



VANMETALS EXPLORATION LTD.

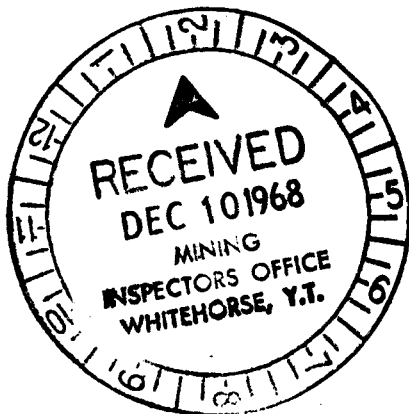
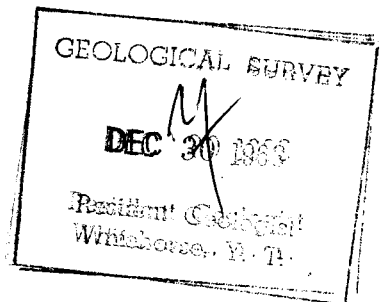
Snowcap Mineral Claims
Whitehorse M.D., 105-K-1,2
Lat. 62° 05'N., Long 132° 30'W.

GEOCHEMICAL REPORT

by

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

December 2, 1968.



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

Approved as to cost in the a. month of \$ 1050.00
H. S. Vedder
RESIDENT MINING ENGINEER

Accepted as representation work under Section 53(4) Yukon Quartz Mining Act.
[Signature]
COMMISSIONER OF YUKON

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Fig. 1 Claim Map 1" = $\frac{1}{2}$ mile

Fig. 2 Location & Geology, 1" = 1,320'

Fig. 3 Geochemical Plot (copper), 1" = 500'

Fig. 4 Geochemical Plot (lead), 1" = 500'

Fig. 5 Geochemical Plot (zinc), 1" = 500'

APPENDIX "A" - Statement of Costs

APPENDIX "B" - List of Personnel and Firms

VANMETALS EXPLORATION LTD.

Snowcap Mineral Claims
Whitehorse M.D., 105-K-1,2

GEOCHEMICAL REPORT

1. INTRODUCTION

Previous work on the Snowcap group by Cominco Ltd. and Vanmetals Exploration Ltd. while inconclusive, had indicated the presence of a sequence of schists, phyllites and tuffaceous rocks in contact with the Anvil batholith. This unit has been correlated with the host rocks containing all known sulphide deposits in the Faro-Vangorda mineral belt.

The purpose of the work covered by this report was to prospect by geochemical methods a selected portion of the claim group.

2. PROPERTY

The Snowcap property, wholly owned by Vanmetals Ltd., consists of the following mineral claims:-

<u>Name</u>	<u>Grant No.</u>	<u>Expiry Date</u>
Snowcap 1 to 10 incl.	96590 - 96599 incl.	December 22, 1968.
" 12	96601	" " "
" 18	96607	" " "
" 20	96609	" " "
" 22	96611	" " "
" 24	96613	" " "
" 26	96615	" " "
" 33 to 40 incl.	96622 - 96629 incl.	" " "

3. REGIONAL GEOLOGY

The Vangorda District is underlain by a succession of sediments and volcanics in which Proterozoic and Palaeozoic strata predominate. Regional unconformities beneath Devonian-Mississippian and Permo-Pennsylvanian strata results in the local absence of parts of the succession. The mid-Cretaceous Anvil batholith, granite to granodiorite-locally porphyritic, intrudes this succession and Tertiary volcanics and

coarse (non-marine) clastics occur sporadically along the Tintina trench.

The Tintina trench is believed to be the locus of a major transcurrent fault. A number of subsidiary faults are known or inferred throughout the district. Major folds are related to a mid-Cretaceous up lift which accompanied emplacement of the granodiorite.

Host rocks for the known ore deposits are now quite firmly established as being a succession of Cambrian phyllites. Total thickness of this unit is indicated as being in the order of 6,000 feet. The favorable "horizon" is now believed to lie near the middle of the unit in a member characterized by a medium grey, lustrous quartz-rich phyllite. Dark grey graphitic phyllite occurs in the lower part of this member and chloritic greenstone lenses are found in the upper part.

Regional metamorphic effect have imparted a change of grade and grain size in the phyllitic rocks providing a range from slaty phyllite to schistose biotite phyllite. An irregular bleached zone in the phyllites around the known ore deposits is a local effect which may provide a guide to the search for other ore bodies. Present evidence indicates a syngenetic origin for the known deposits, thus suggesting that the ore control is sedimentary.

4. LOCAL GEOLOGY

The area under study is underlain by a succession of Cambrian phyllites and schists which abut the granitic rocks to the north. The layered rocks have an easterly trend and dip moderately to the south. This sequence is overlain by andesites on adjacent ground to the south.

5. GEOCHEMISTRY

A. Method

Soil samples were taken at 100 foot intervals along grid

lines spaced 500 feet apart. A mattock was used to excavate a shallow pit and an effort was made to select mineral soil free of organic matter from the oxidized clay rich soil comprising the "B" horizon. Where organic muck and/or the Yukon Ash bed were of unusual depth, an auger was used to obtain the sample. Samples were placed in kraft bags and forwarded to Vancouver where they were analyzed for copper, zinc and lead by Coronex Ltd. A 1.0 gram sample of the -80 mesh fraction was digested in hot HNO₃, HCl and analyzed by atomic absorption on a Techtron AA4 unit.

B. Results

Values obtained are shown on table 1 attached and plotted on the enclosed figures. While none of these values are regarded as anomalous for the province in which they were obtained, they do reveal a pattern of threshold readings. Moreover, the trend established by the significant readings corresponds with the general trend of the known foliations. This trend is best defined by the zinc which shows a high of 288 p.p.m. Lead and to a lesser extent copper, provide confirmation of the correlations made. No structural evidence exists to support the inferred fold at the western termination of the coincident highs.

6. SUMMARY

The presence of bands of disseminated sphalerite elsewhere within the favorable phyllite member suggests that even weak linear zinc concentrations in the soil, where they are unrelated to drainage effects, may prove worthwhile targets for more detailed work.

Favorable regional and local geology and the rapidly expanding state of knowledge concerning ore controls in the Faro-Vangorda district

enhance the merit of this property.

7. RECOMMENDATIONS

It is recommended that the program of geochemical soil sampling be continued by extending the area of coverage to the east boundary of the claim group. Areas of extensive glacial overburden should be omitted. About 200 soil samples would provide the required coverage.

Bulldozer trenching of any anomalous areas revealed by this survey should provide direct evidence of the probable source of the metalliferous elements and should be considered as a logical follow-up stage.

The estimated cost of completing the geochemical survey, using cut-lines and part of an existing grid, would be in the order of \$2,000.00 if work was conducted under favorable weather conditions. A further expenditure of up to \$10,000.00 would be warranted for stripping and trenching in the event that favorable results were obtained.

Respectfully submitted,

A handwritten signature in cursive script, reading "P.H. Sevensma", written over a horizontal line.

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

December 2, 1968.

GEOCHEMICAL ANALYTICAL REPORT

1521 Pemberton Ave.
North Vancouver, B.C.
988-2171

Page 1 of 4

Date: October 22, 1968Weight of Sample Used: 1.00 gramReport Number: PS-003Extraction: Hot HNO₃, HCl

From: Sevensma Consultant Co.
715-850 West Hastings St.
Vancouver, B.C.

Method of Analyses: By atomic absorptionSubmitted By: Mr. AikinsVolume of Dilution: 50 mlReport On: 105 geochem samplesInstrument Used: Techtron 444Analyzed For: Cu, Zn, PbDisposition of Sieved Material: in fileDate Sample Received: October 22, 1968Analyst: C. ChunDate Report Mailed: October 28, 1968Signed: REMARKS:

All values are reported in parts per million unless specified otherwise. All values are believed to be correct to the best knowledge of the analyst based on the method and instrument used.

Lab. No.	Sample Number	Mo	Cu	Zn	Pb		Remarks
01	BL 3500E		23	128	20		
02	LO 300S		42	77	20		
03	400S		10	28	12		
04	1000S		15	78	22		
05	1200S		25	50	12		
06	1300S		8	40	12		
07	1400S		16	100	12		
08	LO 1500S		25	70	5		
09	L5E 100S		29	65	20		
10	200S		23	110	20		
11	300S		35	122	12		
12	400S		16	95	5		
13	800S		5	22	5		
14	900S		16	60	5		
15	L5E 1000S		7	28	5		

ecm

GEOCHEMICAL ANALYTICAL REPORT

1521 Pemberton Ave.
North Vancouver, B.C.
988-2171

Page 2 of 4

Date: October 22, 1968Report Number: PS-003From: Sevenson Consultant Co.Analyst: C. Chua

Lab. No.	Sample Number	Mo	Cu	Zn	Pb		Remarks
01	L5E 1100S		42	130	5		
02	1300S		5	15	5		
03	1400S		42	75	16		
04	1500S		35	88	12		
05	L10E 100S		16	50	12		
06	200S		35	88	25		
07	300S		23	118	12		
08	400S		30	95	40		
09	500S		23	75	20		
10	600S		23	54	12		
11	700S		16	50	12		
12	800S		5	54	5		
13	900S		24	125	23		
14	1000S		25	70	23		
15	1100S		10	64	12		
16	1200S		38	100	20		
17	1300S		50	142	20		
18	1400S		45	132	12		
19	L10E 1500S		35	186	33		
20	L15E 100S		28	95	20		
21	300S		60	95	12		
22	400S		10	70	25		
23	500S		10	80	23		
24	600S		22	145	33		
25	800S		30	25	12		Pb=12
26	900S		28	113	12		
27	1000S		35	70	20		
28	1100S		23	75	5		
29	1200S		82	65	12		
30	L15E 1300S		10	50	5		

GEOCHEMICAL ANALYTICAL REPORT

1521 Pemberton Ave.
North Vancouver, B.C.
988-2171

Page 3 of 4

Date: October 22, 1968 Report Number: PS-003
From: Seymour Consultant Co. Analyst: C. Chun

Lab. No.	Sample Number	Mo	Cu	Zn	Pb		Remarks
01	L15E 1400S		38	60	12		
02	L15E 1500S		127	118	16		
03	L20E 100S		15	110	16		
04	200S		50	190	22		
05	300S		42	153	22		
06	400S		33	154	22		
07	500S		23	142	20		
08	600S		57	232	33		
09	700S		23	190	20		
10	800S		82	283	33		
11	900S		27	122	30		
12	1000S		35	155	12		
13	1100S		42	195	25		
14	1200S		30	122	25		
15	1300S		37	118	33		
16	1400S		29	92	12		
17	L20E 1500S		20	110	25		
18	L25E 100S		16	182	33		
19	200S		30	170	23		
20	300S		15	95	23		
21	400S		28	152	20		
22	500S		75	77	86		
23	600S		32	92	12		Cu=32
24	700S		28	77	5		
25	800S		13	118	12		
26	900S		54	158	33		
27	1000S		20	128	30		
28	1100S		75	173	25		
29	1200S		67	204	33		
30	L25E 1300S		57	153	25		

GEOCHEMICAL ANALYTICAL REPORT

1521 Pemberton Ave.

North Vancouver, B.C.

988-2171

Page 4 of 4

Date: October 22, 1968Report Number: PS-003From: Sevenson Consultants Co.Analyst: G. Gwyn

Lab. No.	Sample Number	Mo	Cu	Zn	Pb		Remarks
01	L30E 100S		50	145	20		
02	200S		32	128	25		
03	300S		24	122	20		
04	400S		47	213	20		
05	500S		28	110	12		
06	600S		29	113	20		
07	700S		18	113	20		
08	800S		23	100	12		
09	900S		16	122	16		
10	1000S		30	204	33		
11	1100S		24	88	12		
12	1200S		12	81	12		
13	1300S		6	64	12		
14	1400S		13	132	12		
15	L30E 1500S		16	169	25		
16	L35E 100S		25	64	12		
17	200S		30	100	12		
18	300S		31	128	20		
19	400S		24	85	20		
20	500S		22	118	25		
21	600S		26	110	20		
22	700S		28	113	23		
23	800S		32	148	20		
24	900S		50	186	33		
25	1000S		48	239	33		
26	1100S		57	220	12		
27	1200S		42	137	20		
28	1300S		40	137	12		
29	1400S		50	158	12		
30	L35E 1500S		15	88	12		

C A N A D A
YUKON TERRITORY
TO WIT:

) IN THE MATTER OF EXPENDITURES FOR A
) GEOCHEMICAL SURVEY ON THE SNOWCAP
) GROUP OF MINERAL CLAIMS

I, PETER H. SEVENSMA

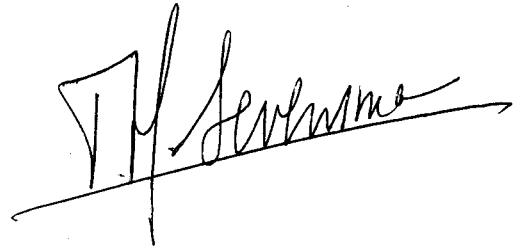
of 715-850 West Hastings Street, Vancouver 1, B.C.

do solemnly declare, - That, ^{attached} hereto, this my affidavit, and marked Appendix "A" and Appendix "B" respectively are statements of the costs incurred and of the personnel employed in conducting the said work.

And I make this solemn declaration conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath and by virtue of The Canada Evidence Act.

Declared before me at Vancouver
in the Province of British Columbia, this 4th day of
December A.D. 19 68.

J. Scobie
A Commissioner for Oaths for Yukon Territory



APPENDIX "A"

Statement of Costs Incurred in the Conduct of a
Geochemical Survey for Vanmetals Exploration Ltd.

Ross River General Store Ross River, Y.T.	Groceries & Supplies	✓ \$ 46.44
Great Northern Airways Whitehorse, Y.T.	Express, invoice #16993	✓ 2.25
Trans-North Turbo Air Whitehorse, Y.T.	Helicopter Charter #1781	✓ 80.50
Canadian Pacific Airlines Vancouver, B.C.	Freight Airbill #111723	✓ 7.80
Mr. George Johnny Ross River, Y.T.	Contract Services	120.00
Mr. Jim Dick Ross River, Y.T.	Contract Services	120.00
Coranex Exploration North Vancouver, B.C.	Analytical Services	236.25
Selwyn Explorations Ltd. c/o P.H. Sevensma Cons. Ltd.	Supplies (tent)	✓ 80.50
P.H. Sevensma Consultants Ltd. 715-850 West Hastings St., Vancouver 1, B.C.	(Consulting Fees & Expenses (Disbursements)	795.50 344.64
		<hr/>
		<u>\$1,833.38</u>

105 sa. for st. ... 115-1050

P.H. Sevensma

APPENDIX "B"

List of Personnel and Firms Employed in a
Geochemical Survey of Snowcap Claim Group

Period during which work was conducted:-
October 10, 1968 to December 2, 1968.

Transportation:

Great Northern Airways
No. 3 Hanger, McCall Field,
Calgary, Alberta.
(Pilot: B. Watson)

Klondike Helicopters Ltd.,
No. 1 Hangar, McCall Field,
Calgary, Alberta.
(Pilot: D. Zutter)

Trans-North Turbo Air,
P.O. Box 1979,
Whitehorse, Yukon.
(Pilot: C. Hankins)

Geochemical Survey:

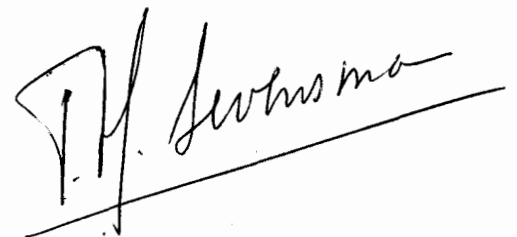
P.H. Sevensma Consultants Ltd.,
715-850 West Hastings St.,
Vancouver 1, B.C.
(P.H. Sevensma, Ph.D., P.Eng.)
(G. Fabro, Geologist)
(H.S. Aikins, Sr. Technician)

Line Cutting & Soil Sampling:

G. Johnny & J. Dick,
Ross River, Yukon.

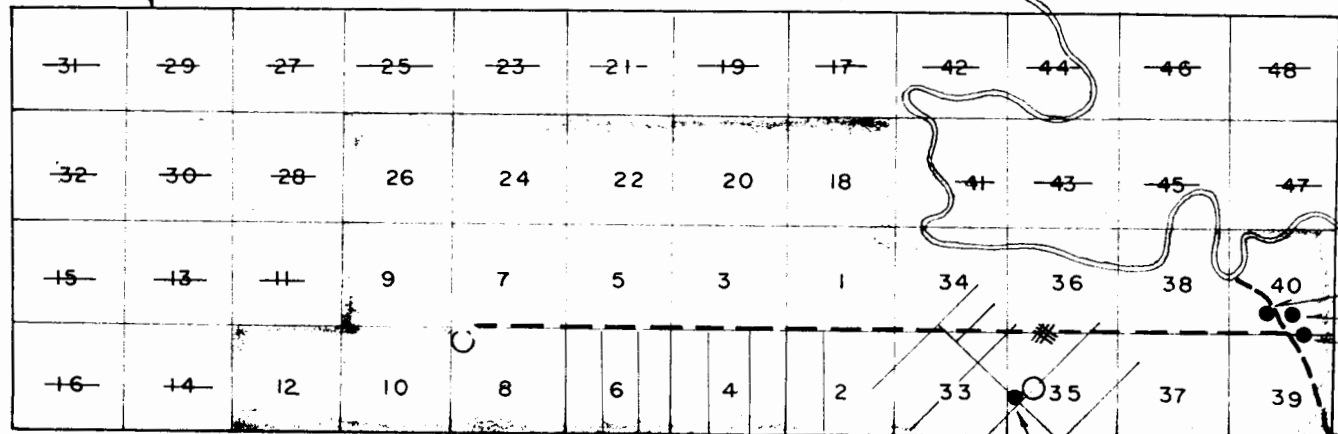
Analytical Work:

Coranex Exploration,
1521 Pemberton Avenue,
North Vancouver, B.C.


P.H. Sevensma



SNOWCAP CLAIMS



OLGIE LAKE

Trench 1
Trench 2
Trench 3

Access Road for tracked vehicle. Total 2 1/2 ml.
8 miles to Canol Road

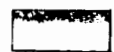
Grid 68 A
3 line-miles

Grid 67 A


Trench 4


132° 30'

CLAIM STATUS

 Expiry Dec. 22, 1968

 Lapsed.

 Conductor (EM - 16 recon.)

 600 p.p.m. Zn in soil

Claim Map 105-K 2

Claim map 105-K 1

V. H. Sevensma

VANMETALS EXPLORATION LTD.

CLAIM MAP — SNOWCAP GROUP

Whitehorse M.D.-Y.T.

105-K-1,2

P. H. Sevensma Consultants Ltd.

Vancouver B.C.

Nov. 1968,

Scale:

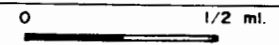
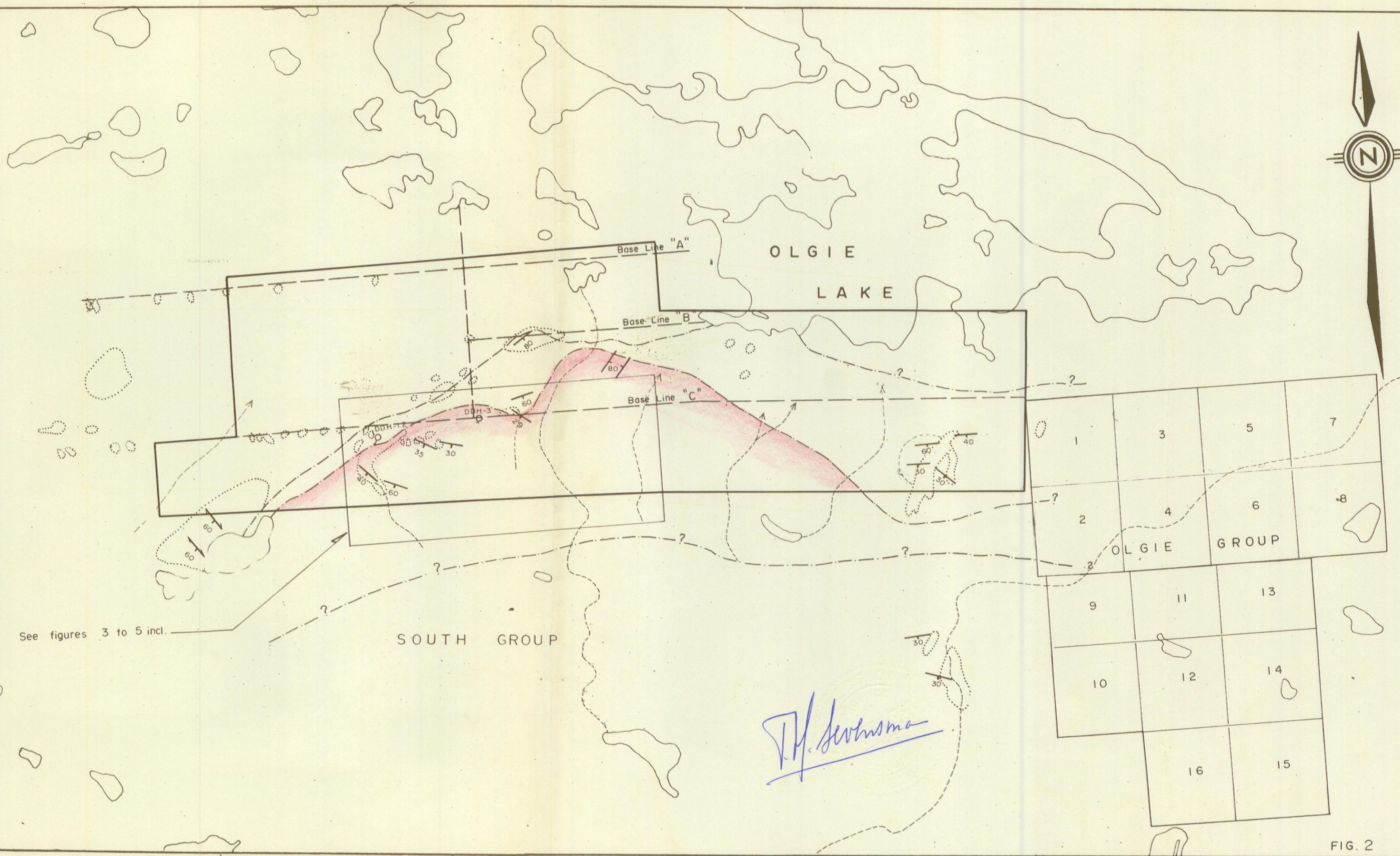


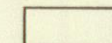
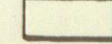
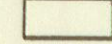
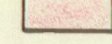
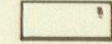
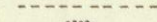

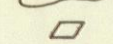
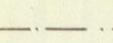


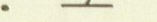

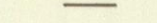
FIG. 1

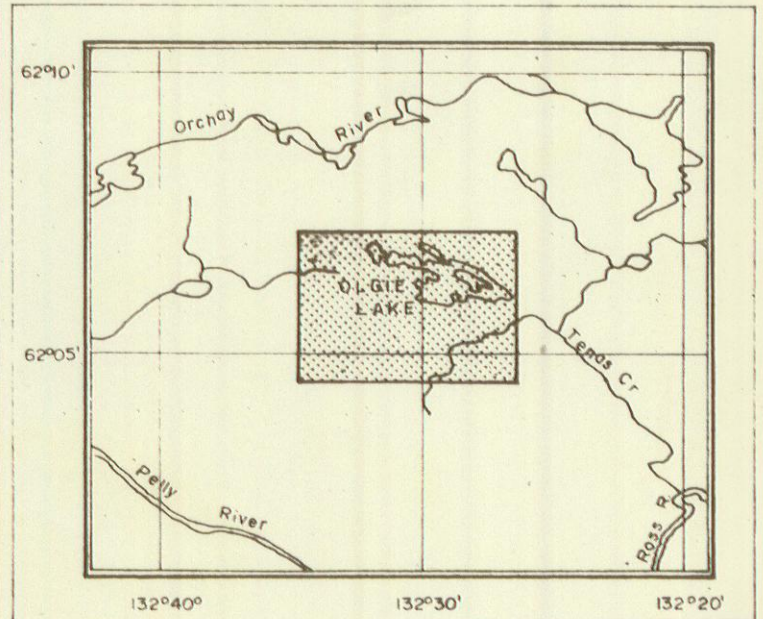


See figures 3 to 5 incl.

P. H. Sevensma

LEGEND

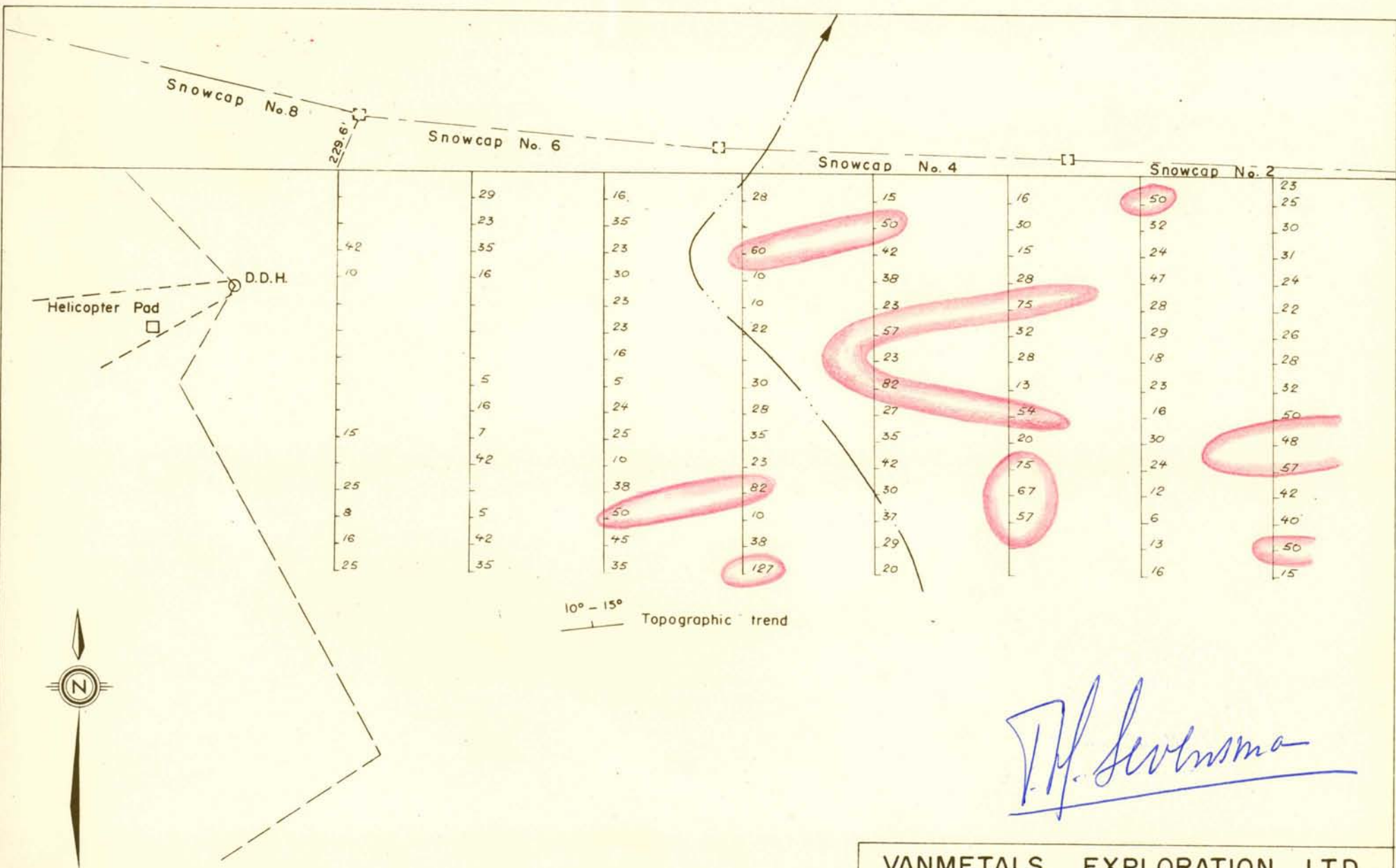
- IGNEOUS ROCKS**
-  Granodiorite — Light grey, medium grained, up to 40% quartz present.
 -  Contact zone — Granodiorite porphyry, Granitic porphyry, and Rhyolitic border phases.
- SEDIMENTARY ROCKS**
-  Skarn — Light greenish grey to creamy, generally schistose, some red garnet bands.
 -  Phyllitic or graphitic schists
- VOLCANIC ROCKS**
-  Andesite — pale green very fine grained.
- Other Symbols:**
-  Intermittent stream
 -  Outcrop
 -  Lake
 -  Claim post
 -  Cut line
 -  Claim line or claim boundary
 -  Bedding
 -  Jointing
 -  Foliation



VANMETALS EXPLORATION LTD.
SNOWCAP GROUP
 Whitehorse M.D.—Y.T. 105-K-1,2
 P. H. Sevensma Consultants Ltd—Vancouver B.C.
 November 1968

0 SCALE 1320'

FIG. 2

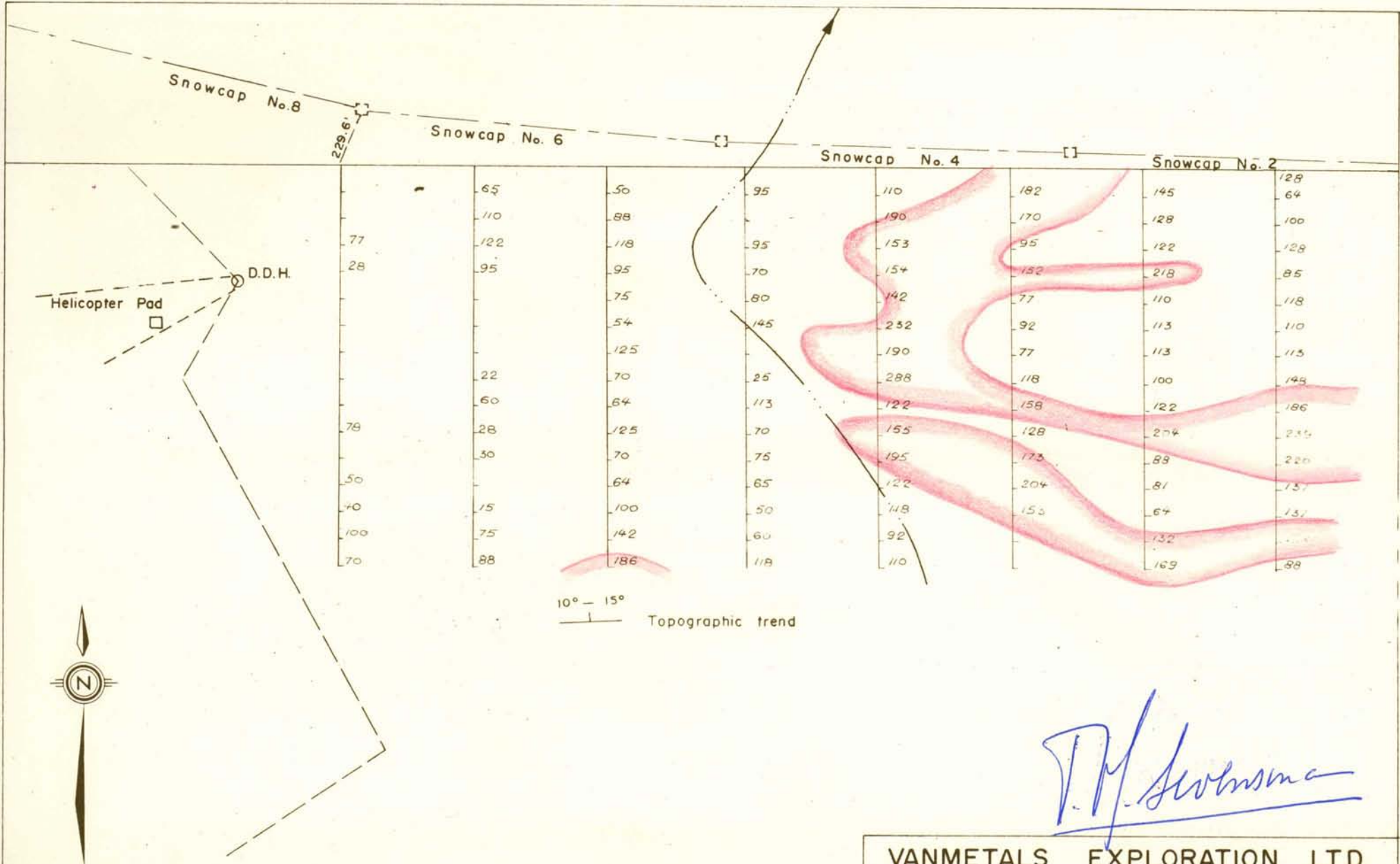


Average 31.1 p.p.m.
 Significant > 50 p.p.m.

P. H. Sevensma

VANMETALS EXPLORATION LTD.	
COPPER PLOT	
Whitehorse M.D.-Y.T.	105 -K- 1,2
P. H. Sevensma Consultants Ltd.-Vancouver B.C.	
November 1968,	Scale: 0 500'

FIG. 3



T. H. Sevensma

VANMETALS EXPLORATION LTD.
ZINC PLOT
 Whitehorse M.D.-Y.T. 105 -K-1,2
 P. H. Sevensma Consultants Ltd.-Vancouver B.C.
 November 1968, Scale: 0 500'

FIG. 5