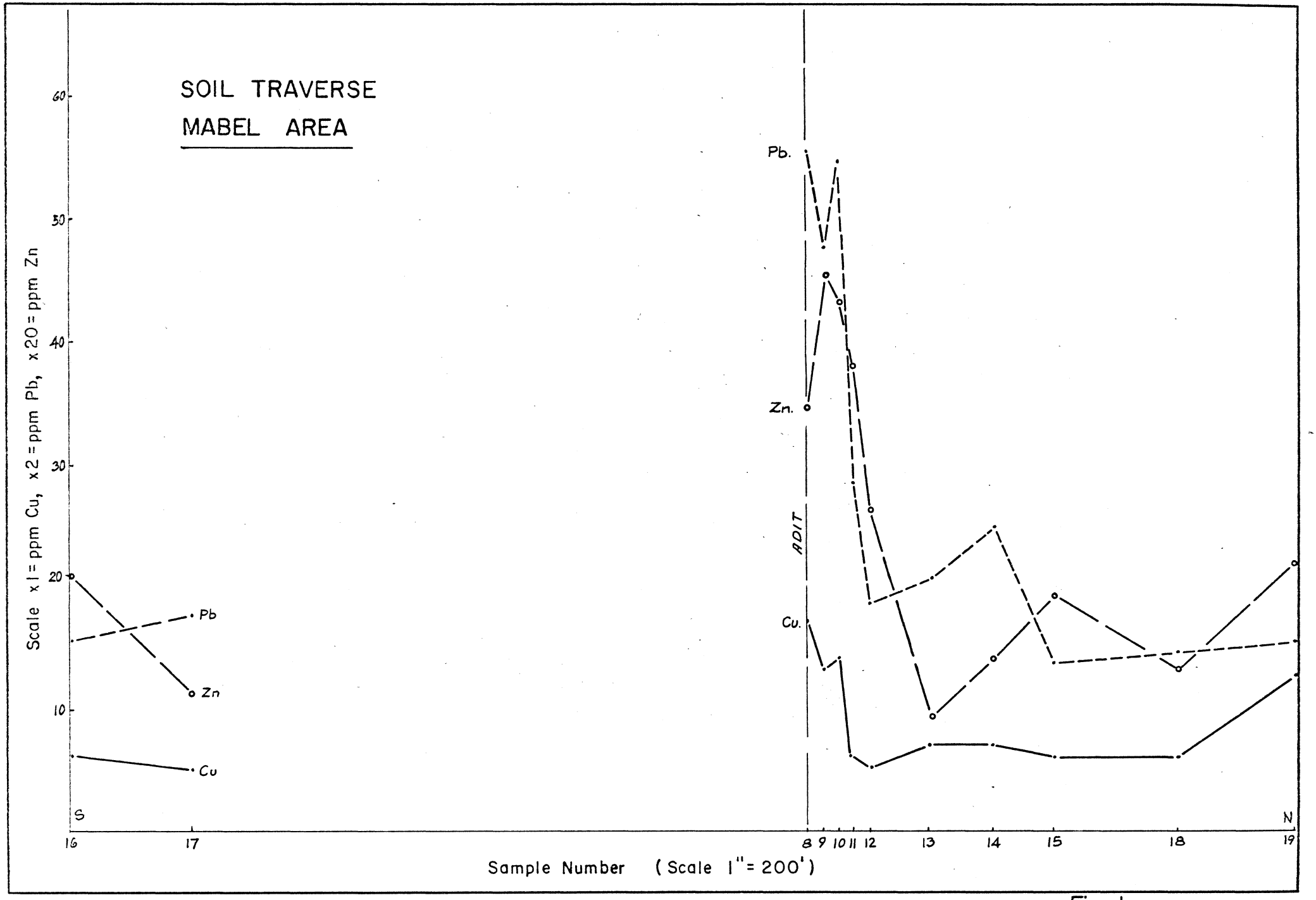
SOIL TRAVERSE
MABEL AREA
Scale x1 = ppm Cu, x2 = ppm Pb, x20 = ppm Zn
60
50
40
30
20
10
Pb
Zn
Cu
S
16
17
Pb.
Zn.
ADIT
Cu.
8 9 10 11 12 13 14 15 18 19
N
Sample Number (Scale 1" = 200')

Fig. 1

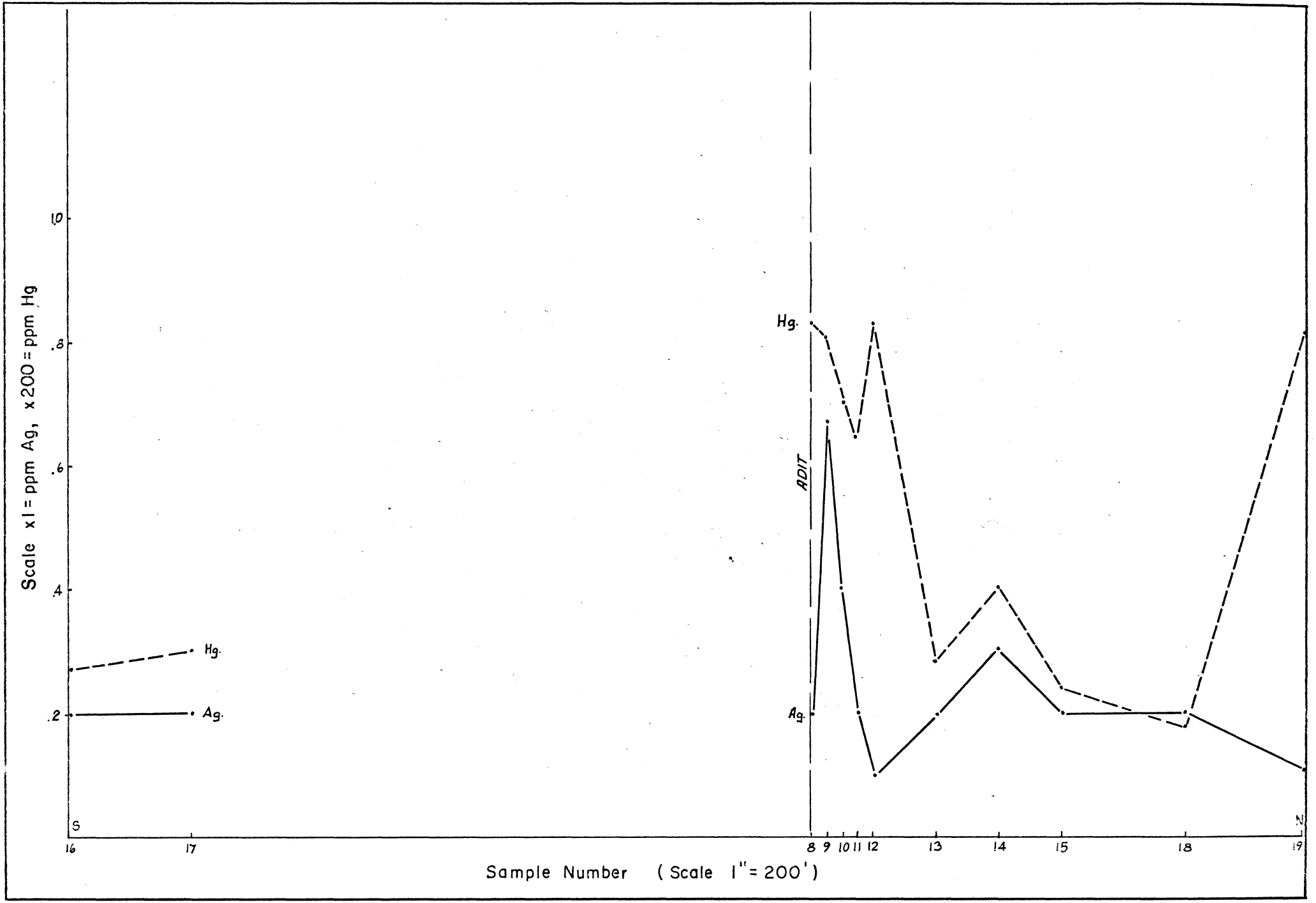
Scale x1 = ppm Ag, x200 = ppm Hg
1.0
.8
.6
.4
.2
Hg.
Ag.
ADIT
Hg.
Ag.
S
N
16
17
8
9
10
11
12
13
14
15
18
19
Sample Number (Scale 1" = 200')

Fig. 1a

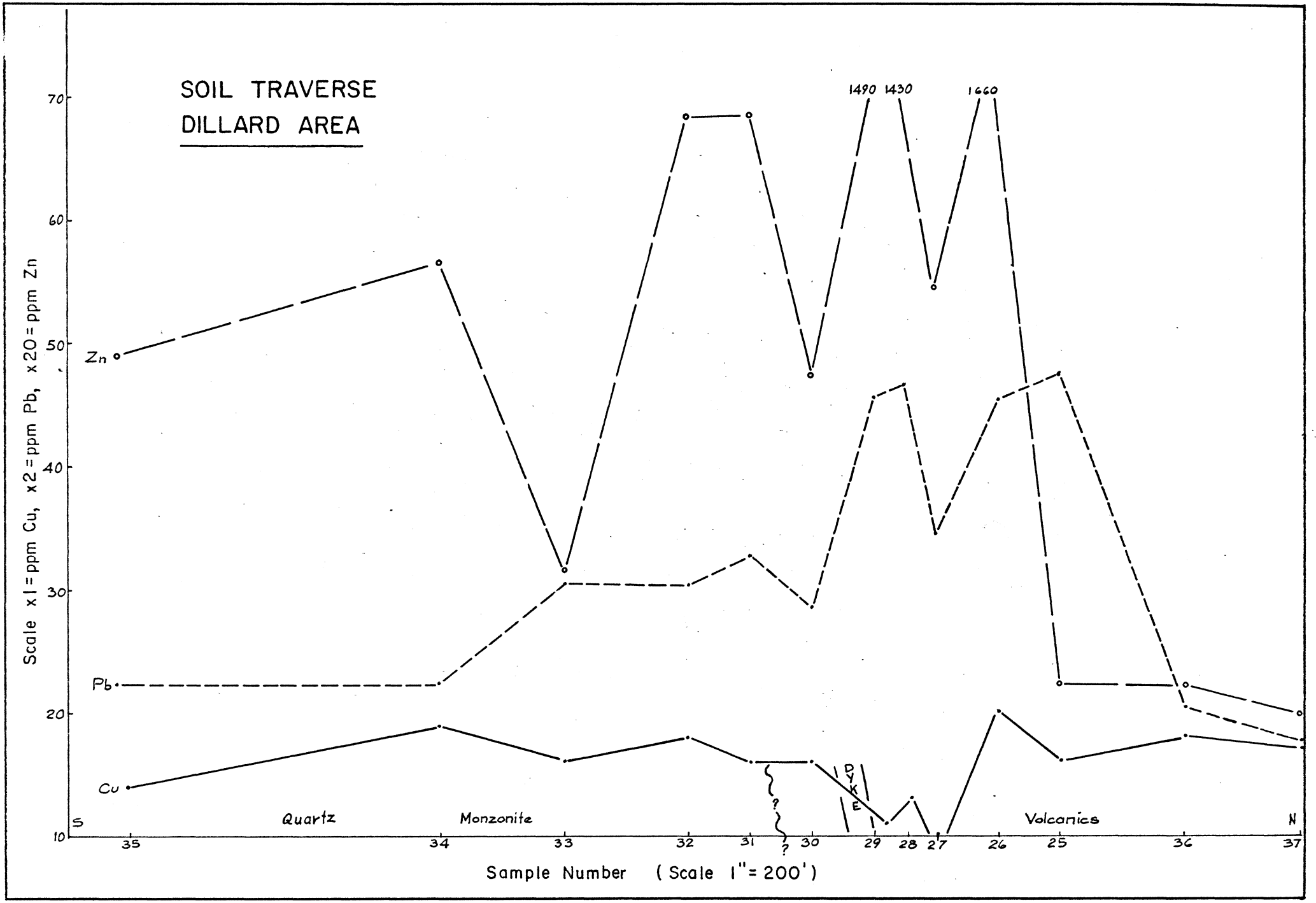
SOIL TRAVERSE
DILLARD AREA
1490
1430
1660
Zn
Pb
Cu
DYKE
?
?
Quartz
Monzonite
Volcanics
S
N
Scale x1 = ppm Cu, x2 = ppm Pb, x20 = ppm Zn
Sample Number (Scale 1" = 200')
70
60
50
40
30
20
10
35
34
33
32
31
30
29
28
27
26
25
36
37

Fig. 2

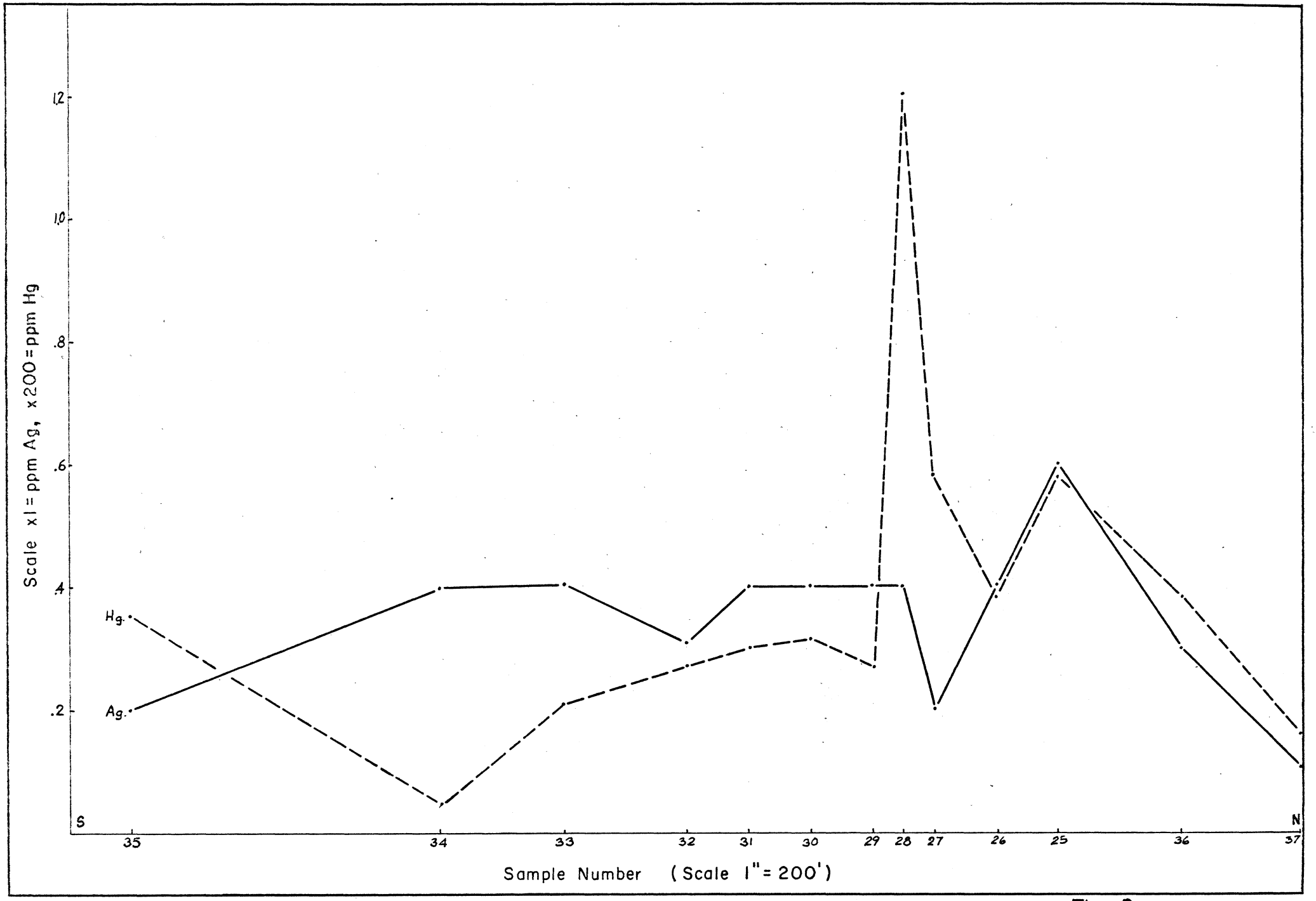
Scale x1 = ppm Ag, x200 = ppm Hg
1.2
1.0
.8
.6
.4
.2
Hg.
Ag.
S
N
35
34
33
32
31
30
29
28
27
26
25
36
37
Sample Number (Scale 1" = 200')

Fig. 2a