2807

REPORT ON

GEOCHEMICAL AND GEOPHYSICAL

SURVEY

SPENHO PROPERTY
PRINCETON AREA

Covering Claim Groups:- Spenho Group "A", Spenho Group "B" Spenho Group "C", Enid "G" and Enid "R"

Located:- Approximately 30 miles south of Princeton, Latitude 49° 09' N, Longitude 120° 30' W.

April 28 - November 30, 1970

By

J. G. Simpson, Ph.D., P.Eng.

CONTENTS:

INTRODUCTION:

Detailed geochemical silt sampling was carried out over the Spenho property in late April and early May of 1970 by Barringer Research Ltd. on behalf of Ironsides Exploration Corporation. Samples were tested for lead, zinc and copper. Areas of known mineralization and source areas of anomalous silt samples were further explored by geochemical soil sampling on a 300 x 100 grid, and a Crone J.E.M. horizontal loop survey was carried out over the resultant areas of interest.

LOCATION AND ACCESS:

The Spenho property claims are situated approximately 30 miles south of Princeton, B.C., athwart the Hope-Princeton highway, having a common boundary with the Manning Provincial Park to the west. Access to the claims is by means of logging roads and previously constructed trails to drill and trench sites.

PHYSIOGRAPHY:

The survey area is cut by the Similkameen and Pasayten Rivers which have cut steep sided valleys: elevations ranging from 3400 to 5000'. The vegetation comprises fairly open coniferous forest on the slopes to willow and marsh grass along valley bottoms.

CLAIMS:

The Spenho property is held under option by Ironsides Exploration Corporation under a joint agreement with Spenho Mines Limited, and comprises the following 136 claims:-

Group	Claim Name	Record Number	Expiry Date
Spenho Gp."A"	Spenho 22-26	23910-14	8 Nov.1971
"	Ajax 1 - 10	14066-75	3 Feb.1972
"	Cal 1-14	27422-35	7 May 1971
"	Cal Fr.#'s 1-2	27436-37	" "
"	Mineral Lease 75	C.G.Lot 229	21 Mar.'72
"	Mineral Lease 75	C.G.Lot1195	" "
Spenho Gp."B"	Spenho 1-16	23893-908	8 Nov.1971
"	Spenho 17	23915	12 Nov.'71
"	Spenho 52-53	23943-44	" " "
"	Spenho 54-57	24003-06	22 Nov.'71
"	Pete 1-8	7689-96	27 Aug.'71
"	Madelene 1-2	22695-96	25 June'71
"	Madelene Fr.	22697	" " "
"	Mineral Lease 67	C.G.Lot 273	28 July'71
"	Red Star	C.G.Lot 399	31 Oct.'71
"	Anaconda	C.G.Lot 400	" " "
"	Spenho 19-21	23916-18	12 Nov. '71

CLAIMS cont'd

Group	Claim Name	Record Number	Expiry Date
Spenho Gp. "C"	Spenho 27-41	23918-32	11 Nov. 1971
"	Spenho 43-51	23934-42	12 Nov. 1971
"	Air 1-2	27439-40	11 May 1971
"	Lorne 3-7	7730-34	2 Sept. 1971
"	Wood Fr. #1	27438	7 May 1971
Enid G. Gp.	Venture #1	12019	20 July 1971
"	Venture Fr.	12018	20 July 1971
"	Diane 1-6	18134-39	15 June 1971
"	Bee 1-8	18140-47	15 June 1971
"	Enid 1-6	22700-05	25 June 1971
Enid R. Gp.	Enid R 7-15	12383-91	26 May 1971

GEOLOGICAL SETTING

The claim area is predominantly underlain by metamorphosed volcanics and sediments of the Nicola Group with overstepping units of the Upper Tertiary, Princeton Group occurring in the north. The relatively high metamorphic grade, up to biotite-garnet in some lithologies, is attributed to the proximity of the Eagle Granodiorite of the Coast Intrusions series. The rocks have been strongly folded, and both metavolcanics and metasediments display a strong schistocity or foliation trending 20-30 degrees west of north. Three areas of copper-zinc mineralization known as the Red Star, Knobb Hill and Dianne zones occur, in which bornite, chalcocite, chalcopyrite, sphalerite and pyrite have been noted generally in association with vein-quartz in highly deformed quartz-sericite-talc schist horizons.

GEOCHEMICAL SURVEY

Methods and Procedure

The stream sediments consist of large sandy grains in the main creeks and medium to fine-grained particles in the smaller tributary streams. Manganese precipitation in some creeks was noticed, originating from the weathering volcanics. Soils are regosolic in nature, and have a loamy, sandy B horizon. Raised terraces composed of Quaternary alluvium are present on the lower slopes. Drainage is fair to excellent. Stream sediment samples were taken at 500 foot intervals from the active sediment in the centre of the stream either by hand or with the aid of a trowel. Soil samples were taken from the B horizon using a grubhoe at 100 or 200 foot stations on lines spaced 300 feet apart. All samples were packaged in heavy Kraft paper envelopes.

GEOCHEMICAL SURVEY Methods & Procedure Cont'd:

The soil and stream sediment samples were sent to Barringer Research Laboratory in Vancouver, where they were analysed for total copper and zinc in the case of soils, and .5N HCl copper, lead and zinc in the case of stream sediments. The samples were oven dried, seived to -80 mesh with nylon screening, and a .2 gram cut was taken. For soils, the cut was digested in perchloric acid and for silts, the cut was digested in .5N hydrochloric acid. The solutions were analysed for copper, lead, and zinc using atomic adsorption instrumentation. The analysis was performed by Miss Y. Hazeldene.

Results:

A. Stream Sediments - the statistics for copper, lead and zinc in the stream sediments are as follows:-

	Cu (ppm)	Pb (ppm)	Zn (ppm)
Background	0-30	0-14	0-40
Threshold	30	14	40
3rd order anomaly	31-50	15-30	41-60
2nd order anomaly	51-70	31-45	61-80
1st order anomaly	< 70	< 45	< 80

It will be noticed from these figures that there is a likelihood of copper and zinc mineralization, but lead occurs only as background values. There are four areas of copper anomalies in the stream sediments. The first is on Bonnevier Creek approximately 7000 feet north of the highway. It is composed of four anomalous samples, one of which is second order anomalous. The samples lie in an area covered by glacial alluvium and appear to originate on the west side of the creek. The second anomalous area is composed of one sample from a tributary draining the east side of the hill to the east of Bonnevier Creek. This sample warrants a closer look because it is the only sample taken directly from a stream draining that hill. The third area is near the headwaters of Crowley Creek. Seven samples are statistically anomalous in copper, but no sample is above third order. These samples lie directly on the Princeton volcanics and are not diluted by glacial alluvium. Due to this, and a slightly higher copper content in the volcanics, these samples are of no major importance. The fourth area lies southeast of the highway in the valley of the Pasayten River. Tributaries draining both sides of the valley are anomalous, with eight samples being third order, and two samples second order anomalous. The possibility of contamination in these streams exists because a large amount of trenching in and around the creeks has been done.

There are two areas of anomalous zinc in the stream sediments. The first consists of the lower portion of the stream which lies between Bonnevier and Crowley Creeks. The stream is anomalous from its mouth to about 3000 feet upstream. There

GEOCHEMICAL SURVEY Methods & Procedure Cont'd:

is a sharp cut-off which would indicate a source of zinc entering the stream at or slightly above the last anomalous value. The first order anomaly at the mouth of the creek is due to organic accumulation. The second area of anomalous zinc is a first order anomaly on a creek draining into Pasayten River. This value is due to a zinc culvert placed upstream from the sample point and can be disregarded.

B. Soil Samples

The soil sampling was carried out to check areas of interest indicated by the anomalous silt samples, where this information satisfied geological and ground considerations, and also to cover those areas indicated by geological mapping as being of above average potential. As lead values from the silt program were uniformly low and appeared to have a fairly consistent ratio to zinc this metal was not assayed for in the soils.

The rock types being similar in both major areas of soil sampling, the statistics for copper and zinc in the soils are based on all values as follows:-

	Cu (ppm)	Zn (ppm)
Background	0-70	0-200
Threshold	70	200
3rd order anomaly	70-110	200-400
2nd order anomaly	110-150	400-600
1st order anomaly	< 150	< 600

Although generally of weak character a number of anomalies were obtained for both zinc and copper; the former being more readily dispersed are broader and somewhat less intense than the latter. In the northern section two areas east and west of the central stream show a roughly north-south elongation parallel to the general strike of the country rocks and outline two zones of sericitic and chloritic schist. Copper values are sharply defined in the vicinity of known mineralization within these zones. South of the main road two small anomalous areas, one in zinc and one in copper, are widely separated. The copper anomaly proved to be related to a pyritised horizon of graphitic schist. Neither would appear to be of particular interest.

Conclusions on Geochemical Survey:

The silt and soil sampling program indicates that the two areas of previously known mineralization to the north of the main road, known as the Knobb Hill and Red Star zones and situated west and east of the central stream respectively, and the weakly mineralized area to the south known as the Dianne Zone, are the only areas of interest within the claim boundaries. Of

GEOCHEMICAL SURVEY Methods & Procedure Cont'd:

these the Red Star and Knobb Hill zones are indicated as a most likely source of mineralization. This agrees with the observed geological data. As none of the zones offered a primary drill target on the basis of geochemistry, a Crone J.E.M. vertical loop survey was carried out over the three areas of interest to determine the possibility of near surface sulphide deposits.

GEOPHYSICAL SURVEY:

Method & Instrumentation:

Instrumentation consisted of a dual frequency Crone Electro Magnetic Reconnaissance Unit based on the vertical loop principal. Both operators alternately read and transmit from identical instruments spaced 200' apart, with readings expressed as dip-angles at station intervals of 100'. The dip readings for frequencies of 3600 Hz and 1800 Hz are averaged for the two instruments and the resultants recorded as two separate figures. The appendation of N or NN indicates noisy to very noisy background. Anomalous values are usually represented by resultants reading greater than plus or minus 4 degrees. Noisy readings may be due to water-logged ground or if in association with high dip-angles could be indicative of a sulphide body.

Results:

The accompanying maps show resultants plotted for both high and low frequency readings. In the northern section results are uniformly near zero the only point of interest being a north north-easterly trending line of noisy to very noisy readings roughly paralleling the central creek and probably indicating a water bearing fault. South of the main road a number of readings appear to be anomalous and can be traced to a slightly pyritic graphite-schist horizon. There is no indication of near surface sulphide bodies in either of the two areas covered.

GENERAL CONCLUSIONS AND RECOMMENDATIONS:

It is concluded that the soil and silt responses for zinc and to a lesser extent copper are indicative of mineralization associated with mapped sericitic schist belts. The electro-magnetic response does not indicate near surface massive sulphides associated with these zones and it is concluded that the mineralization is either sporadic or consists of low-grade disseminations within the schist belts.

A program of I.P. survey is recommended over the anomalous areas to determine the extent and intensity of disseminated sulphide mineralization and/or the presence of deeper seated massive sulphide bodies.

APPENDIX 1

TIME AND COST DISTRIBUTION

Personnel	Occupation	Dates	Days	Rate	Total
J.G. Simpson, P. Eng.	Field Supervisor	1-3 Apr. 15-16 May 4 June	6	150	$ 900.00
G. Jilson, B. Sc.	Party Chief (Geologist)	1 May -	61	30	1,830.00
J. Truscott	Line Cutter/ Soil Sampler	29 Apr.- 31 May	33	30	990.00
J. Grant	"	"	33	30	990.00
T. Kelley	"	1-18 June	18	30	540.00
M. Wilson	"	29 Apr. - 15 June	48	30	1,440.00
J. Altenburg	(Geophysical	19-31 May	13	30	390.00
T. Altenburg	(Optr.	"	13	30	390.00

Camp Rental for above at $200. per mo. for 2 mos. 400.00

Gateway Cafe Meals at $7. per man day, 225 man days 1,575.00

Barringer Research Ltd.
Contract Silt Sampling Program
8 Crew days (4 men crew and all field costs inc. board & lodging) at $225/day 1,800.00

Barringer Research Ltd.
Assay Costs
1256 Soil samples for total Cu and Zn at $1.70 each 2,135.20
166 Silt samples for H.Cl., Cu, Zn, Pb at $2.20 each 365.20

Vehicle Rental

Redhawk 4X4 for 2 months at $400. per mo. 800.00

Instrument Rental

Crome J.E.M. for 2 weeks at $200. per mo. 100.00

TOTAL $14,645.40

APPENDIX 2

CERTIFICATE

I, John Glenn Simpson, of 720 Anderson Crescent, West Vancouver, British Columbia, do certify that

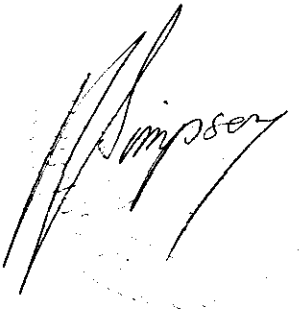
1) I graduated from King's College, London University with a B.Sc. (Hons) Geology in 1958, and was awarded a Ph.D. (External) from London University in 1969.

2) I am a Fellow of the Geological Association of Canada and a registered Professional Engineer in the Province of British Columbia and have practiced my profession in Africa, Europe and Canada for the past 12 years.

3) As a salaried employee of Cyprus Exploration Corporation, Ltd. I have no direct or indirect interest in the property or securities of Ironsides Exploration Corporation, or Spenho Mines Ltd. (N.P.L.).

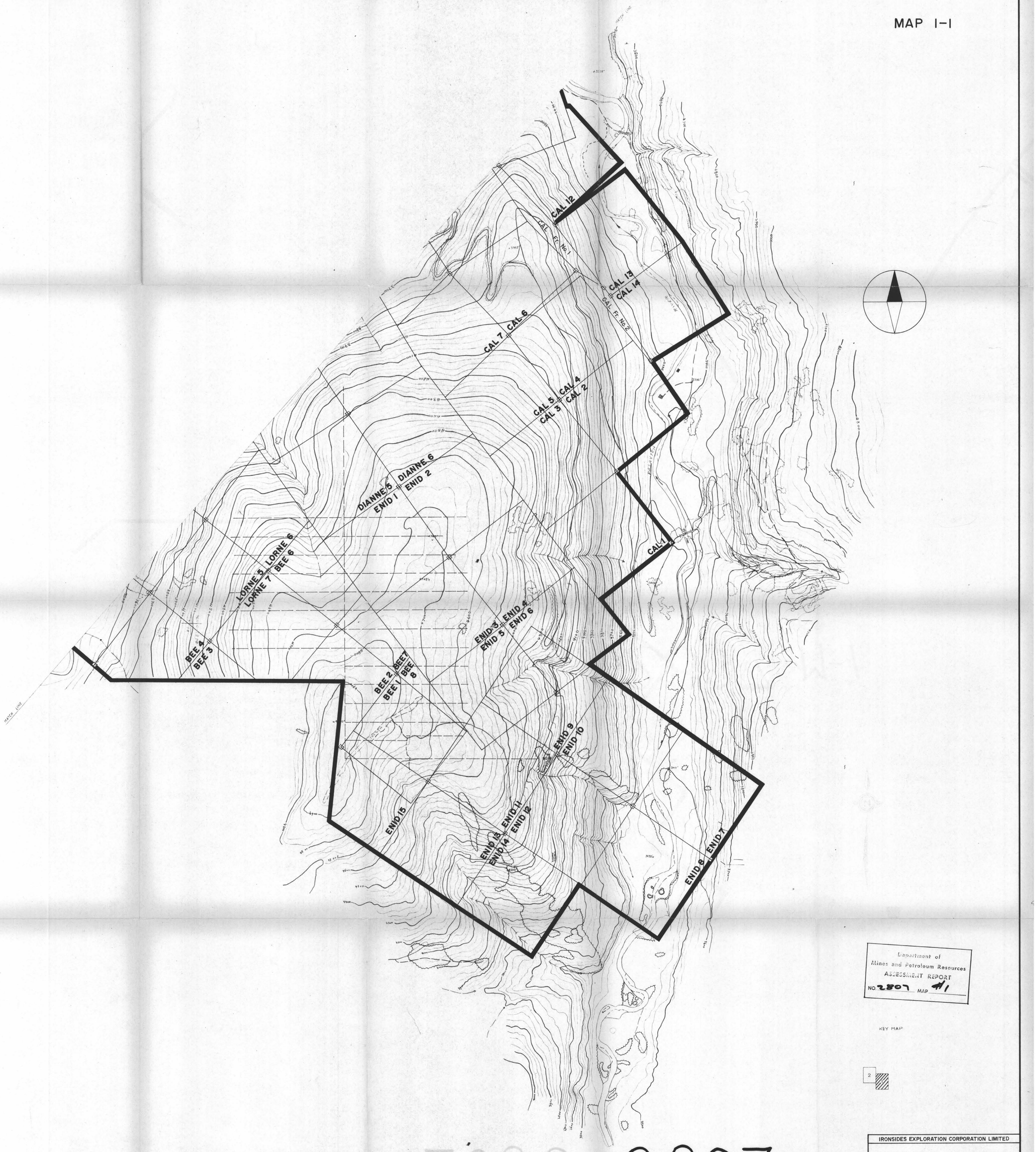
Dated at Vancouver

This 9th day of December, 1970.



J.G. Simpson, B.Sc., Ph.D., P.Eng.

MAP 1-1



KEY MAP

2

To accompany geophysical report, geochemical report,
on Spenho claims, Princeton area
By J. G. Simpson B. Sc., PH. D., P. Eng.
Nov., 1970

2807 M-1

IRONSIDES EXPLORATION CORPORATION LIMITED

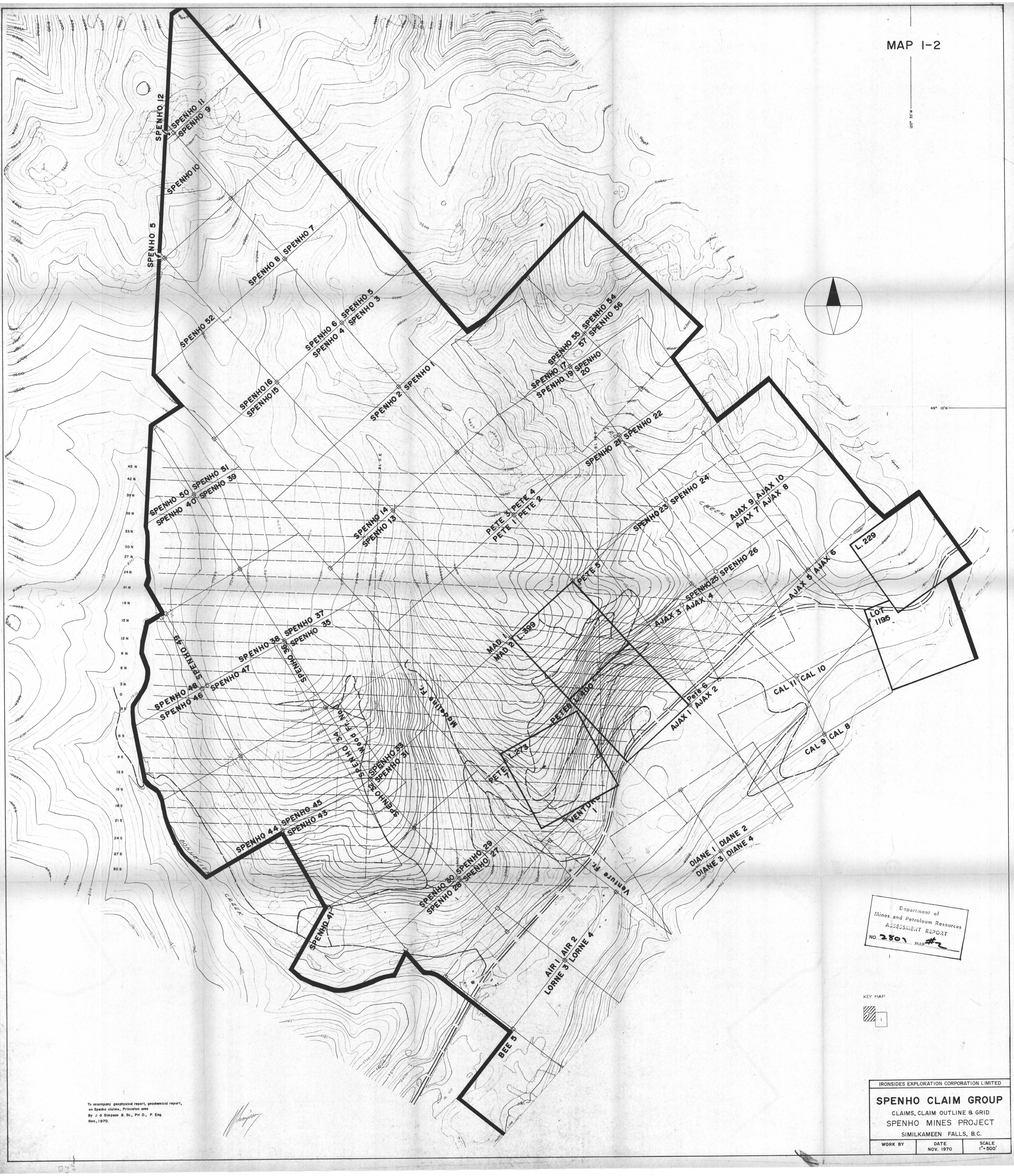
SPENHO CLAIM GROUP

CLAIMS, CLAIM OUTLINE & GRID

SPENHO MINES PROJECT

SIMILKAMEEN FALLS, B.C.

WORK BY	DATE	SCALE
	NOV. 1970	1"=500'



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CLAIMS, CLAIM OUTLINE & GRID

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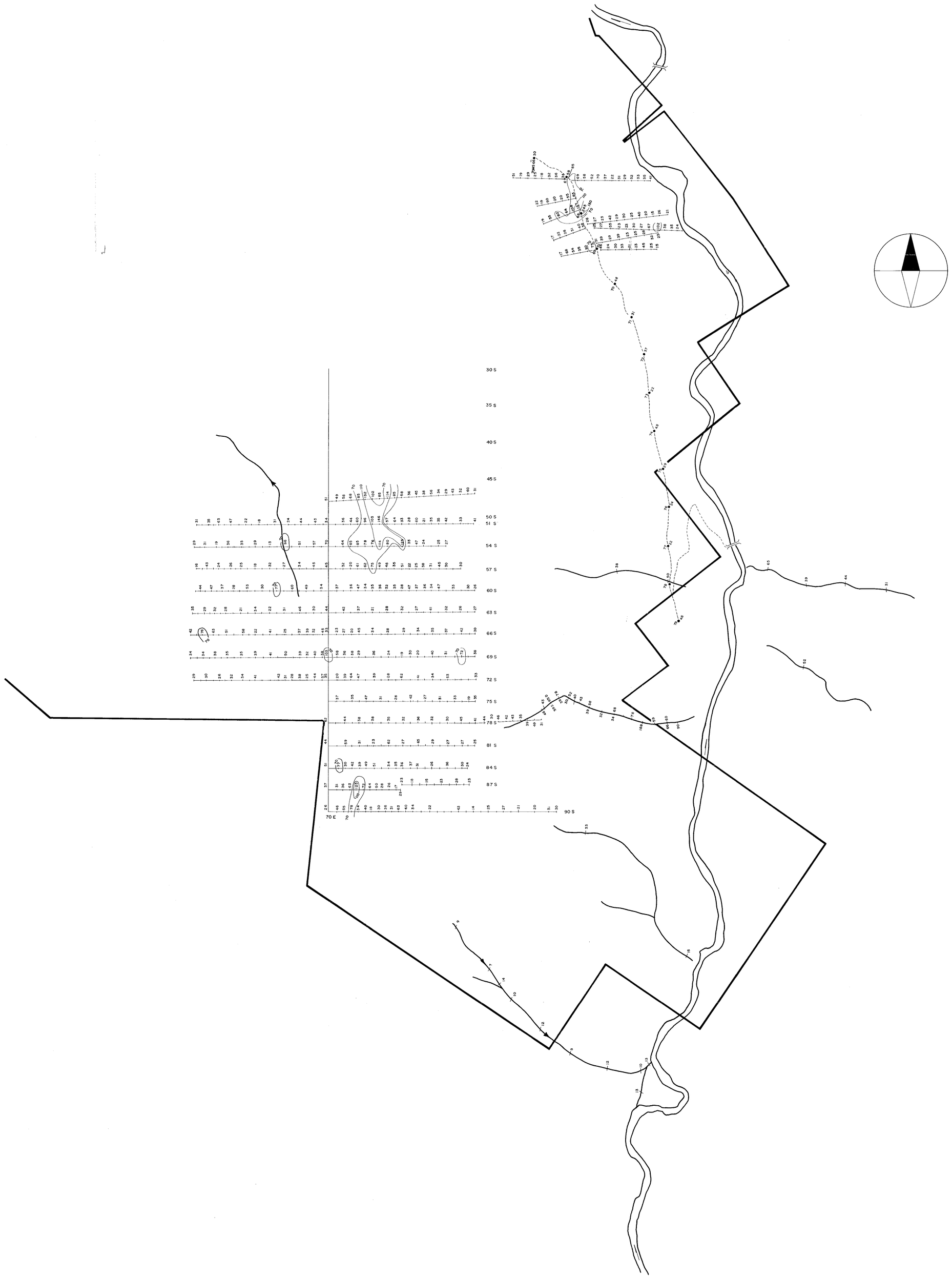
WORK BY	DATE	SCALE
	NOV. 1970	1" = 500'

MAP 2-1



LEGEND

25 Cu p.p.m (total Cu)

8 Cu p.p.m. (HCl)

2

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GEOCHEMICAL SURVEY

SILT & SOIL SAMPLING — COPPER

SPENHO MINES PROJECT

SIMILKAMEEN FALLS, B.C.

WORK BY	DATE	SCALE
	NOV. 1970	1" = 500'

MAP 2-2

120° 35' W

49° 10' N

BL 0 E

BL 38 E

45 N
42 N
39 N
36 N
33 N
30 N
27 N
24 N
21 N
18 N
15 N
12 N
9 N
6 N
3 N
0
3 S
6 S
9 S
12 S
15 S
18 S
21 S
24 S
27 S
30 S

LEGEND

25 Cu p.p.m. (total Cu)

25 Cu p.p.m. (HCl)

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GEOCHEMICAL SURVEY

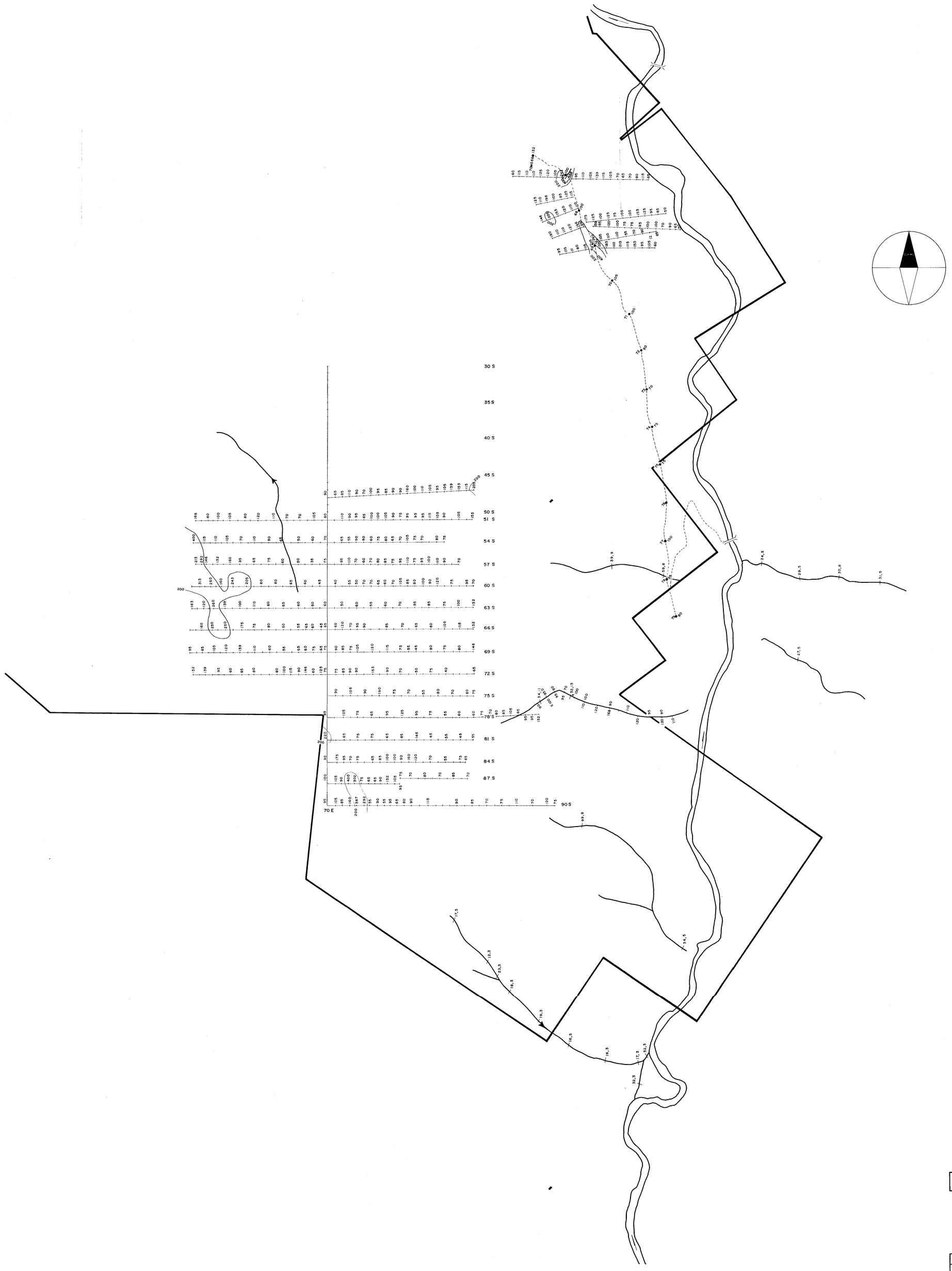
SILT & SOIL SAMPLING —— COPPER

SPENHO MINES PROJECT

SIMILKAMEEN FALLS, B.C.

WORK BY	DATE	SCALE
	NOV. 1970	1"=500'

MAP 3-1



LEGEND

65/100 Zn p.p.m. (total Zn)

34,5 Zn, Pb p.p.m. (HCl)

2

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IRONSIDES EXPLORATION CORPORATION LIMITED

GEOCHEMICAL SURVEY

SILT & SOIL SAMPLING — LEAD & ZINC

SPENHO MINES PROJECT

SIMILKAMEEN FALLS, B.C.

WORK BY	DATE	SCALE
	NOV. 1970	1" = 500'

MAP 3-2

120° 35' W

49° 10' N

B.L. 0 E

B.L. 38 E

45 N
42 N
39 N
36 N
33 N
30 N
27 N
24 N
21 N
18 N
15 N
12 N
9 N
6 N
3 N
0
3 S
6 S
9 S
12 S
15 S
18 S
21 S
24 S
27 S
30 S

LEGEND

65 / 90 Zn p.p.m. (total Zn)

34.5 Zn, Pb p.p.m. (HCl)

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IRONSIDES EXPLORATION CORPORATION LIMITED

GEOCHEMICAL SURVEY

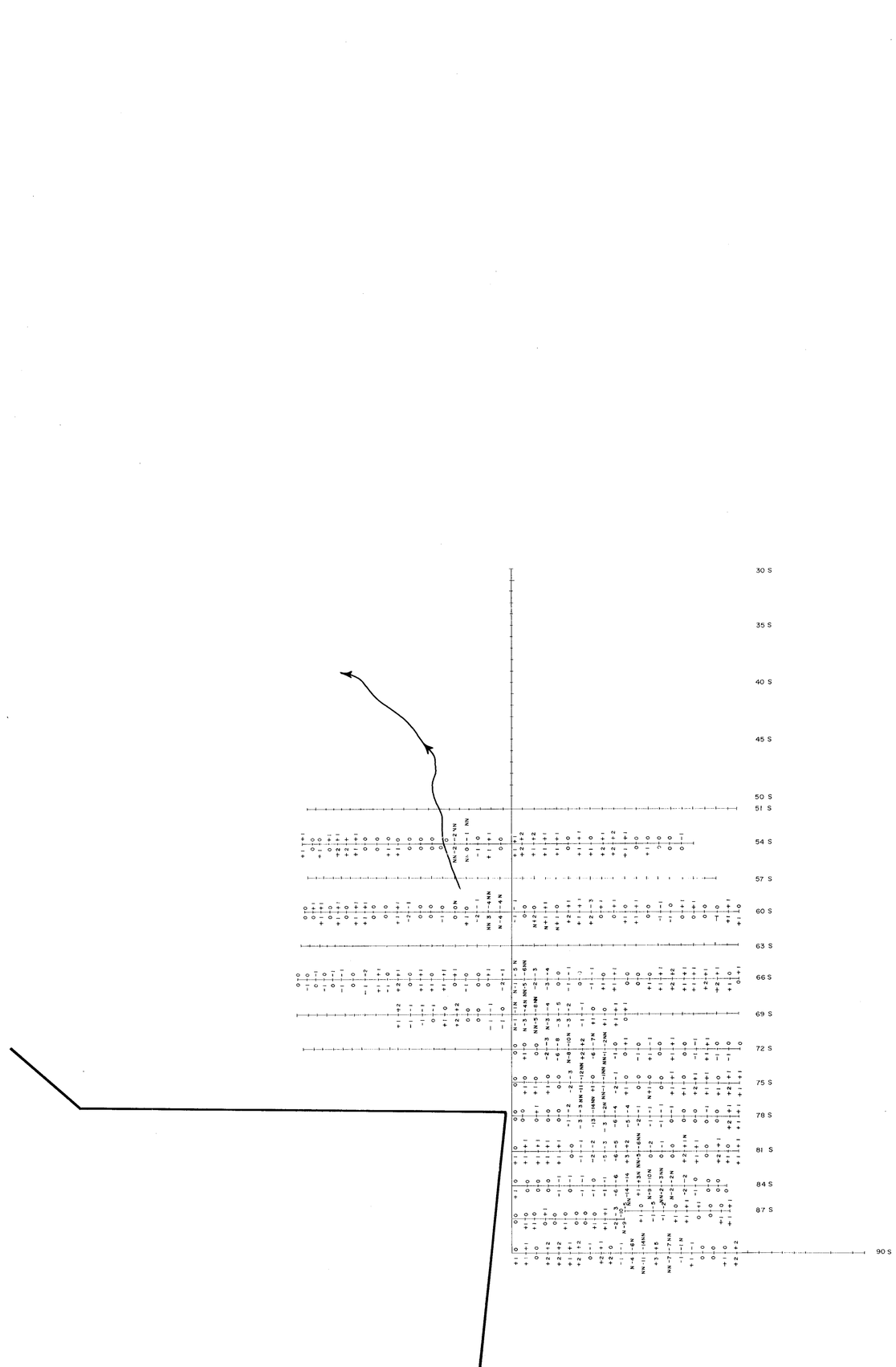
SILT & SOIL SAMPLING LEAD & ZINC

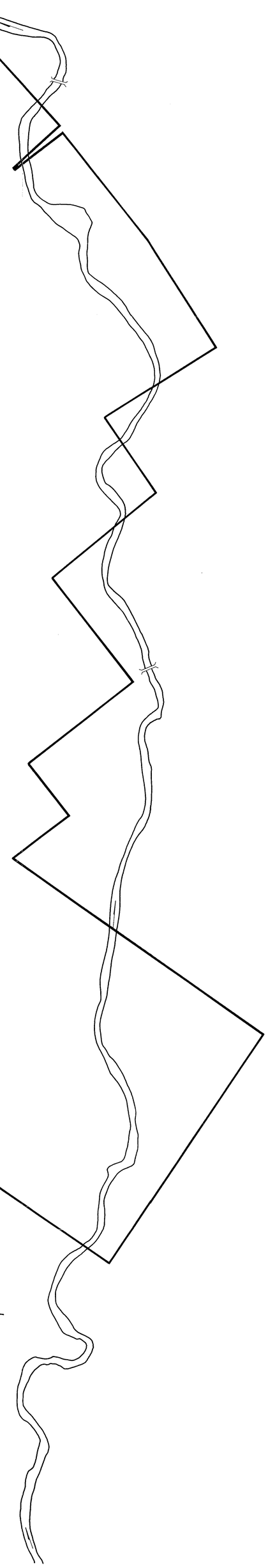
SPENHO MINES PROJECT

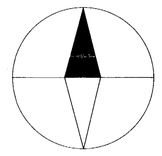
SIMILKAMEEN FALLS, B.C.

WORK BY	DATE	SCALE
	NOV. 1970	1" = 500'

MAP 4-1







2

LEGEND

high frequency 3600 Hz

low frequency 1800 Hz

N : NOISY

NN : VERY NOISY

IRONSIDES EXPLORATION CORPORATION LIMITED

CRONE J.E.M. SURVEY

SPENHO MINES PROJECT

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6 N
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3 S
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