

BRANTA EXPLORATIONS LTD.

South and EM Mineral Claims
Whitehorse M.D., 105-K-1/2
132° 31' West, 62° 05' North



GEOPHYSICAL & GEOCHEMICAL REPORT

by

P.H. Sevensma, Ph.D., P. Eng.

Program

September 16, 1968 to February 14, 1969

This report has been examined by
the Geological Evaluation Unit.
Approved as to technical worth by:


RESIDENT GEOLOGIST

Approved as to cost in the amount
of: \$ 6700.⁰⁰


RESIDENT MINING ENGINEER

Accepted as representation work
under Section 53(4) Yukon Quartz
Mining Act.


COMMISSIONER OF YUKON

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September 16, 1968 to February 14, 1969.

1. INTRODUCTION

The South and EM groups total 72 claims and cover a potential lead-zinc prospect situated in the Anvil Range 130 airmiles Northeast of Whitehorse, Yukon Territory. They lie South of Olgie Lake in an area of generally low relief.

The property was staked in early 1966. In the same year a Lockwood Airborne geophysical survey located anomalous magnetic and electromagnetic fields on the property.

A limited program of road construction and linecutting during the winter of 1966-67 provided partial access by tote road from Ross River Post. Work in the winter of 1967-68 provided access and grid control to defined regions of interest.

A detailed evaluation of selected target areas was planned for the 1968 season. A combined program of geophysical and geochemical work was initiated late in September.

2. PROPERTY

The South and EM groups comprize a total of 72 contiguous mineral claims as listed below:

<u>Claim No.</u>	<u>Grant No.</u>	<u>Date of Record</u>
South 1 - 48	99461 - 99508	February 16, 1966.
EM 1 - 24	Y10542 - Y10565	February 16, 1966.

Previously completed programs of exploration work have been applied as representation work to hold all claims in good standing until August 16, 1969.

A beneficial interest in this property is held by Branta Explorations Ltd.

3. LOCATION & ACCESS

The property is located 8 miles Northwest of the community of Ross River, and some 130 miles Northeast of Whitehorse. The recently re-opened Canol Road passes 6.3 miles to the East of the property and a winter road has been extended on to the property. No difficult terrain is encountered in gaining access to the property which is located on a gentle North facing slope. Tenas Creek forms the most prominent drainage feature on the property. The steeply incised valley which forms much of the course provides numerous rock exposures in an area otherwise obscured by drift.

4. GEOLOGY

(a) Regional

The attached Figure 1 provides a generalized picture of the regional features which characterize the Anvil Range base metal camp. A potential well in excess of 50 million tons of ore grading 10% combined lead-zinc with lessor values in silver and copper has been disclosed in three major deposits thus far discovered. Mineralization has been located along a belt some 20 miles in length. In all cases the sulphides have been confined to a "middle" phyllite member in a sequence of Cambrian meta-sediments.

(b) Local

Trenching conducted during the winter of 1967-68 exposed rusty weathering creamy phyllite which bears a close resemblance to a sericite alteration halo noted adjacent to ore deposits of the district.

The dominant trend of foliated rocks is WNW with a moderate Southerly dip.

An intrusive contact has been traced across the North-west corner of the property. This contact marks the Southern boundary of an extensive area of granitic rock which runs sub-parallel to the property between the North boundary and Olgie Lake. Traces of disseminated pyrite and chalcopyrite have been noted in a locally rhyolitic border phase of this intrusive at a point near the property boundary.

Graphitic schist exposed along Texas Creek is coincident with a belt of high conductivity revealed by earlier airborne surveys. Quartz veins within the schist carried chalcopyrite.

5. GEOPHYSICAL SURVEYS

(a) Method and Instrumentation

(1) Magnetometer

A Sabre MK 1 fluxgate magnetometer was employed. This instrument measures the vertical component on a dial graduated in 40 gamma increments. All surveys were conducted from base stations which were periodically checked to note and record diurnal variations which were subsequently corrected.

(2) EM Set

A Ronka EM 16 utilizing a homogeneous horizontal field from a remote transmitter was employed. This instrument measures the angle of the secondary field radiated by a sub surface conductor by means of a clinometer. An out-of-phase component of this field is obtained by null detection on a calibrated scale.

Transmitter station NPG, Seattle, Washington, operating on a frequency of 18.6 kc was used as it provided a primary magnetic field oriental approximately at right angles to the inferred regional strike.

Readings were taken facing in a Northeasterly direction.

(b) Results

(1) Grid Area 1.

1.6 miles of line were cut and picketed. The grid was located to provide coverage of the anomalies detected by the HEM survey.

Contoured readings obtained from the magnetometer survey are shown on Fig. 3. A lenticular high exhibiting relatively sharp magnetic relief across the central portion is the most pronounced feature.

The topographic surface slopes from 5 to 10 degrees to the North resulting in a negative bias on all recorded EM 16 readings. No attempt to adjust the profiles for terrain have been made. Variations in overburden thickness

and conductivity impair the value of the quadrature response as a guide to conductor quality but it is noted that inflections in the quadrature profile follow the In-phase profile in most instances thus suggesting poor conductivity. An exception to this general pattern is located at 9+70 South on line 0+00.

(2) Grid Area 2.

A grid system comprized of 1.5 miles of bulldozer lines was picketed and an additional 1,500 feet of line was cut to facilitate a survey of the position of this grid relative to topographic features and claim boundaries.

Magnetometer readings were taken at stations located 100 ft. apart. Values obtained from this survey are plotted on Fig. 5. Considerable variation in base station readings occurred over the duration of the survey. Results however tend to confirm the pattern revealed by the airborne survey.

The EM 16 survey plotted on Figure 6 fails to provide adequate data for a definitive interpretation. The survey as plotted, with no adjustment for topographic effect should show a positive polarity when approaching, i.e. west of, a conductor and negative polarity from stations beyond the conductor. Crossovers at 3+50W on Line 0+00 and at 1+70 and 4+80 on line 5+00N warrant evaluation by a more comprehensive survey. All lines should be extended further to the West.

6. GEOCHEMICAL SURVEY(a) Method

A 2" diameter soil auger was used to penetrate the highly organic muck and ash layer. The oxidized B layer was found to be very irregular and frequently absent from the soil profile. Permafrost was frequently encountered which prevented sampling at a number of stations, particularly on area 1.

The samples may be characterized as representing the "C" horizon except in local areas of well drained soil where a mature profile provides an identifiable layer of oxidation.

Individual samples consisted of from 200 to 500 grams of soil.

Stream silt samples were taken from the active channel at a period of low water.

All samples were submitted without further processing to the Whitehorse Assay Office.

Laboratory procedures consisted of drying, sieving to obtain the -80 mesh fraction, perchloric acid digestion and Atomic Absorption analysis on a Techtron unit.

All samples were analyzed for lead, zinc and copper.

(b) ResultsArea 1.

Figures 7 to 9 inclusive show values obtained in this survey. Results are negative in that all values fall within the normal background range. Maximum values

are as follows:-

Lead:	28 p.p.m.
Zinc:	260 p.p.m.
* Copper:	160 p.p.m.

* This value represents an isolated high somewhat above the threshold level.

Area 2.

Values obtained in the survey of this grid are plotted on Figures 10 to 12 inclusive. The trend of threshold values outlined on the Zn. plot does not conform to any topographic trend which might otherwise suggest dispersion of this mobile element by groundwater. The sequence of consecutive, above average copper values near the South end of the base line also conforms to this trend. Lead values do not convey any meaningful pattern.

Maximum values obtained from this grid are as follows:

Lead: 68 p.p.m.
Zinc: 920 p.p.m.
Copper: 116 p.p.m.

Reconnaissance Survey along Texas Creek:

Sample sites 0 to 18 follow the course of a winter road located along the base of a gentle South slope. Samples 19 to 33 were taken from stream silts along Texas Creek. A sample interval of approximately 200 feet was maintained and all locations were flagged. Sample locations are noted on Fig. 2 and values are given in the attached table 1.

Results from this survey should be examined in the light of data provided on a confidential basis by the holder of adjacent property.

The significance of the electromagnetic survey is enhanced by the probability that the heavy metal source lies near an indicated conductor.

7. SUMMARY

Area 1.

The absence of any significant geochemical expression from this area suggests that conductivity is caused by other than a sulphide source. No further work in this area is recommended for the present, but a final decision should only be made on completion of other areas suggested as warranting further work.

Area 2.

Extension of the existing grid to the South and West is warranted in view of both geochemical and geophysical data which, indicates but fails to delineate a potentially anomalous zone within a sequence of phyllitic rocks which bear a marked similarity to those enclosing the Swim deposit.

Reconnaissance Survey, Tenas Creek.

The wide distribution of threshold zinc values in the drainage system down slope from a well defined conductor with high In-phase: Quadrature ratios (Refer to Lockwood Survey) provides an excellent target for detailed ground surveys.

The inferred area of interest appears to lack any magnetic expression.

8. RECOMMENDATION

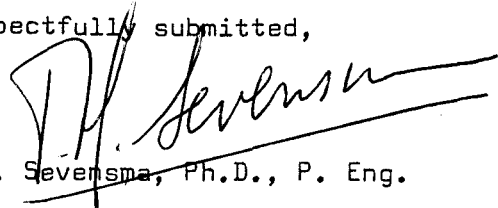
Systematic soil sampling in the area adjacent to Tenas Creek is believed to be the most effective tool for establishing the general location of the causative source. If close coincidence with the electromagnetic conductor defined by the airborne survey is confirmed,

a limited program of ground geophysics employing horizontal loop equipment may prove adequate to define drilling targets.

The extension of grid area 2 and particularly the geochemical follow-up should be given early attention. This area also offers more outcrop which should be mapped in an effort to improve the tentative correlation based on similar lithologys.

Completion of the work outlined above should fall within the originally budgeted estimate of \$10,000.00 of which some \$4,500.00 has been expended to date.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "P.H. Sevensma", written over a horizontal line.

P.H. Sevensma, Ph.D., P. Eng.

February 14, 1969.

TABLE 1

Reconnaissance Geochemical Survey along Tenas Creek

1. Soil Samples (No's. 0 to 18 incl.)

<u>Sample No.</u>	<u>Pb.</u>	<u>Zn.</u>	<u>Cu.</u>
0	20	136	60
1	18	148	58
2	20	620	80
3	18	280	54
4	26	240	72
5	20	440	80
6	20	172	44
7	18	132	36
8	34	160	72
9	16	144	40
10	18	160	64
11	16	140	36
12	16	108	28
13	12	76	20
14	16	132	36
15	16	120	38
16	24	174	67
17	18	136	38
18	28	160	52

2. Silt Samples (19 to 33 incl.)

<u>Sample No.</u>	<u>Pb.</u>	<u>Zn.</u>	<u>Cu.</u>
19	26	300	68
20	52	380	48
21	32	440	48
22	34	320	36
23	24	300	40
24	24	380	48
25	24	420	60
26	26	540	60
27	20	380	44
28	24	410	52
29	26	440	64
30	22	370	48
31	22	192	40
32	20	285	60
33	8	116	20

All data from Analytic Report No. A-105-80, Whitehorse Assay Office.



CERTIFICATE

I, PIETER H. SEVENSMA, of 908, 1280 Haro Street, in the City of Vancouver, in the Province of British Columbia, DO HEREBY CERTIFY:

1. THAT I am a Consulting Geologist with a business address at 715-850 West Hastings Street, in the City of Vancouver, in the Province of British Columbia.
2. THAT I am a graduate of the University of Geneva, Switzerland [Physics and Chemistry, 1937; Geology and Mineralogy, 1937] where I obtained by Ph.D. in Geological and Mineralogical Sciences in 1941.
3. THAT I am a Registered Professional Engineer in the Geological Section of the Association of Professional Engineers of the Province of British Columbia and of the Association of Professional Engineers of the Yukon Territory.
4. THAT I have practiced my profession as a geologist for the past 30 years.
5. THAT I have personally laid out and supervised a program of helicopter-borne magnetic and electromagnetic surveying of this area by Lockwood Survey Corporation Ltd. in 1966.
6. THAT I have not personally examined the South and EM groups, but members of my staff have conducted several exploration programs on these claims as well as on immediately adjoining claims.
7. THAT I have no direct or indirect interest in any of the securities or properties of Branta Explorations Ltd., nor do I expect to receive or acquire any.

Dated this 14th day of February, 1969.

Respectfully submitted,



P. H. Sevensma, Ph.D., P.Eng.

APPENDIX "A"

Statement of Costs Incurred
Geochemical & Geophysical Surveys
South and EM Mineral Claims

<u>Date</u>	<u>Payee</u>	<u>Item</u>	<u>Amount</u>	<u>Cheque No.</u>
Sept. 24/68	Canadian Pacific Airlines	Freight	\$ 70.07	1
24	Seely's (Yukon) Ltd.	Supplies	201.75	2
24	Whitehorse Assay Office	Supplies	13.50	3
24	Apex Equipment Co. B.C. Ltd.	Equipment	272.00	4
25	H.S. Aikins	Expenses	100.00	5
25	Burns Foods Ltd.	Supplies	86.81	6
27	Mineral Motel	Accommodation	35.00	7
28	Ross River General Store	Supplies	35.52	8
31	Jimmy Dick	Labour Contract	160.00	9
Oct. 2	Joseph Shorty	" "	140.00	10
2	George Johnny	" "	120.00	11
9	Coachways System	Freight	5.30	12
10	Ross River Cafe	Meals	8.00	13
10	Woody's Taxi	Transportation	100.00	14
11	H.S. Aikins (exp. advance)	Expenses	150.00	15
11	Taylor & Drury	Supplies	123.80	16
16	P.H. Sevensma Consultants Ltd.	Transportation	1,657.12	17
17	Klondike Helicopters Ltd.	Transportation	584.49	18
28	Whitehorse Assay Office	Assays	245.00	19
Nov. 5	Mineral Lounge & Motel	Accommodation	14.00	20
Feb. 19/69.	P.H. Sevensma Consultants Ltd.	Services & Expenses	342.47	21
	Less credit for salvage of equipment:		<u>236.87</u>	
	Costs applicable to this program:		<u>\$4,227.96</u>	



APPENDIX "B"

Statement of Personnel & Firms Employed

Geochemical & Geophysical Surveys
South & EM Mineral Claims

P.H. Sevensma Consultants Ltd.,
715-850 West Hastings St.,
Vancouver 1, B.C.

P.H. Sevensma, P. Eng.
H.S. Aikins, Senior Technician.
J. Davis, Geophysical Operator.
R. Saucier, Cook.

J. Shorty,
General Delivery,
Whitehorse, Yukon Territory.

Surveys & Line Cutting.

J. Dick,
Ross River, Yukon Territory.

Line Cutting.

G. Johnny,
Ross River, Yukon Territory.

Soil Sampling.

Klondike Helicopters Ltd.,
P.O. Box 999,
Whitehorse, Yukon Territory.

D. Zutter, Pilot.

A handwritten signature in black ink, appearing to be 'P.H.S.', is located in the bottom right corner of the page. The signature is written in a cursive style and is underlined.

TABLE OF FORMATIONS

- TERTIARY**
 Basalt
- CRETACEOUS**
 Andesite
- TRIASSIC**
 Conglomerate
- PALAEOZOIC (Undivided)**
 Limestone, Sandstone, slate, chert, minor volcanics.
- CAMBRIAN**
 Pred. phyllite, minor limestone, "greenstone."
- PROTEROZOIC**
 Gritty Quartzite
- Schiste & Gneiss — various ages.
- INTRUSIVE ROCKS**
CRETACEOUS
 Granite, granodiorite, S - Syenite
- PERMIAN**
 Ultrabasic Rocks.
- Extensive Surficial Deposits.

MINERAL DEPOSITS

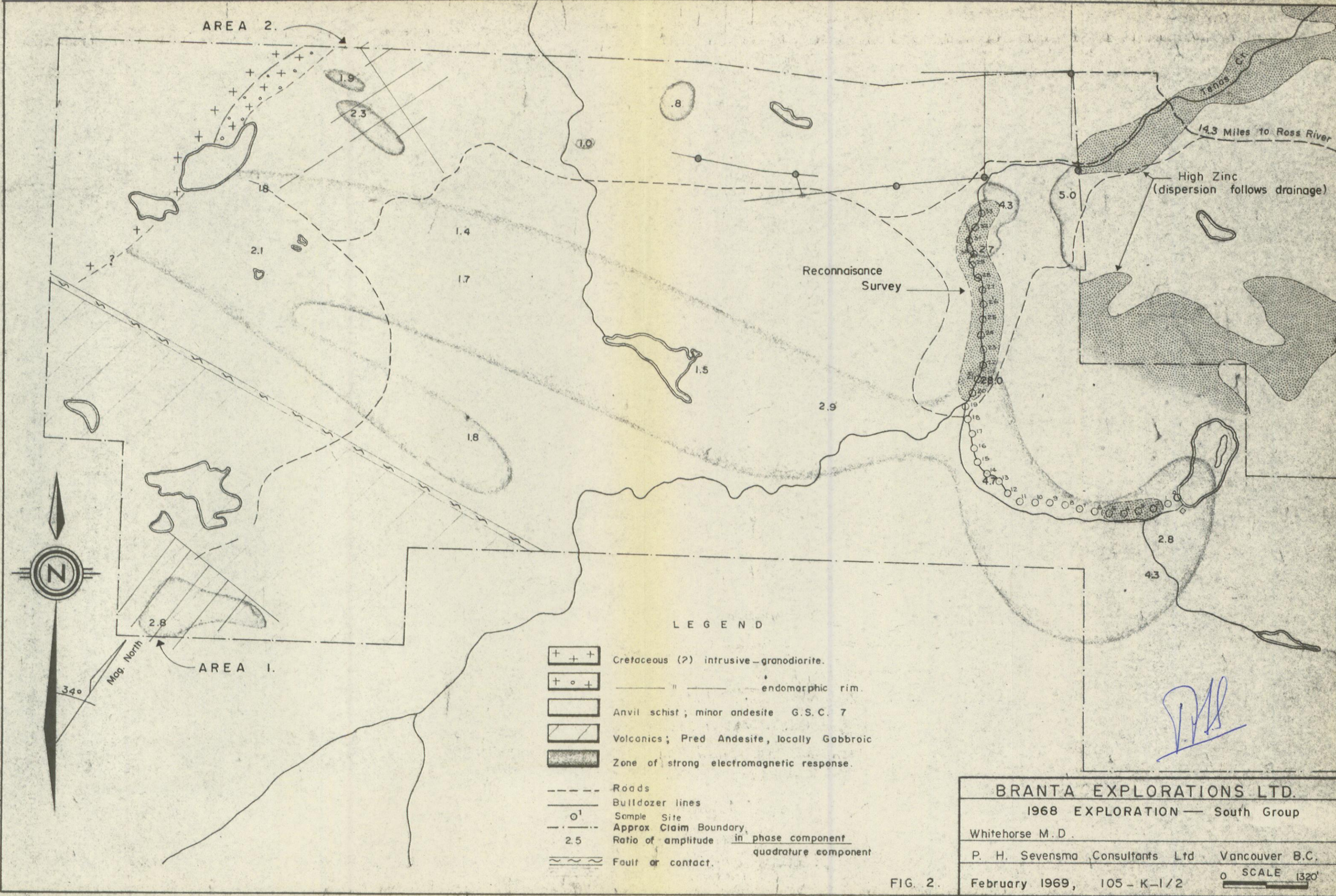
- 1 Anvil, Faro
- 2 Kerr Addison, Vangorda
- 3 Kerr Addison, Swim



JMS

BRANTA EXPLORATIONS LTD	
REGIONAL GEOLOGY, ANVIL — ST. CYR RANGES	
Whitehorse M.D.—Y.T.	105—K—1,2
P. H. Sevensma Consultants Ltd. Vancouver, B.C.	
February 1969,	Scale: 16mile.

Dwg. No. Fig. 1.

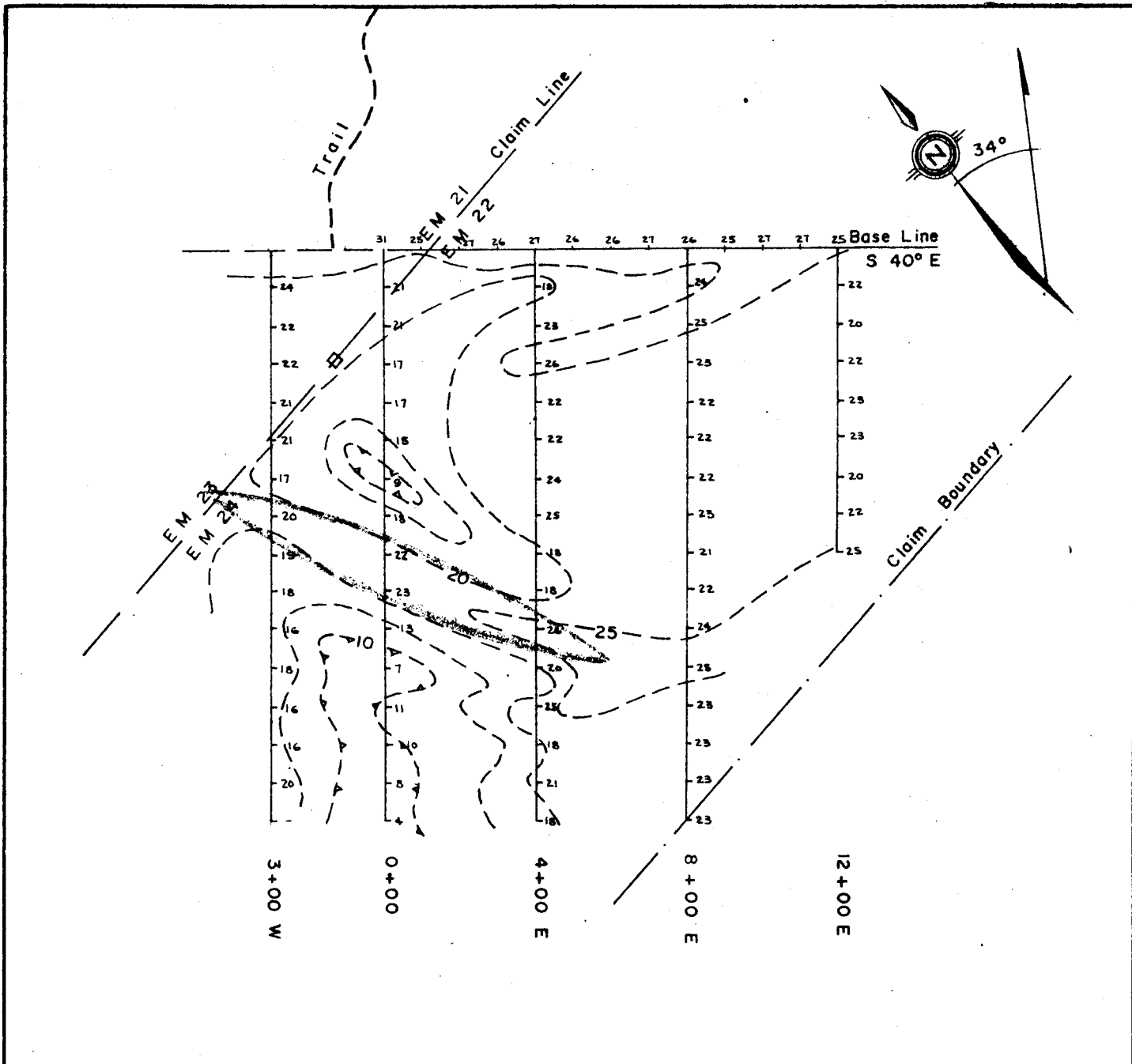


LEGEND

- Cretaceous (?) intrusive-granodiorite.
- " " endomorphic rim.
- Anvil schist; minor andesite G.S.C. 7
- Volcanics; Pred Andesite, locally Gabbroic
- Zone of strong electromagnetic response.
- Roads
- Bulldozer lines
- Sample Site
- Approx Claim Boundary,
- Ratio of amplitude in phase component
- Fault or contact.

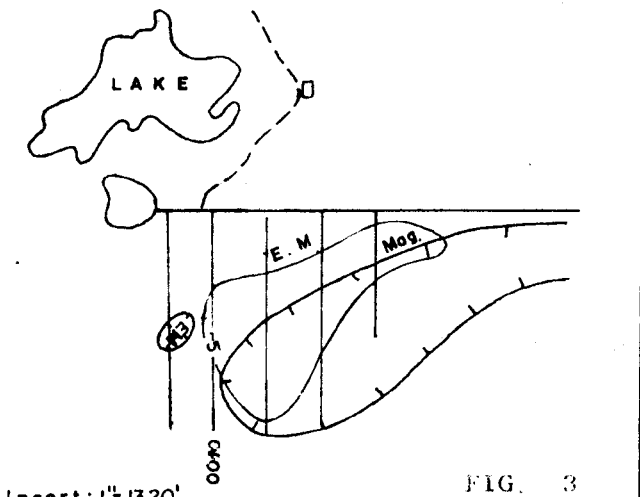
BRANTA EXPLORATIONS LTD.	
1968 EXPLORATION — South Group	
Whitehorse M.D.	
P. H. Sevensma Consultants Ltd	Vancouver B.C.
February 1969, 105-K-1/2	0 SCALE 1320'

FIG. 2.



Note: 1 Scale unit = 40 gammas

Data derived from Airborne Survey



Insert: 1" = 1320'

FIG. 3

AREA 1.

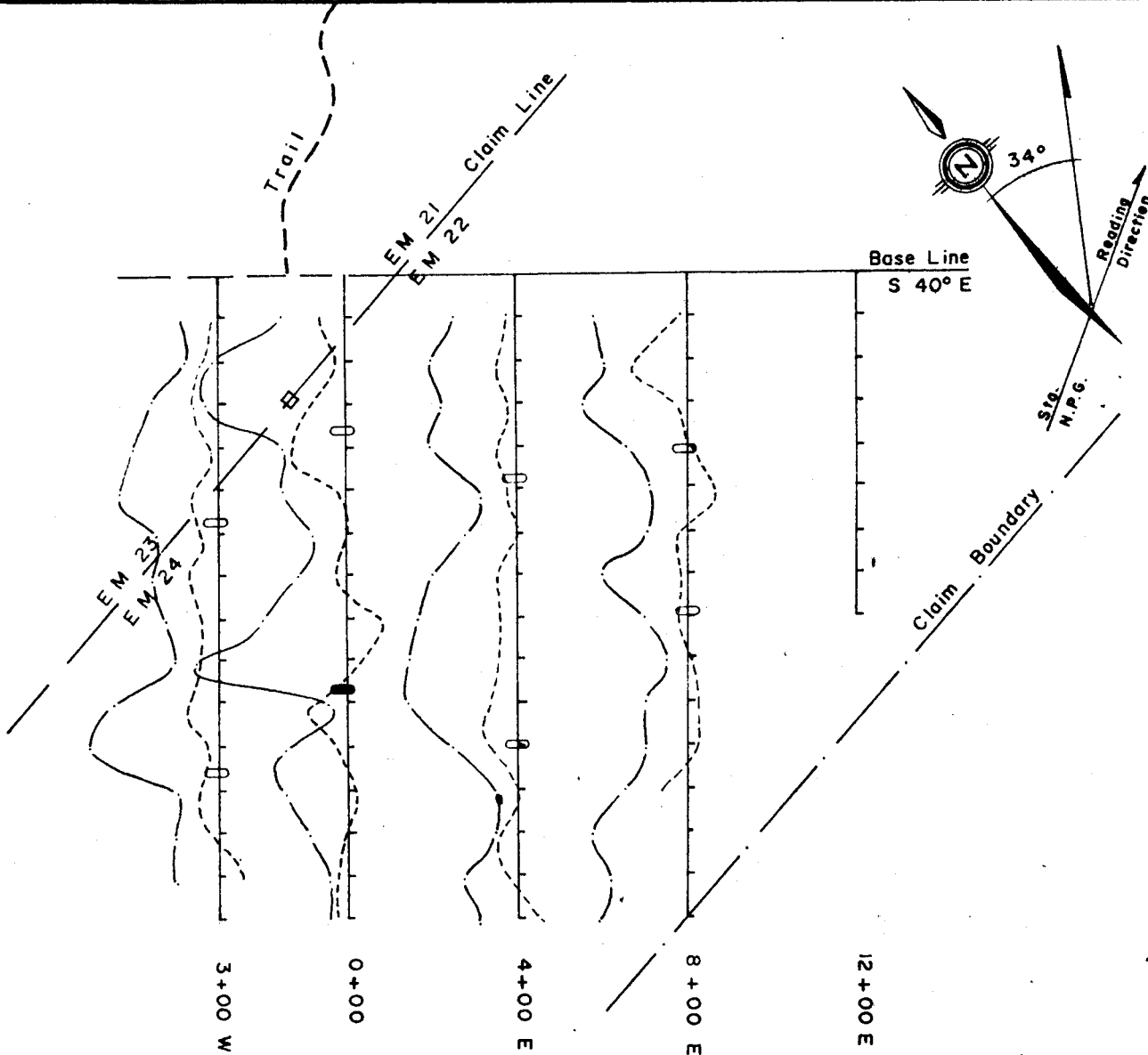
BRANTA EXPLORATIONS LTD.

MAGNETOMETER SURVEY

Whitehorse M.D. 105-K-1, 2

P.H. Sevensma Consultants Ltd: Vancouver B.C.

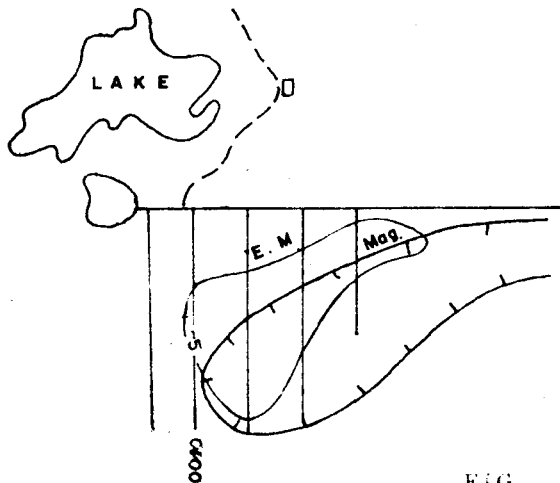
September 1968, Scale: 0 400'



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○ Conductivity, see text.

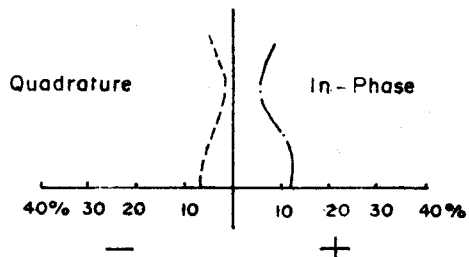
Data derived from Airborne Survey



Insert: 1"=1320'

FIG. 4

RONKA EM 16 SURVEY



BRANTA EXPLORATIONS LTD.

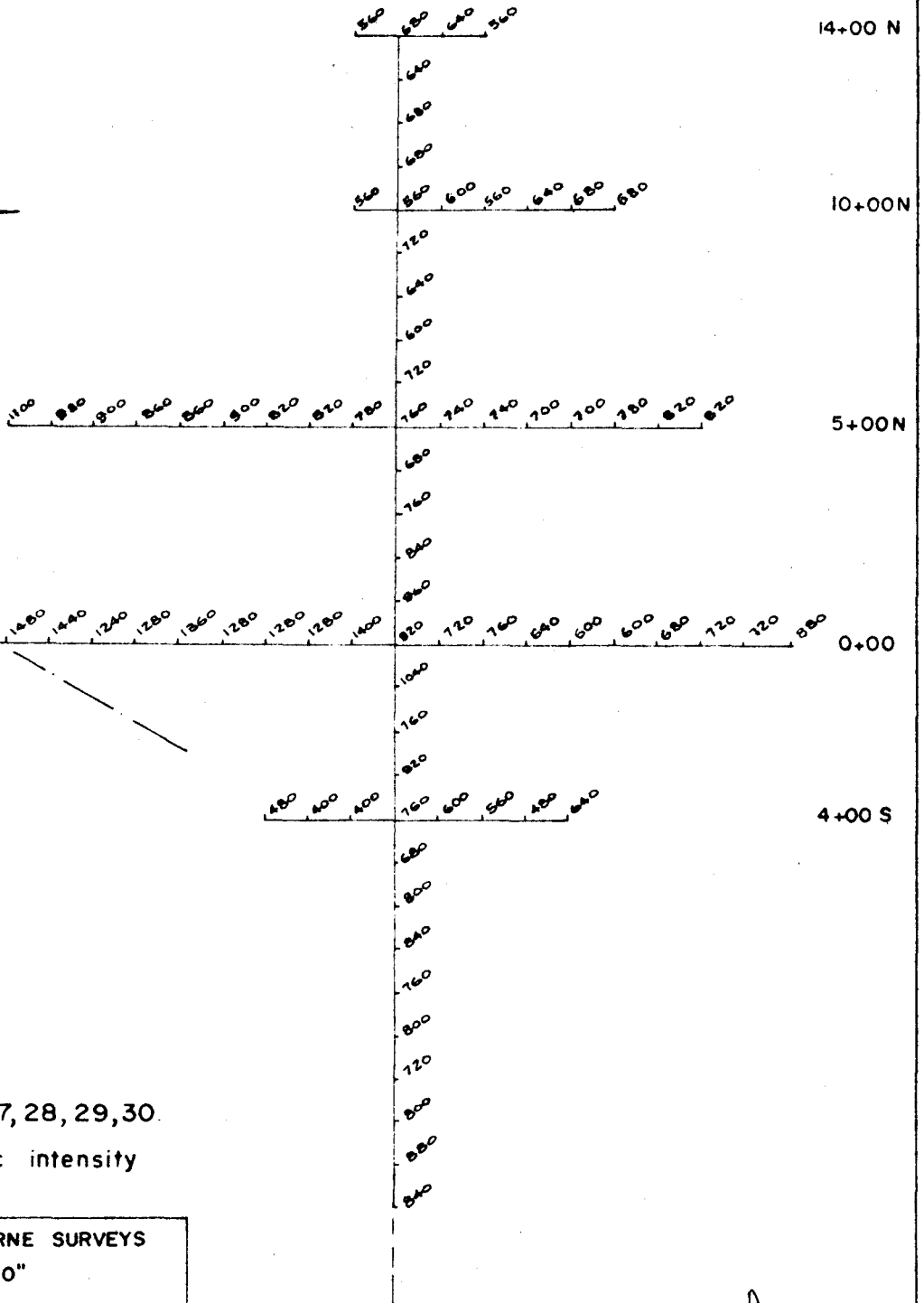
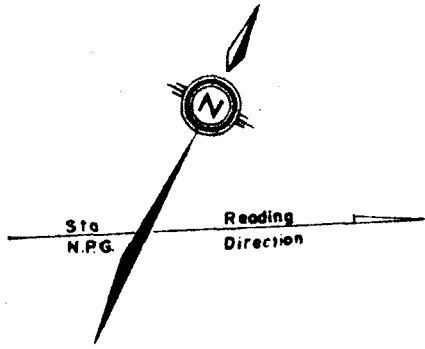
AREA I.

Whitehorse M.D.

105-K-1, 2

P.H. Sevensma Consultants Ltd: Vancouver B.C.

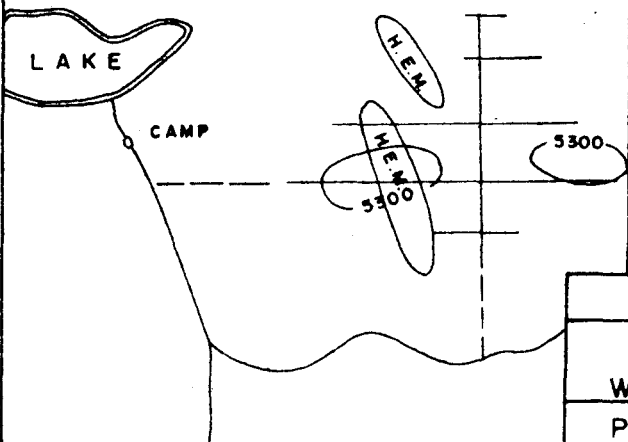
September 1968, Scale: 0 400'



—□— Claim posts South 27, 28, 29, 30.

Relative vertical magnetic intensity value shown in Gammas.

DATA FROM AIRBORNE SURVEYS
Scale: 1" = 1320"



AREA 2.

BRANTA EXPLORATIONS LTD.

MAGNETOMETER SURVEY

Whitehorse M.D.-Y.T.

105-K-1,2

P. H. Sevensma Consultants Ltd. Vancouver, B.C.

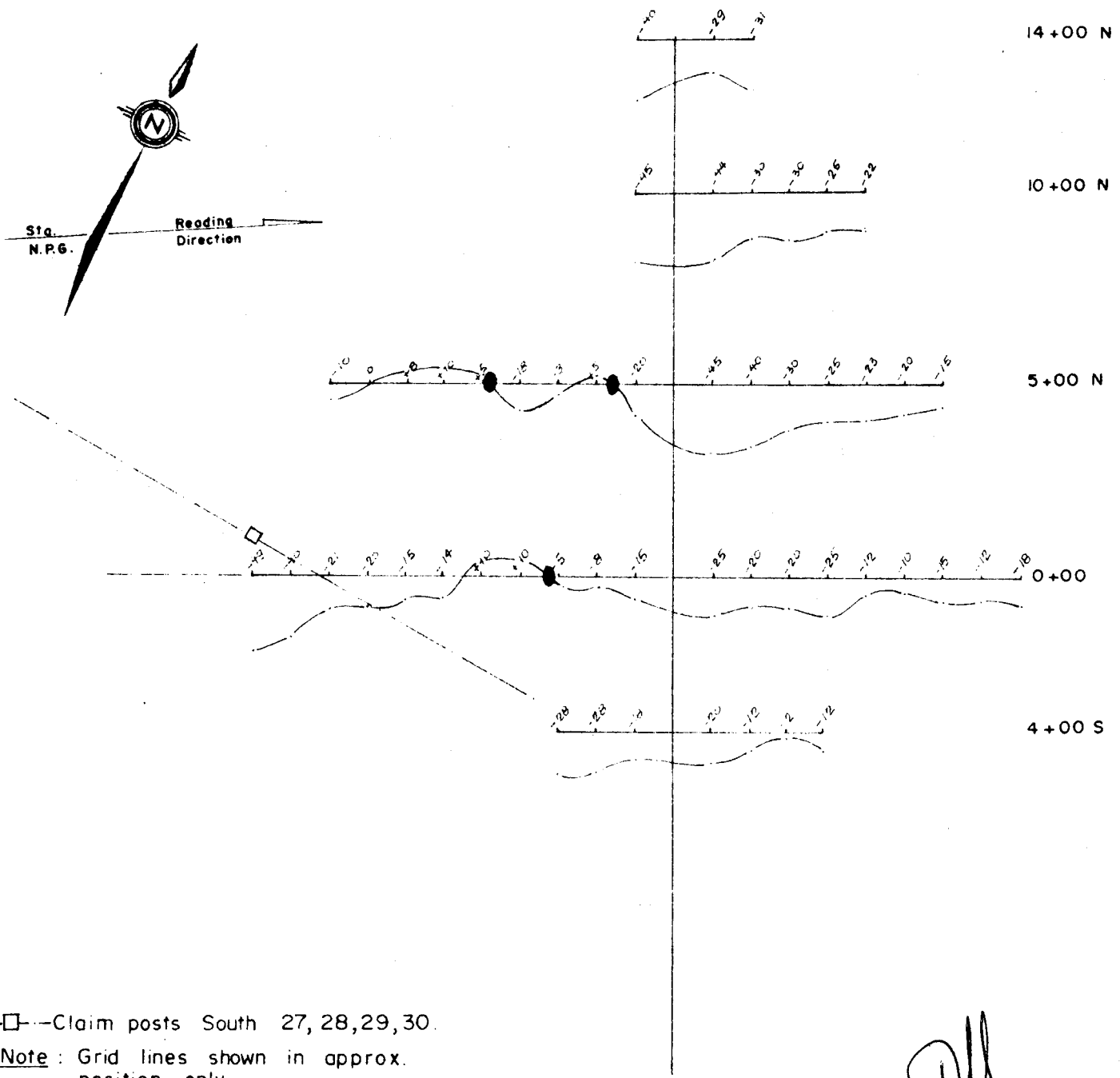
Dwg. No.

Fig: 5

Feb. 1969

Scale:

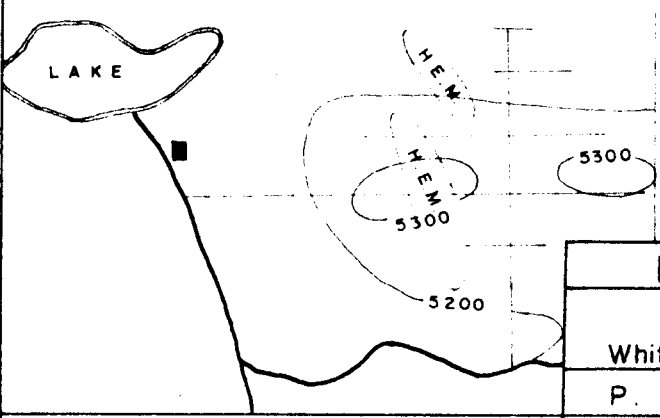




□ -- Claim posts South 27, 28, 29, 30.
 Note: Grid lines shown in approx. position only.

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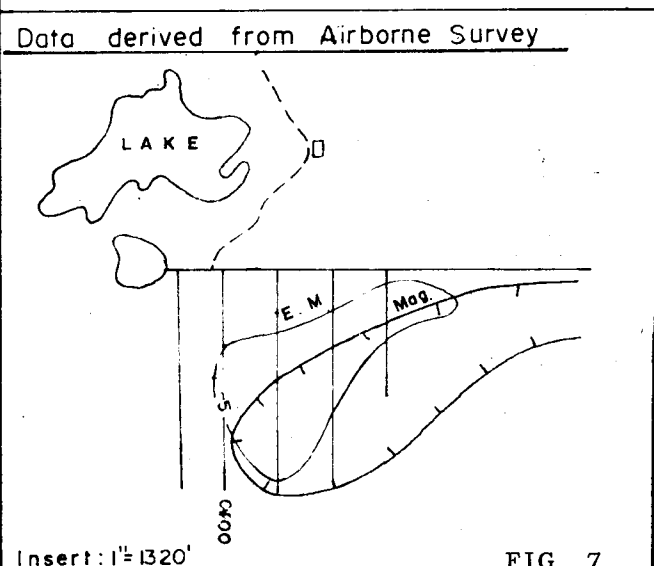
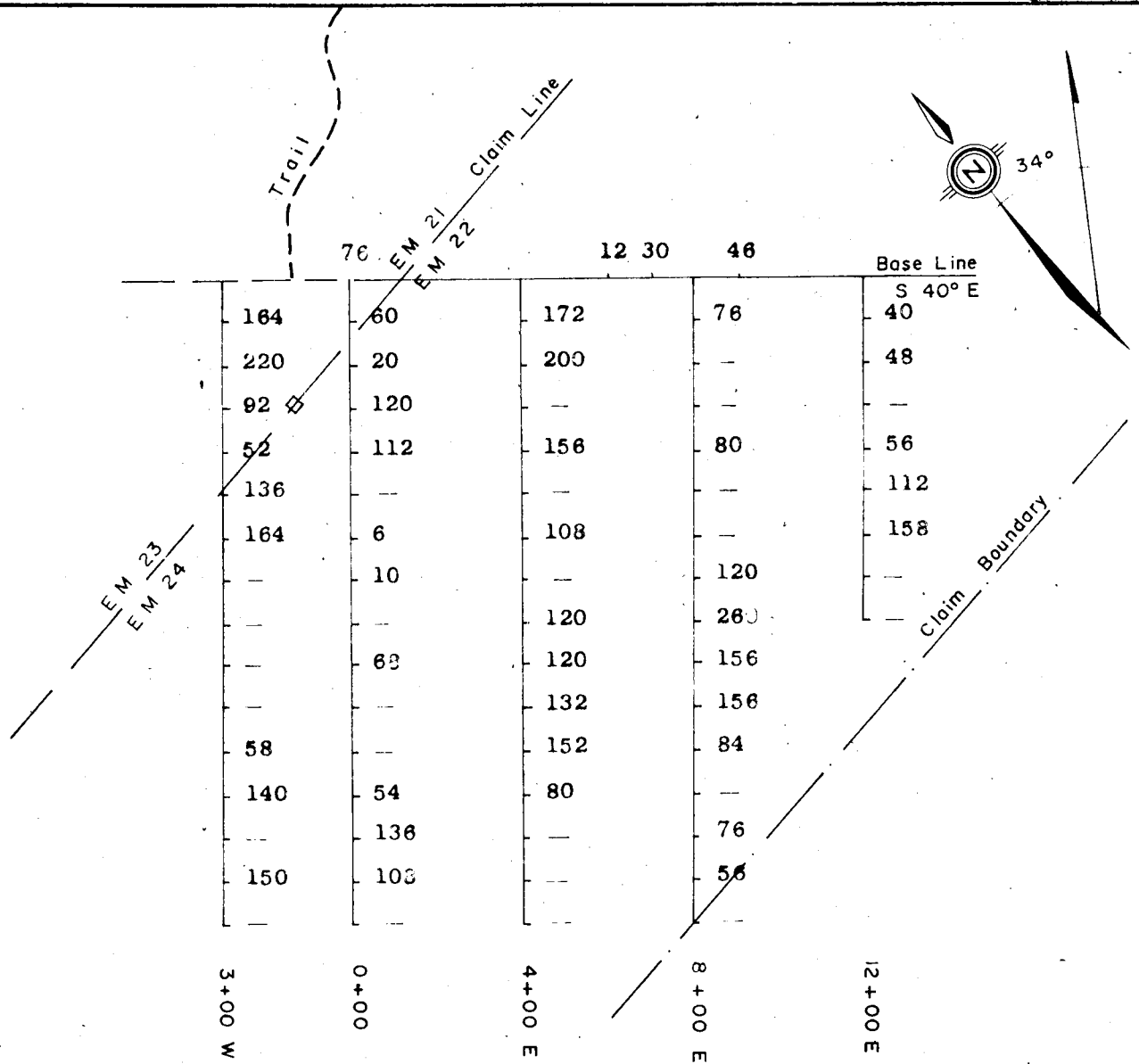
DATA FROM AIRBORNE SURVEYS
 Scale. 1" = 1320



GRID AREA 2.
 Station N.P.G. — Seattle
 frequency 18,6 Kc.
 In — Phase readings recorded.

BRANTA EXPLORATIONS LTD.

Whitehorse M.D.—Y.T. 105-K-1/2
 P. H. Sevensma Consultants Ltd. Vancouver, B.C.



Geochemical Soil Survey
AREA I.

BRANTA EXPLORATIONS LTD.

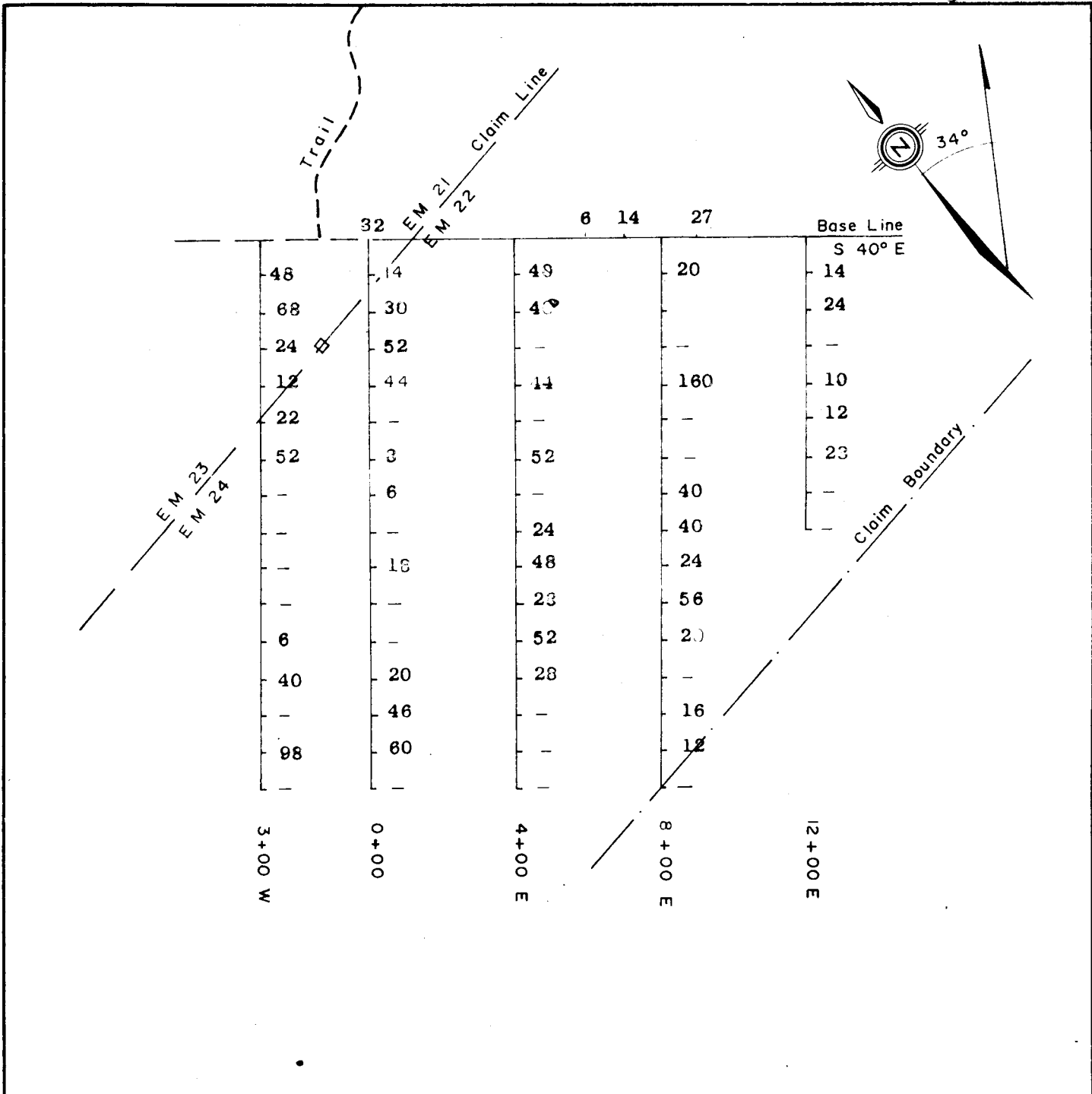
ZINC PLOT

Whitehorse M.D. 105-K-1, 2

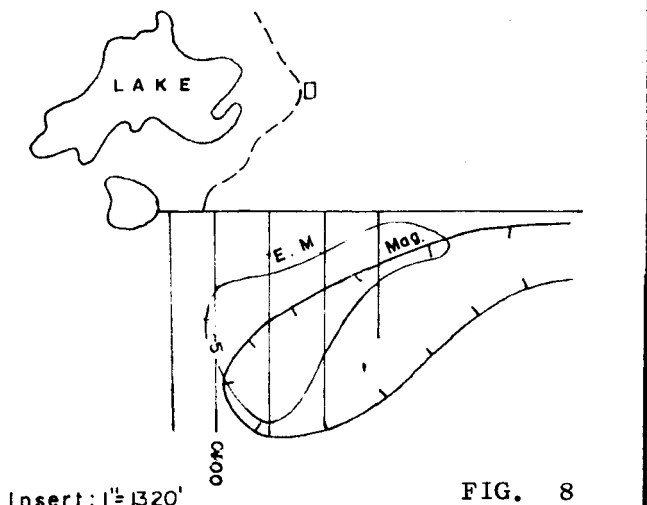
P.H. Sevensma Consultants Ltd: Vancouver B.C.

September 1968, Scale: 0 400'

FIG. 7



Data derived from Airborne Survey

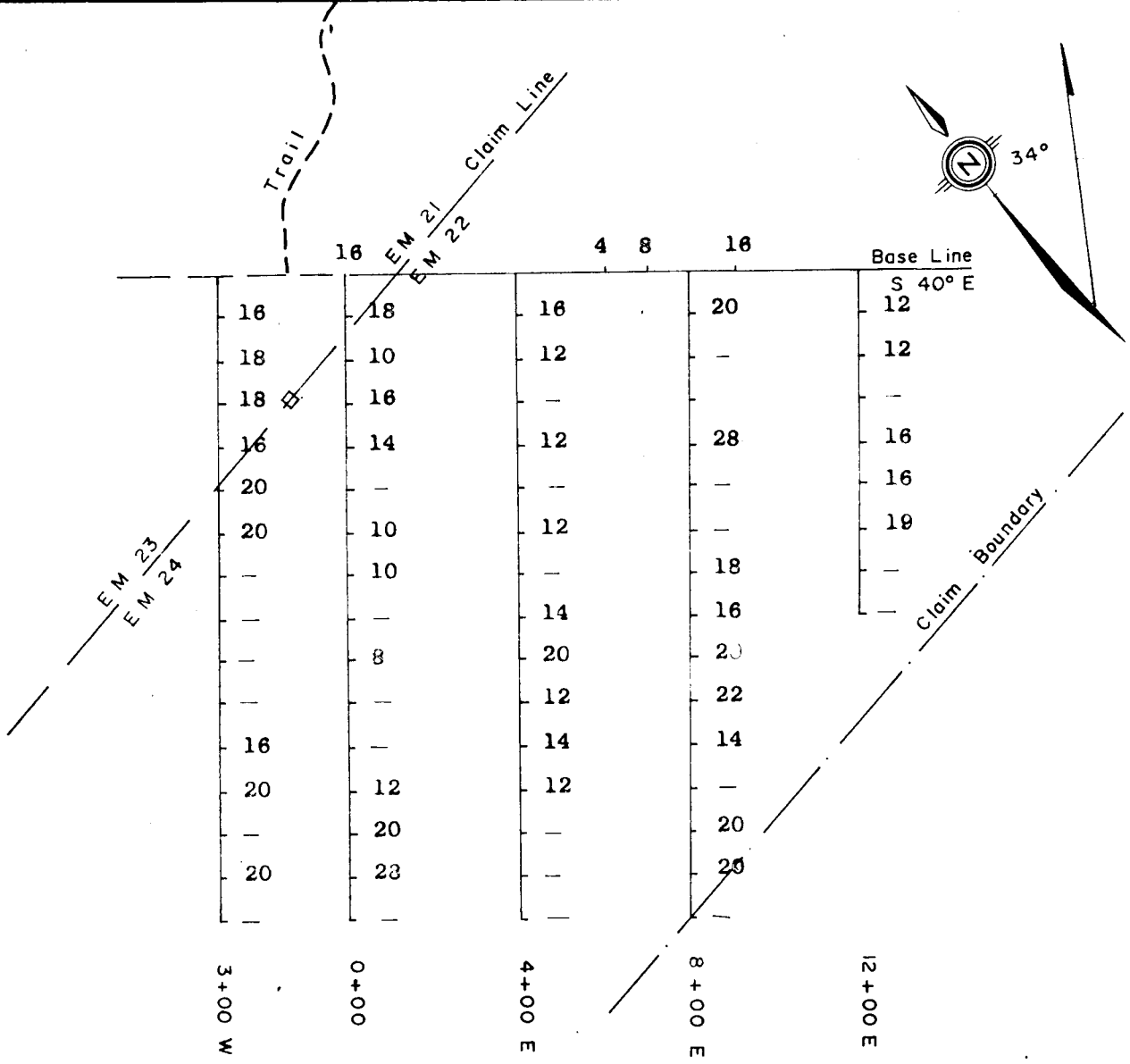


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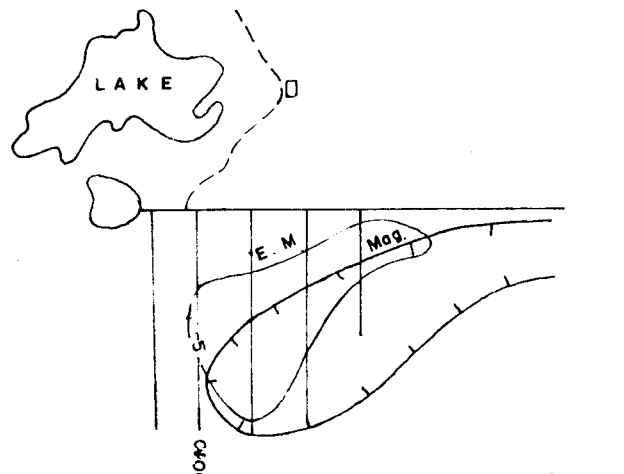
FIG. 8

Geochemical Soil Survey
AREA I.

BRANTA EXPLORATIONS LTD.	
COPPER PLOT	
Whitehorse M.D.	105-K-1, 2
P.H. Sevensma Consultants Ltd: Vancouver B.C.	
September 1968, Scale:	0 400'



Data derived from Airborne Survey

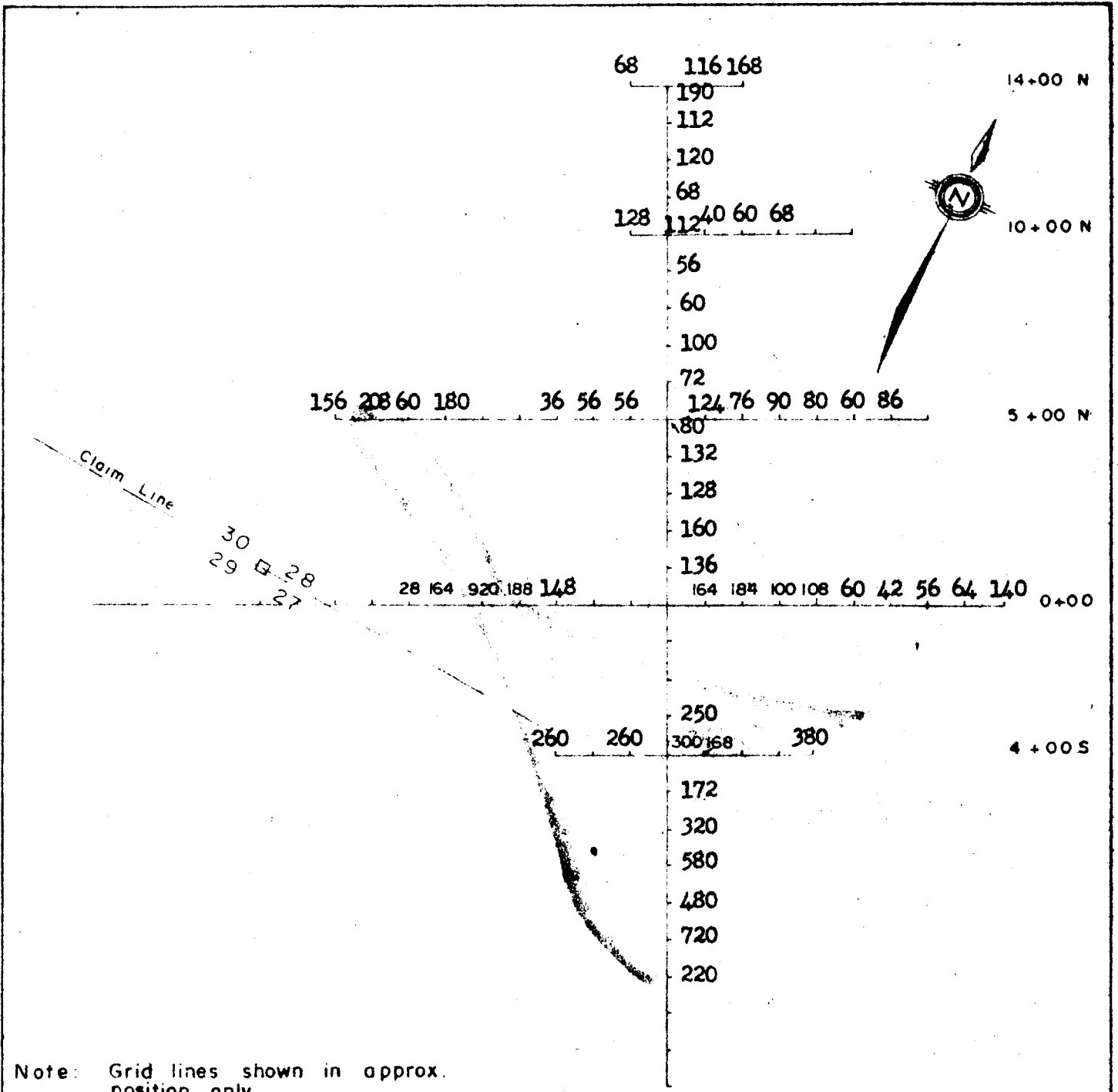


Insert: 1" = 1320'

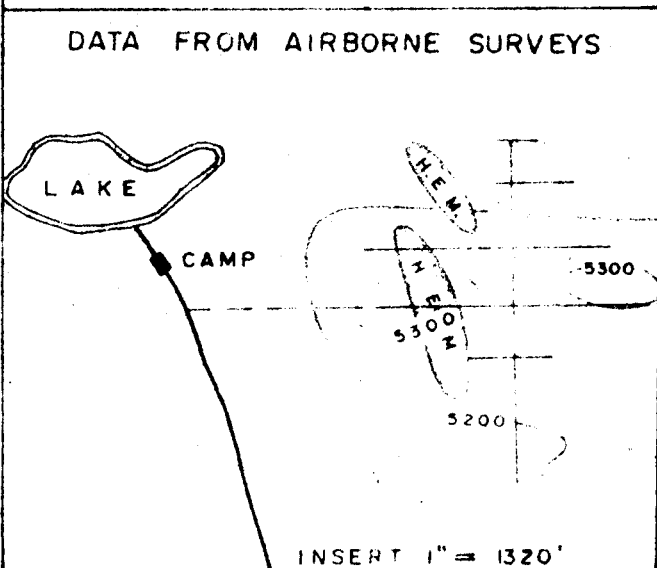
FIG. (9)

Geochemical Soil Survey
AREA I.

BRANTA EXPLORATIONS LTD.	
LEAD PLOT	
Whitehorse M.D.	105-K-1, 2
P.H. Sevensma Consultants Ltd. Vancouver B.C.	
September 1968, Scale:	0 400'



Note: Grid lines shown in approx. position only.

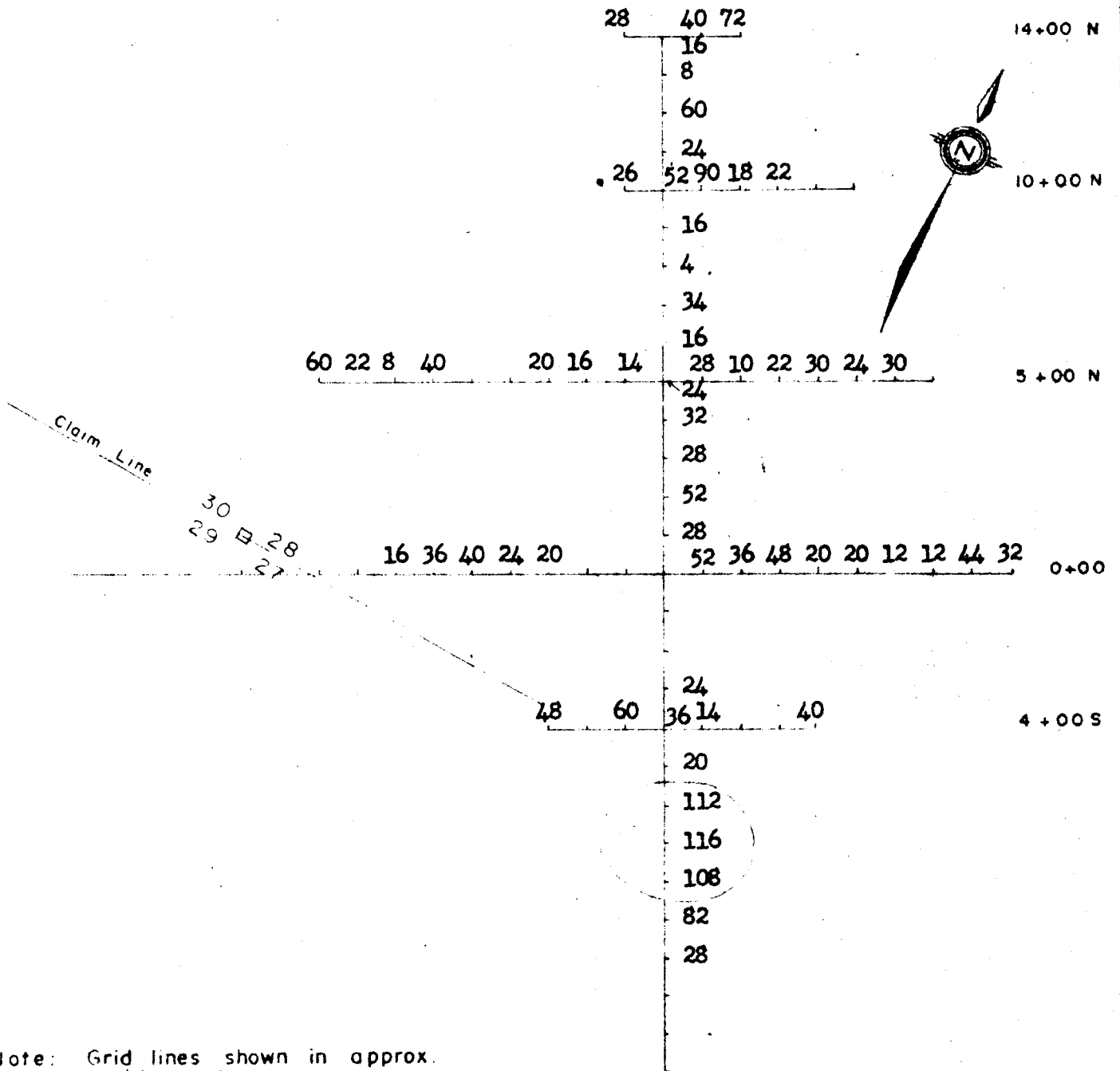


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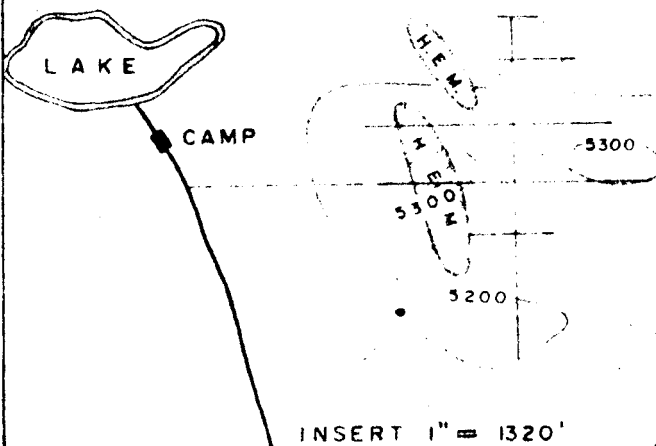
Zn Plot

FIG. 10

BRANTA EXPLORATIONS LTD.	
GEOCHEMICAL SURVEY — AREA 2.	
Whitehorse M.D.-Y.T.	105-K-1/2
P. H. Sevensma Consultants Ltd. Vancouver B.C.	
October 1968,	Scale 0 400'



DATA FROM AIRBORNE SURVEYS



Cu. Plot

FIG. 11

BRANTA EXPLORATIONS LTD.

GEOCHEMICAL SURVEY — AREA 2.

Whitehorse M.D. - Y.T.

105-K-1/2

P. H. Sevensma Consultants Ltd. Vancouver B.C.

October 1968,

Scale 0 400'

Addenda to Report of February 14, 1969.

Geological & Geochemical Follow-Up

July 1st to August 15th, 1969.

by

I. Borovic, Geologist

P.H. SEVENSMA CONSULTANTS LTD.

August 26, 1969.

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ILLUSTRATIONS

Fig. 1a - Summary of Data	1" = 1,320'
Fig. 2a - Soil Sample Locations	1" = 400'
Fig. 3a - Cu. Plot	1" = 400'
Fig. 4a - Zn. Plot	1" = 400'
Fig. 5a - Pb. Plot	1" = 400'
Fig. 6a - As. Plot	1" = 400'

Addenda to Report of February 14, 1969.

Geological & Geochemical Follow-Up

July 1st to August 15th, 1969.

1. GENERAL

The following report is based on field work conducted between July 8th and July 11th, 1969. The objective was to map all outcrop and conduct a limited program of geochemical testing in an area previously selected as anomalous. Data obtained in this work is intended to supplement a previously completed report on this property.

2. LOCAL GEOLOGY

Detailed geological mapping has shown the following formations:

- A. Metamorphic rocks - mostly phyllites interbedded with quartzites and with quartz veins.
- B. Dykes and/or flows - basic to intermediate composition.
- C. Intrusives - granodiorite.
- D. Volcanics - intermediate composition - probably andesite.

A. Metamorphic Rocks

Phyllites are exposed over much of the area. They are pelitic, black, folded and faulted and foliated. Dominant trend of the foliated rocks is WNW with a moderate southerly dip. According to regional geology they belong to a phyllite member in a sequence of Cambrian sediments.

B. Dykes and/or Flows

A few dykes or thin extrusive layers have been noted within the black schists. They outcrop along the Texas Creek Valley. Thickness

is from 1' to 10' of very fine grained andesite, light grey in color with a greenish (chloritic) alteration. These may be equivalent to No. 4 Volcanics described below.

C. Intrusives (Probably Cretaceous)

Are exposed in the South West part of the Tenas Creek (samples 42, 43). Light grey to dark grey color. Quartz is main visible mineral and black hornblende, medium to coarse grained. Contact with phyllites is not visible but some black quartzite is exposed near the inferred contact.

D. Volcanics

A large outcrop of light grey andesites (with green phenocrysts) rock is exposed in the North part of the Tenas Creek and is morphologically very notable.

3. MINERALIZATION

Mineralization occurs in quartz veins which are found in the phyllites, dykes, intrusives and extrusives. The most interesting are intrusives from the Southwestern part of the Tenas Creek (42, 43) and around the middle part (22). Pyrite, pyrrhotite and traces of chalcopyrite were noted in the andesite and in the numerous quartz veins as well as in the granodiorite.

Samples were taken to represent all mineralized types observed. Results are as follows:-

<u>Sample No.</u>	<u>Description</u>	<u>Au. oz/t.</u>	<u>% Cu.</u>	<u>% Pb.</u>	<u>% Zn.</u>
22	chloritized diorite	tr.	.02	0.1	.01
23+100	andesitic dyke	.005	.01	tr.	tr.
23	black phyllites	tr.	.01	tr.	tr.

<u>Sample No.</u>	<u>Description</u>	<u>Au. oz/t.</u>	<u>% Cu.</u>	<u>% Pb.</u>	<u>% Zn.</u>
24+120	andesite	tr.	.01	tr.	tr.
26+90	andesite	.005	.01	.01	tr.
27+100	quartz (vein)	tr.	.03	tr.	tr.
27+110	andesite	tr.	.02	tr.	tr.
41	quartzites	tr.	.01	tr.	tr.
42	granodiorite	tr.	.01	tr.	tr.
43	granodiorite	tr.	.01	tr.	tr.

Assayed by Whitehorse Assay Office, Report 5479-10.

The following list provides a more complete description of the specimens selected and includes all rock types observed in the area:

LIST OF SPECIMENS

- 4 - 22 Greenish-grey, fine grained chloritized pyrite, Cpy (chalcopyrite) disseminated. Estimation = 0.4% Cu.
Quartz filled fractures.
Chlorite, epidot alterations.
System of parallel fractures 135/24.
- 4 - 22 + 90' Black schists, foliation 175/42.
Outcrop about 20' long in the creek direction toward the next point.
- 4 - 22 + 110' Black phyllites with quartz veins.
- 4 - 23 Black phyllites, quartz limonitized veins.
Quartz veins to 1' thick.
Black quartzite interbedded.
- 4 - 23 + 50' Black phyllites, quartz veins.
- 4 - 23 + 100' Light grey, fine grained, altered dyke (probable andesitic)
- 4 - 24 + 120' Grey fine grained amygdaloidal volcanic rock metamorphized amygdaloidoles - quartz.
Pyrite.
Fractures 93/41.
- 4 - 25 Phyllites, intruded light grey fine grained dyke (same as on 4 - 23 + 100') (3' thickness)
Pyrite, quartz veins.
Foliation 195/34.

- 4 - 25 + 175 Pale grey fine grained dykes.
Small with quartz filled amygdoles.
- 4 - 26 + 90 (120') Pale grey andesite, quartz veins mineralized
(pyrite) (veins to 7' thick).
- 4 - 27 Foliation 250/33 greenish grey andesite, green
phenocrystals.
- 4 - 27 + 100' Quartz vein in the same rock (pyrite).
- 4 - 27 + 110' Pale greenish grey andesite (pyrite disseminated,
and in fractures).
- 4 - 29 Andesite.
- 4 - 29 + 20 Phyllites with quartz veins.
- 4 - 30 " " " "
- 4 - 31 " " " "
- 4 - 32 " " " "
- 4 - 33 " " " "
- 4 - 34 " " " "
- 36 Black phyllites. Foliation 100/23, no quartz veins.
- 37 Folded black phyllite. Quartz veins. Foliation 95/52.
- 38 Beds to 1" thick, of black schists argillites 162/38.
- 39 Phyllites, foliation 227/34, quartz veins.
- 40 Phyllites, quartz veins, foliation 212/35.
- 41 Black quartzites interbedded with black phyllites.
Quartz veins. Bedding 158/12. Pyrite disseminated.
- 42 Coarse grained rock black hornblende and quartz
mineralized.
- 43 Medium grained grey diorite, mineralized.

Attitudes given as direction and degree of dip.

4. GEOCHEMICAL SURVEY

A. Method

Field procedures involved to chaining of a grid as shown on figure 2a attached. Samples were taken by digging a shallow pit with a mattock to expose the "B" soil horizon (mineral soil). All samples were taken below the Yukon ash layer from the "B" horizon below a well defined Palaeo "A" humus. Analytic methods were as described in the previous report and all samples were processed by the Whitehorse Assay Office.

B. Results

Results are as shown on figures 3a to 6a attached. As no values judged to be significant were obtained the data are plotted as a matter of record only. Zinc displays a minor degree of variation which may relate to the zinc dispersion pattern shown on figure 2 of the previous report.

C. Conclusion

The minor amounts of heavy metal present in the soil and the resultant pattern in the soil and stream silt can be attributed to the weak metallization associated with both the granodiorite and the greenstone dykes. No unexposed source is inferred by the results of this survey.

5. SUMMARY

A geophysical and geochemical investigation of the South and EM group was conducted in the fall and winter of 1968 - 1969.

The results indicated that the favorable "Vangorda" phyllites were identifiable by generally high zinc values with a higher than normal background of copper.

Follow-up surveys during July, 1969 were conducted in areas estimated to be most promising.

The results of this follow-up survey have been discouraging in that they did not suggest any significant primary base-metal concentration as the source of the abnormal values found in some of the soils.

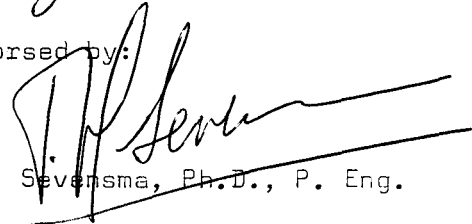
Although the property is in general well located with respect to the favorable sequence carrying ore-bodies elsewhere along strike, no other work is recommended at this time on this property.

Respectfully submitted,

I. Borovic, Geologist.



Endorsed by:



P.H. Sevensma, Ph.D., P. Eng.

August 26, 1969.

APPENDIX "A"

Statement of Costs Incurred

Geological and Geochemical Follow-up
July 1st to August 15, 1969

<u>Date</u>	<u>Payee</u>	<u>Item</u>	<u>Amount</u>	<u>Chg. No.</u>
July 21/69.	P.H. Sevensma Consultants	Services & expenses	\$1,245.85	22
July 21/69.	Ross River General Store	Hardware & Groceries	75.67	23
Aug. 4/69.	Trans North Turbo Air		714.75	24
Aug. 26/69	P.H. Sevensma Consultants	Services & expenses	508.50	25
Total Cost, this phase			<u>\$2,544.77</u>	
Cost of previous work as listed in previous Report		\$4,227.96		
Less adjustment - Chg. #21		<u>.10</u>		
		<u>\$4,227.86</u>	<u>\$4,227.86</u>	
Total cost applicable			\$6,772.63	

APPENDIX "B"

Statement of Personnel & Firms Employed

Geochemical & Geophysical Surveys

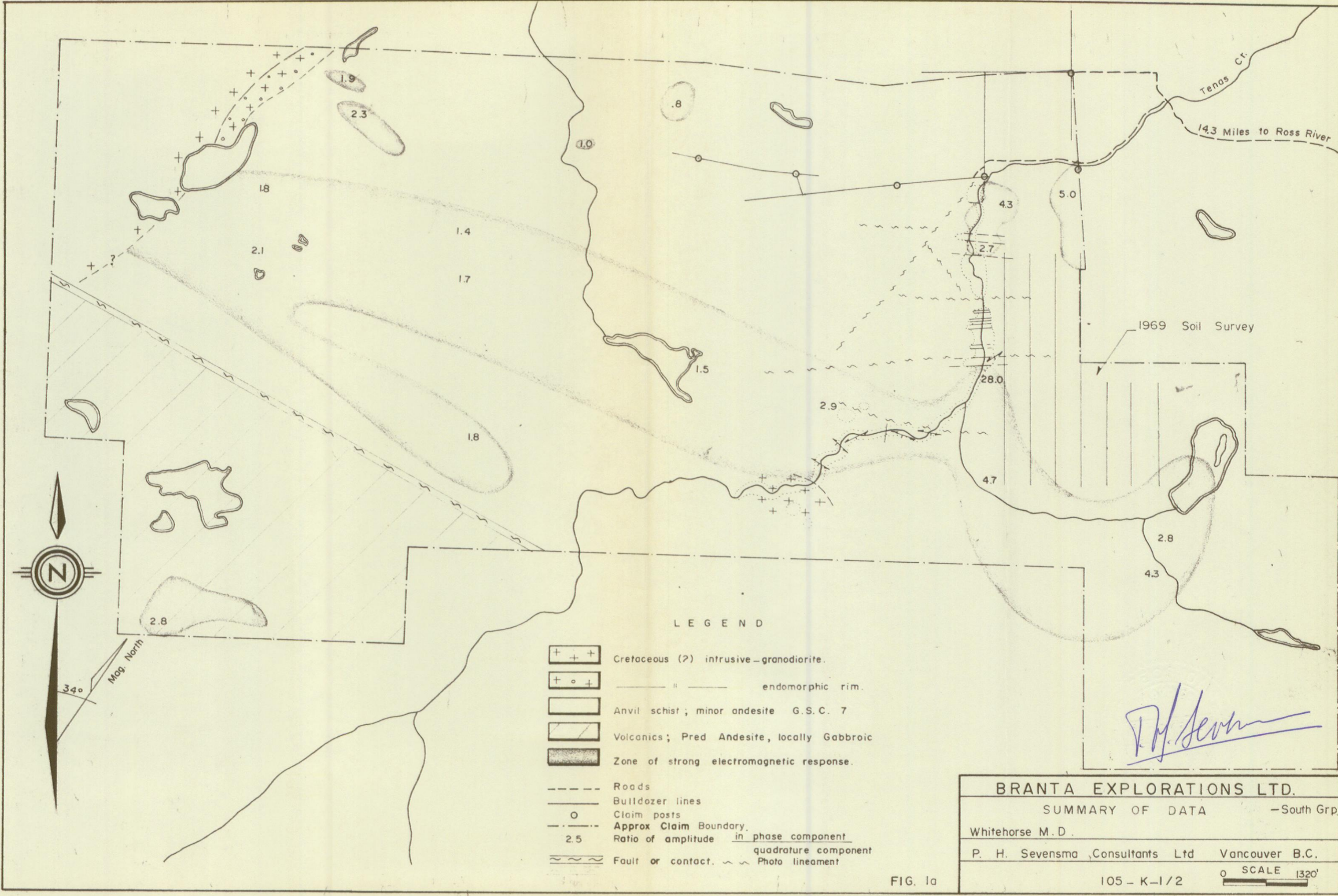
South & EM Mineral Claims

P.H. Sevensma Consultants Ltd.,
715 - 850 West Hastings Street,
Vancouver 1, B.C.

P.H. Sevensma, P. Eng.
R. Borovic, Geologist
K. McFee, Technician
Don Pauls, Soil Sampler

Trans North Turbo Air Ltd.,
P.O. Box 1977,
Whitehorse, Yukon

C. Armstrong, Pilot
R. Conant, Pilot



LEGEND

- +++ Cretaceous (?) intrusive-granodiorite.
- +o+ " " endomorphic rim.
- Anvil schist; minor andesite G.S.C. 7
- Volcanics; Pred Andesite, locally Gabbroic
- Zone of strong electromagnetic response.
- Roads
- Bulldozer lines
- o Claim posts
- - - - - Approx Claim Boundary.
- 2.5 Ratio of amplitude in phase component / quadrature component
- ~ ~ ~ Fault or contact. ~ ~ ~ Photo lineament

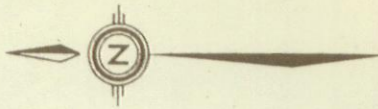


Mag. North
34°

P. H. Sevensma

BRANTA EXPLORATIONS LTD.	
SUMMARY OF DATA	- South Grp.
Whitehorse M.D.	
P. H. Sevensma Consultants Ltd	Vancouver B.C.
105 - K-1/2	0 SCALE 1320'

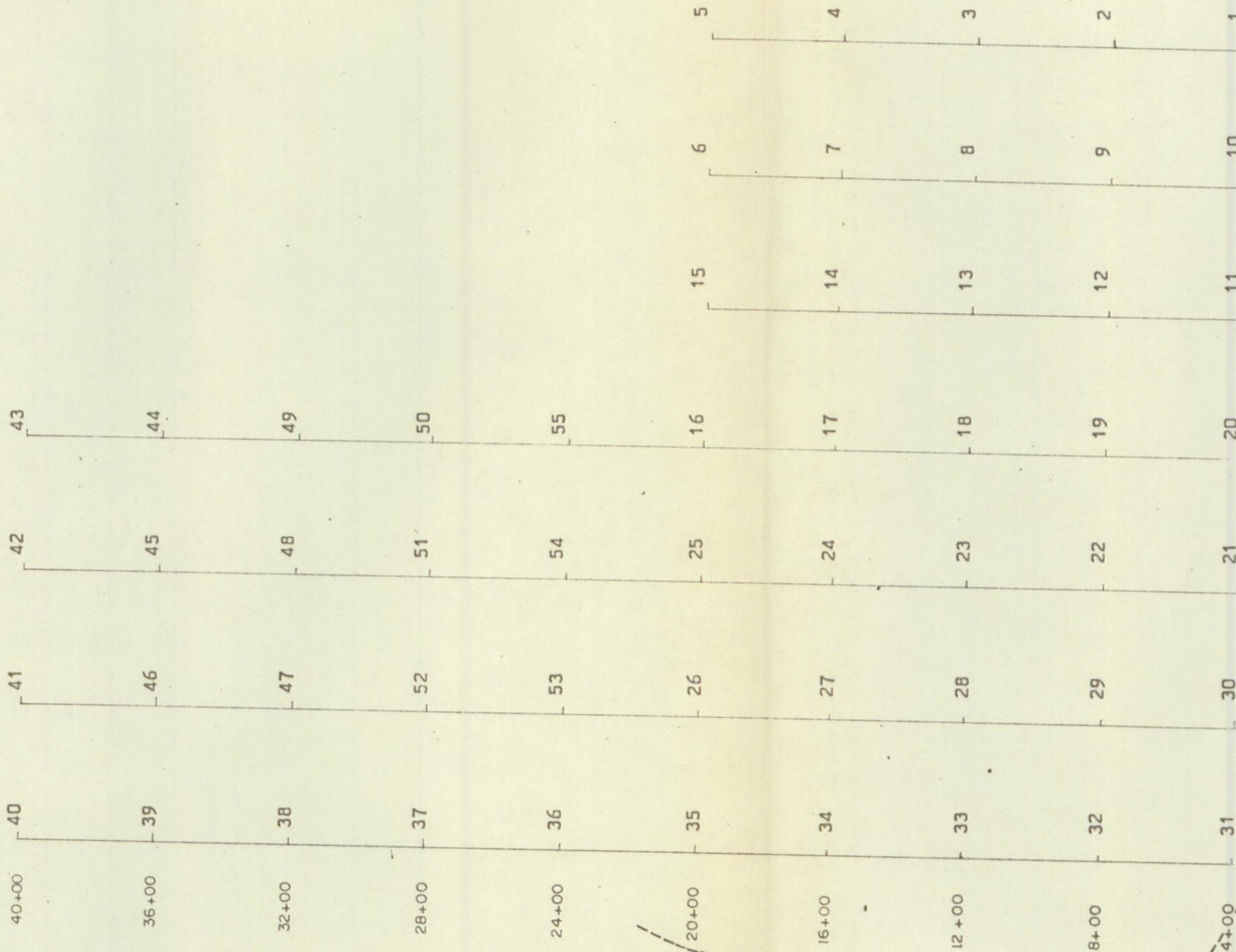
FIG. 1a



LAKE

Helicopter Pad

L4-1
L4-3
L4-5
L4-7
L4-9
L4-11
L4-13

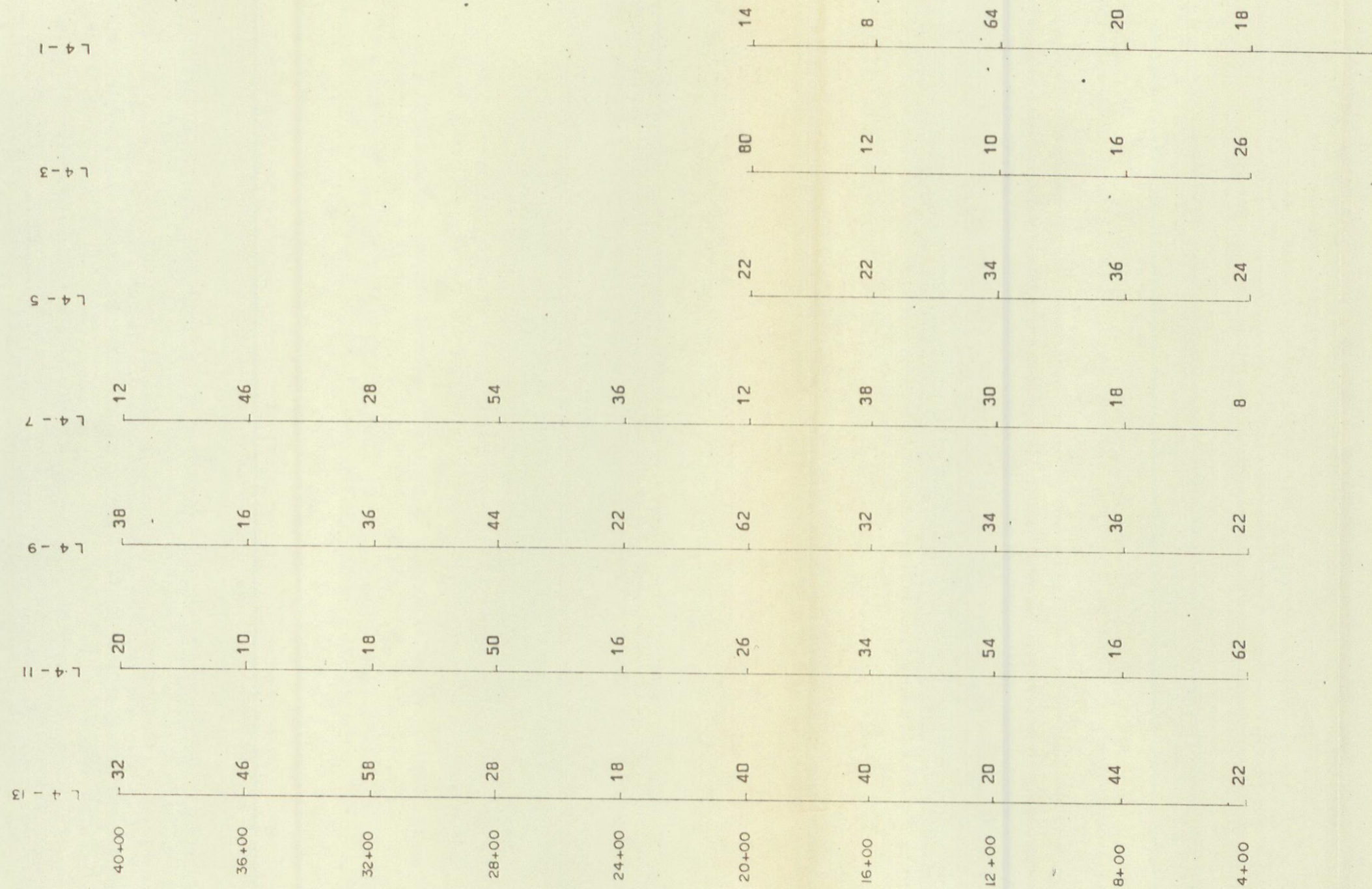
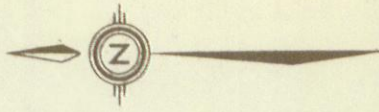


Bulldozer Road
Creek Approx. Loc.

GEOCHEMICAL SOIL SURVEY
Soil Sample Locations

BRANTA EXPLORATIONS LTD.	
SOUTH and EM GROUPS	
Whitehorse M.D.-Y.T.	105-K-1/2
P. H. Sevensma Consultants Ltd. Vancouver, B.C.	
August 1969.	Scale: 0 400'

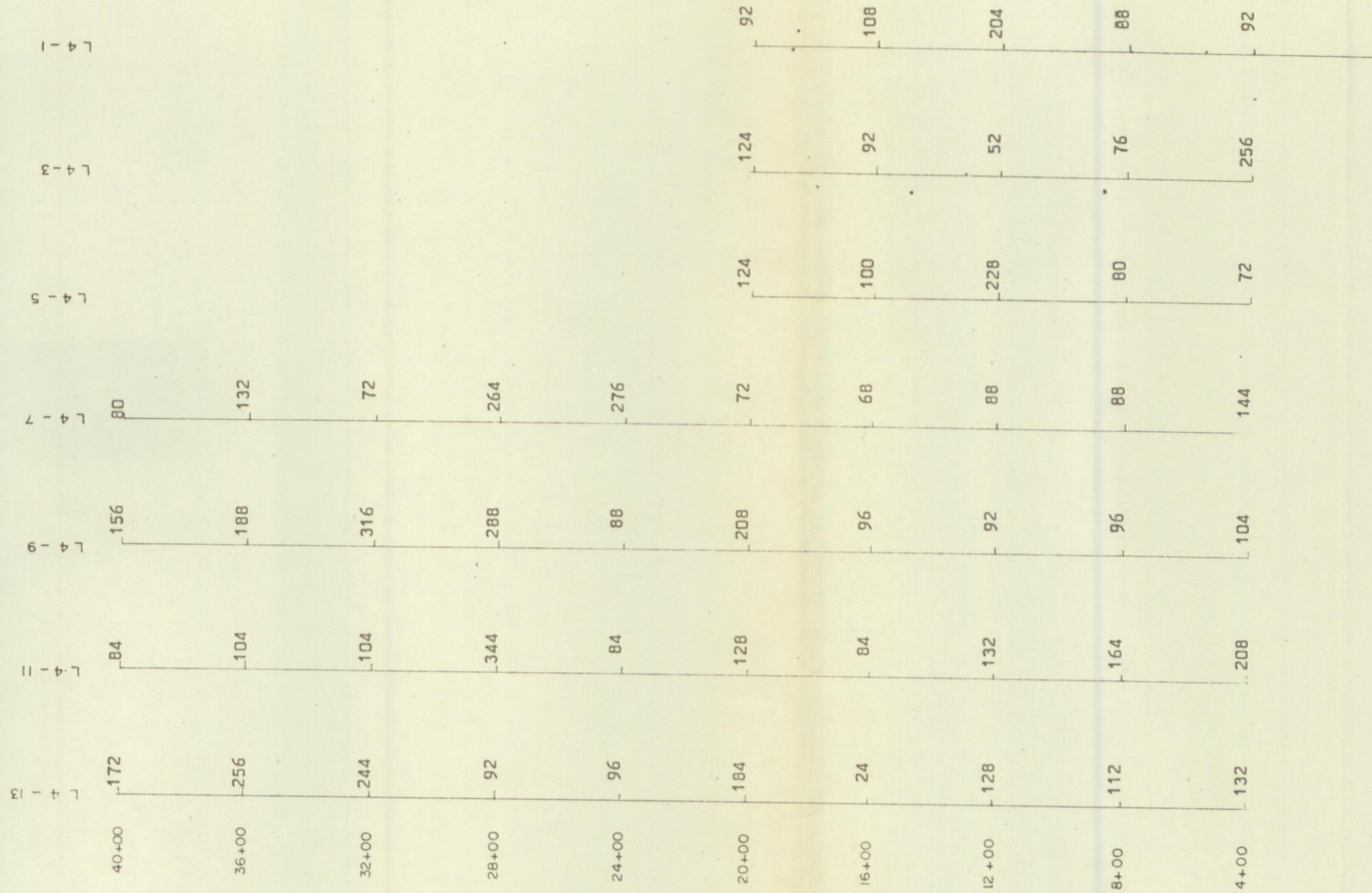
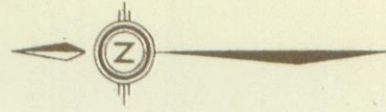
Dwg. No. Fig:2a



GEOCHEMICAL SOIL SURVEY
Cu. Plot

BRANTA EXPLORATIONS LTD.	
SOUTH and EM GROUPS	
Whitehorse M.D.-Y.T.	105-K-1/2
P. H. Sevensma Consultants Ltd. Vancouver, B.C.	
August 1969.	Scale: 0 400'

Dwg. No. Fig:3a



GEOCHEMICAL SOIL SURVEY
Zn. Plot

BRANTA EXPLORATIONS LTD.

SOUTH and EM GROUPS

Whitehorse M.D.-Y.T. 105-K-1/2

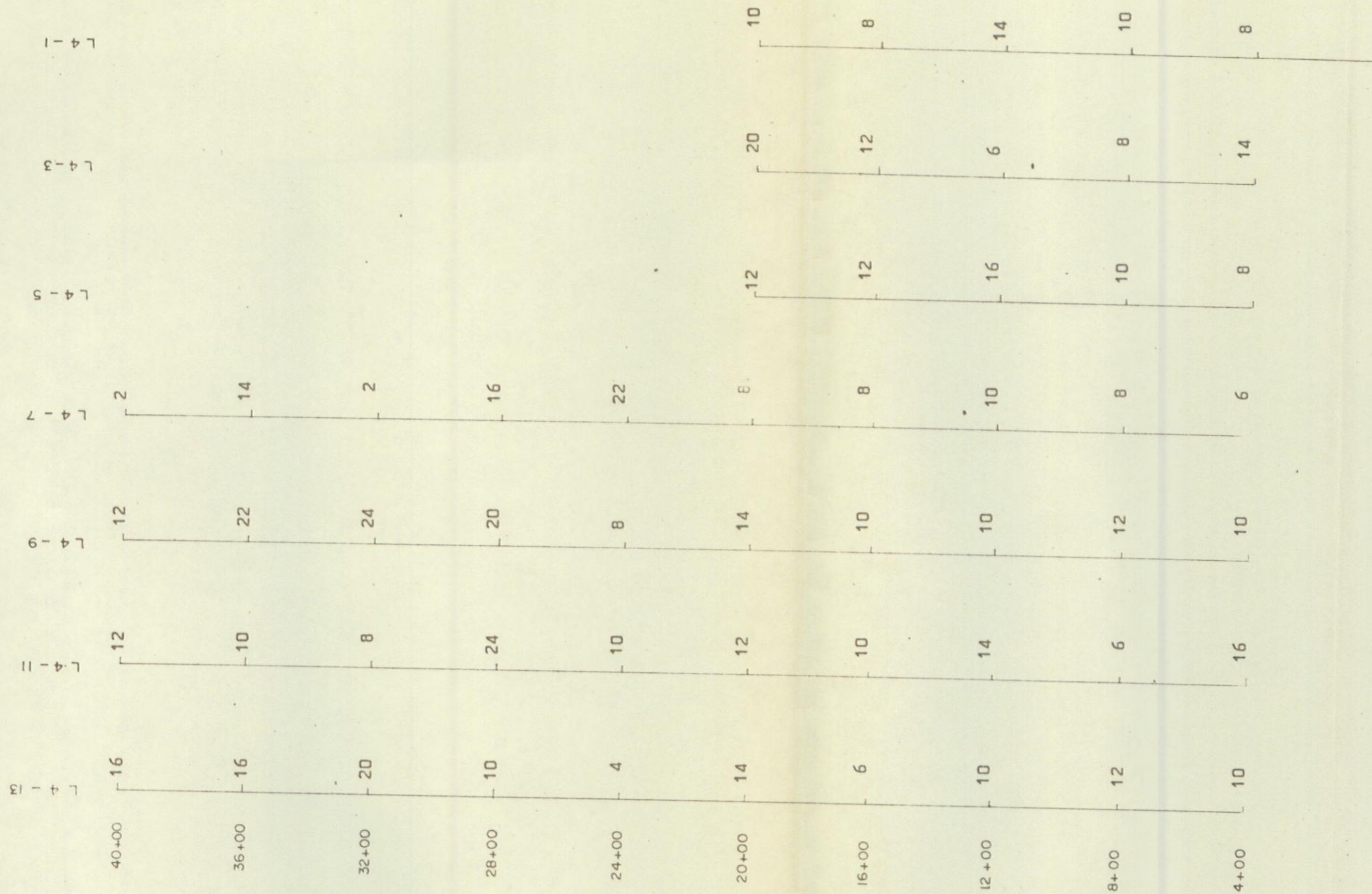
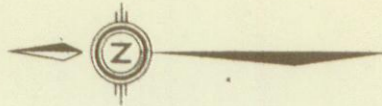
P. H. Sevensma Consultants Ltd. Vancouver, B.C.

August 1969.

Scale: 0 400'

Dwg. No.:

Fig: 4a

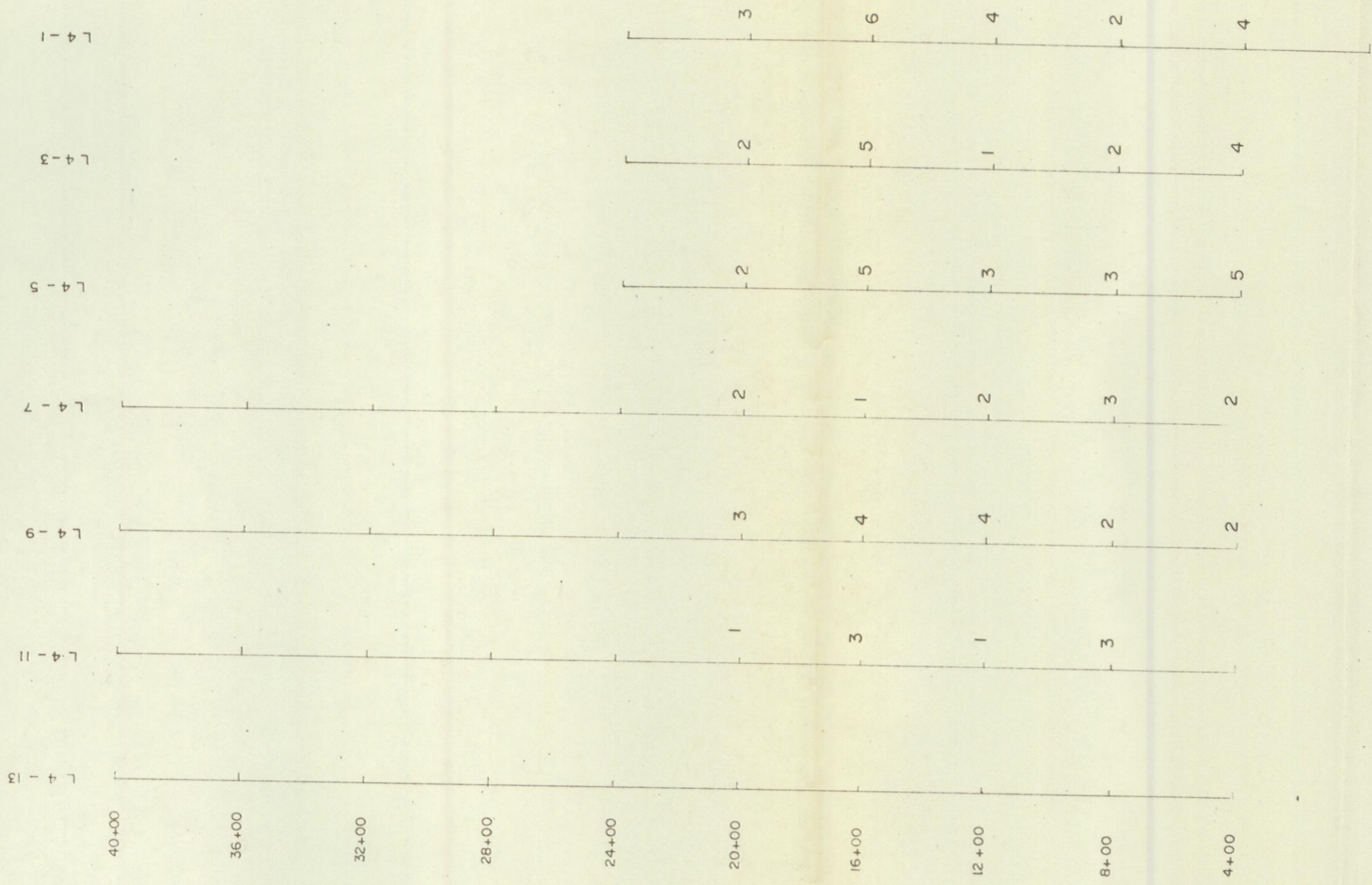
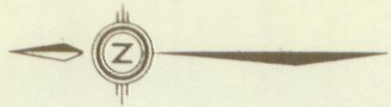


P. H. Sevensma

GEOCHEMICAL SOIL SURVEY
Pb. Plot

BRANTA EXPLORATIONS LTD.	
SOUTH and EM GROUPS	
Whitehorse M.D.-Y.T.	105-K-1/2
P. H. Sevensma Consultants Ltd. Vancouver, B.C.	
August 1969.	Scale: 0 400'

Dwg. No. Fig:5a



P.H. Sevensma

GEOCHEMICAL SOIL SURVEY
As Plot

BRANTA EXPLORATIONS LTD.	
SOUTH and EM GROUPS	
Whitehorse M.D.-Y.T.	105-K-1/2
P. H. Sevensma Consultants Ltd. Vancouver, B.C.	
August 1969.	Scale: 0 400'

Dwg. No. Fig:6a