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GEOLOGICAL REPORT
ON THE
BLUE GROUSE AND SUNNYSIDE MINE AREA
COWICHAN LAKE
VICTORIA MINING DIVISION
BRITISH COLUMBIA
NTS 92C 16E
NORTH LATITUDE: 48 degrees, 50 minutes
WEST LONGITUDE: 124 degrees, 14 minutes
BY
MICHAEL RENNING
PROSPECTOR
MAY 1991

21391

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INTRODUCTION

The Blue Grouse property is situated approximately 13km west of Lake Cowichan a logging community established before the turn of the century. Here on the southern shore of Cowichan Lake lie two former copper producers, the Blue Grouse and the Sunnyside Mines. Approximately 14,769,067 lbs. of copper and 78,834 oz. of silver have been mined from the Blue Grouse.

The property has been held in good standing since 1987 by Michael Renning of Vancouver. Recent efforts have mostly been towards attempting to consolidate all of the sub surface rights under one agreement for exploration. Despite the wishes of the owners of BK 107, a program of geological mapping had taken place on the newly constructed access road on the property. This work lead to the discovery of copper mineralization on the Dads Birthday claim located within BK 22 (refer to Figure 3 in pocket). Although it is far too early to tell, there appears to be a potential for a large tonnage deposit of structurally controlled, 2% copper. It seems this feature could extend up to 200M in a southerly direction before crossing the boundary of BK107.

SUMMARY

1. The Blue Grouse and Sunnyside are both former copper producers with the Blue Grouse having been the more active of the two.

2. The Blue Grouse produced approximately 14,769,067 lbs. of copper and 78,834 oz. of silver during the years from 1955 to 1960 while operated by Cowichan Copper Company Ltd.

3. The most significant undertaking on the property since production was by Corrie Copper Ltd. in 1979. Highlights of the program included underground rehabilitation, mapping and diamond drilling.

4. Exploration on the property has been hampered by the sub surface issue surrounding BK107. Fletcher Challenge Canada Ltd. owns all base metal rights within BK 107.

5. The work on the property undertaken earlier this year involved mapping approximately 50% of the new access road constructed during 1989 and 1990.

6. Significant copper mineralization was discovered on the Dads Birthday claim in an area where all of the sub surface rights belong to the claim.

7. Detailed interpretation of old soil geochemistry (1987 Di Spirito) through statistical analysis and the production of 30 maps (see Appendix 1), revealed a strong arsenic, zinc and molybdenum trend which passes through what is now the discovery zone.

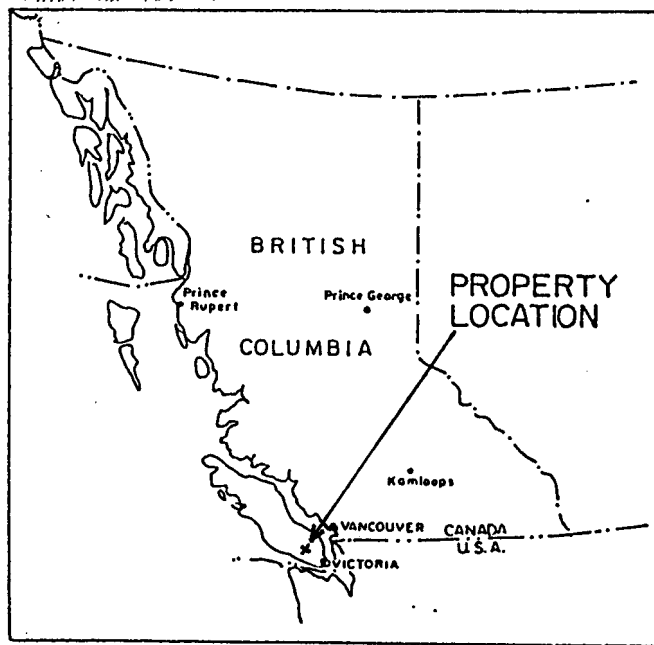
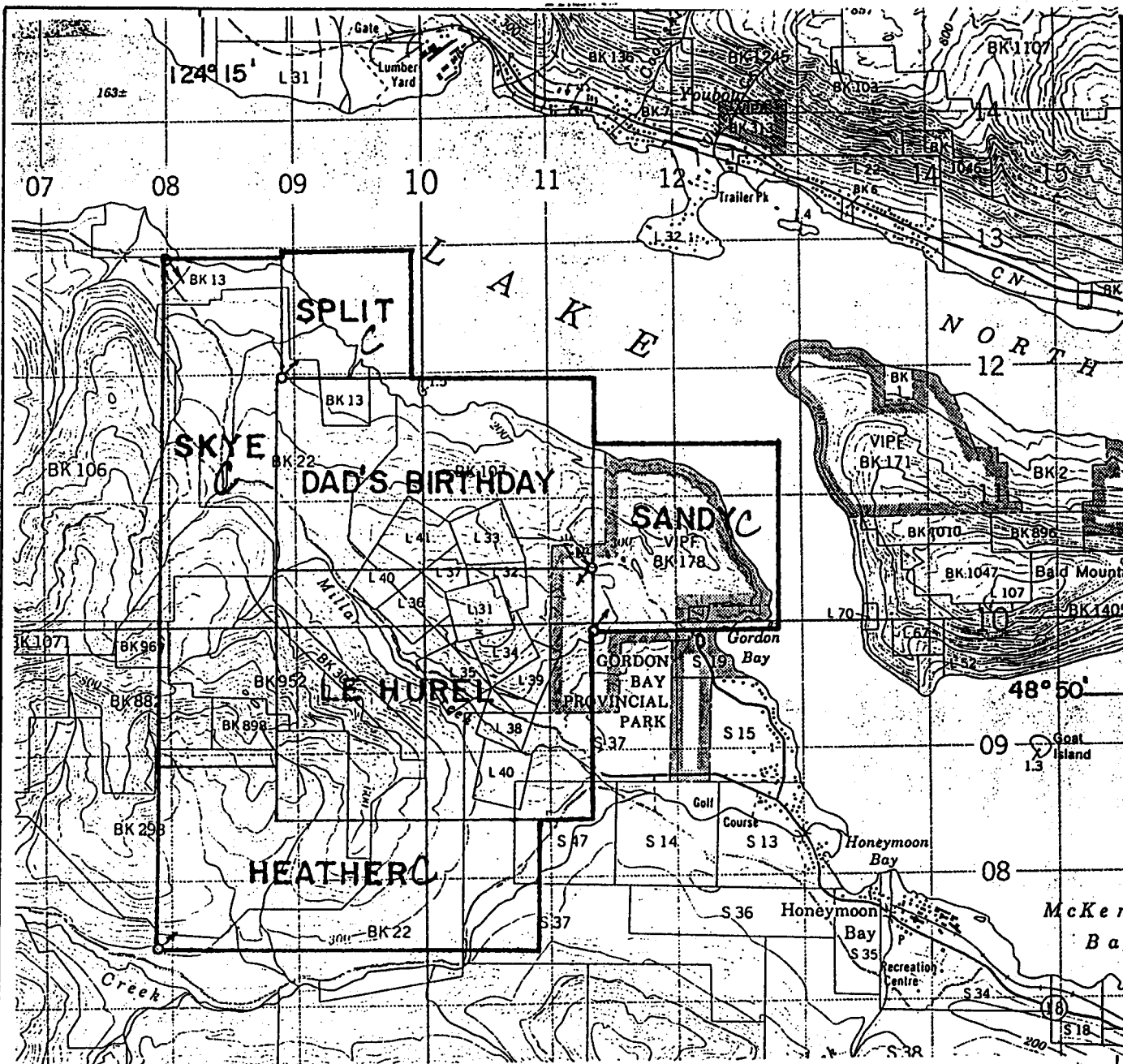
LOCATION AND ACCESS

The Blue Grouse property is located about 13km westerly of Lake Cowichan on south central Vancouver Island. The south, eastern and northern portion of the property is easily accessed by any vehicle on a newly constructed, unpaved section of highway 18. The western portion of the property is still easily accessible by the old section of highway 18 which has now been bypassed by the foregoing section.

CLAIM STATUS

The Blue Grouse property consists of eleven reverted Crown granted mineral claims encompassed by 35 units of modified grid claims. The previous owner of the reverted Crown granted claims, Corrie Copper Ltd., had allowed the claims to forfeit on the 13th of February 1987. Since February 24, 1987 the status of the claims has been as follows:

NAME	RECORD#	LOT#	ANNIVERSARY	AREA
Blue Grouse	1854	31G	Feb. 24/92	19.59 hec.
Blue Grouse No.1	1855	32G	Feb. 24/92	10.58 hec.
Blue Grouse No.2	1856	33G	Feb. 24/92	20.87 hec.
SS No. 1	1857	34G	Feb. 24/92	17.13 hec.
SS No. 2	1858	35G	Feb. 24/92	20.69 hec.
SS No. 3	1861	38G	Feb. 24/92	18.89 hec.
SS No. 4	1862	39G	Feb. 24/92	11.51 hec.
SS No. 5	1859	36G	Feb. 24/92	18.59 hec.
SS No. 6	1860	37G	Feb. 24/92	8.95 hec.
SS No. 7	1863	40G	Feb. 24/92	15.18 hec.
SS No. 8	1864	41G	Feb. 24/92	20.71 hec.
Dads Birthday	1842		Mar. 4/92	15 units
Le Hurel	1843		Mar. 4/92	20 units



SCALE 1:50,000



BLUE GROUSE PROPERTY

LOCATION MAP

VICTORIA M.D., B.C.

N.T.S. 92C - 16 E

DATE: Feb. 1991

DRAWN BY: M.R.

REGIONAL GEOLOGY

North of Cowichan Lake, the area is underlain by island arc volcanics and marginal basin and platform sediments of the Devonian Sicker and Mississippian to Lower Permian Buttle Lake Groups, respectively.

In the area of the Blue Grouse and Sunnyside Mines south of the lake, separated from the Paleozoic sequence by the Cowichan fault, Mesozoic sediments form a broad anticline. The Upper Triassic basalt and sediments of the Karmutsen, Quatsino and Parson Bay formations are overlain by arc volcanics of the Lower Jurassic Bonanza Group. Granodiorite stocks and plutons of the early to middle Jurassic Island plutonic suite intrude all older sequences. Clastic sediments of the Upper Cretaceous Nanaimo Group occur throughout the area.

PROPERTY GEOLOGY

The property consists primarily of a medium to dark green brown basalt (Vb), chloritic in nature it contains numerous slick n'side features with an earthy brown weathered surface. This unit is probably the equivalent to the Karmutsen volcanics found throughout Vancouver Island. Within this formation are other volcanic features such as flow breccia (Vb2), a dark black basalt characterized by calcite filled amygdoids (Vb1), and maroon (Vt1) and grey (Vt) tuffaceous units. All of the foregoing features are overlain by limestone units (Ls) of varying thicknesses. However, there are some small showings of limestone (marble) and limy tuffs which appear to have formed between some of these volcanic events. Most of the massive limestone observed is likely part of the Quatsino formation of the Vancouver Group of rocks. All of the above mentioned rock types have been intruded by andesitic (often feldspar porphyry) dykes (Va), some of which may be automatically labelled as Bonanza volcanics. However there were some dykes observed cutting through units of the Nanaimo Group (just northwest off the claims) which, as a result, places uncertainty in distinguishing the younger volcanics on the property.

The mineralization in the unusually rich Blue Grouse skarn consists of massive chalcopryrite found in association with grey and maroon tuffaceous units within a swarm of feldspar porphyry dykes. At the Sunnyside, the skarn is reported to be of the contact metasomatic type with the chalcopryrite found at the contact between massive limestone and altered volcanics (Frank Di Spirito, B.A.Sc., P.Eng, 1987)

ROCK SAMPLING METHOD

During the initial visit to the property with Noranda the 20 rock samples were of three types; chip samples, grab samples and loose ore grab samples from the Blue Grouse dump. All of Noranda's samples were submitted in large plastic sample bags with sample numbers from a series included in the bag and tied off with plastic ribbon. All samples were shipped to ACME Laboratories Ltd. where a 0.500 gram sample was digested in 3ml of 3-parts HCl, 1-part HNO₃ and 2-parts H₂O for one hour before undergoing 30 element ICP analysis. This leach is partial for Mn, Fe, Sr, Ca, P, La, Cr, Mg, Ba, Ti, B, W and limited for Na, K and Al. Gold analysis was performed separately by acid leach on a 10 gram sample followed by Atomic Absorption.

Three samples in the series were crossed out by Noranda (see Appendix 2) apparently because of a mix up with another project. Just to be sure, the author re-visited the site with geologist Brian Malahoff where the series ends at sample 47568 - at the maroon tuff. Grab samples of the chlorite altered green basalt, just a few metres east of the maroon tuffs were collected where it is believed samples 47569-47571 had been taken. Samples BG91-BM001 and BG91-BM005 were collected in their place and were part of a total of eleven samples analyzed by Rossbacher Laboratory Ltd., courtesy of CME consulting Limited. The eleven rock samples were all grab samples collected during the mapping of the new access road cut with the exception of BG91-R005 which was (also a grab) collected from a new showing northwest of the Sunnyside Mine. All eleven samples were digested and subsequently underwent 30 element ICP with gold done separately under Atomic Absorption.

ROCK SAMPLE DESCRIPTIONS

- BG91BM-001 Basalt. Dark green with purplish patches. Bornite present in a disseminated form in notable amounts. Large grab sample taken just a few metres east of the contact with the maroon tuff (red bed).
- BG91BM-002 Quartz vein within andesite containing a trace of pyrite.
- BG91BM-003 Highly altered basalt. Extremely limonitic weathering. Arsenopyrite present in notable amounts.
- BG91BM-004 Basalt. Moderate limonitic weathering. Zeolitic stringers.
- BG91BM-005 Basalt. Same description and location as BG91BM-001.
- BG91-001 Altered limonitic basalt. Notable chalcopyrite, malachite and epidote.
- BG91-002 Andesite. Light blue green with feldspar phenocrysts. 1-2% pyrite.
- BG91-003 Dark grey/black basalt. Minor pyrite.
- BG91-004 Altered andesite. Medium grey/black, 2-3% finely disseminated pyrite. Quartz stringers present.
- BG91-005 Skarn. Dark green tuff? Chalcopyrite, malachite and epidote.
- BG91-006 Highly argillically altered basalt. 5-10% pyrite.

* Assays in Appendix 2

DISCUSSION OF RESULTS

The objective of finding additional copper mineralization on the property remains favorable as the results of the analysis clearly indicate. Of immediate interest are the results returned from the sampling performed at the northern end of the property where a recent road cut exposed an approximate 5 metre thickness of maroon tuff. This tuff or 'red bed' was known as the principle host to the skarn mineralization at the Blue Grouse Mine. Interestingly, the red bed at the road cut was basically found to be void of copper mineralization, however the dark green chlorite altered basalt at its eastern contact was discovered to contain bornite and possible copper carbonate mineralization running 17391 ppm and 19924 ppm copper from two independent grab samples BG91-BM001 and BG91-BM005 respectively. Much of the credit for this copper discovery goes to the 30 geochemical maps produced from 1987 (Di Spirito) soil geochemistry data in preparation of the mapping and exploration on the property. Special attention should be given to the strong well defined arsenic, zinc and molybdenum anomalies passing through the discovery area.

Approximately 600 metres northwest of the Sunnyside Mine sample BG91-R005 confirmed the location of copper mineralization discovered by D.C. Malcolm in a report to Cowichan Copper Co. Ltd. in 1965. Malcolm later (1976) describes a surface showing which showed 2.1 metres of 8% copper with an apparent strike length of 213 metres in a limy tuff being located somewhere in this area. Sample BG91-R005 was a select grab sample from a massive chalcopyrite vein only 3-4" wide.

CONCLUSIONS AND RECOMMENDATIONS

After a few investigations of the new red bed associated showing and the immediate surrounding area at the northerly end of the property (just south of BK 13), it appears that soil sampling at the density which was done over this area in the past has not been successful in outlining any copper zones - assuming there is strike length to the new showing of course. Based on these observations then, a soil orientation program is recommended over this area where the showing is known to occur along with a new set of statistics isolating anomalous thresholds for this possible reduction - oxidation setting. Pending the results of this survey, a program of hand trenching may prove to be successful as the overburden in this area of the property seems to be averaging only 1-2 metres in thickness.

In addition, a program of detailed mapping and panel chip sampling is strongly recommended for the discovery zone as the source of the very well defined arsenic, zinc and molybdenum anomalies, which drew the initial interest to the area, has yet to be found.

It seems wise at this point to focus on developing this new showing as it seems to be the best base metal target in an area where all of the base metals are held by the Dads Birthday claim.

REFERENCES

Malcolm, D.C., Blue Grouse Group Geological Report. Assessment Report No. 616, March 8 1965.

Malcolm, D.C., Report On The Blue Grouse, Victoria Mining Division, B.C., May 25, 1976.

Skeryl, A.C. Report On A Self Potential Survey On The Cowichan Copper Property, Cowichan Lake, B.C., Assessment Report No. 97, May 24, 1954.

Di Spirito, Frank, Geological, Geophysical And Geochemical Report On The Blue Grouse Property, 1987.

Massey, S.J., et al Geology Of The Cowichan Lake Area, Geoscience Map 1991-2.

COST BREAKDOWN

Property Examination with Noranda Exploration Company Ltd. from May 28 to May 30 1990.

Expenses paid for by Noranda:

Linda Erdman (geologist) 2 days on property and one office day.....\$1000.00
Accommodations (one Night).....\$ 40.00
Food (two days).....\$ 50.00
Truck rental, 2 days at \$75.00/day.....\$ 150.00
Gasoline.....\$ 50.00
Assays, 20 samples at approx. \$20.00/sample...\$ 400.00

Total estimated value contributed by Noranda.....\$1690.00

Expenses paid for by Michael Renning:

Michael Renning (prospector) 2 days at \$200.00/day.....\$ 400.00
Food and Expenses (two days).....\$ 120.00

Total estimated value contributed by Renning.....\$ 520.00

Total value of property examination.....\$2210.00

Geological mapping carried out by Michael Renning and Brian Malahoff B.Sc., from February 15 to February 22, 1991.

Personel:

Brian Malahoff 2 days @ 350.00/day (field rate)\$700.00
Michael Renning 5 days @ 300.00/day*.....\$1500.00

Transportation:

Camper Van, 2 days @ 75.00/day.....\$ 150.00
Station Wagon, 5 days @ 40.00/day.....\$ 200.00
Gasoline.....\$ 110.97
B.C. Ferry.....\$ 96.00

Food:

Meals and Groceries.....\$ 121.63

Accommodations:

Motel, 4 nights @ 40.00/night plus Tax.....\$ 188.00

* includes field gear and supplies

...cont.

Report Preparation Costs:
Brian Malahoff 5 days @ \$150.00/day\$ 750.00
Michael Renning 15 days @ \$100.00/day.....\$1500.00

Reproductions and Research Costs:
Data entry (computer time).....\$ 900.00
Statistical Plots (30 sheets).....\$ 400.00
Geochemical Plots (30 sheets).....\$ 500.00
Materials\$ 180.00

Recording Fees.....\$ 470.00

Prospecting and Report Preparation Total.....\$7766.60

TOTAL VALUE OF THIS REPORT.....\$9976.60

APPENDIX 1

SOIL GEOCHEMICAL PLOTS
AND STATISTICS

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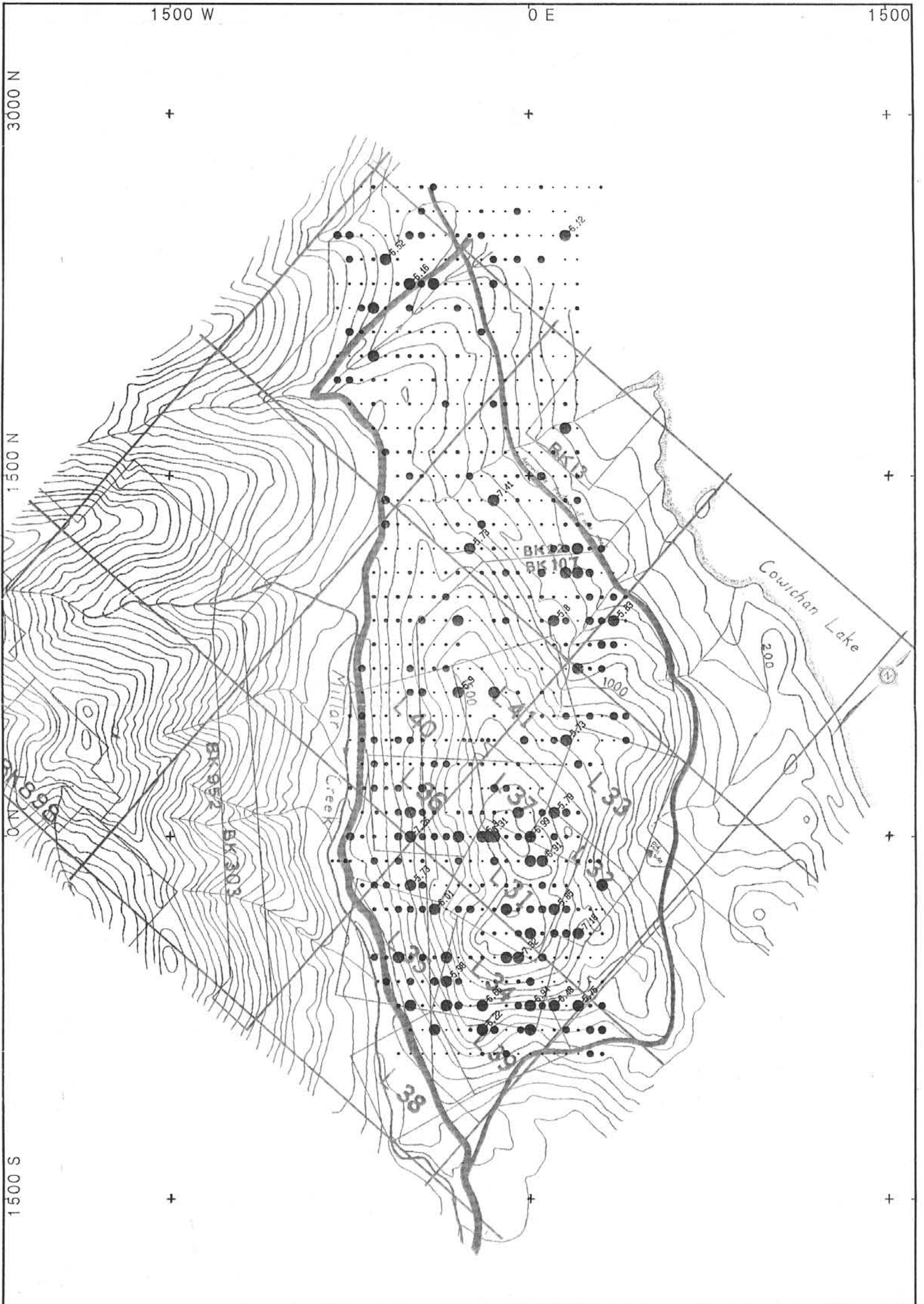
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GEOCHEMICAL REPORT ON THE
BLUE GROUSE PROPERTY

BY

FRANK DI SPIRITO

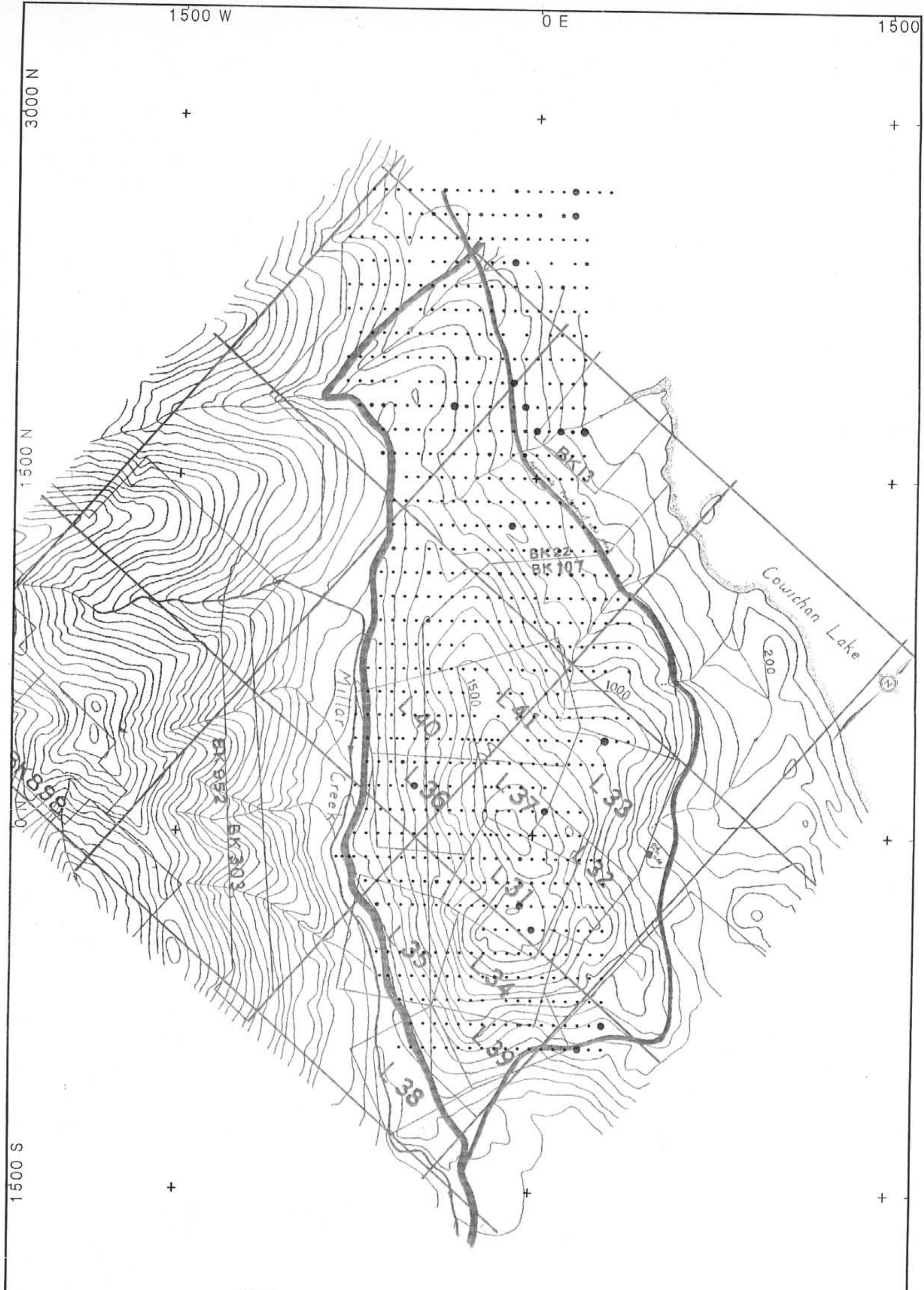
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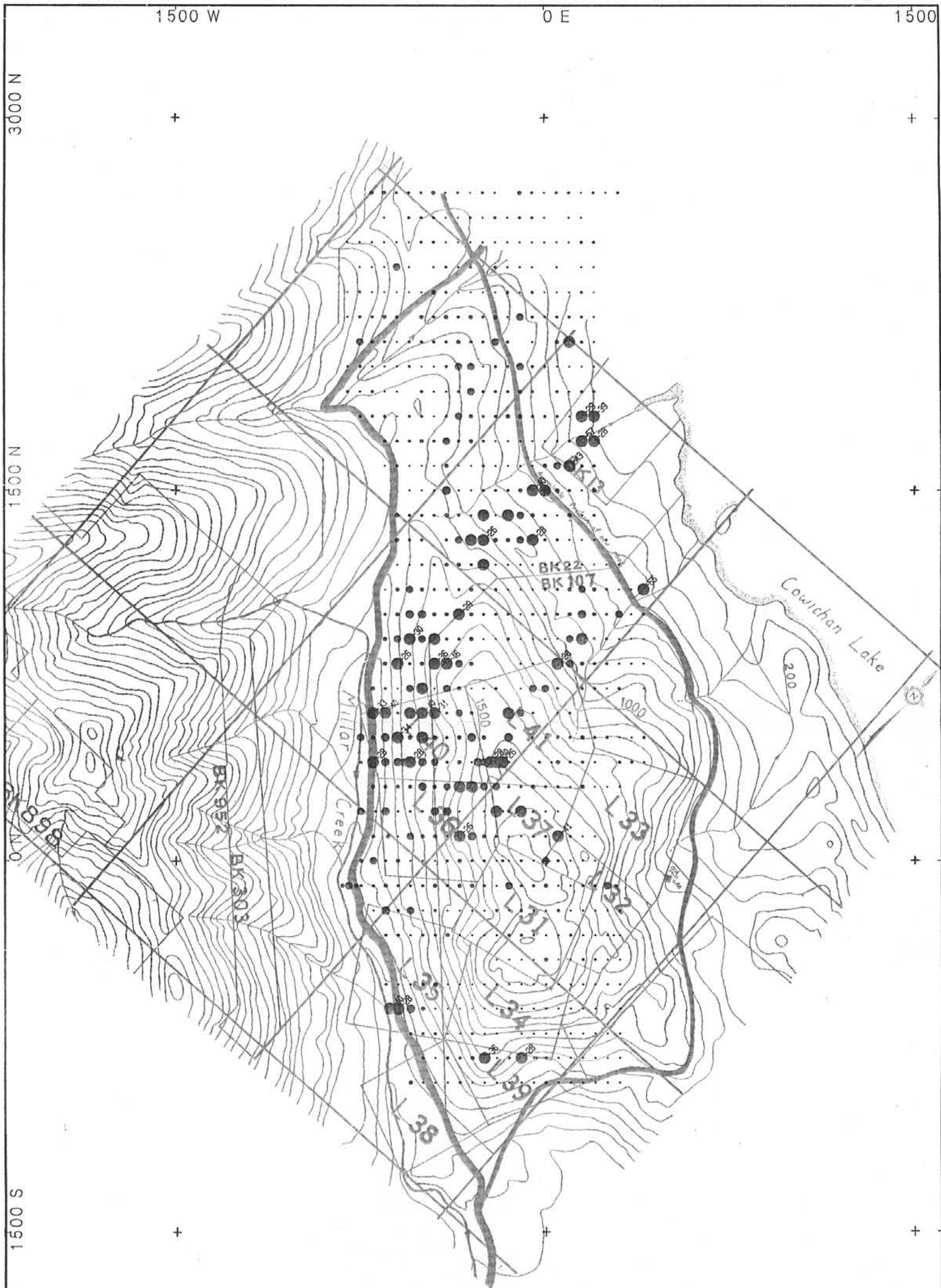
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Project No. AM-001		NTS 92C/16E		Scale 1:15000		
Date APRIL 1988		Report No.		Fig. No.		

AMBER MINERALS LTD.



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Date APRIL 1988		Report No.	Fig. No.	

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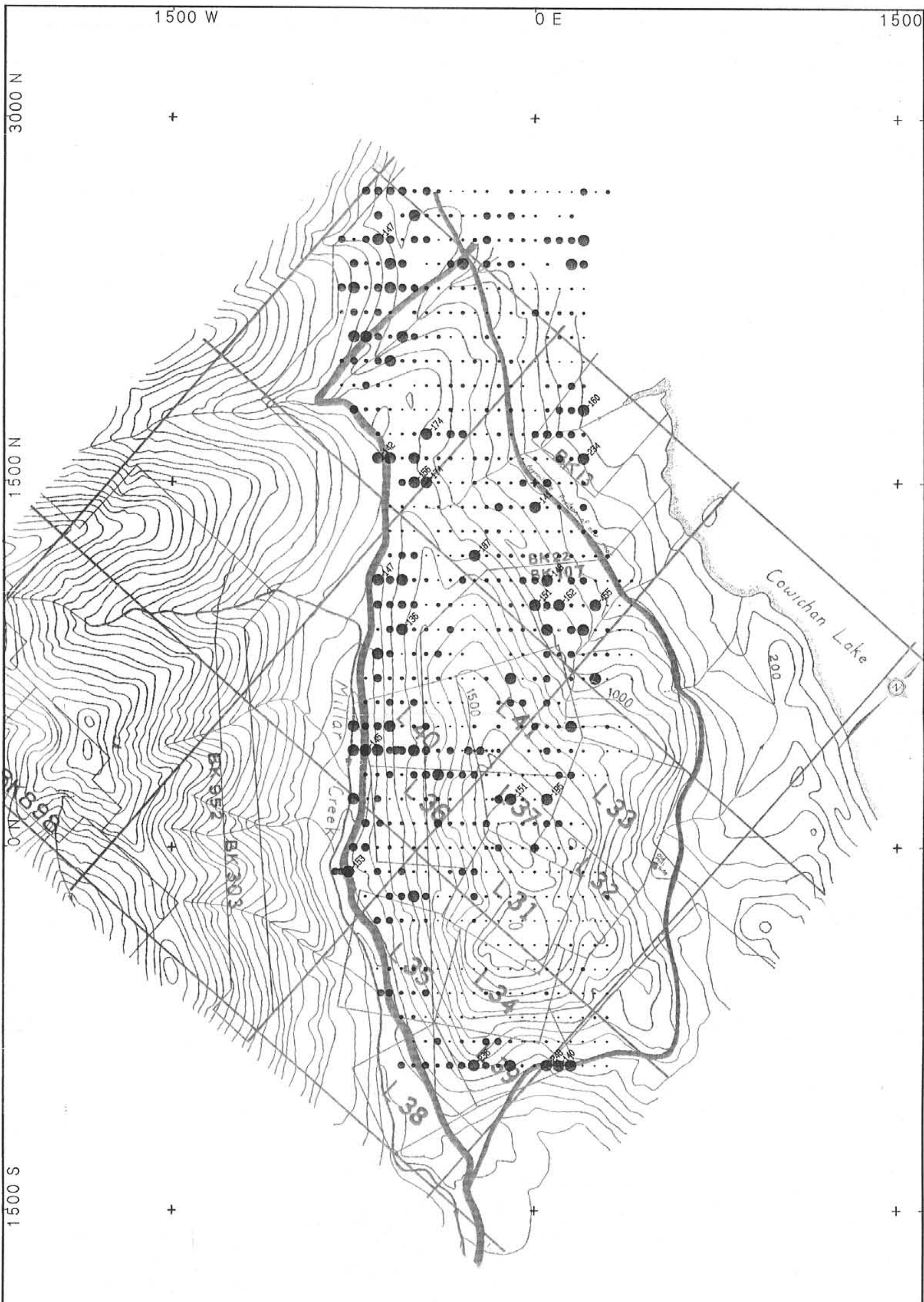
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- ≤ 17
- ≤ 14
- ≤ 11
- ≤ 6

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ARSENIC (ppm)

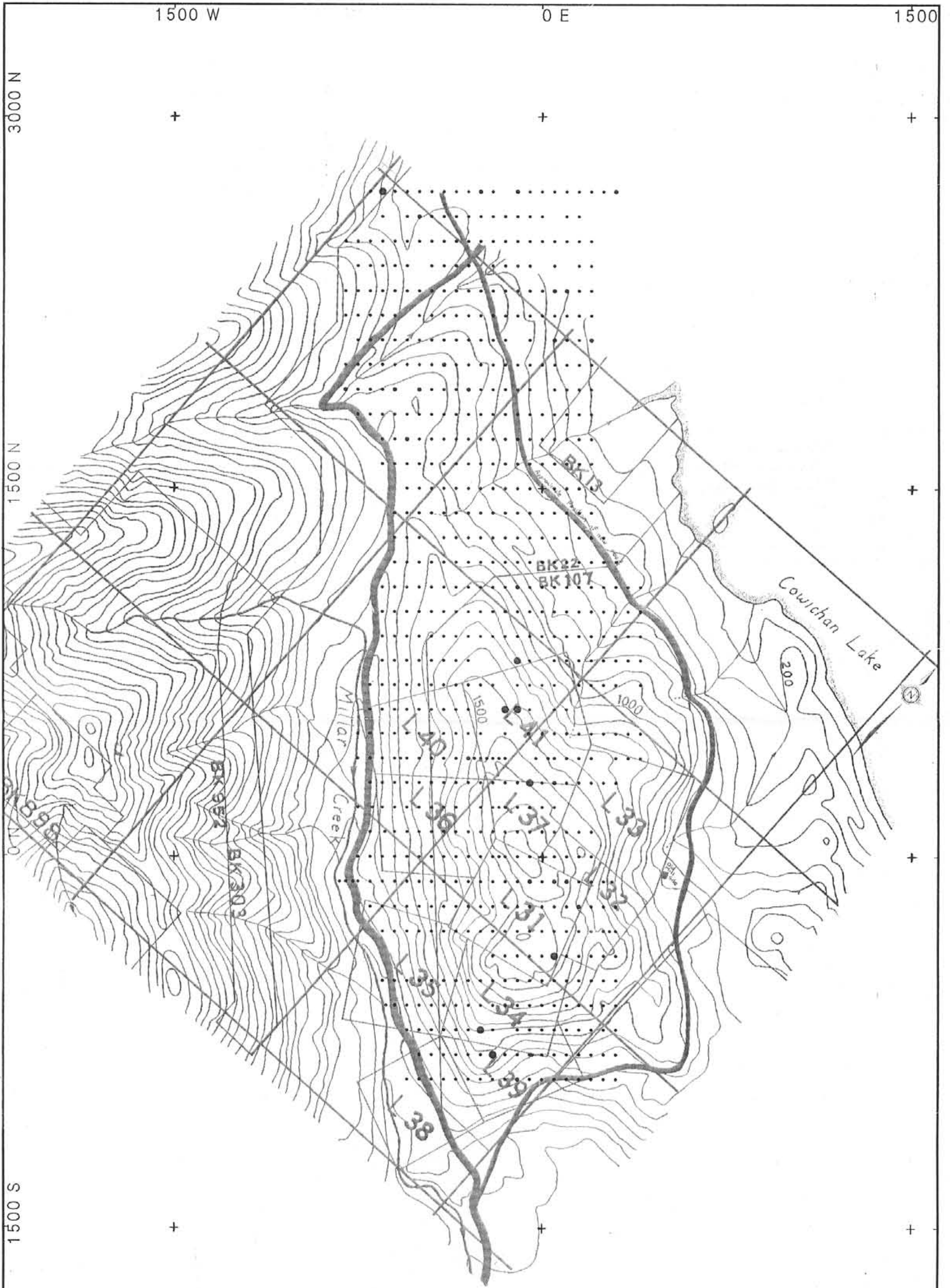
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 COWICHAN LAKE - B.C.
 1987 SOIL GEOCHEMISTRY

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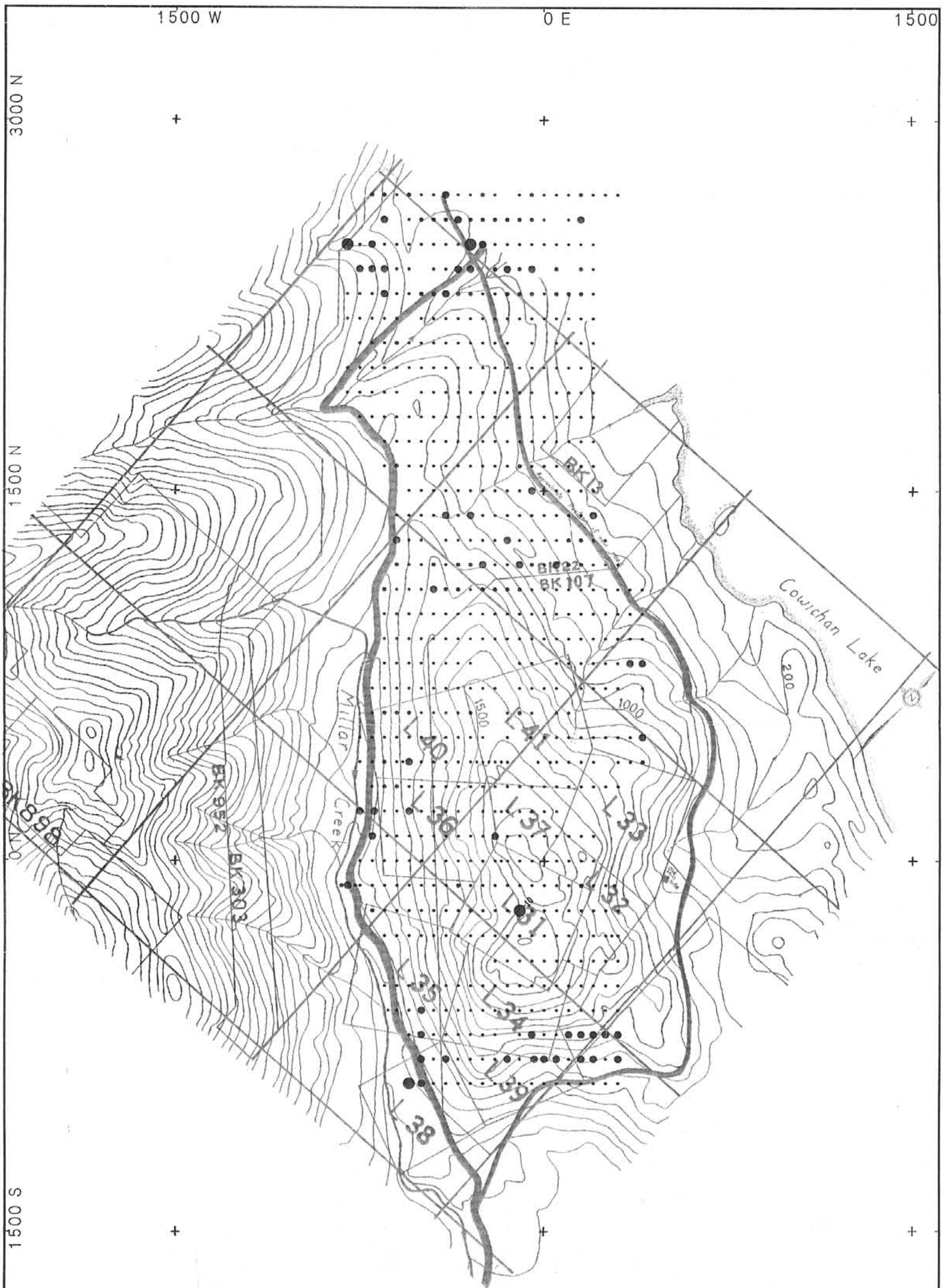
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Date APRIL 1988		Report No.	Fig. No.	

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		BISMUTH (ppm)	
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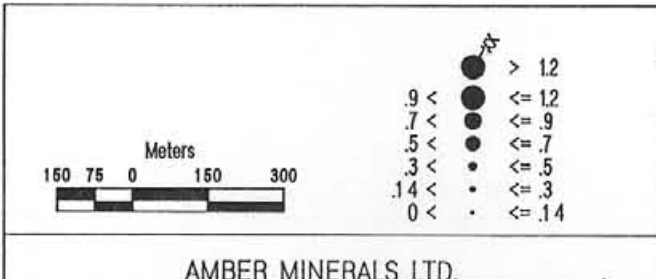
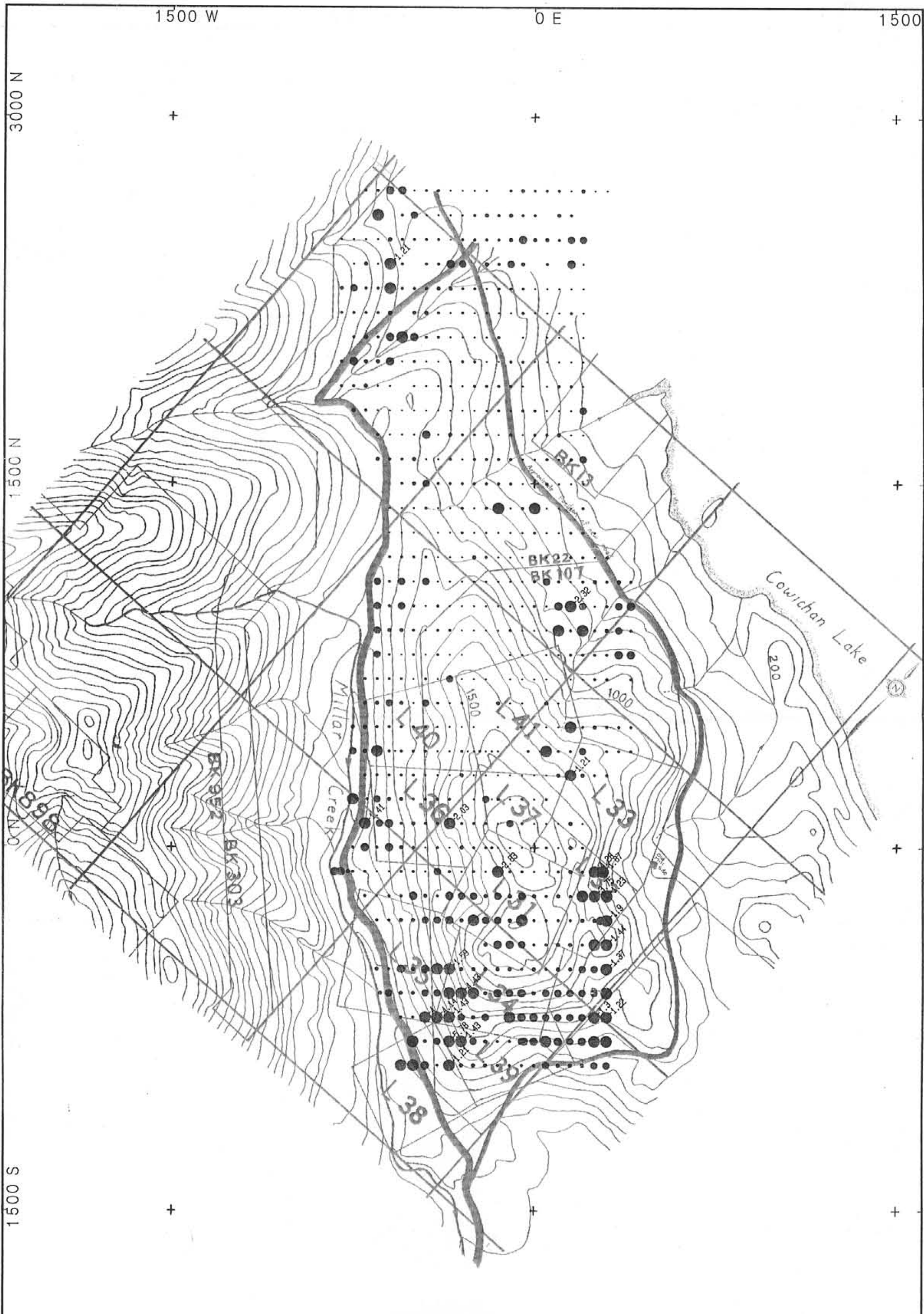
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- ≤ 4
- ≤ 3
- ≤ 2
- ≤ 1



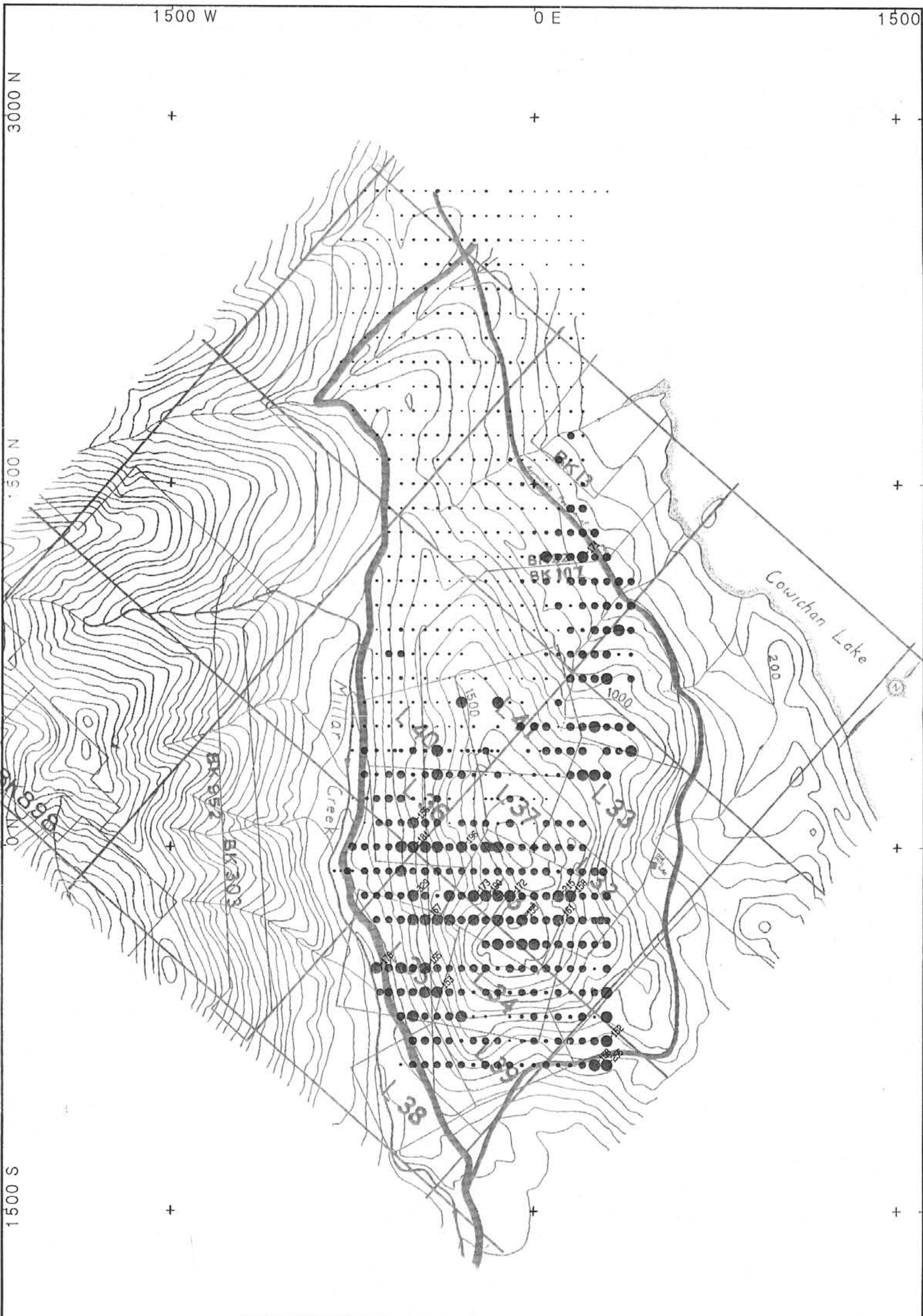
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CALCIUM (%)			
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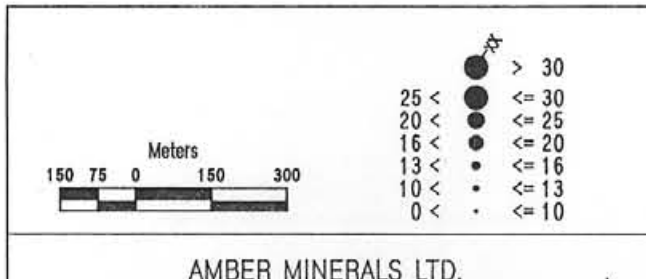
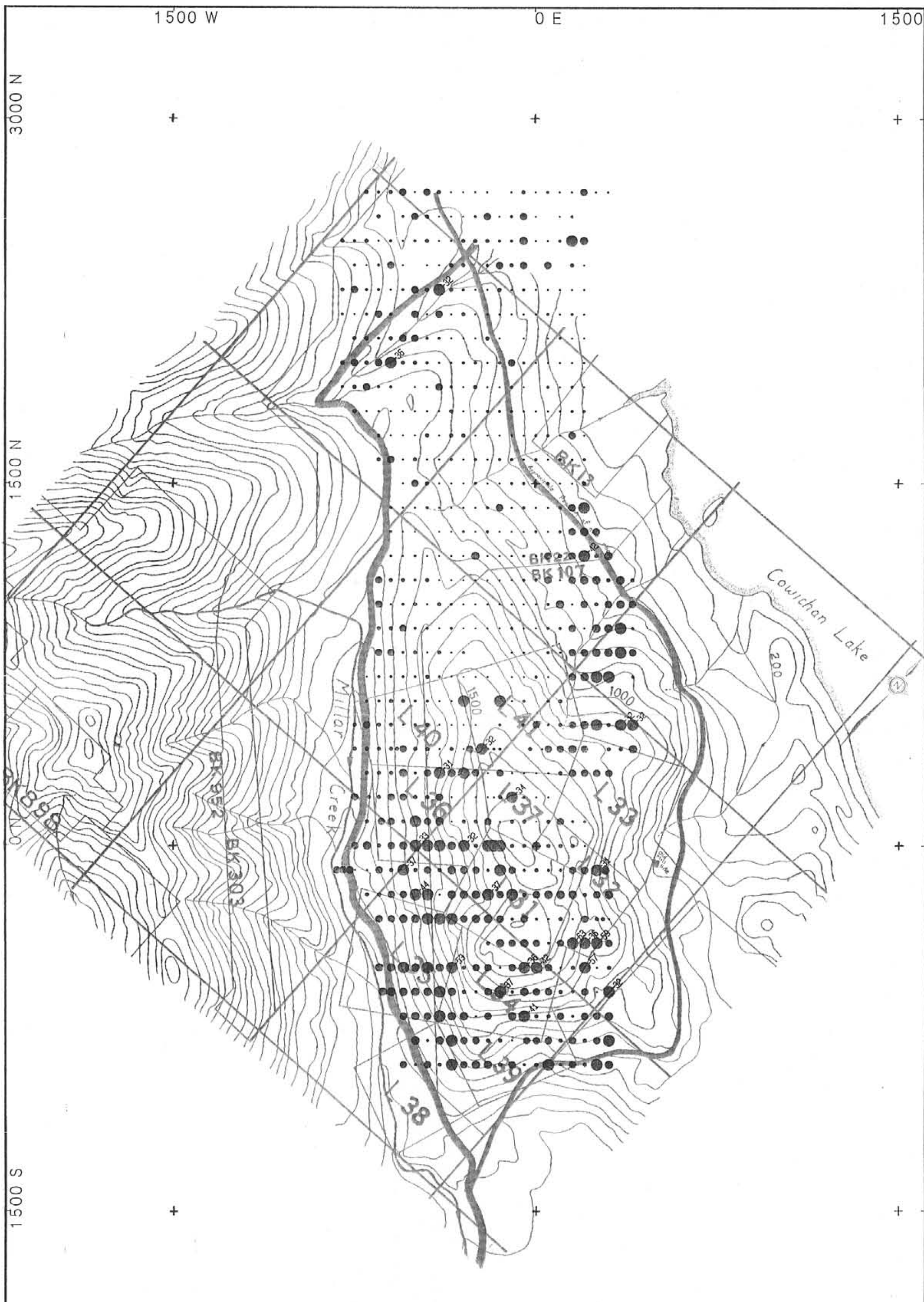
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CHROMIUM (ppm)			
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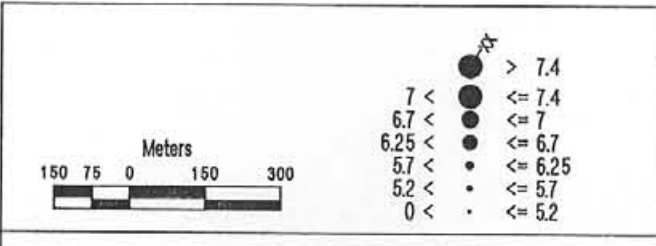
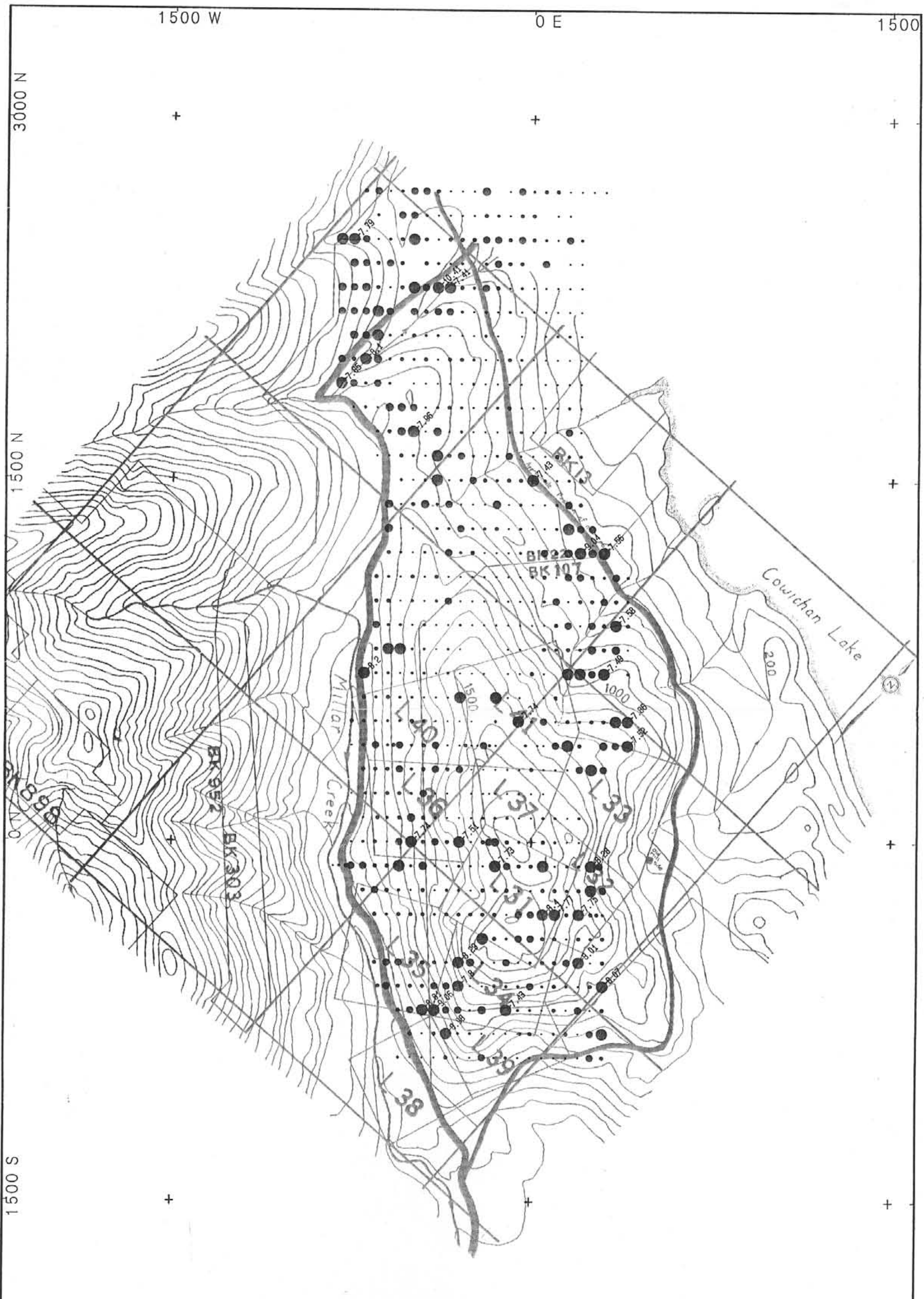
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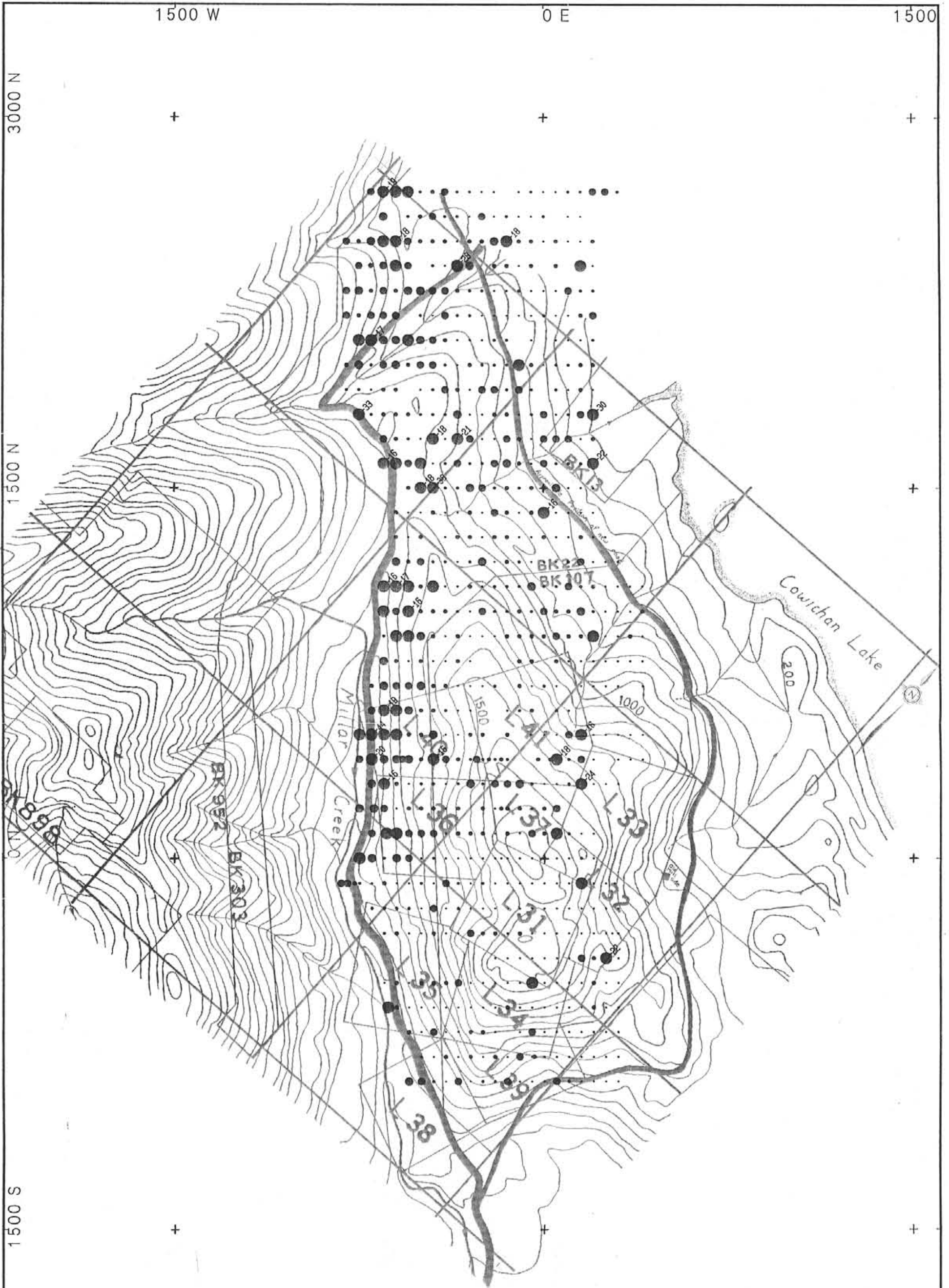
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- > 12
- ≤ 12
- ≤ 10
- ≤ 8
- ≤ 6
- ≤ 4
- ≤ 2



IRON (%)			
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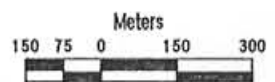
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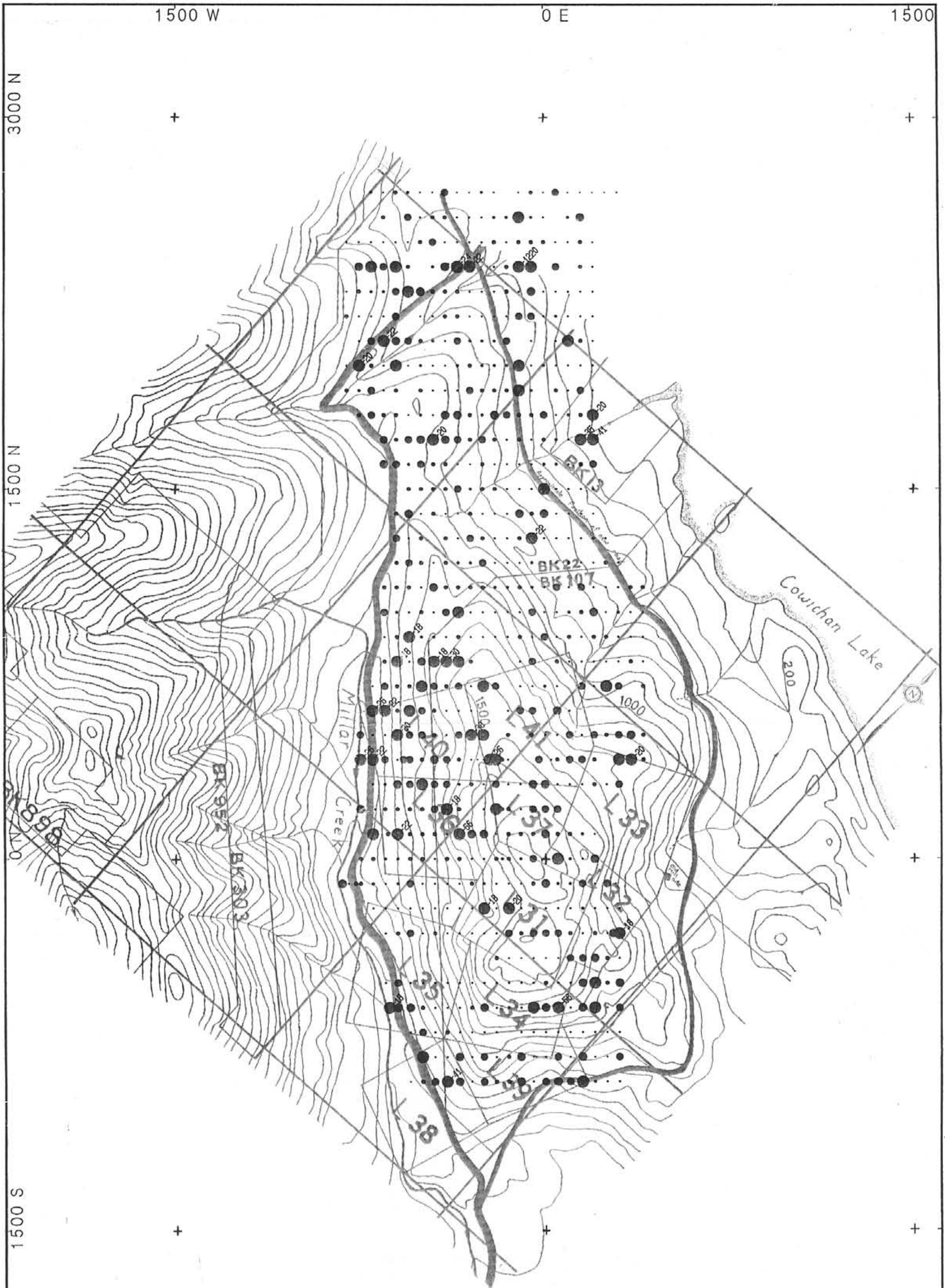
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- 6 <
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LANTHANUM (ppm)

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COWICHAN LAKE - B.C.
1987 SOIL GEOCHEMISTRY

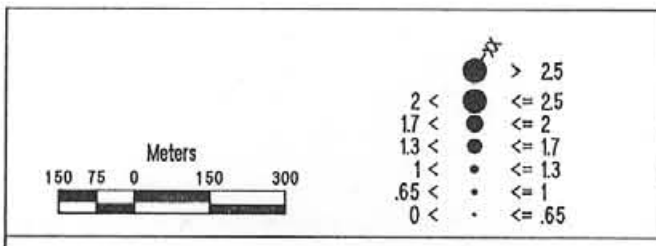
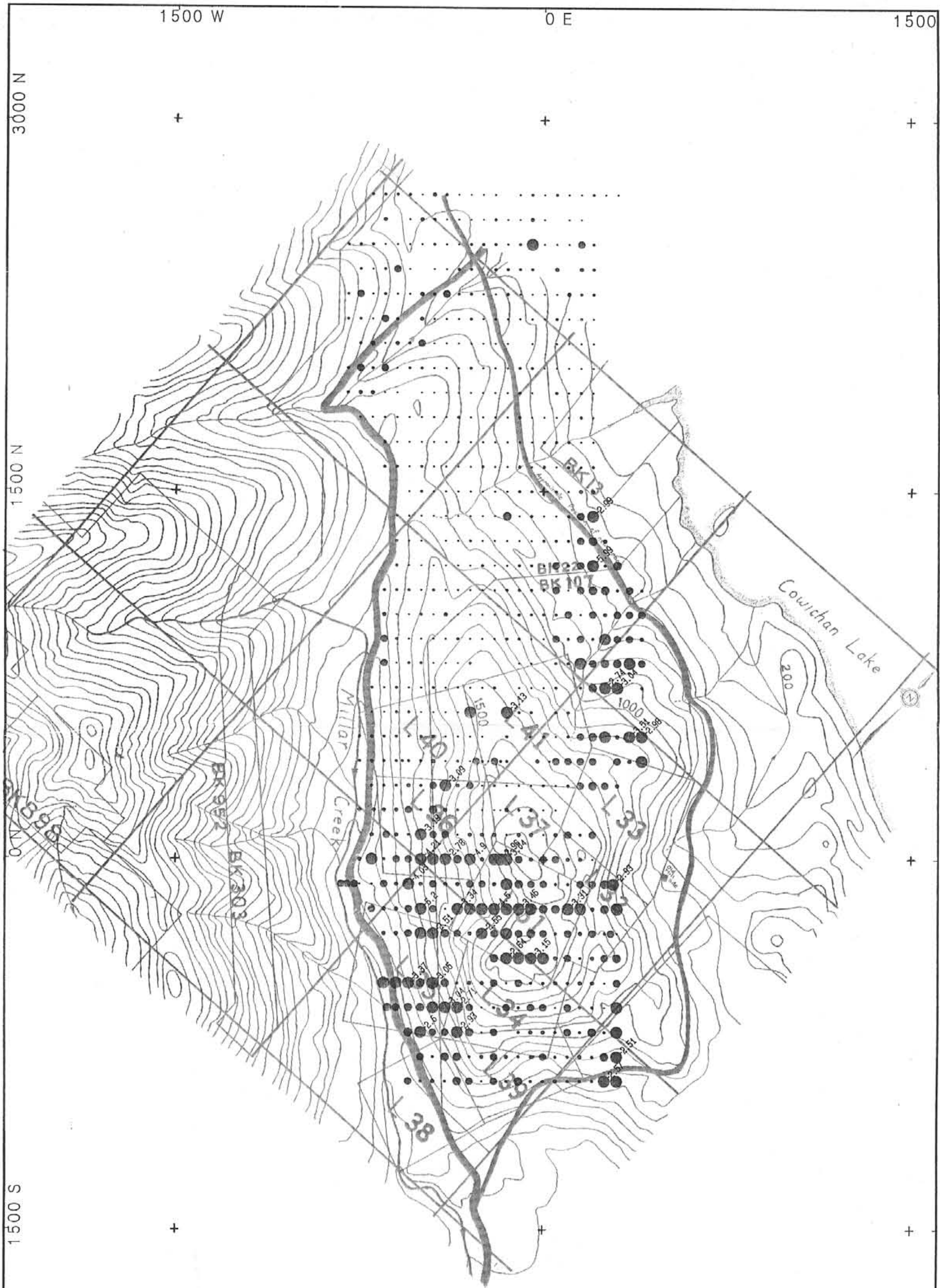
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Date APRIL 1988		Report No.	Fig. No.	

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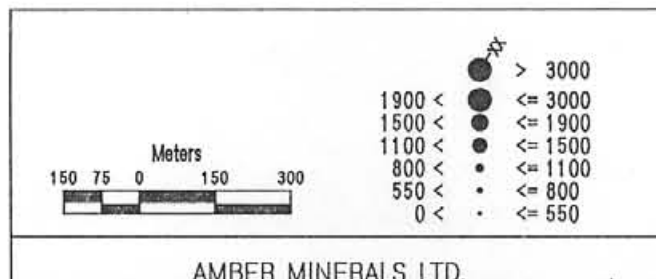
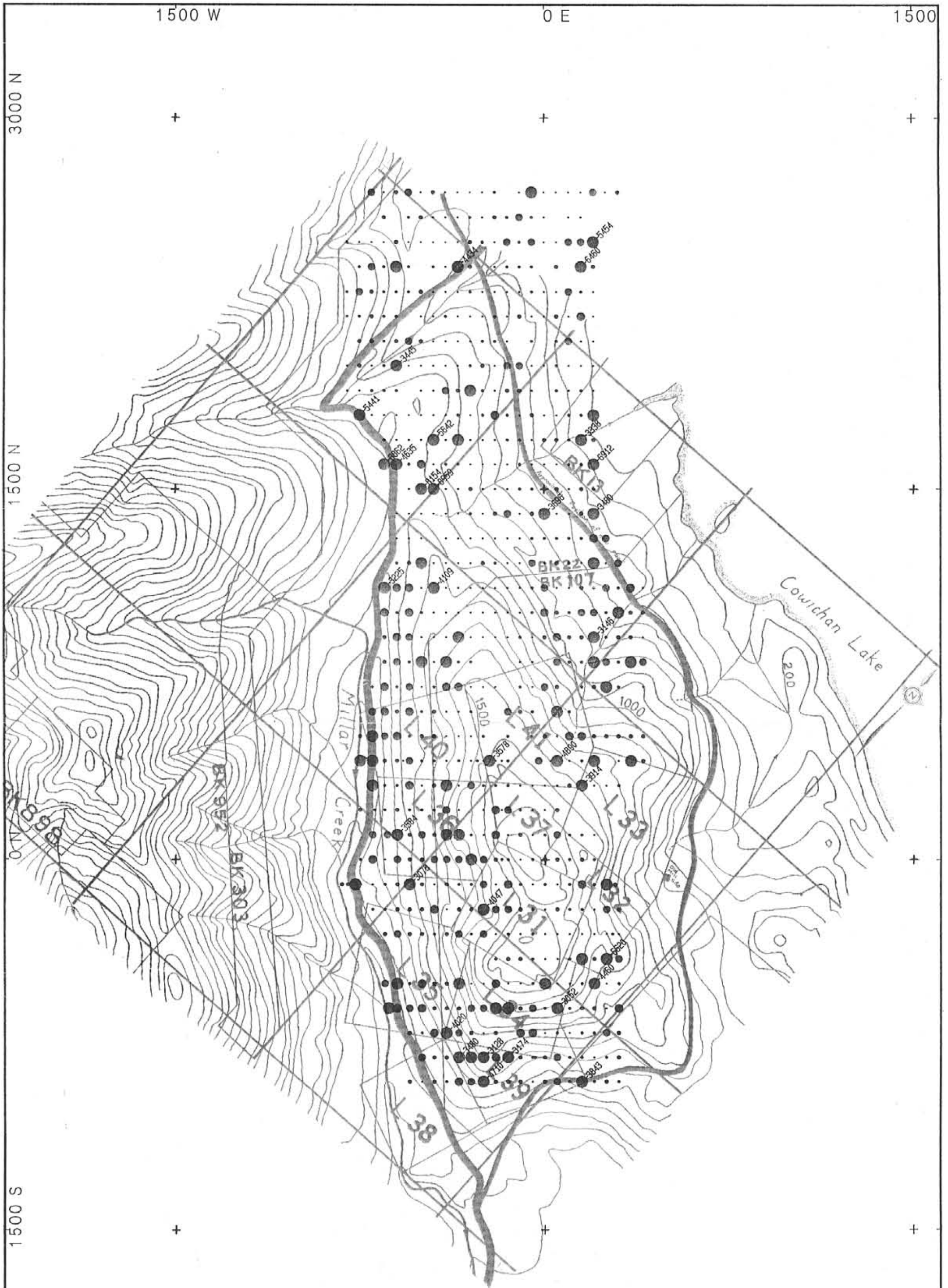


MAGNESIUM (%)

BLUE GROUSE PROPERTY
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1987 SOIL GEOCHEMISTRY

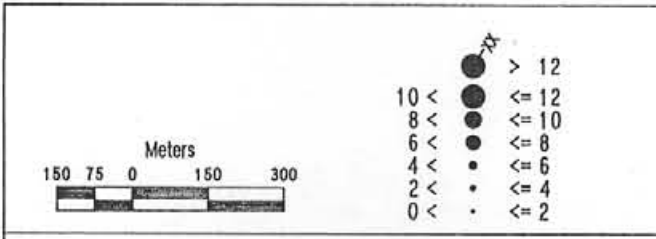
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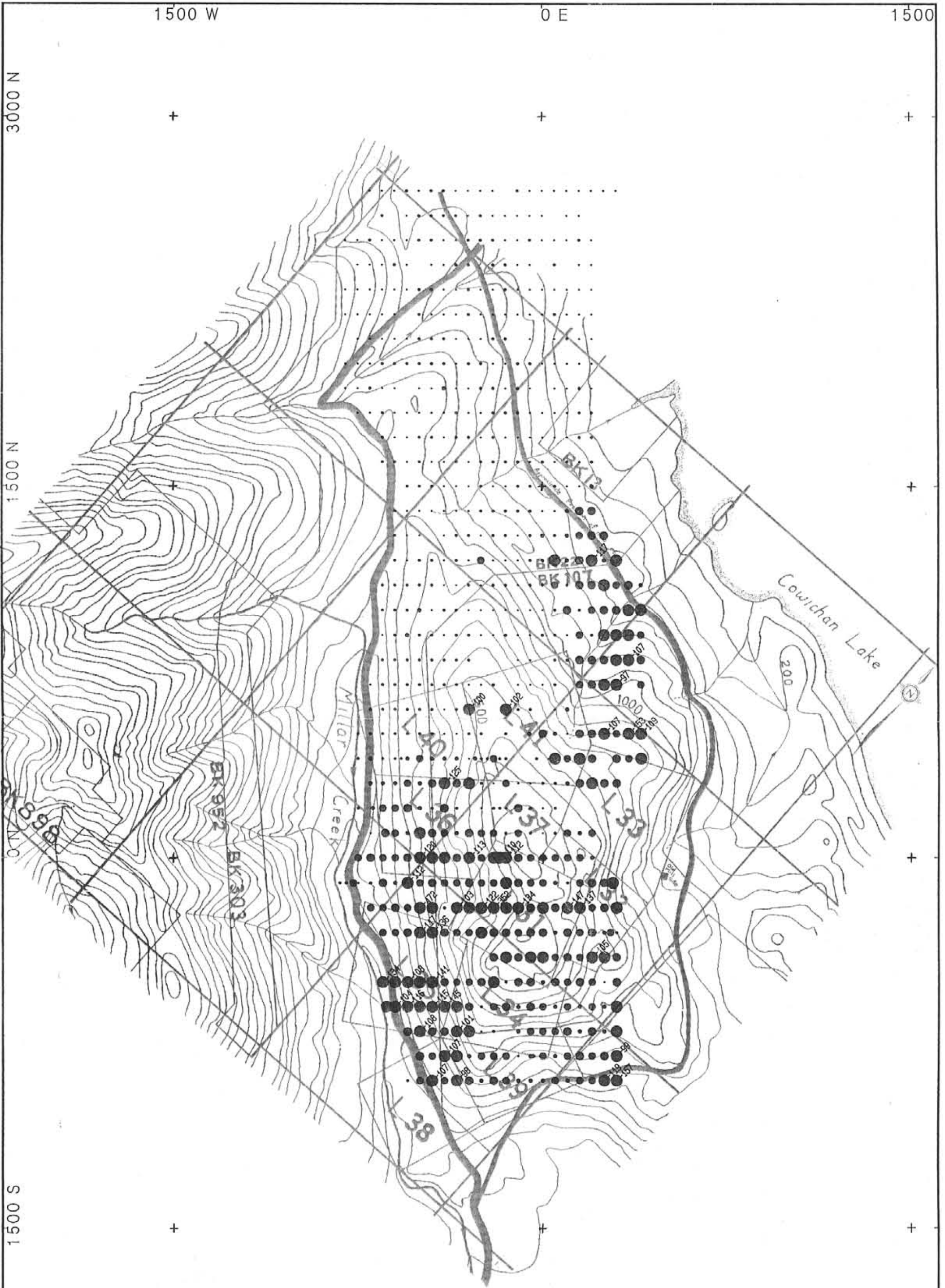
MANGANESE (ppm)		
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Project No.	NTS	Scale
AM-001	92C/16E	1:15000
Date	Report No.	Fig. No.
APRIL 1988		

AMBER MINERALS LTD.

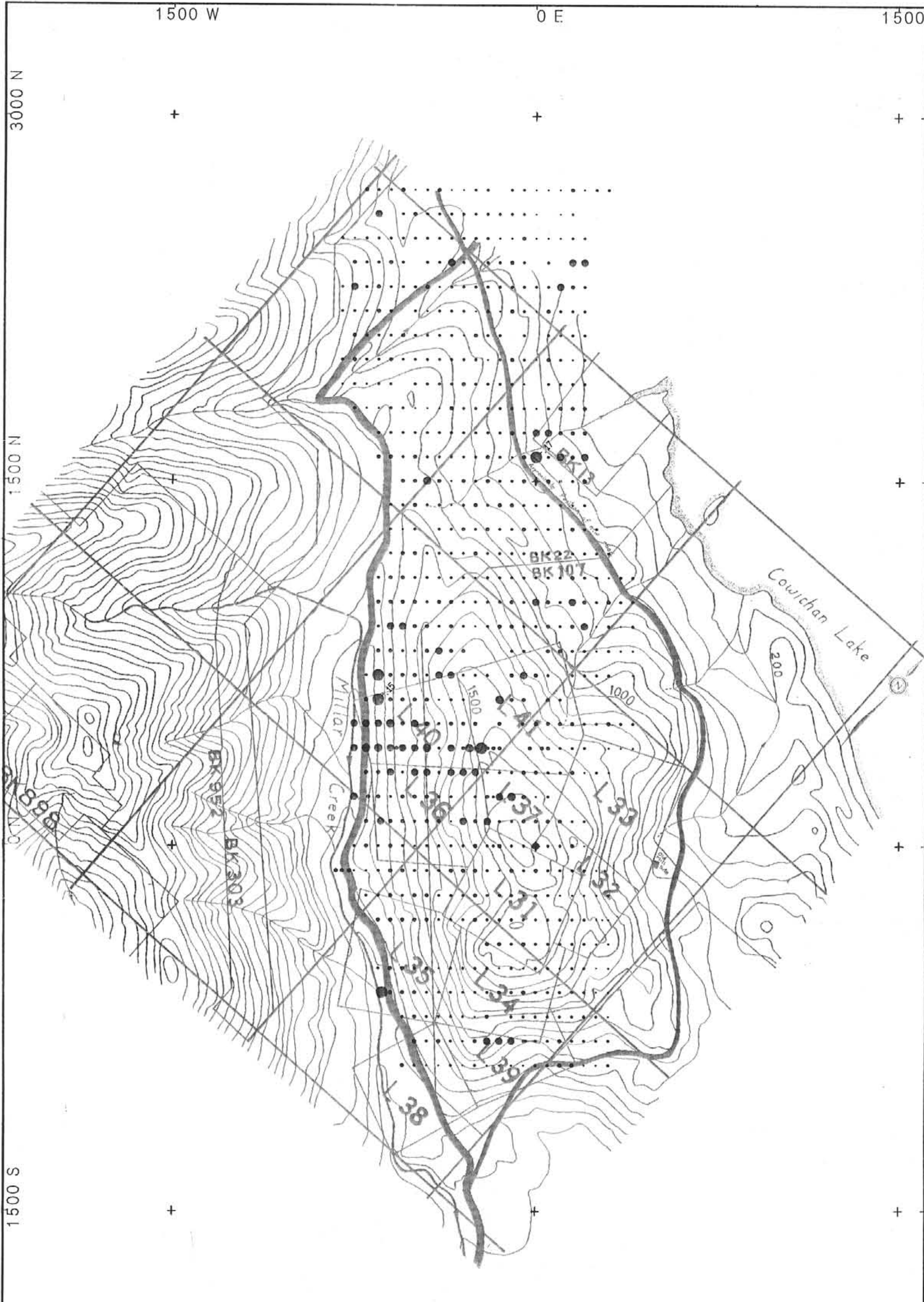


MOLYBDENUM (ppm)			
BLUE GROUSE PROPERTY COWICHAN LAKE - B.C. 1987 SOIL GEOCHEMISTRY			
Project No.	AM-001	NTS	92C/16E
Date	APRIL 1988	Report No.	
Scale	1:15000		Fig. No.

AMBER MINERALS LTD.

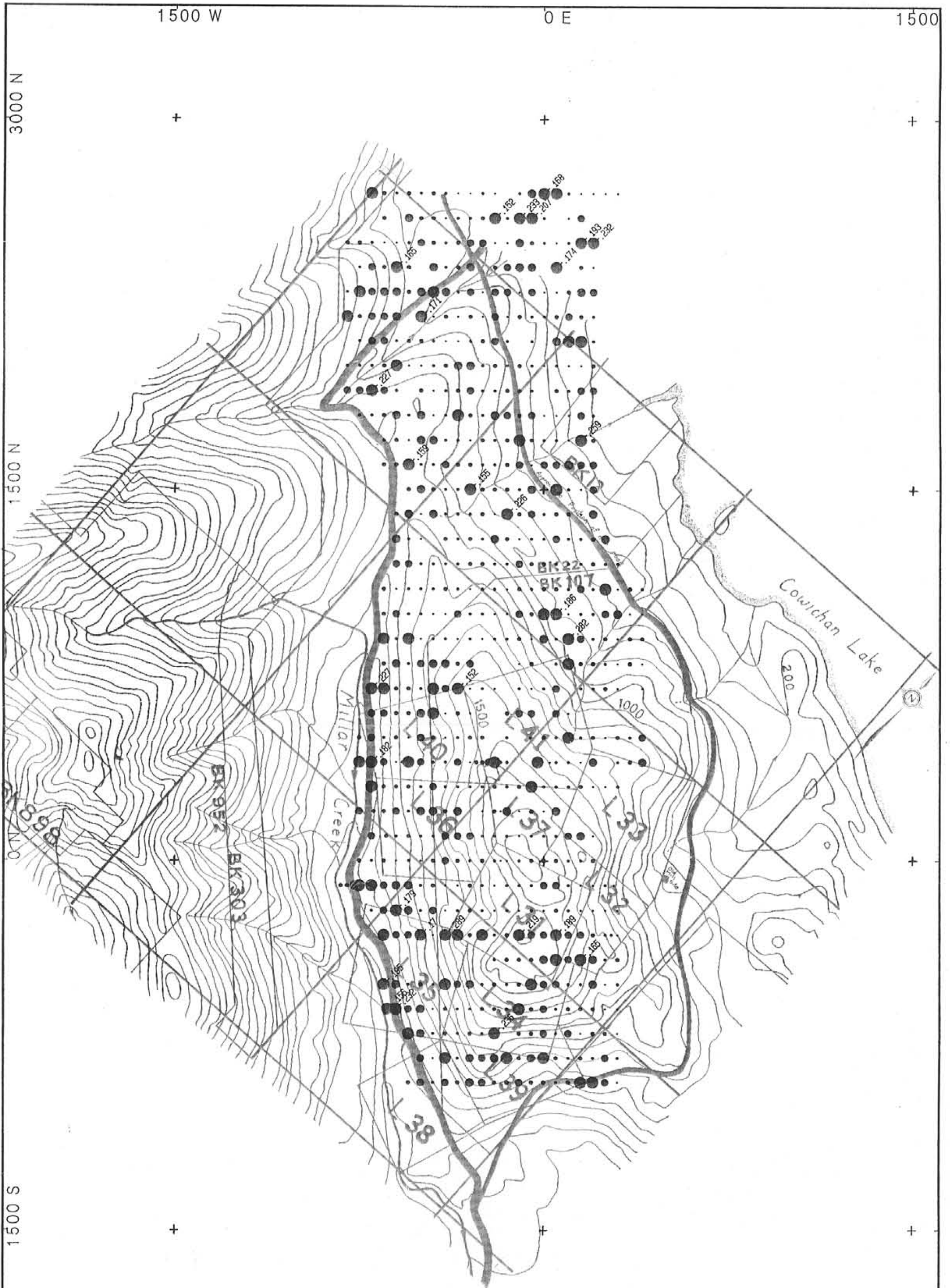


	<ul style="list-style-type: none"> > 95 ≤ 95 ≤ 75 ≤ 50 ≤ 35 ≤ 25 ≤ 10 	<h2 style="margin: 0;">NICKEL (ppm)</h2> <p style="margin: 0;">BLUE GROUSE PROPERTY COWICHAN LAKE - B.C. 1987 SOIL GEOCHEMISTRY</p>		
		Project No. AM-001	NTS 92C/16E	Scale 1:15000
AMBER MINERALS LTD.		Date APRIL 1988	Report No. Fig. No.	



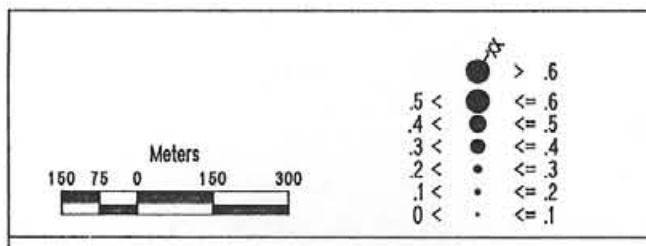
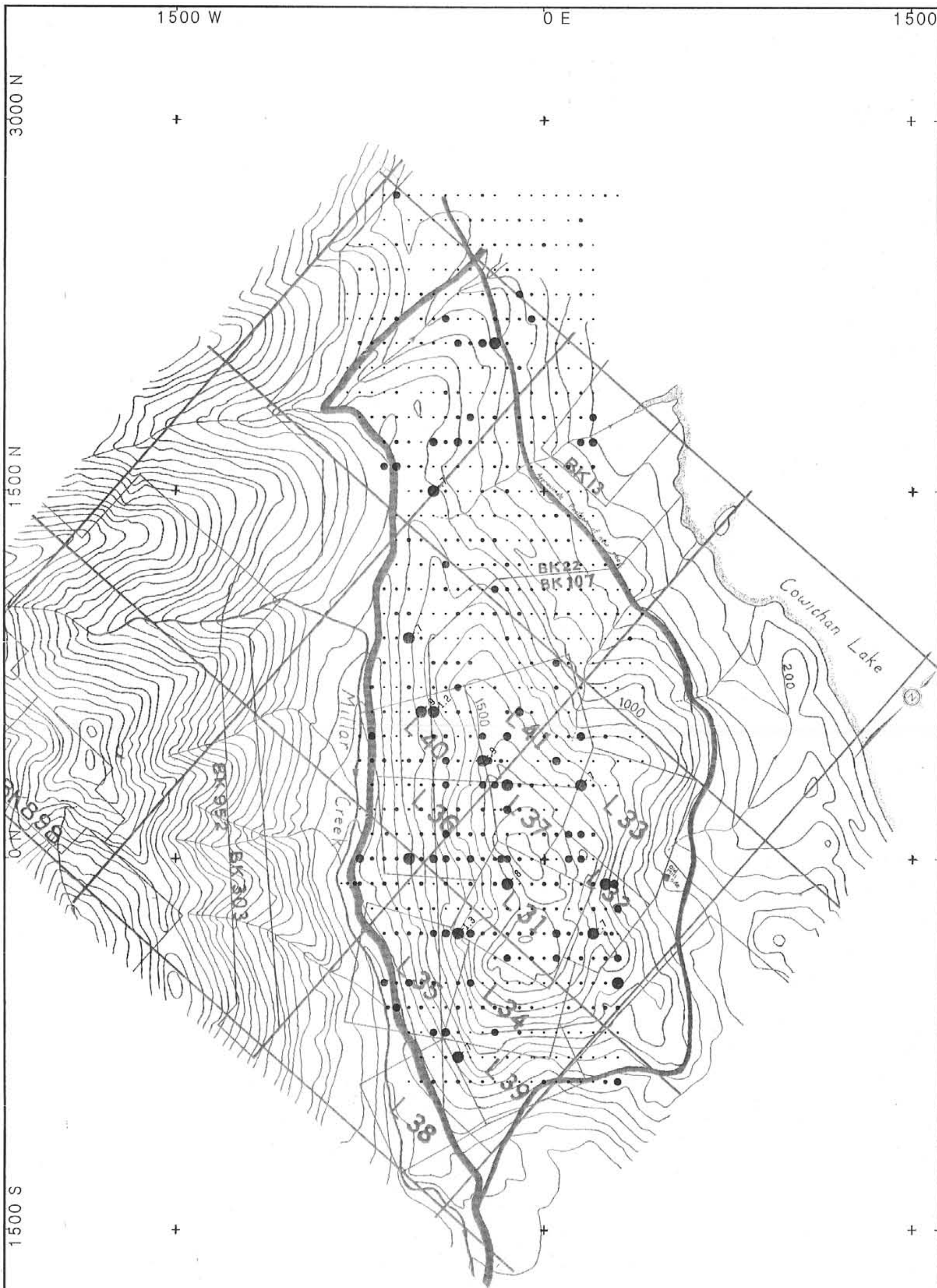
	<p>AMBER MINERALS LTD.</p>

POTASSIUM (%) BLUE GROUSE PROPERTY COWICHAN LAKE - B.C. 1987 SOIL GEOCHEMISTRY		
Project No.	NTS	Scale
AM-001	92C/16E	1:15000
Date	Report No.	Fig. No.
APRIL 1988		



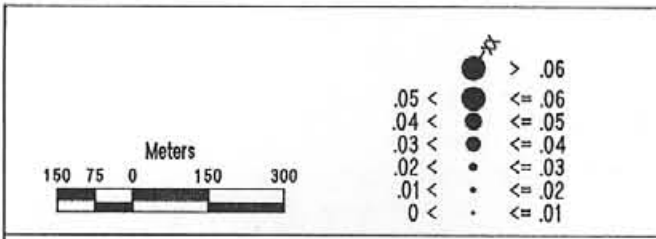
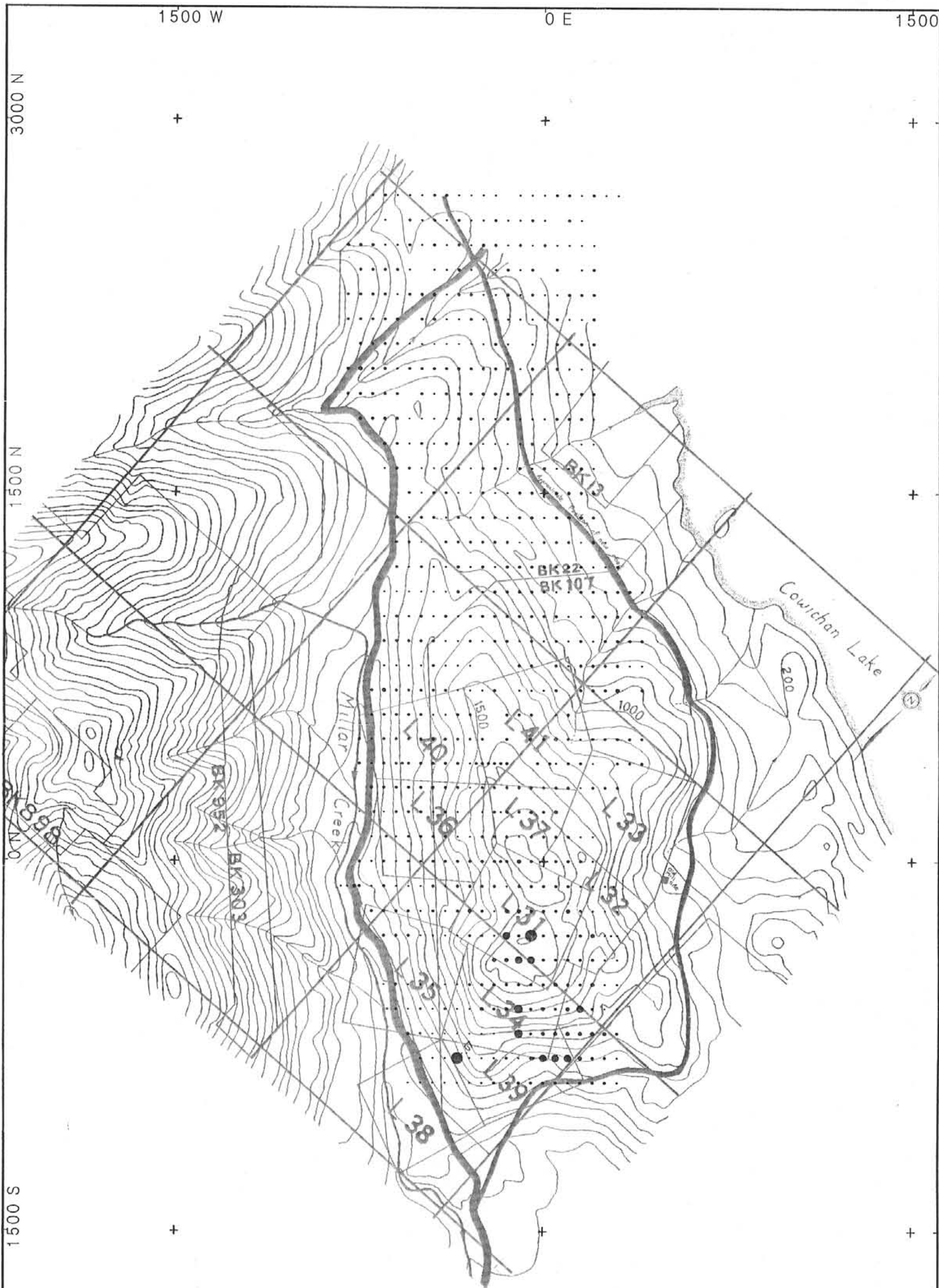
	<p>● > .15</p> <p>● < .15</p> <p>● < .12</p> <p>● < .1</p> <p>● < .08</p> <p>● < .06</p> <p>● < .04</p>	PHOSPHORUS (%)	
		BLUE GROUSE PROPERTY COWICHAN LAKE - B.C. 1987 SOIL GEOCHEMISTRY	
Project No. AM-001		NTS 92C/16E	Scale 1:15000
Date APRIL 1988		Report No.	Fig. No.

AMBER MINERALS LTD.



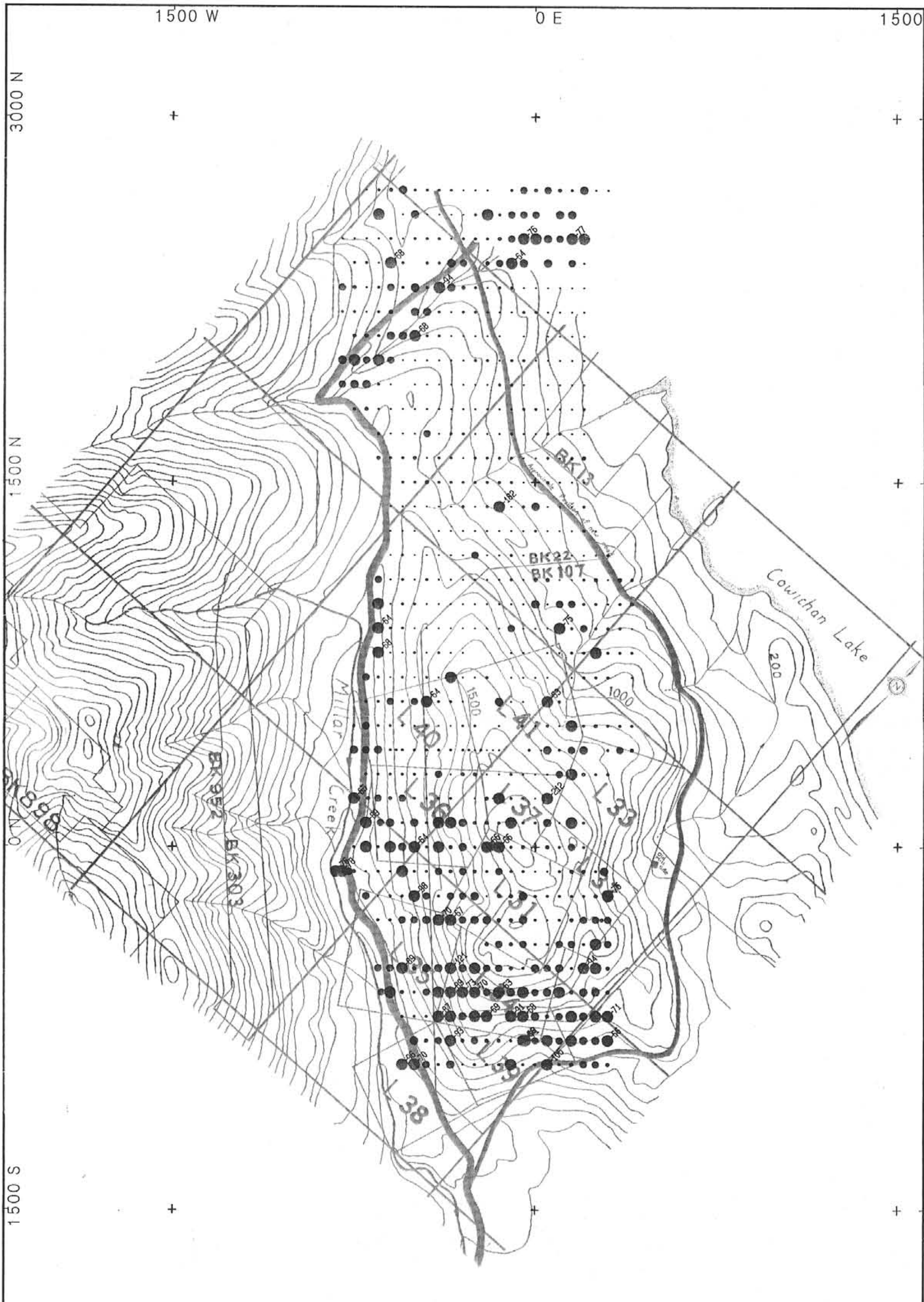
SILVER (ppm)		
BLUE GROUSE PROPERTY COWICHAN LAKE - B.C. 1987 SOIL GEOCHEMISTRY		
Project No.	NTS	Scale
AM-001	92C/16E	1:15000
Date	Report No.	Fig. No.
APRIL 1988		

AMBER MINERALS LTD.



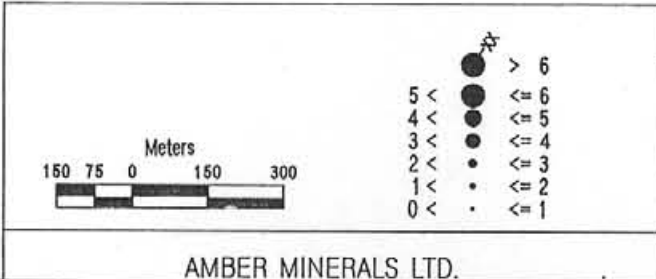
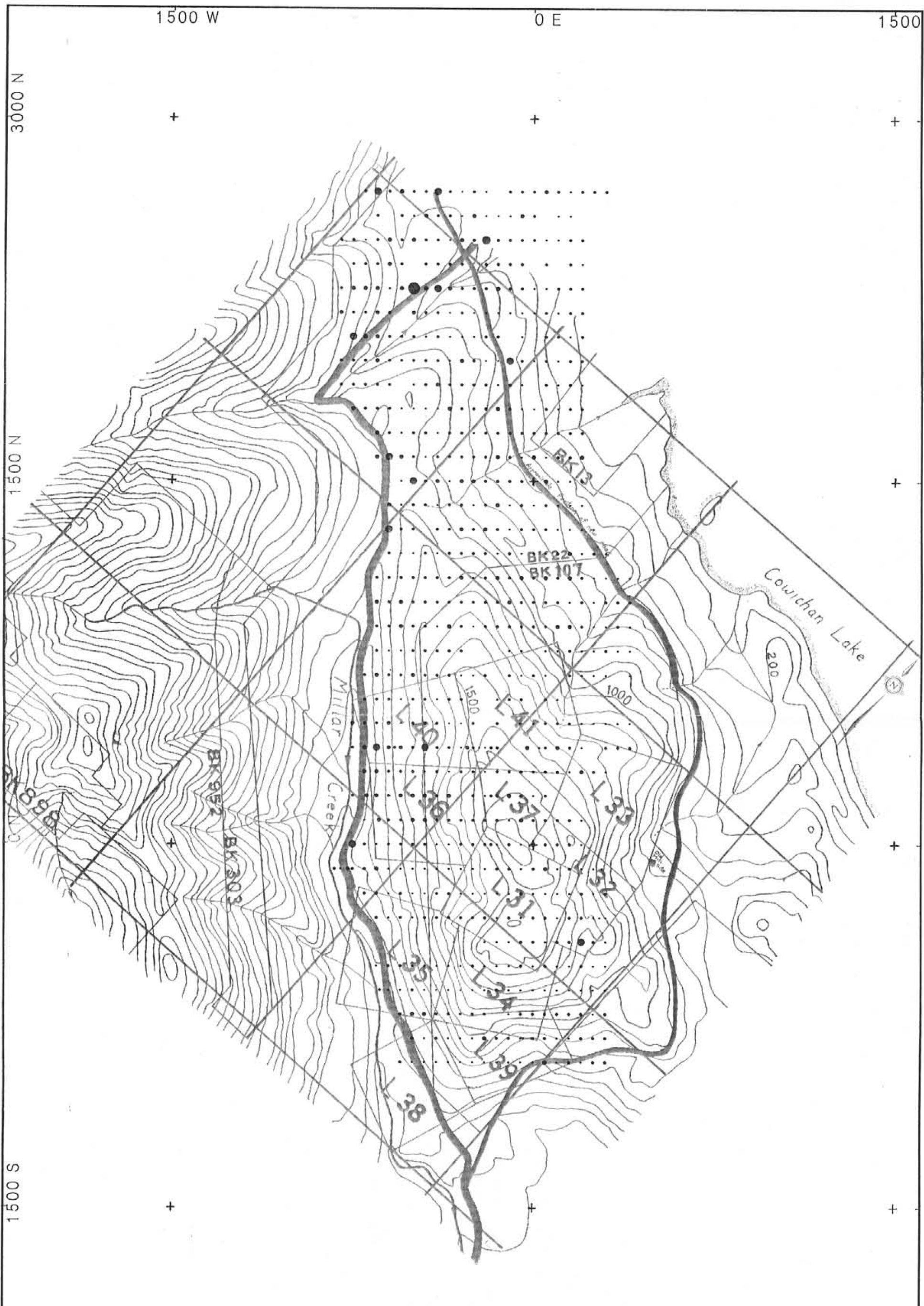
AMBER MINERALS LTD.

SODIUM (%)			
BLUE GROUSE PROPERTY COWICHAN LAKE - B.C. 1987 SOIL GEOCHEMISTRY			
Project No.	AM-001	NTS	92C/16E
Date	APRIL 1988	Report No.	1:15000
		Scale	1:15000
		Fig. No.	



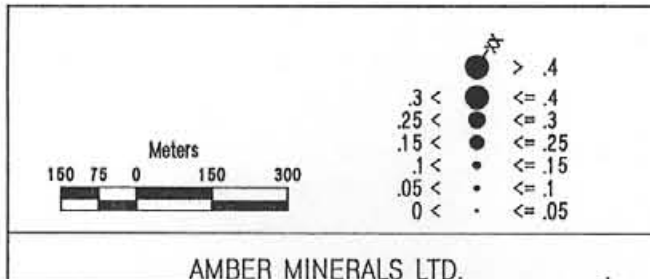
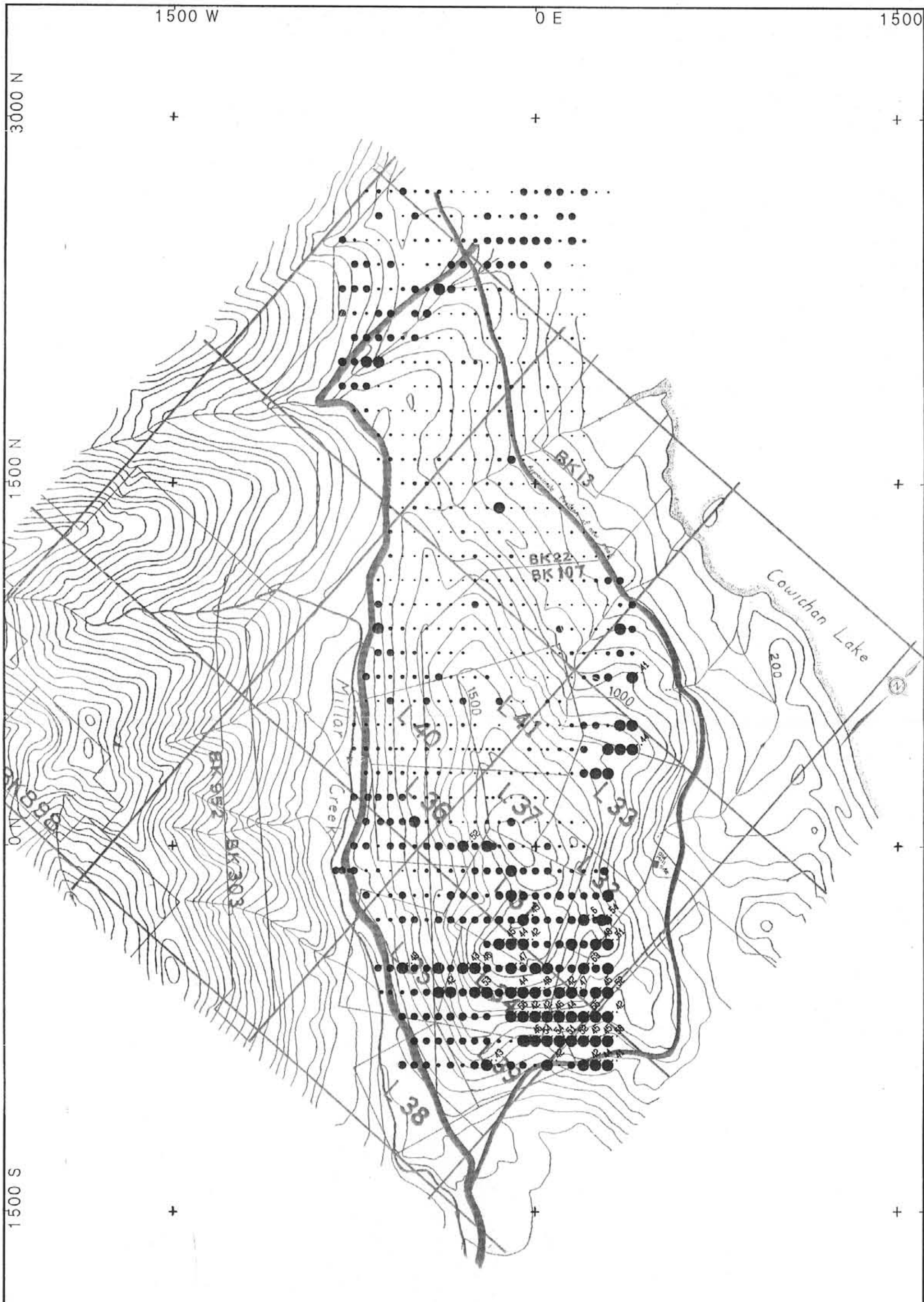
	<ul style="list-style-type: none"> ● > 62 ● ≤ 62 ● ≤ 50 ● ≤ 40 ● ≤ 30 ● ≤ 25 ● ≤ 15 	STRONTIUM (ppm) BLUE GROUSE PROPERTY COWICHAN LAKE - B.C. 1987 SOIL GEOCHEMISTRY		
		Project No. AM-001 Date APRIL 1988	NTS 92C/16E Report No.	Scale 1:15000 Fig. No.

AMBER MINERALS LTD.



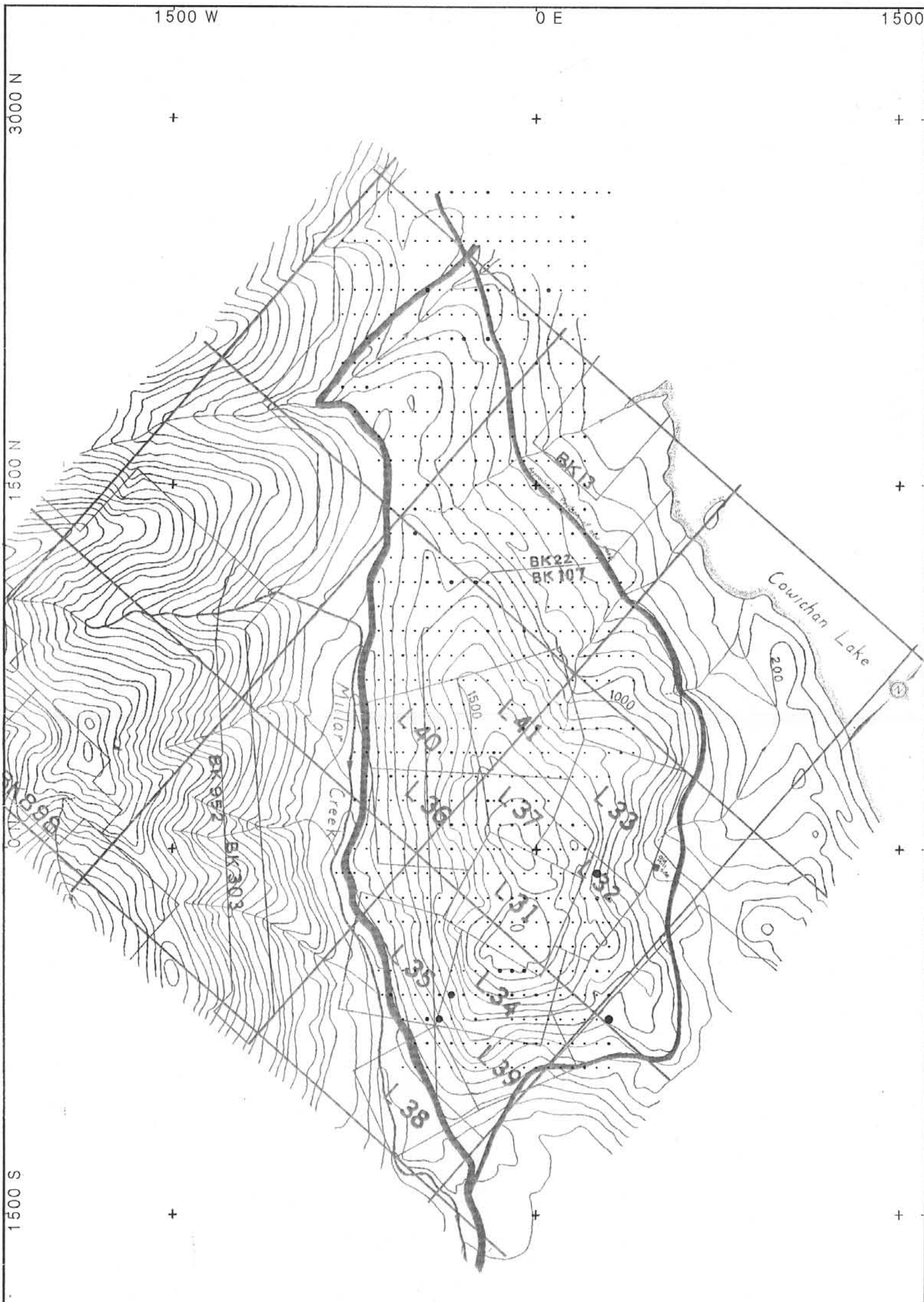
THORIUM (ppm)		
BLUE GROUSE PROPERTY COWICHAN LAKE - B.C. 1987 SOIL GEOCHEMISTRY		
Project No.	NTS	Scale
AM-001	92C/16E	1:15000
Date	Report No.	Fig. No.
APRIL 1988		

AMBER MINERALS LTD.



TITANIUM (%)		
BLUE GROUSE PROPERTY COWICHAN LAKE - B.C. 1987 SOIL GEOCHEMISTRY		
Project No.	NTS	Scale
AM-001	92C/16E	1:15000
Date	Report No.	Fig. No.
APRIL 1988		

AMBER MINERALS LTD.

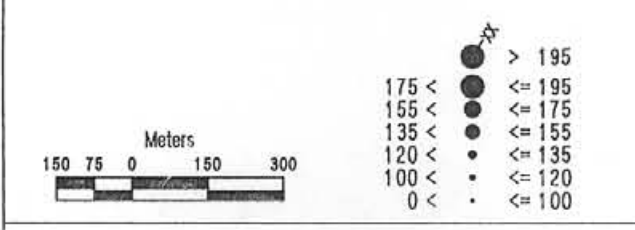
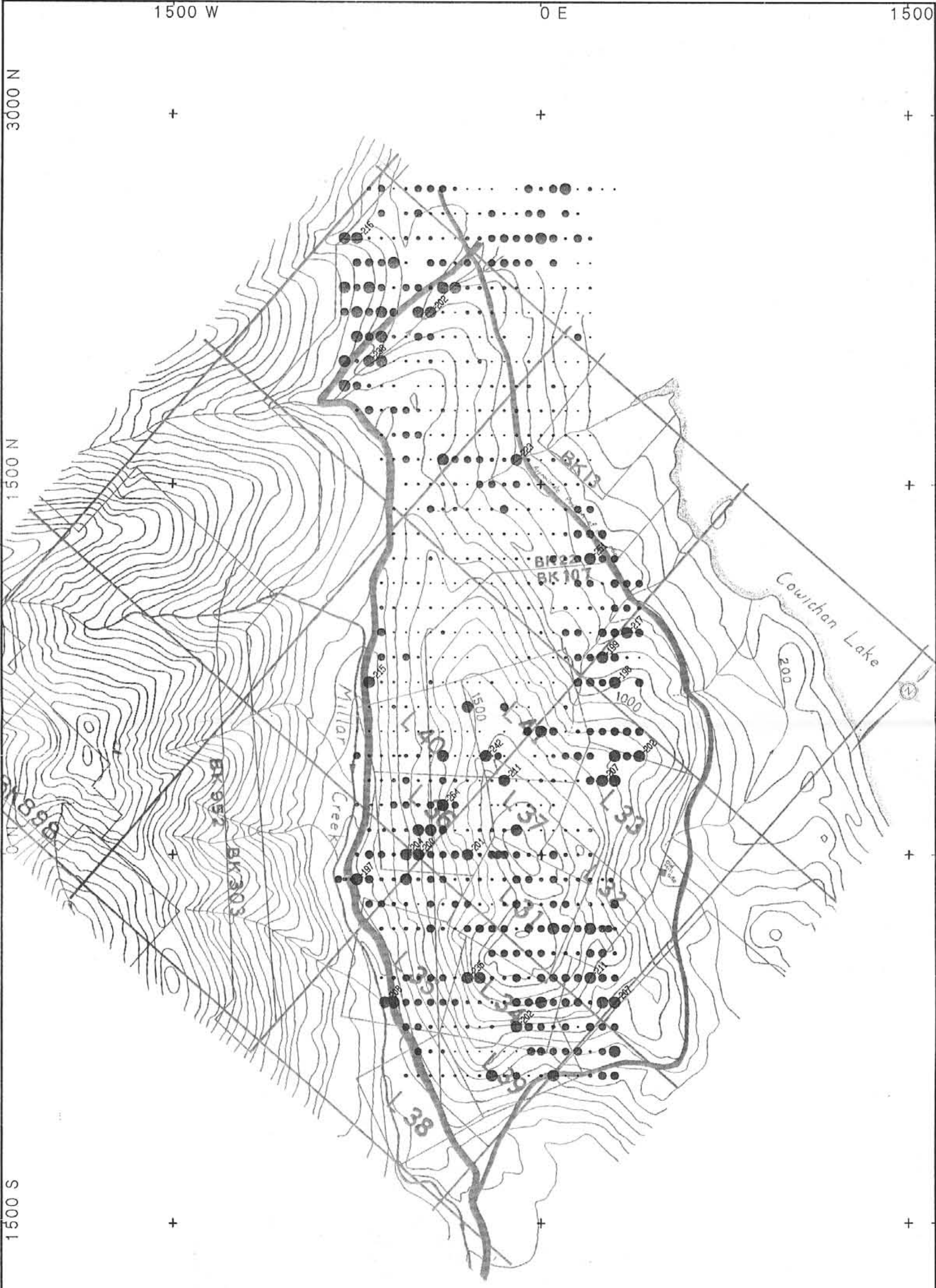


	<ul style="list-style-type: none"> 5 < ● > 6 4 < ●● > 5 3 < ●●● > 4 2 < ●●●● > 3 1 < ●●●●● > 2 0 < ●●●●●● > 1 	TUNGSTEN (ppm)		
		BLUE GROUSE PROPERTY COWICHAN LAKE - B.C. 1987 SOIL GEOCHEMISTRY		
AMBER MINERALS LTD.		Project No. AM-001	NTS 92C/16E	Scale 1:15000
		Date APRIL 1988	Report No.	Fig. No.



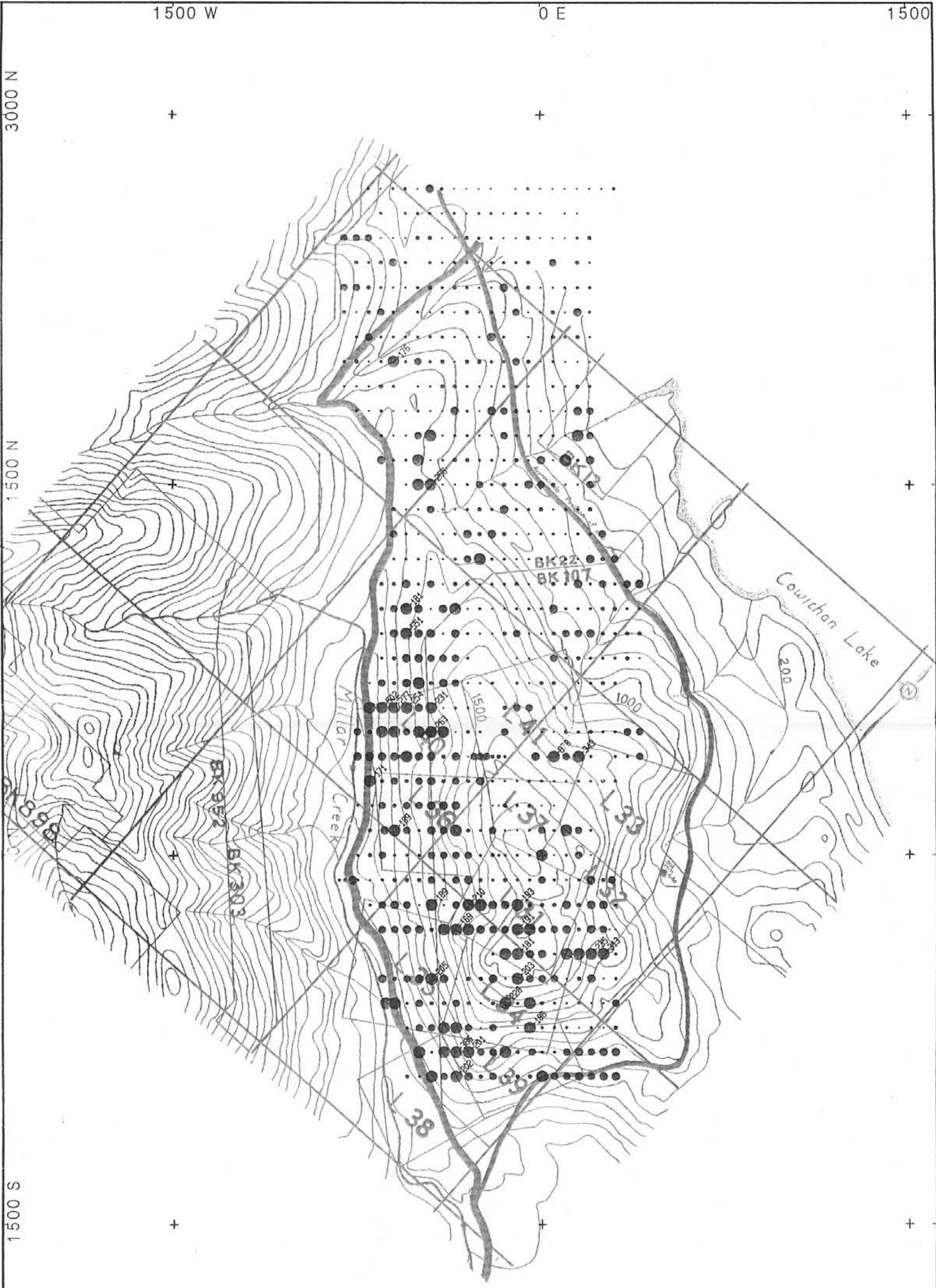
	<ul style="list-style-type: none"> ● > 30 ● 25 < ● 20 < ● 15 < ● 10 < ● 5 < ● 0 < 	URANIUM (ppm)		
		BLUE GROUSE PROPERTY COWICHAN LAKE - B.C. 1987 SOIL GEOCHEMISTRY		
Project No. AM-001		NTS 92C/16E	Scale 1:15000	
Date APRIL 1988		Report No.	Fig. No.	

AMBER MINERALS LTD.



VANADIUM (ppm)		
BLUE GROUSE PROPERTY COWICHAN LAKE - B.C. 1987 SOIL GEOCHEMISTRY		
Project No.	NTS	Scale
AM-001	92C/16E	1:15000
Date	Report No.	Fig. No.
APRIL 1988		

AMBER MINERALS LTD.

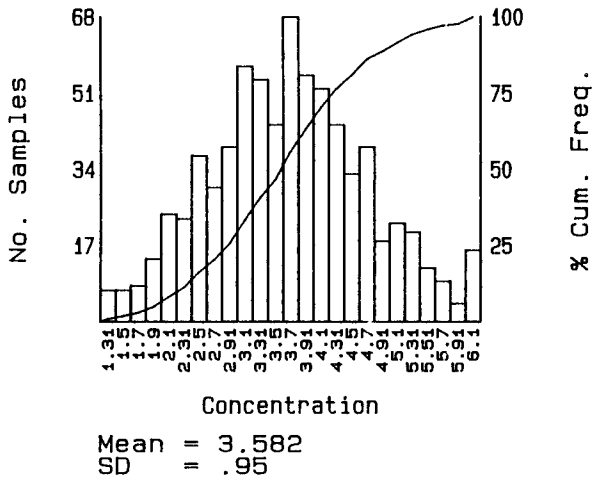


		ZINC (ppm)	
		BLUE GROUSE PROPERTY COWICHAN LAKE - B.C. 1987 SOIL GEOCHEMISTRY	
Project No. AM-001	NTS 92C/16E	Scale 1:15000	
Date APRIL 1988	Report No.	Fig. No.	

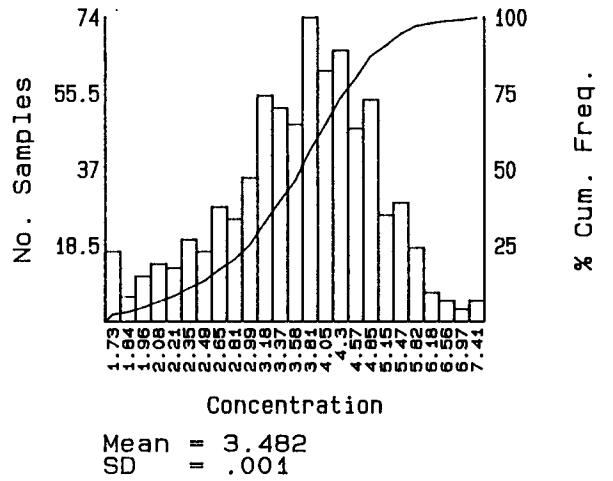
AMBER MINERALS LTD.

ALUMINUM (%)

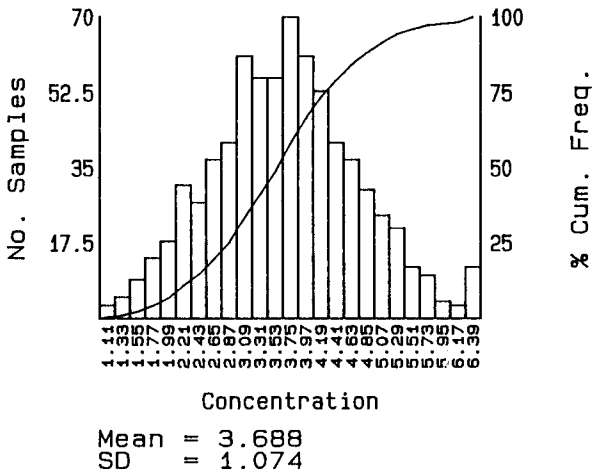
TRUNCATED ARITHMETIC



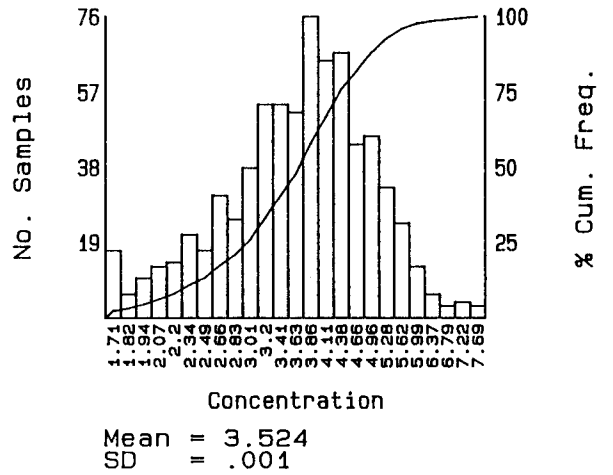
TRUNCATED LOGARITHMIC



ARITHMETIC



LOGARITHMIC



Number Samples = 736
Minimum Value = 1.01
Maximum Value = 7.41

SUBSET CRITERIA
Property Code(s) = East North
Sample Type(s) =
Lab. Code(s) =

1987 SOIL GEOCHEMISTRY

Project Name

BLUE GROUSE PROPERTY

Project Code

AM-001

Date

APRIL 1988

Report No.

N.T.S.

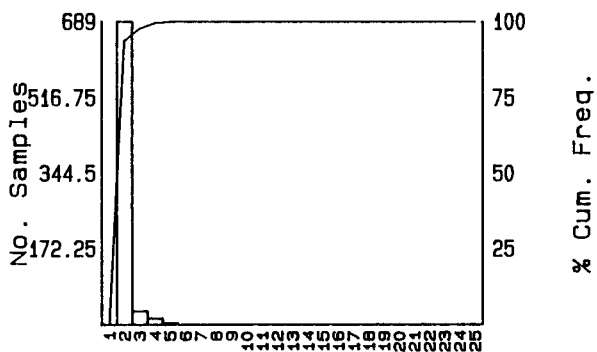
92C/1 6E

Fig. No.

AMBER MINERALS LTD.

ANTIMONY (ppm)

ARITHMETIC



Mean = 2.091
SD = .381

Number Samples = 736
Minimum Value = 2
Maximum Value = 5

SUBSET CRITERIA

Property Code (s) = [] East North
Sample Type (s) = []
Lab. Code (s) = []

1987 SOIL GEOCHEMISTRY

Project Name

BLUE GROUSE PROPERTY

Project Code

AM-001

Date

APRIL 1988

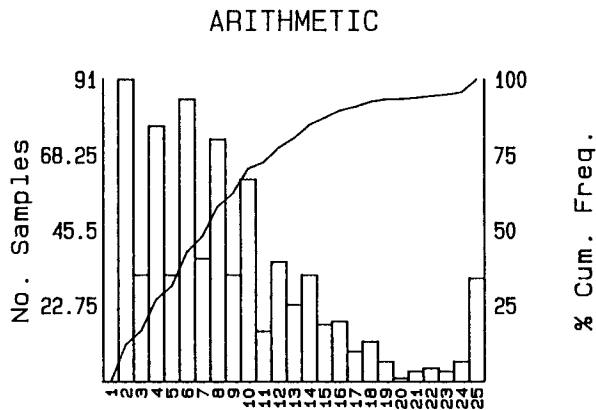
Report No.

N.T.S.

92C/16E

Fig. No.

AMBER MINERALS LTD.



Concentration
 Mean = 9.264
 SD = 7.378

Number Samples = 736
 Minimum Value = 2
 Maximum Value = 65

SUBSET CRITERIA
 Property Code (s) = [] East North
 Sample Type (s) = []
 Lab. Code (s) = []

1987 SOIL GEOCHEMISTRY

Project Name

BLUE GROUSE PROPERTY

Project Code

AM-001

Date

APRIL 1988

Report No.

N.T.S.

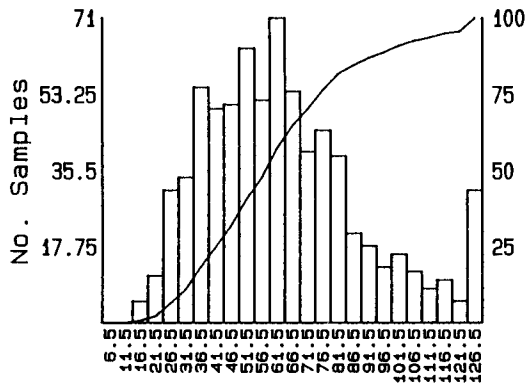
92C/16E

Fig. No.

AMBER MINERALS LTD.

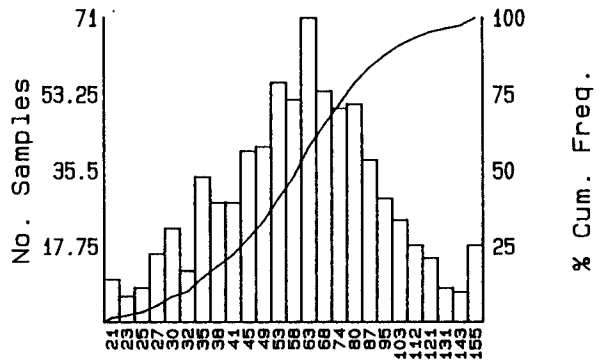
BARIUM (ppm)

TRUNCATED ARITHMETIC



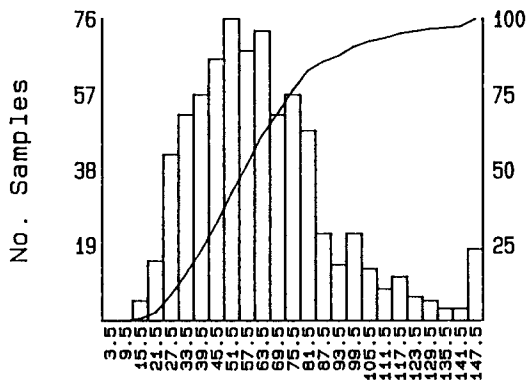
Mean = 59.913
SD = 22.694

TRUNCATED LOGARITHMIC



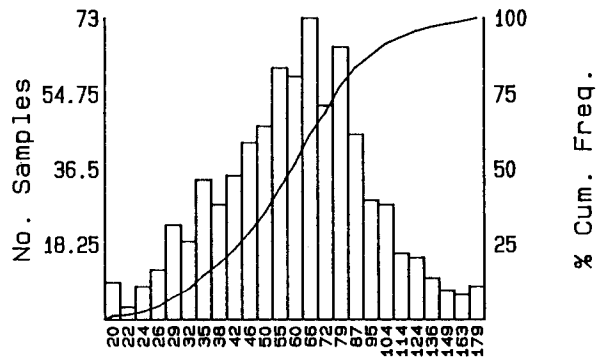
Mean = 55.891
SD = .178

ARITHMETIC



Mean = 64.382
SD = 33.303

LOGARITHMIC



Mean = 58.017
SD = .196

Number Samples = 736
Minimum Value = 15
Maximum Value = 455

SUBSET CRITERIA

Property Code (s) = East North
Sample Type (s) =
Lab. Code (s) =

1987 SOIL GEOCHEMISTRY

Project Name

BLUE GROUSE PROPERTY

Project Code

AM-001

Date

APRIL 1988

Report No.

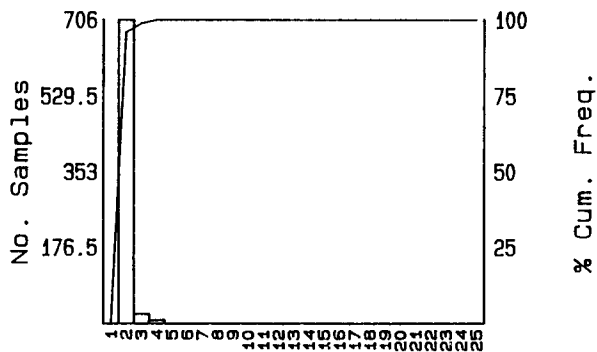
N.T.S.

92C/16E

Fig. No.

AMBER MINERALS LTD.

ARITHMETIC



Mean = 2.052
SD = .266

Number Samples = 736
Minimum Value = 2
Maximum Value = 4

SUBSET CRITERIA

Property Code (s) = East North
Sample Type (s) =
Lab. Code (s) =

1987 SOIL GEOCHEMISTRY

Project Name

BLUE GROUSE PROPERTY

Project Code

AM-001

Date

APRIL 1988

Report No.

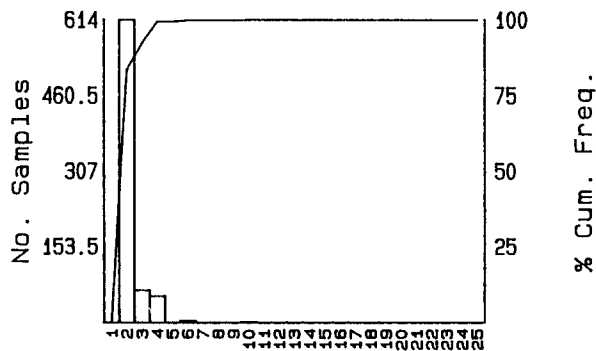
N.T.S.

92C/16E

Fig. No.

AMBER MINERALS LTD.

ARITHMETIC



Mean = 2.26
SD = .68

Number Samples = 736
Minimum Value = 2
Maximum Value = 10

SUBSET CRITERIA
Property Code(s) = [] East North
Sample Type(s) = []
Lab. Code(s) = []

1987 SOIL GEOCHEMISTRY

Project Name

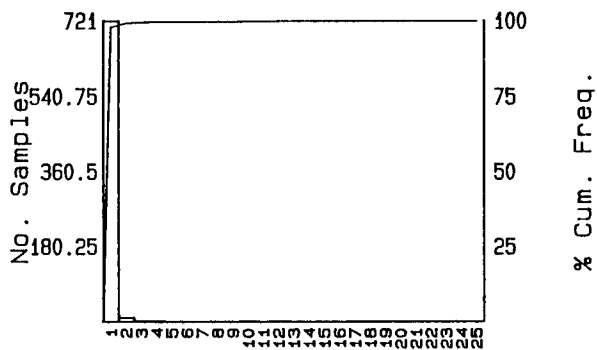
BLUE GROUSE PROPERTY

Project Code AM-001	Date APRIL 1988	Report No.	N.T.S. 92C/16E	Fig. No.
------------------------	--------------------	------------	-------------------	----------

AMBER MINERALS LTD.

CADMIUM (ppm)

ARITHMETIC



Mean = 1.05
SD = .556

Number Samples = 736
Minimum Value = 1
Maximum Value = 12

SUBSET CRITERIA

Property Code (s) = [] East North
Sample Type (s) = []
Lab. Code (s) = []

1987 SOIL GEOCHEMISTRY

Project Name

BLUE GROUSE PROPERTY

Project Code

AM-001

Date

APRIL 1988

Report No.

N.T.S.

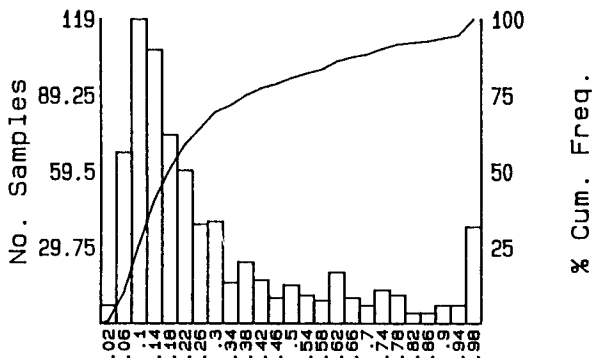
92C/16E

Fig. No.

AMBER MINERALS LTD.

CALCIUM (%)

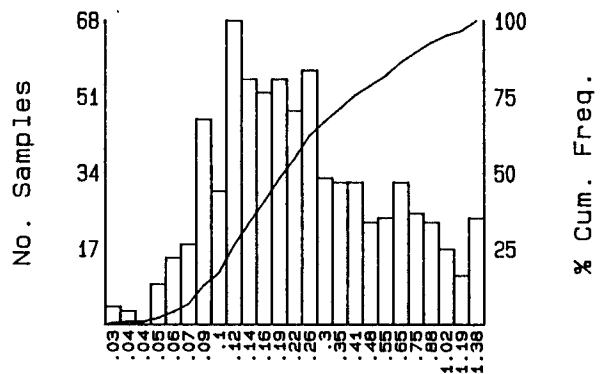
TRUNCATED ARITHMETIC



Concentration

Mean = .296
SD = .255

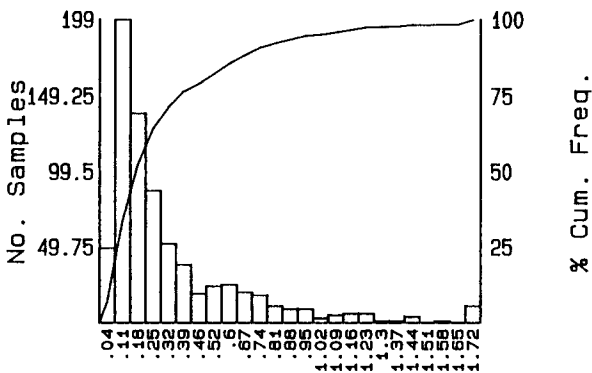
TRUNCATED LOGARITHMIC



Concentration

Mean = .209
SD = .003

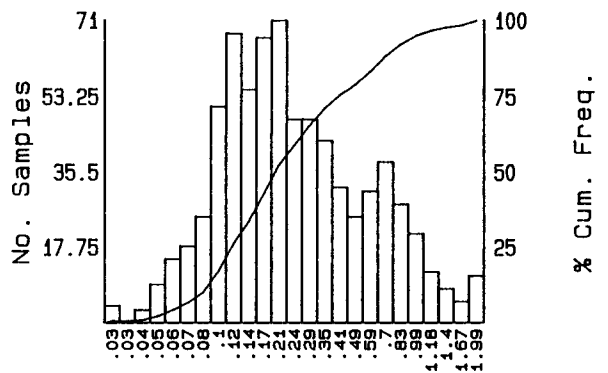
ARITHMETIC



Concentration

Mean = .353
SD = .488

LOGARITHMIC



Concentration

Mean = .229
SD = .004

Number Samples = 736
Minimum Value = .01
Maximum Value = 5.78

SUBSET CRITERIA

Property Code (s) = East North
Sample Type (s) =
Lab. Code (s) =

1987 SOIL GEOCHEMISTRY

Project Name

BLUE GROUSE PROPERTY

Project Code

AM-001

Date

APRIL 1988

Report No.

N.T.S.

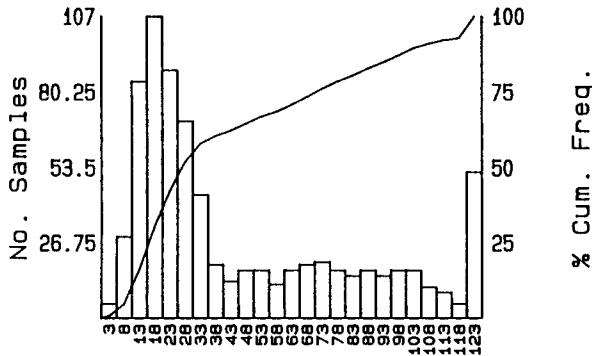
92C/16E

Fig. No.

AMBER MINERALS LTD.

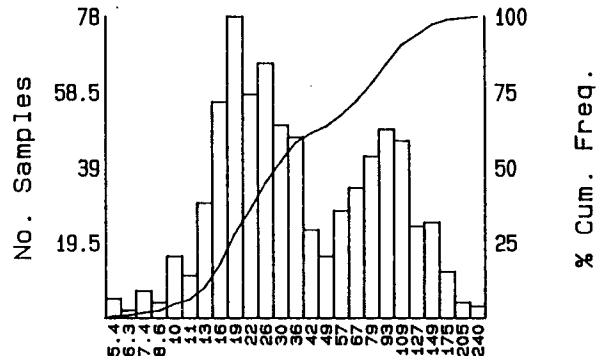
CHROMIUM (ppm)

TRUNCATED ARITHMETIC



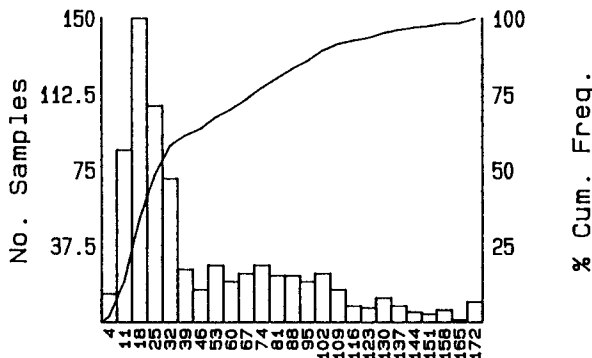
Concentration
 Mean = 41.344
 SD = 30.909

TRUNCATED LOGARITHMIC



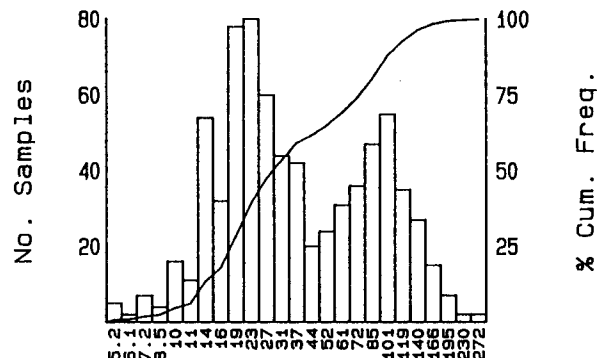
Concentration
 Mean = 33.325
 SD = .343

ARITHMETIC



Concentration
 Mean = 48.575
 SD = 41.775

LOGARITHMIC



Concentration
 Mean = 34.731
 SD = .358

Number Samples = 736
 Minimum Value = 3
 Maximum Value = 329

SUBSET CRITERIA
 Property Code (s) = East North
 Sample Type (s) =
 Lab. Code (s) =

1987 SOIL GEOCHEMISTRY

Project Name

BLUE GROUSE PROPERTY

Project Code

AM-001

Date

APRIL 1988

Report No.

N.T.S.

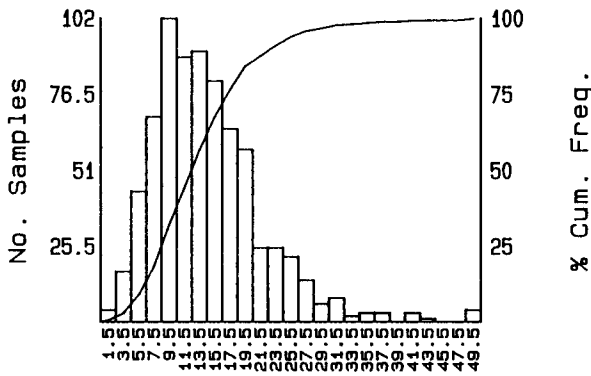
92C/16E

Fig. No.

AMBER MINERALS LTD.

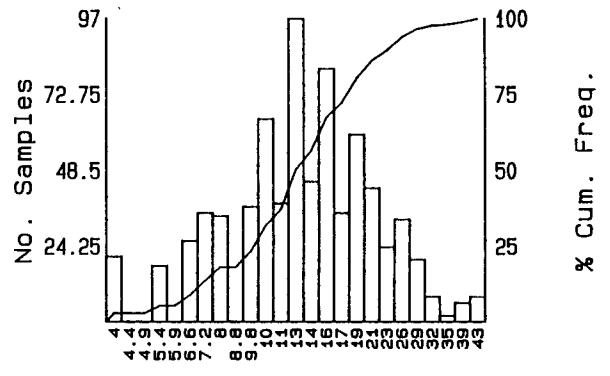
COBALT (ppm)

TRUNCATED ARITHMETIC



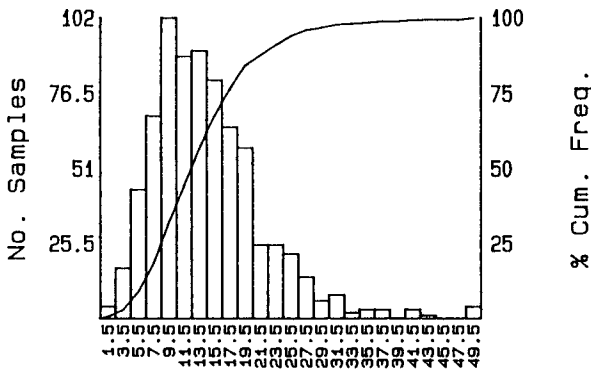
Mean = 13.66
SD = 5.696

TRUNCATED LOGARITHMIC



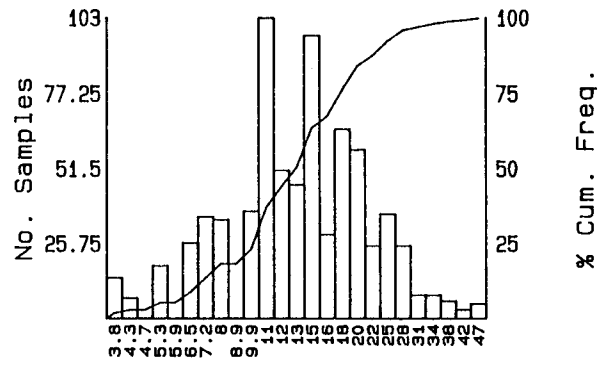
Mean = 12.565
SD = .215

ARITHMETIC



Mean = 14.618
SD = 7.499

LOGARITHMIC



Mean = 12.899
SD = .226

Number Samples = 736
Minimum Value = 1
Maximum Value = 63

SUBSET CRITERIA
Property Code(s) = [] East North
Sample Type(s) = []
Lab. Code(s) = []

1987 SOIL GEOCHEMISTRY

Project Name

BLUE GROUSE PROPERTY

Project Code

AM-001

Date

APRIL 1988

Report No.

N.T.S.

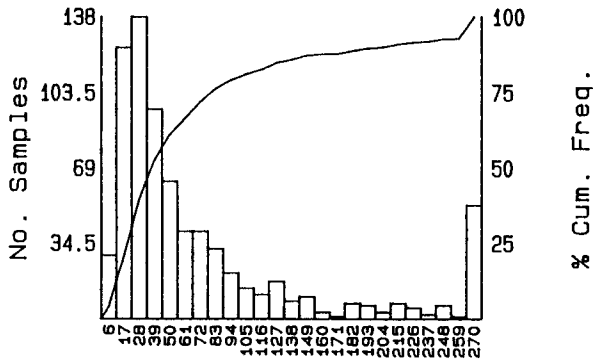
92C/16E

Fig. No.

AMBER MINERALS LTD.

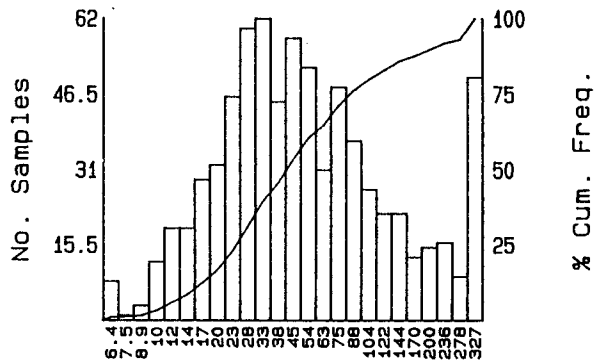
COPPER (ppm)

TRUNCATED ARITHMETIC



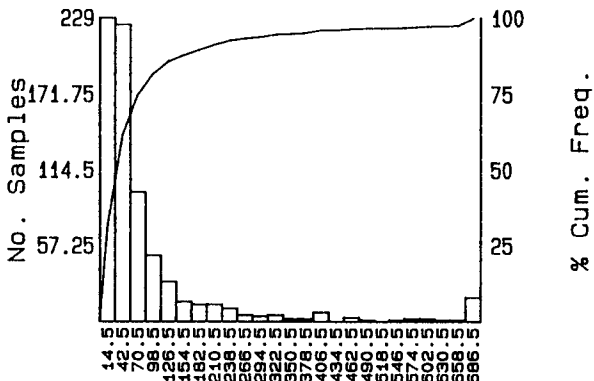
Concentration
 Mean = 68.543
 SD = 77.466

TRUNCATED LOGARITHMIC



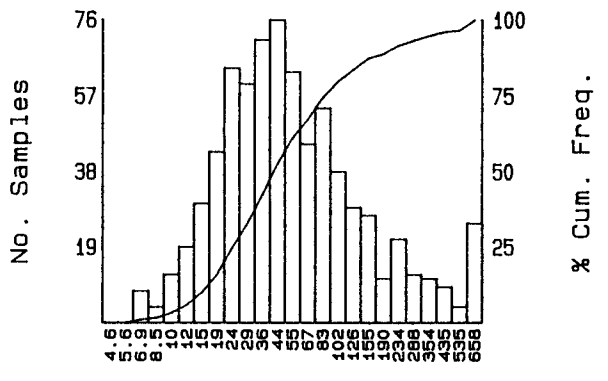
Concentration
 Mean = 42.274
 SD = .356

ARITHMETIC



Concentration
 Mean = 102.633
 SD = 234.748

LOGARITHMIC



Concentration
 Mean = 49.745
 SD = .449

Number Samples = 736
 Minimum Value = 6
 Maximum Value = 3825

SUBSET CRITERIA

Property Code(s) = [] East North
 Sample Type(s) = []
 Lab. Code(s) = []

1987 SOIL GEOCHEMISTRY

Project Name

BLUE GROUSE PROPERTY

Project Code

AM-001

Date

APRIL 1988

Report No.

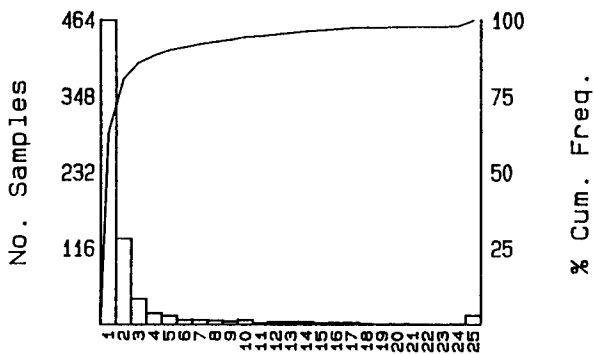
N.T.S.

92C/1 6E

Fig. No.

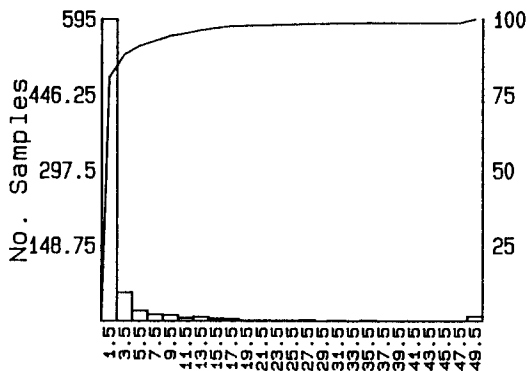
AMBER MINERALS LTD.

TRUNCATED ARITHMETIC



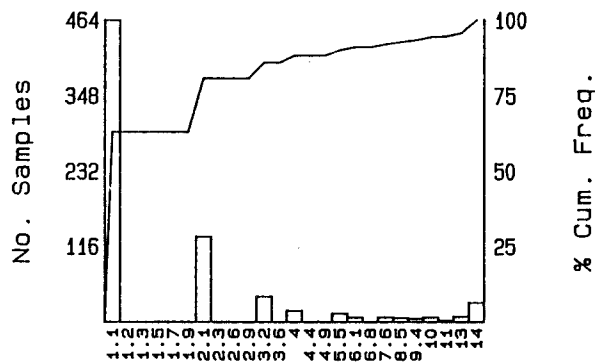
Concentration
 Mean = 2.214
 SD = 2.89

ARITHMETIC



Concentration
 Mean = 3.558
 SD = 11.161

LOGARITHMIC



Concentration
 Mean = 1.656
 SD = .377

Number Samples = 736
 Minimum Value = 1
 Maximum Value = 128

SUBSET CRITERIA

Property Code (s) = East North
 Sample Type (s) =
 Lab. Code (s) =

1987 SOIL GEOCHEMISTRY

Project Name

BLUE GROUSE PROPERTY

Project Code

AM-001

Date

APRIL 1988

Report No.

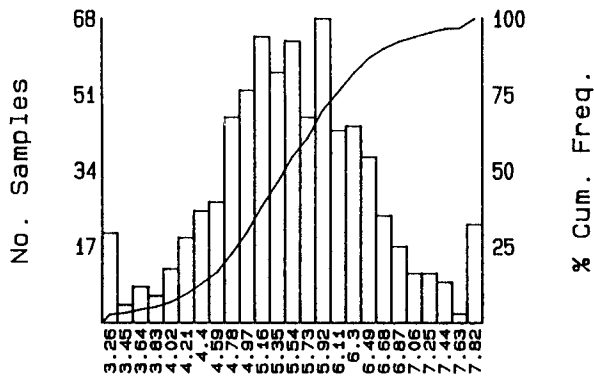
N.T.S.

92C/1 6E

Fig. No.

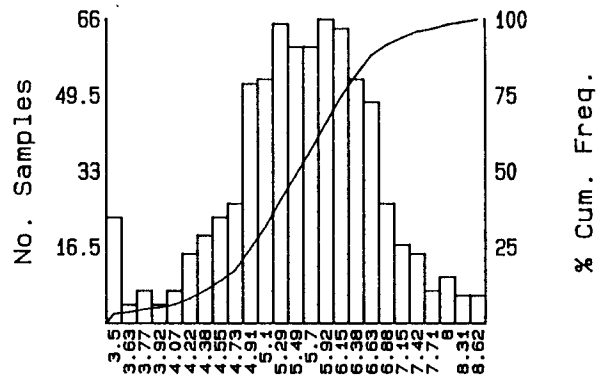
AMBER MINERALS LTD.

TRUNCATED ARITHMETIC



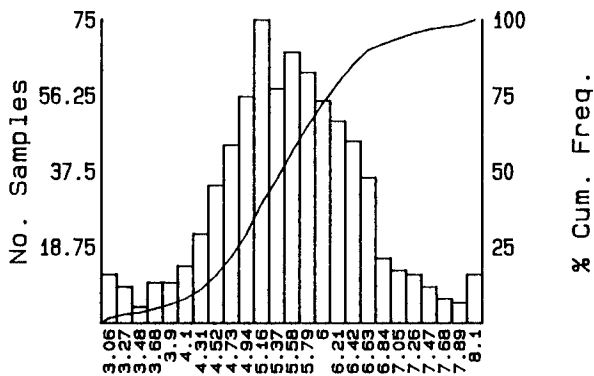
Mean = 5.45
SD = .912

TRUNCATED LOGARITHMIC



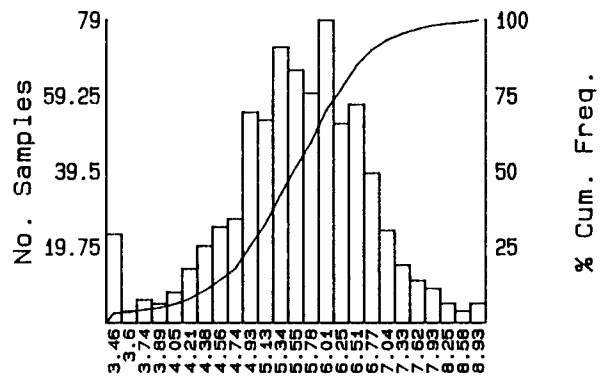
Mean = 5.396
SD = .001

ARITHMETIC



Mean = 5.553
SD = 1.038

LOGARITHMIC



Mean = 5.451
SD = .001

Number Samples = 736
Minimum Value = 2.36
Maximum Value = 10.41

SUBSET CRITERIA
Property Code(s) = East North
Sample Type(s) =
Lab. Code(s) =

1987 SOIL GEOCHEMISTRY

Project Name

BLUE GROUSE PROPERTY

Project Code

AM-001

Date

APRIL 1988

Report No.

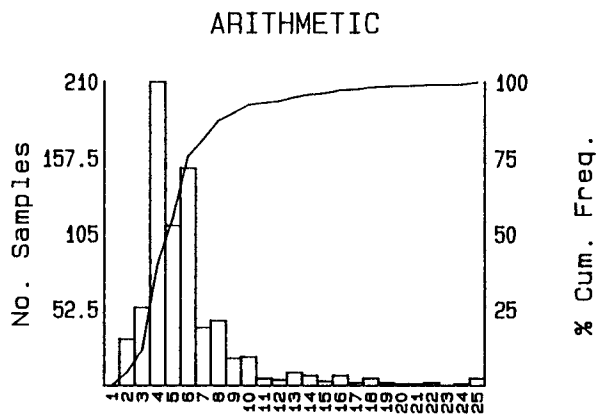
N.T.S.

92C/16E

Fig. No.

AMBER MINERALS LTD.

LANTHANUM (ppm)



Concentration
 Mean = 6.056
 SD = 3.968

Number Samples = 736
 Minimum Value = 2
 Maximum Value = 44

SUBSET CRITERIA
 Property Code (s) = [] East North
 Sample Type (s) = []
 Lab. Code (s) = []

1987 SOIL GEOCHEMISTRY

Project Name

BLUE GROUSE PROPERTY

Project Code

AM-001

Date

APRIL 1988

Report No.

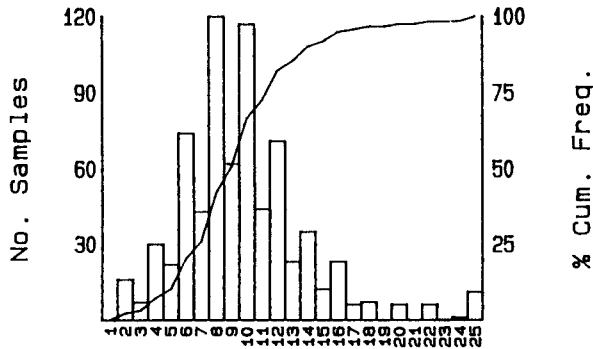
N.T.S.

92C/1 6E

Fig. No.

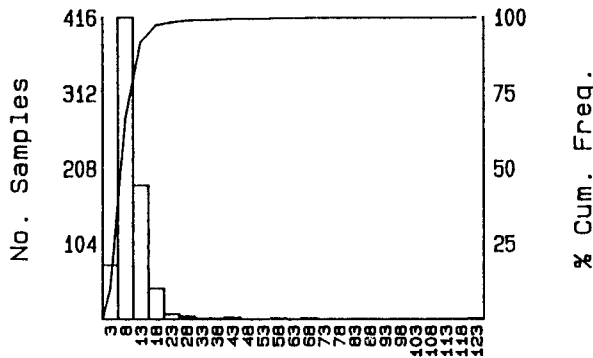
AMBER MINERALS LTD.

TRUNCATED ARITHMETIC



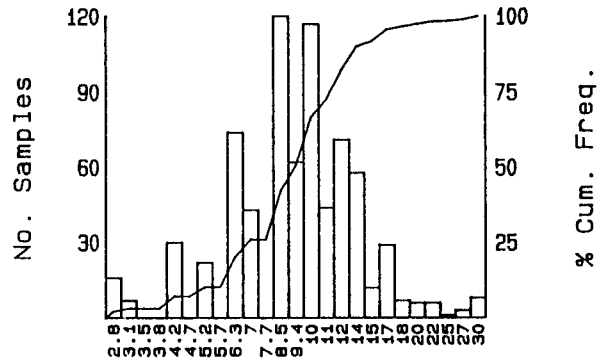
Concentration
 Mean = 9.902
 SD = 5.152

ARITHMETIC



Concentration
 Mean = 11.546
 SD = 44.901

LOGARITHMIC



Concentration
 Mean = 8.996
 SD = .214

Number Samples = 736
 Minimum Value = 2
 Maximum Value = 1220

SUBSET CRITERIA

Property Code (s) = [] East North
 Sample Type (s) = []
 Lab. Code (s) = []

1987 SOIL GEOCHEMISTRY

Project Name

BLUE GROUSE PROPERTY

Project Code

AM-001

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APRIL 1988

Report No.

N.T.S.

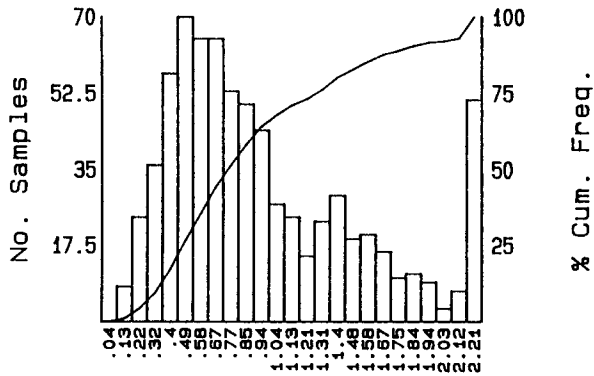
92C/1 6E

Fig. No.

AMBER MINERALS LTD.

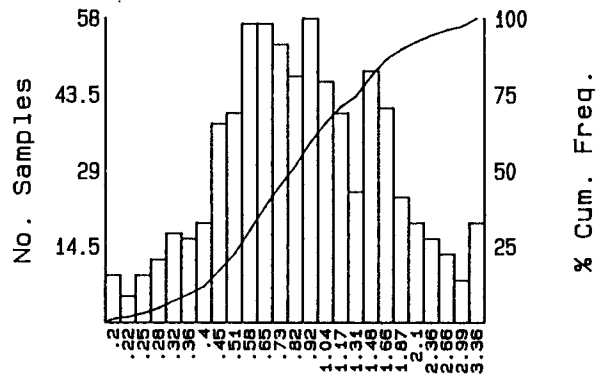
MAGNESIUM (%)

TRUNCATED ARITHMETIC



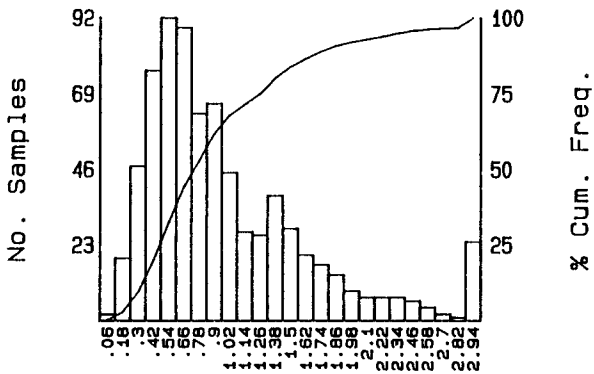
Mean = .882
SD = .478

TRUNCATED LOGARITHMIC



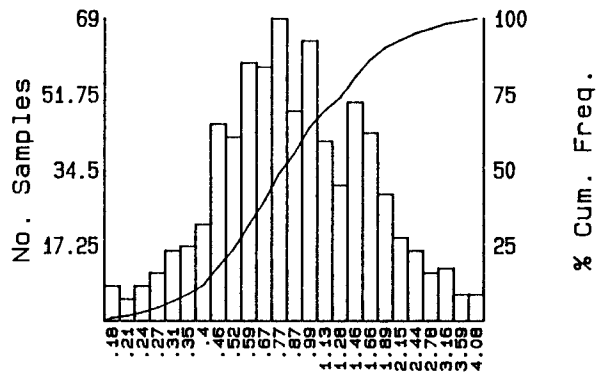
Mean = .778
SD = .003

ARITHMETIC



Mean = 1.013
SD = .731

LOGARITHMIC



Mean = .822
SD = .003

Number Samples = 736
Minimum Value = .1
Maximum Value = 6.2

SUBSET CRITERIA

Property Code (s) = [] East North
Sample Type (s) = []
Lab. Code (s) = []

1987 SOIL GEOCHEMISTRY

Project Name

BLUE GROUSE PROPERTY

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Report No.

N.T.S.

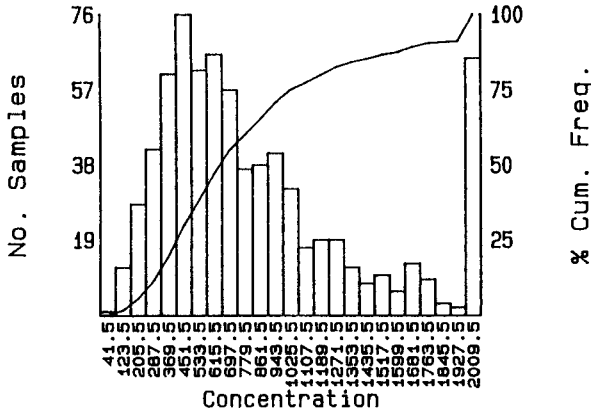
92C/16E

Fig. No.

AMBER MINERALS LTD.

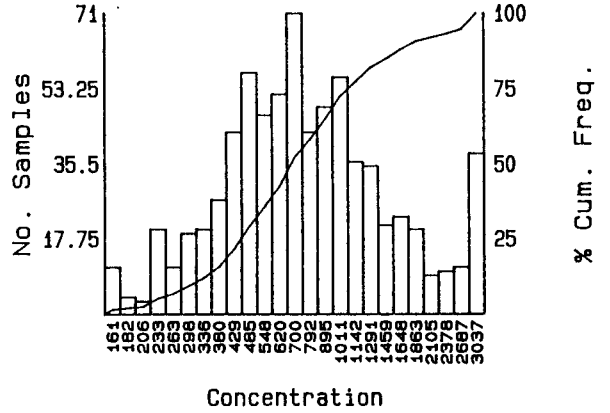
MANGANESE (ppm)

TRUNCATED ARITHMETIC



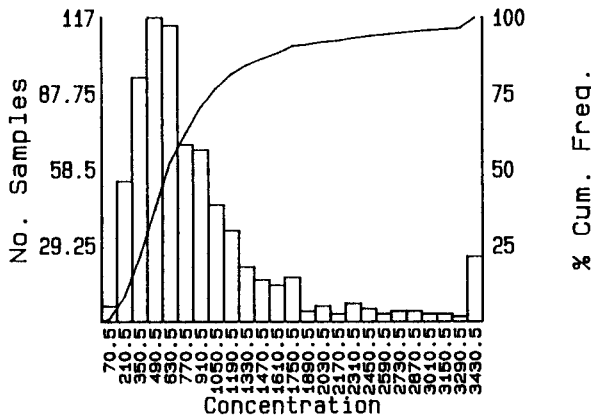
Mean = 792.391
SD = 499.317

TRUNCATED LOGARITHMIC



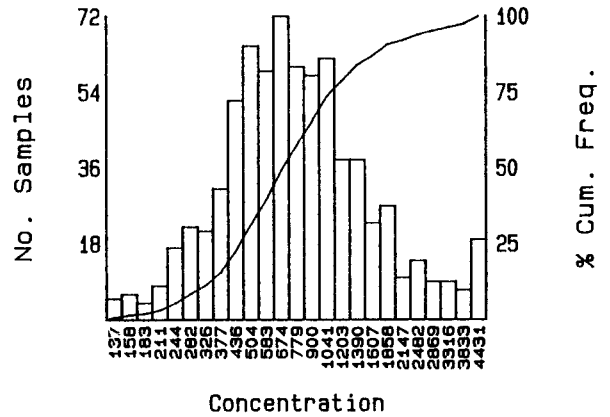
Mean = 659.42
SD = .265

ARITHMETIC



Mean = 974.716
SD = 1001.958

LOGARITHMIC



Mean = 724.894
SD = .314

Number Samples = 736
Minimum Value = 76
Maximum Value = 8959

SUBSET CRITERIA

Property Code (s) = [] East North
Sample Type (s) = []
Lab. Code (s) = []

1987 SOIL GEOCHEMISTRY

Project Name

BLUE GROUSE PROPERTY

Project Code

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Date

APRIL 1988

Report No.

N.T.S.

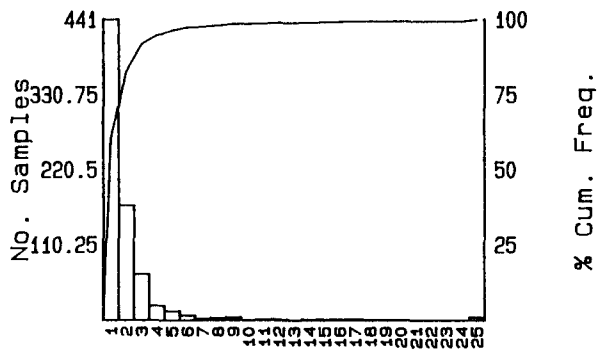
92C/16E

Fig. No.

AMBER MINERALS LTD.

MOLYBDENUM (ppm)

ARITHMETIC



Mean = 2.311
SD = 9.543

Number Samples = 736
Minimum Value = 1
Maximum Value = 243

SUBSET CRITERIA

Property Code (s) = [] East North
Sample Type (s) = []
Lab. Code (s) = []

1987 SOIL GEOCHEMISTRY

Project Name

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Report No.

N.T.S.

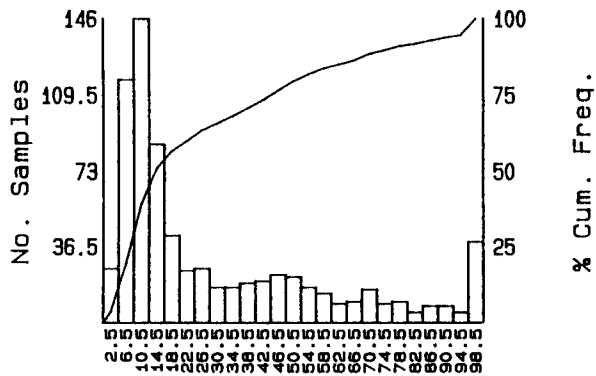
92C/16E

Fig. No.

AMBER MINERALS LTD.

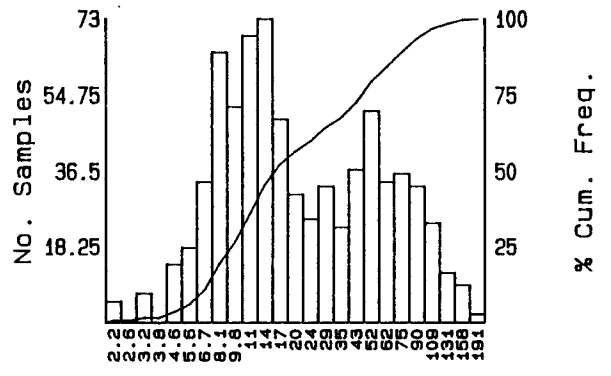
NICKEL (ppm)

TRUNCATED ARITHMETIC



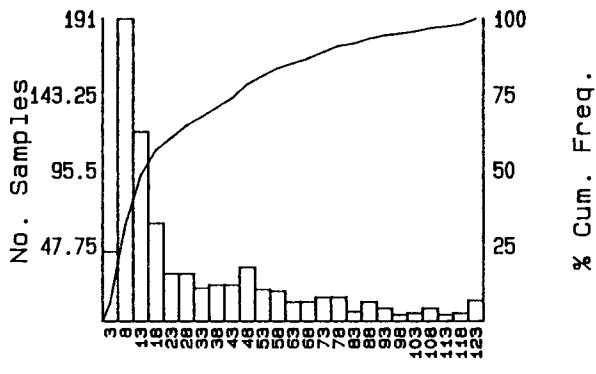
Mean = 26.423
SD = 23.567

TRUNCATED LOGARITHMIC



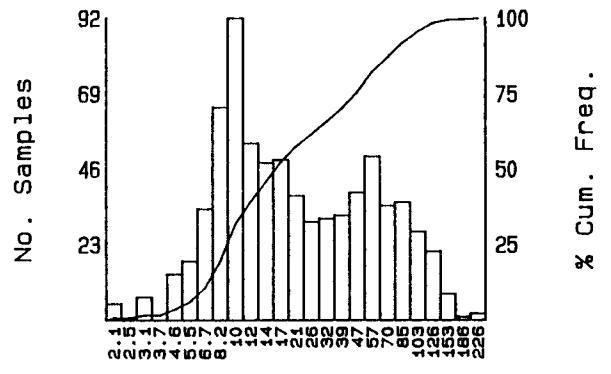
Mean = 18.808
SD = .403

ARITHMETIC



Mean = 31.948
SD = 36.518

LOGARITHMIC



Mean = 19.835
SD = .423

Number Samples = 736
Minimum Value = 1
Maximum Value = 472

SUBSET CRITERIA
Property Code (s) = [] East North
Sample Type (s) = []
Lab. Code (s) = []

1987 SOIL GEOCHEMISTRY

Project Name

BLUE GROUSE PROPERTY

Project Code

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Date

APRIL 1988

Report No.

N.T.S.

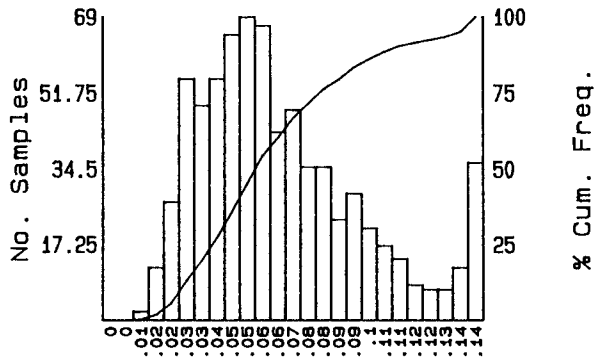
92C/16E

Fig. No.

AMBER MINERALS LTD.

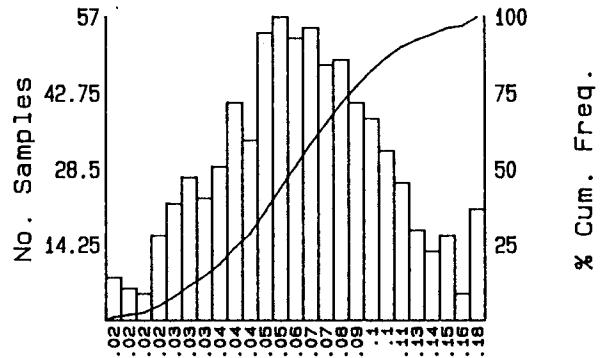
PHOSPHORUS (%)

TRUNCATED ARITHMETIC



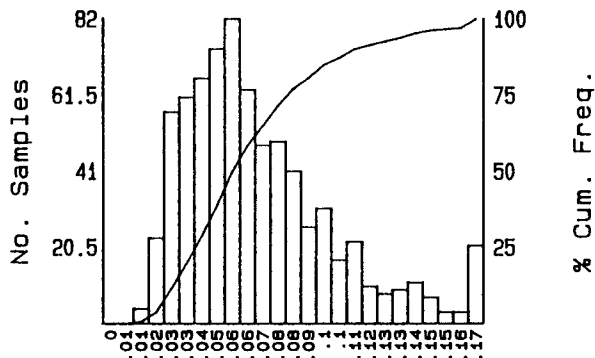
Concentration
 Mean = .066
 SD = .027

TRUNCATED LOGARITHMIC



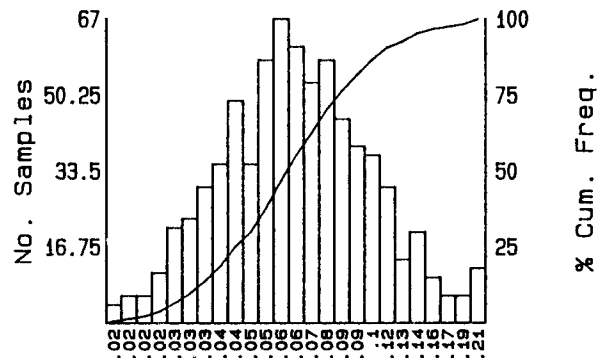
Concentration
 Mean = .062
 SD = 0

ARITHMETIC



Concentration
 Mean = .073
 SD = .039

LOGARITHMIC



Concentration
 Mean = .065
 SD = 0

Number Samples = 736
 Minimum Value = .016
 Maximum Value = .289

SUBSET CRITERIA
 Property Code(s) = [] East North
 Sample Type(s) = []
 Lab. Code(s) = []

1987 SOIL GEOCHEMISTRY

Project Name

BLUE GROUSE PROPERTY

Project Code

AM-001

Date

APRIL 1988

Report No.

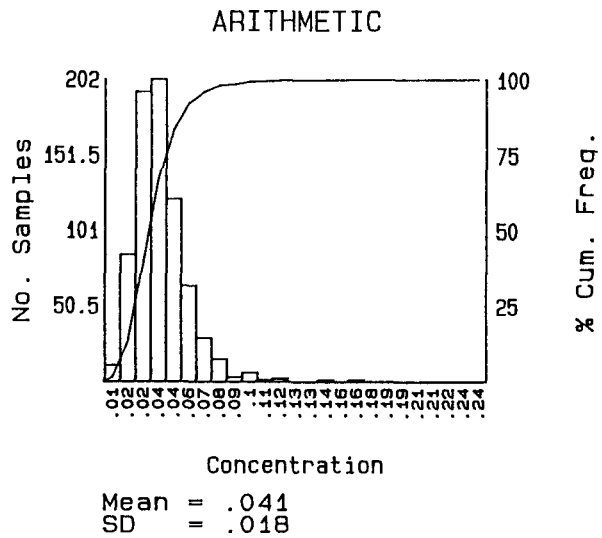
N.T.S.

92C/16E

Fig. No.

AMBER MINERALS LTD.

POTASSIUM (%)



Number Samples = 736
Minimum Value = .01
Maximum Value = .17

SUBSET CRITERIA
Property Code (s) = East North
Sample Type (s) =
Lab. Code (s) =

1987 SOIL GEOCHEMISTRY

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Report No.

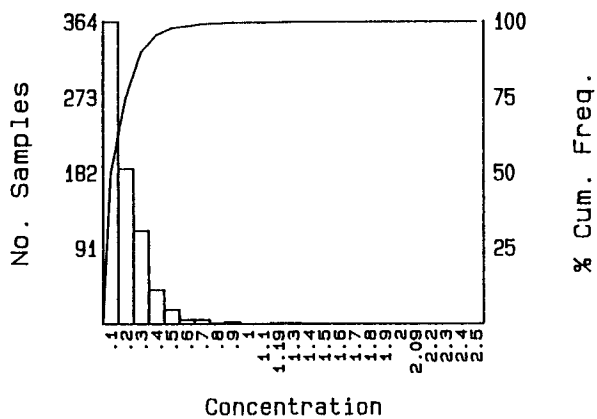
N.T.S.

92C/16E

Fig. No.

AMBER MINERALS LTD.

ARITHMETIC



Mean = .196
SD = .136

Number Samples = 736
Minimum Value = .1
Maximum Value = 1.3

SUBSET CRITERIA

Property Code (s) = East North
Sample Type (s) =
Lab. Code (s) =

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Report No.

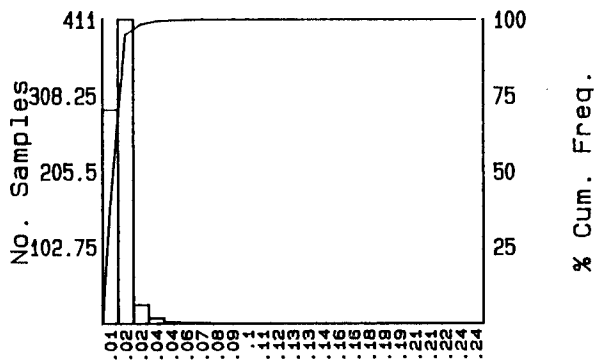
N.T.S.

92C/16E

Fig. No.

AMBER MINERALS LTD.

ARITHMETIC



Mean = .017
SD = .007

Number Samples = 736
Minimum Value = .01
Maximum Value = .07

SUBSET CRITERIA

Property Code (s) = East North
Sample Type (s) =
Lab. Code (s) =

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Project Name

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Project Code

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Report No.

N.T.S.

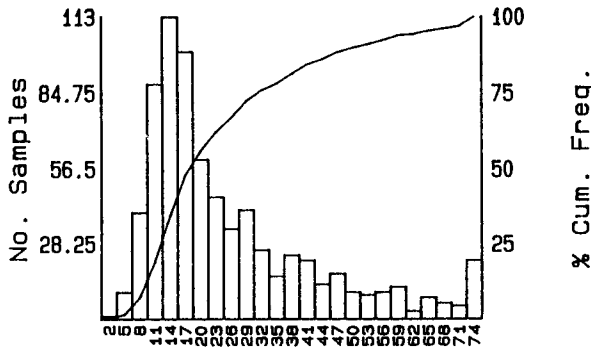
92C/16E

Fig. No.

AMBER MINERALS LTD.

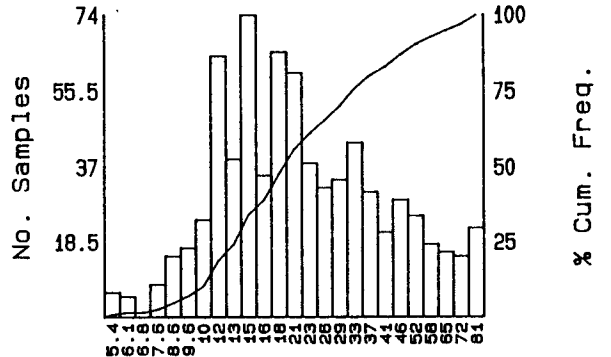
STRONTIUM (ppm)

TRUNCATED ARITHMETIC



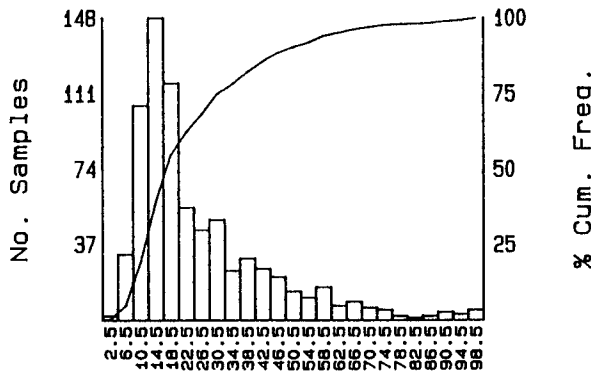
Concentration
 Mean = 22.838
 SD = 12.939

TRUNCATED LOGARITHMIC



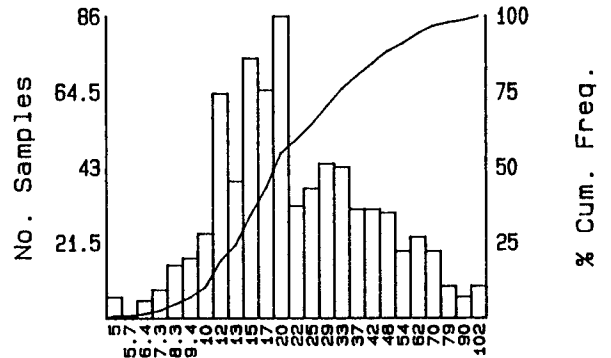
Concentration
 Mean = 20.006
 SD = .244

ARITHMETIC



Concentration
 Mean = 26.329
 SD = 20.051

LOGARITHMIC



Concentration
 Mean = 21.341
 SD = .273

Number Samples = 736
 Minimum Value = 2
 Maximum Value = 212

SUBSET CRITERIA

Property Code (s) = East North
 Sample Type (s) =
 Lab. Code (s) =

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Report No.

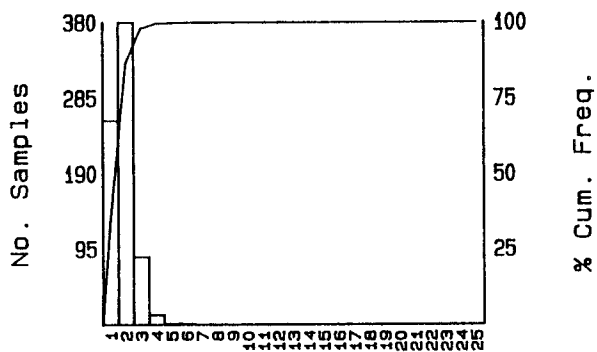
N.T.S.

92C/16E

Fig. No.

AMBER MINERALS LTD.

ARITHMETIC



Mean = 1.808
SD = .727

Number Samples = 736
Minimum Value = 1
Maximum Value = 6

SUBSET CRITERIA

Property Code (s) = East North
Sample Type (s) =
Lab. Code (s) =

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Report No.

N.T.S.

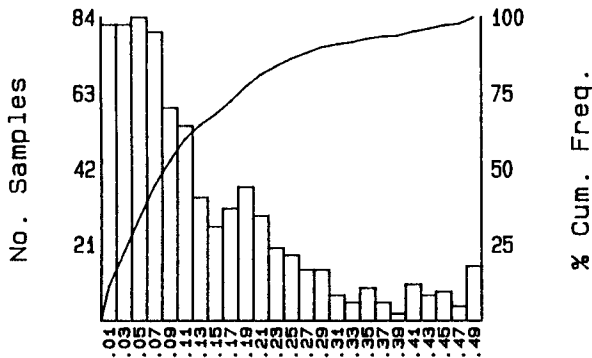
92C/1 6E

Fig. No.

AMBER MINERALS LTD.

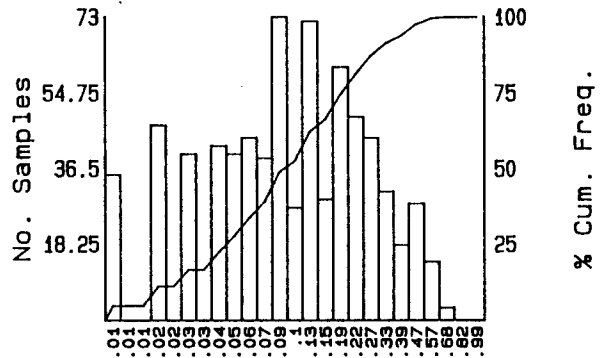
TITANIUM (%)

TRUNCATED ARITHMETIC



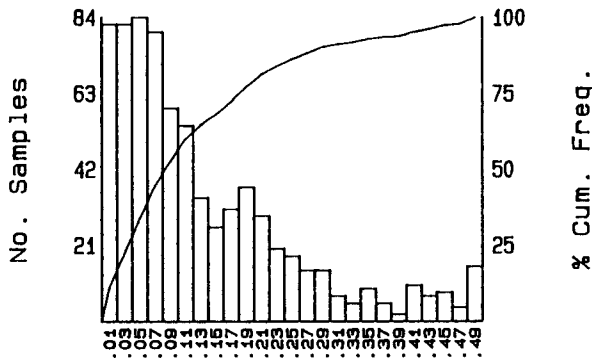
Concentration
 Mean = .113
 SD = .083

TRUNCATED LOGARITHMIC



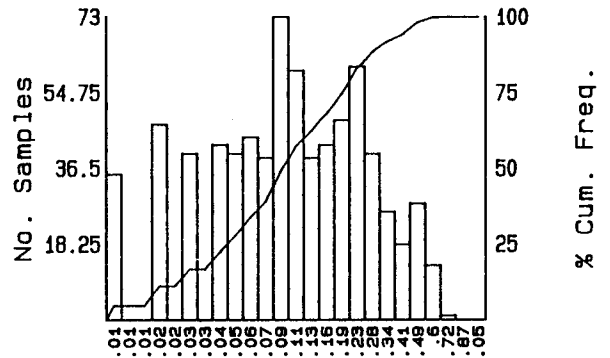
Concentration
 Mean = .09
 SD = .004

ARITHMETIC



Concentration
 Mean = .139
 SD = .122

LOGARITHMIC



Concentration
 Mean = .092
 SD = .004

Number Samples = 736
 Minimum Value = .01
 Maximum Value = .63

SUBSET CRITERIA
 Property Code (s) = [] East North
 Sample Type (s) = []
 Lab. Code (s) = []

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Report No.

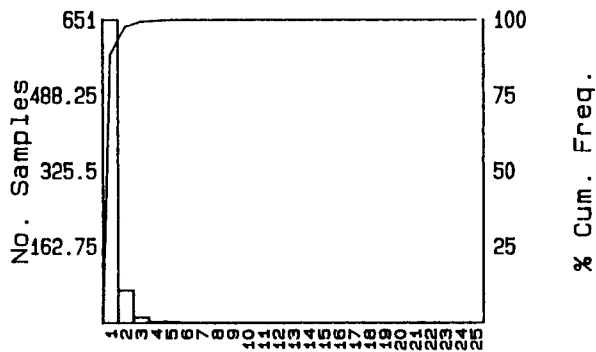
N.T.S.

92C/16E

Fig. No.

AMBER MINERALS LTD.

ARITHMETIC



Concentration
 Mean = 1.145
 SD = .454

Number Samples = 736
 Minimum Value = 1
 Maximum Value = 5

SUBSET CRITERIA

Property Code (s) = East North
 Sample Type (s) =
 Lab. Code (s) =

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Report No.

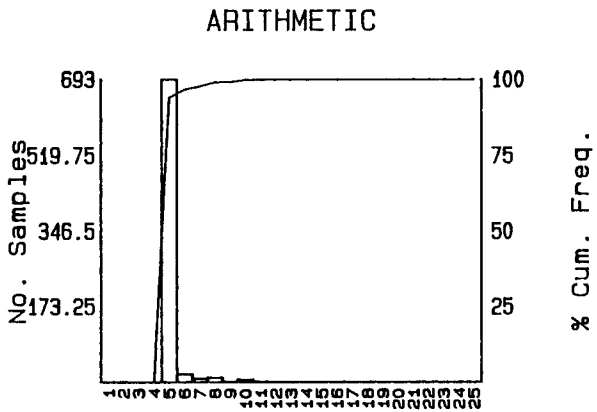
N.T.S.

92C/16E

Fig. No.

AMBER MINERALS LTD.

URANIUM (ppm)



Concentration
 Mean = 5.135
 SD = .643

Number Samples = 736
 Minimum Value = 5
 Maximum Value = 11

SUBSET CRITERIA
 Property Code (s) = East North
 Sample Type (s) =
 Lab. Code (s) =

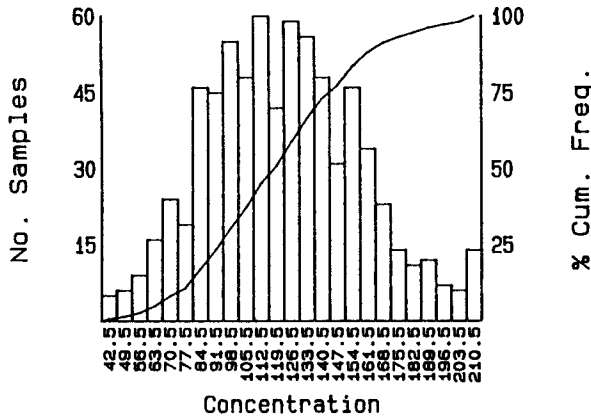
1987 SOIL GEOCHEMISTRY

Project Name				
BLUE GROUSE PROPERTY				
Project Code	Date	Report No.	N.T.S.	Fig. No.
AM-001	APRIL 1988		92C/16E	

AMBER MINERALS LTD.

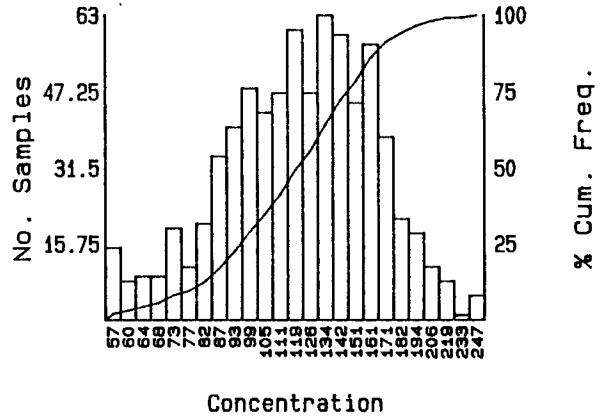
VANADIUM (ppm)

TRUNCATED ARITHMETIC



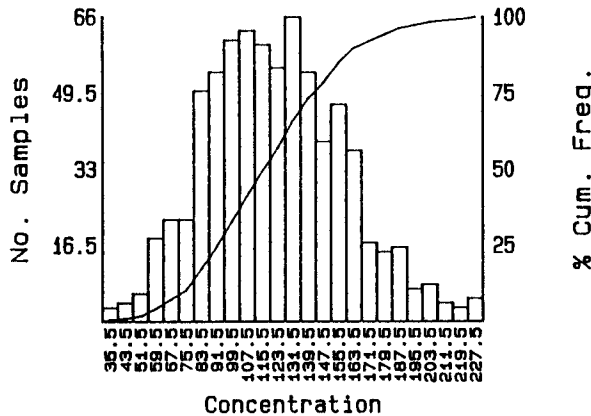
Mean = 118.746
SD = 32.093

TRUNCATED LOGARITHMIC



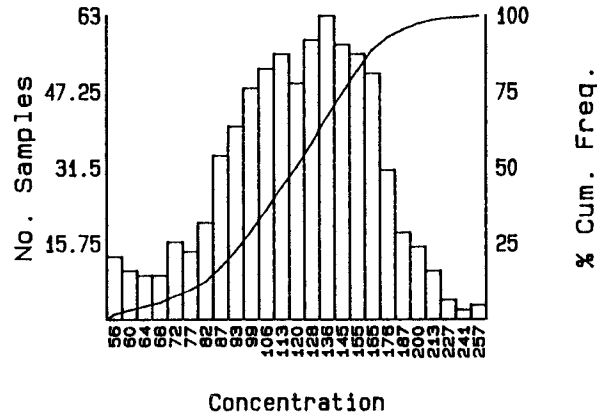
Mean = 115.457
SD = .133

ARITHMETIC



Mean = 122.557
SD = 36.496

LOGARITHMIC



Mean = 116.921
SD = .137

Number Samples = 736
Minimum Value = 29
Maximum Value = 264

SUBSET CRITERIA
Property Code(s) = East North
Sample Type(s) =
Lab. Code(s) =

1987 SOIL GEOCHEMISTRY

Project Name

BLUE GROUSE PROPERTY

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Report No.

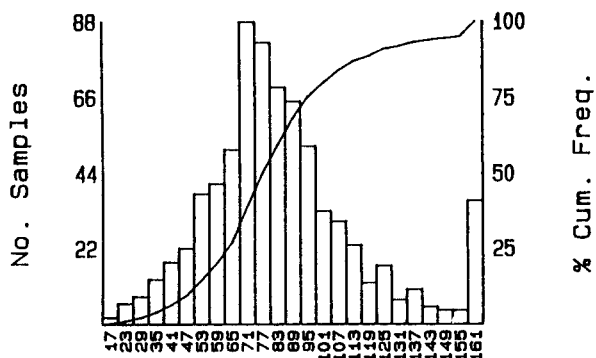
N.T.S.

92C/16E

Fig. No.

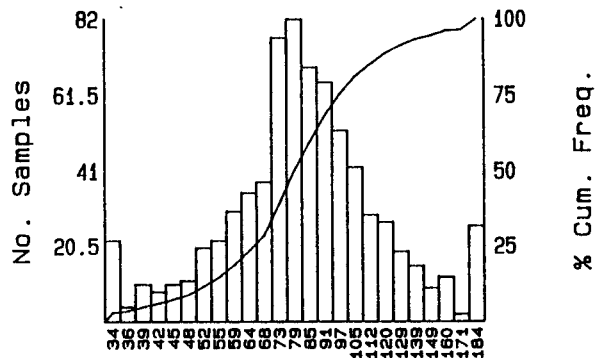
AMBER MINERALS LTD.

TRUNCATED ARITHMETIC



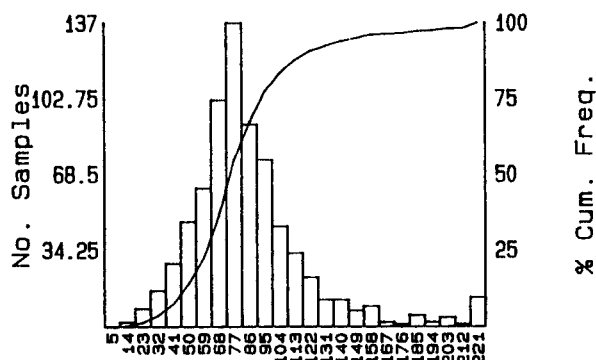
Concentration
 Mean = 81.588
 SD = 27.22

TRUNCATED LOGARITHMIC



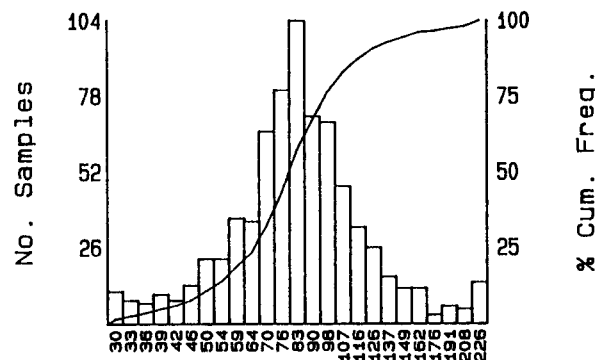
Concentration
 Mean = 76.571
 SD = .153

ARITHMETIC



Concentration
 Mean = 88.122
 SD = 53.122

LOGARITHMIC



Concentration
 Mean = 79.958
 SD = .181

Number Samples = 736
 Minimum Value = 15
 Maximum Value = 878

SUBSET CRITERIA
 Property Code (s) = East North
 Sample Type (s) =
 Lab. Code (s) =

1987 SOIL GEOCHEMISTRY

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Report No.

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92C/16E

Fig. No.

AMBER MINERALS LTD.

APPENDIX 2

ROCK ANALYSIS AND DESCRIPTIONS

BY NORANDA

ROSSBACHER LABORATORY LTD.

2225 S. Springer Ave., Burnaby,
British Columbia, Can. V5B 3R1
Ph: (604)299-6910 Fax:299-6252

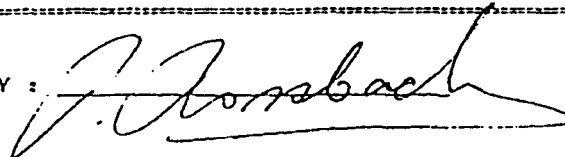
CERTIFICATE OF ANALYSIS

TO : CME CONSULTING LTD.
#2405-555 WEST HASTINGS STREET
VANCOUVER, B.C.
PROJECT : HAYES
TYPE OF ANALYSIS : ICP

CERTIFICATE # : 91114
INVOICE # : PENDING
DATE ENTERED : 91-05-31
FILE NAME : CME91114.I
PAGE # : 1

PRE FIX	SAMPLE NAME	NO	CU	PB	ZN	AG	NI	CO	MN	FE	AS	U	AU	HG	SR	CD	SR	BI	V	CA	P	LA	CR	MG	BA	TI	AL	NA	SI	M	RE	Au	AA
A	RG91-RM 001	1	1992	17	2517	11.5	104	31	672	2.56	29	5	ND	ND	44	2	14	2	327	2.97	0.14	4	99	5.11	86	0.01	4.79	0.05	0.03	1	4	30	
A	RG91-RM 002	10	69	29	36	0.4	22	13	666	1.67	83	5	ND	ND	30	2	11	2	33	7.88	0.12	9	59	0.50	16	0.03	0.79	0.03	0.01	6	1	30	
A	RG91-RM 003	24	126	110	581	0.5	137	121	974	2.24	1034	5	ND	ND	3	16	15	2	43	0.10	0.06	6	186	0.31	33	0.01	0.87	0.04	0.01	1	1	70	
A	RG91-RM 004	2	56	22	229	0.4	10	9	1065	5.47	44	5	ND	ND	137	2	17	2	86	2.25	0.21	14	49	1.40	59	0.17	4.87	0.09	0.05	1	2	70	
A	RG91-RM 005	1	1739	37	218	0.11	94	32	847	2.34	41	5	ND	ND	62	3	19	2	233	7.84	0.17	8	75	4.34	79	0.01	4.02	0.06	0.01	3	4	70	
A	RG91-R 001	5	1856	28	46	13.9	116	60	1289	4.30	33	5	ND	ND	115	4	12	2	69	2.18	0.10	3	176	1.50	20	0.19	1.99	0.06	0.03	1	1	5	
A	RG91-R 002	2	54	18	108	0.4	13	21	996	4.61	38	5	ND	ND	82	2	17	2	105	2.76	0.18	11	62	2.15	16	0.29	2.61	0.11	0.08	2	2	70	
A	RG91-R 003	5	1026	38	182	0.4	61	55	1441	8.67	41	5	ND	ND	62	6	24	2	285	3.93	0.21	13	121	2.79	27	1.14	3.30	0.12	0.06	2	6	70	
A	RG91-R 004	21	236	22	117	0.03	52	67	774	6.87	21	5	ND	ND	6	1	12	2	141	0.84	0.10	5	117	1.26	24	0.31	2.06	0.06	0.09	1	3	60	
A	RG91-R 005	5	17.93	9	1752	0.75	4	121	257	142	27	5	ND	ND	9	4	3	2	2	0.25	0.01	3	121	0.24	22	0.06	0.55	0.01	0.01	1	1	70	
A	RG91-R 006	13	1568	36	105	2.17	73	81	303	16.10	928	5	ND	ND	4	8	10	2	136	0.04	0.09	4	119	1.10	47	0.01	2.10	0.05	0.02	1	3	70	

CERTIFIED BY :



GEOCHEMICAL ANALYSIS CERTIFICATE

S. General (LE)

Noranda Exploration Co. Ltd. PROJECT 9005-019 127 File # 90-1501

P.O. Box 2380, 1050 Davie St., Vancouver BC V6B 3T5

SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	AU*
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	%	ppm	ppb
47553	1 44218	2 31	2 31	1.2	10	26	810	9.64	4	5	ND	1	3	1.1	2	2	3	.59	.015	4	1	.23	42	.01	2	.12	.01	.01	2	330	
47554	6 21994	2 50	2 50	2.9	2	38	2312	30.15	31	7	ND	3	23	3.8	2	2	2	3.74	.006	2	1	.05	47	.01	6	.14	.01	.01	2	11	
47555	1 1713	2 56	2 56	.4	2	26	5790	22.49	21	5	ND	2	9	2.1	2	2	1	2.47	.009	2	2	.08	50	.01	5	.14	.01	.01	1	1	
47556	7 67340	2 454	2 454	3.6	44	153	314	12.21	13	5	ND	1	57	5.1	2	13	11	1.50	.013	2	1	.09	58	.11	2	.67	.01	.01	1	26	
47557	12 66714	2 864	2 864	6.0	45	254	257	18.41	23	5	ND	1	43	8.4	2	2	18	.83	.045	2	4	.12	28	.09	8	.59	.01	.01	1	5	
47558	8 13720	2 848	2 848	17.7	39	77	192	26.04	71	7	ND	2	47	11.9	2	5	24	.97	.041	2	7	.09	28	.08	2	.69	.01	.01	1	3	
47559	4 973	2 31	2 31	.2	5	6	240	1.47	2	5	ND	1	84	.4	2	2	26	2.94	.013	2	6	.34	4	.08	3	1.18	.01	.01	1	2	
47560	1 65	2 5	2 5	.1	2	1	332	.10	3	5	ND	1	90	.3	2	2	12	38.48	.021	2	1	.07	3	.01	2	.04	.01	.01	1	2	
47561	2 22	5 131	5 131	.1	1	3	373	1.56	4	5	ND	1	14	1.0	2	2	8	2.59	.029	13	2	.40	23	.01	7	.95	.02	.14	1	1	
47562	1 388	12 53	12 53	.1	194	43	1544	7.06	2	5	ND	1	12	.8	4	2	194	.32	.023	2	250	6.03	46	.02	9	5.76	.01	.08	1	1	
47563	1 141	2 66	2 66	.1	95	30	866	5.39	2	5	ND	1	105	.4	2	2	126	4.60	.029	3	150	3.32	22	.01	4	3.78	.02	.09	1	1	
47564	5 142	6 65	6 65	.1	101	36	7624	4.88	7	5	ND	1	12	.2	2	2	106	.40	.029	5	93	2.11	33	.04	4	2.92	.01	.09	1	1	
47565	1 23610	7 46	7 46	5.4	71	70	381	5.66	140	5	ND	1	64	.4	2	8	17	1.00	.132	2	11	.28	10	.21	5	.58	.01	.01	1	6	
47566	1 1214	7 134	7 134	.1	59	31	1256	7.25	2	5	ND	1	46	.8	2	2	132	2.01	.036	6	48	3.07	37	.01	3	4.41	.01	.10	1	1	
47567	2 5222	10 119	10 119	1.6	72	38	1052	9.16	17	5	ND	1	28	1.3	2	2	188	1.25	.032	5	75	3.07	38	.06	2	4.67	.01	.08	1	1	
47568	1 36	2 38	2 38	.1	66	22	1401	3.83	3	5	ND	2	146	.7	2	2	60	11.93	.015	2	51	1.91	18	.01	6	2.93	.01	.05	1	9	
47572	1 115	2 58	2 58	.1	65	20	1050	5.02	3	5	ND	1	110	.8	2	2	102	8.99	.025	3	95	2.51	15	.01	3	3.50	.01	.07	1	7	
STANDARD C/AU-R	18	58	39	132	7.2	67	30	1028	3.94	37	24	6	37	48	17.1	15	21	57	.50	.088	38	55	.92	173	.09	38	1.92	.06	.13	11	520

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM. - SAMPLE TYPE: Rock AU* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

DATE RECEIVED: MAY 29 1990 DATE REPORT MAILED: June 1/90 SIGNED BY: D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

✓ ASSAY RECOMMENDED

N.T.S. 92016

PROPERTY Blue Grouse

DATE _____

ROCK SAMPLE REPORT

PROJECT _____

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G <input type="checkbox"/> A <input type="checkbox"/>							SAMPLED BY
7562	Dark red highly friable rock. One patchy area of malachite but no visible sulphides. Looks like this rock is a hematitic altered amygdaloidal volcanic	/	Grab.									L. Erdman
7563	Light green volcanic tuff. Locally welded, calcite stringers, chlorite alteration. Disseminated fine grain, to v/g blebby py associated with the chlorite	Tr	Grab									L. Erdman
7564	Very friable, black coloured sheared rock. Totally altered. No visible sulphides. Minor limonite stain. Margins of shear are covered so no width or direction determination	/	Chip	0.7m								L. Erdman
7565	Well layered volcanic tuff. Epidote alteration, limonitic stain. Layers of pyrite as well as dissem. py.	5%	Chip	0.4m								L. Erdman

PROPERTY Blue Grouse

N.T.S. 92C16

DATE _____

ROCK SAMPLE REPORT

PROJECT _____

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G <input type="checkbox"/> A <input type="checkbox"/>							SAMPLED BY	
17566	Crystal-lithic volcanic tuff. Maroon in color. Calcareous with hairline calcite veins. Local malachite stain. Disseminated pyrite, also streaky Py/cp to 5mm in width but not continuous. Heavy Mn in locations adjacent to sulfides	Tr	Chp	1m									L. Erdman
17567	10 m distance from sample 17566. Similar rock but this sample has blobs (to 8mm) of chalcocite. It looks like the sulfides are closely associated with fractures	1/2%	Chp	15m									L. Erdman
17568	Red bed volcanic tuff. Quartz veins, calcite veins and local 2cm blobs of calcite. Very rare blobs (<1cm) of malachite. Disseminated pyrite - rare.	Tr	Grab										L. Erdman

NORANDA EXPLORATION COMPANY, LIMITED

PROPERTY: Blue Grouse

N.T.S. 92C16
 DATE May 26/90
 PROJECT: 127/A4

ROCK SAMPLE REPORT

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G	A	G	A	G	A	G	A	G	A	G	A	SAMPLED BY
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
17572	Light green coloured volcanic tuff. Local silicification. Trace of f.g. disseminated pyrite. Similar to sample 47563. Pervasive carbonate alteration	TR	Grab														L. Erdman

5

APPENDIX 3

CERTIFICATE

CERTIFICATE

1. I have been employed in the mineral exploration business since 1988 and have operated my own exploration company, Amber Minerals Ltd. since 1988.
2. I hold a 100% interest in the Blue Grouse group of claims in the Victoria Mining Division.
3. This report is based on two property visits; both of which I was actively mapping and investigating the property to the best of my abilities.

A handwritten signature in cursive script, reading "Michael Rennie". The signature is written in black ink and is positioned centrally below the list of points.

APPENDIX 4

ASSORTED LETTERS DEALING WITH SUB SURFACE RIGHT ISSUES

Fletcher Challenge Canada Limited
9th Floor • 700 West Georgia Street
P.O. Box 10058 Pacific Centre
Vancouver, B.C., Canada V7Y 1J7

(604) 654-4000
Telex 04-51203



FLETCHER CHALLENGE CANADA

18 July 1990

Our File: 17-814

Transtel Communications Corporation
P.O. Box 10339, Pacific Centre
Vancouver, B.C.
V7Y 1G5

Attention: Frances Petryshen

Dear Sirs:

RE: Nic-Nik Resources Ltd (now Transtel Communications Corporation) - Blocks 106, 107, 952 and 969, Cowichan Lake District

Further to your 23 March 1990 request to assign the base metal rights Agreement dated 4 January 1988 (assigned 21 January 1988 and amended 8 March 1989) (the "Agreement") back to Michael Renning, Fletcher Challenge Canada Limited has reviewed the situation and we advise that we will not consent to such assignment.

Effective immediately and in accordance with Clauses 1 (a), (b), (c), and (d) of the Agreement, all base metal rights granted to Michael Renning and later assigned to Nic-Nik Resources have reverted back to Fletcher Challenge Canada Limited.

Yours very truly,

FLETCHER CHALLENGE CANADA LIMITED

Fred Kozier
Property Administrator
Lands & Properties

AFK/rp

cc: Doug Mosher - Caycuse
Michael Renning
#1209 - 510 West Hastings Street
Vancouver, B.C.
V6B 1L8



Province of
British Columbia

Ministry of
Energy, Mines and
Petroleum Resources

Parliament Buildings
Victoria
British Columbia
V8V 1X4

#17-525 Superior Street
Victoria, B.C.

December 13, 1990

File: 11000-01

Mr. Michael Renning
8071 Rosewell Avenue
Richmond, B.C.
V7A 2J3

Dear Mr. Renning:

**Re: Acquisition of Base Minerals from
Fletcher Challenge - Blue Grouse Mine**

Further to your request to this branch for help in negotiating with Fletcher Challenge to obtain the right to the base minerals on your mineral claims near Cowichan Lake.

If Fletcher Challenge holds the rights to the base minerals as the fee simple title holder of Block 107, Cowichan Lake Land District, they are entitled to manage those rights in their own interest. They are not obligated to negotiate with anyone for the base minerals on their property. If they chose to negotiate with you, that is their choice, but this branch has no influence over what Fletcher Challenge decides to do. Should negotiations take place, they would be between you and Fletcher Challenge and this branch would not be involved.

Should you require additional information or help in some other capacity, please contact this branch at your convenience.

Yours truly,

Doug Carter
Deputy Gold Commissioner
Victoria Mining Division

DC/ps

MICHAEL RENNING

#1209 - 510 West Hastings Street,
Vancouver, B.C.
V6B 1L8

March 7, 1991

Joe Allan
Director, Area F
P.O. Box 1350,
Lake Cowichan, B.C.

Dear Sir:

The Blue Grouse mountain area encompasses two former producers originally known as the Blue Grouse and Sunnyside properties. The Sunnyside and the Blue Grouse both started production in 1917. The Blue Grouse continued production until 1919 and was operated by Consolidated Mining and Smelting Company (Cominco). It wasn't until 1954 that the Blue Grouse started producing again under the ownership of Cowichan Copper Co. Ltd. The mine closed in 1960 after 14,769,067 lbs. of copper and 78,834 oz. of silver were mined and has been Southern Vancouver Island's largest copper producer to date.

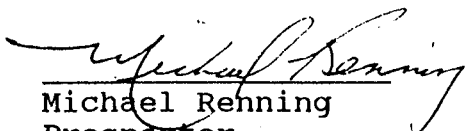
During these years of exploration and production, agreements had been negotiated with the owners of the surface rights. Today, Fletcher Challenge Canada owns the surface rights to the areas which include the Sunnyside and Blue Grouse Mines. The significance of surface right ownership is that it also includes ownership of the base metals. To name a few, base metals include metals such as copper, lead and zinc. Under the old Esquimalt/Nanaimo railway land grant, all lands held within 25 miles of the tracks were also endowed with the base metals. Since the time of the grant, land has been dealt off mostly to forestry companies. Up until the early 1970's all land within the E & N grant sold by the railway included the base metal rights. After this time, the base metal rights of all unsold lands were made property of the CROWN. Today, many mining companies are very apprehensive about doing any exploration on this part of Vancouver Island.

I have been involved in the mining industry since 1981 starting as a field assistant and in recent years have become devoted to prospecting. The Blue Grouse claims are currently my only claims on Vancouver Island. In February of 1987, as it turns out, I acquired only the precious metal rights to the Blue Grouse and Sunnyside mines and surrounding areas. In early 1988, I had arranged a deal between BCFP and a VSE listed junior company

whereby the base metal rights were made available for option under terms agreed upon by both parties. Soon after the deal was arranged, Fletcher Challenge Canada, had taken over BCFP. In fact, Fletcher Challenge Canada has now decided it does not want exploration to continue on its property. Not only has the development of this resource been halted, efforts were made to permanently collapse the old underground workings.

There are obvious economic and social benefits in allowing other industries to move into a single industry community. The Blue Grouse and Sunnyside were producing mines in the past and from all reports were very successful. It is my hope that Fletcher Challenge Canada may be convinced to work with the mining industry and help diversify the economy of the Cowichan Valley. The people of this region must get together and give their views on how the natural resources which surround them should be managed.

Yours truly,


Michael Renning
Prospector

/tls.



49 SOUTH SHORE ROAD
BOX 860
LAKE COWICHAN
VANCOUVER ISLAND
BRITISH COLUMBIA V0R 2G0

Phone: 604-749-6554
Fax: 604-749-3900

June 3, 1991

Mr. Michael Renning
#1209 - 510 West Hastings Street,
Vancouver, B.C.
V6B 1L8

Fax: 681-8775, Page 1 of 1

Dear Mr Renning:

Re: Blue Grouse Mine

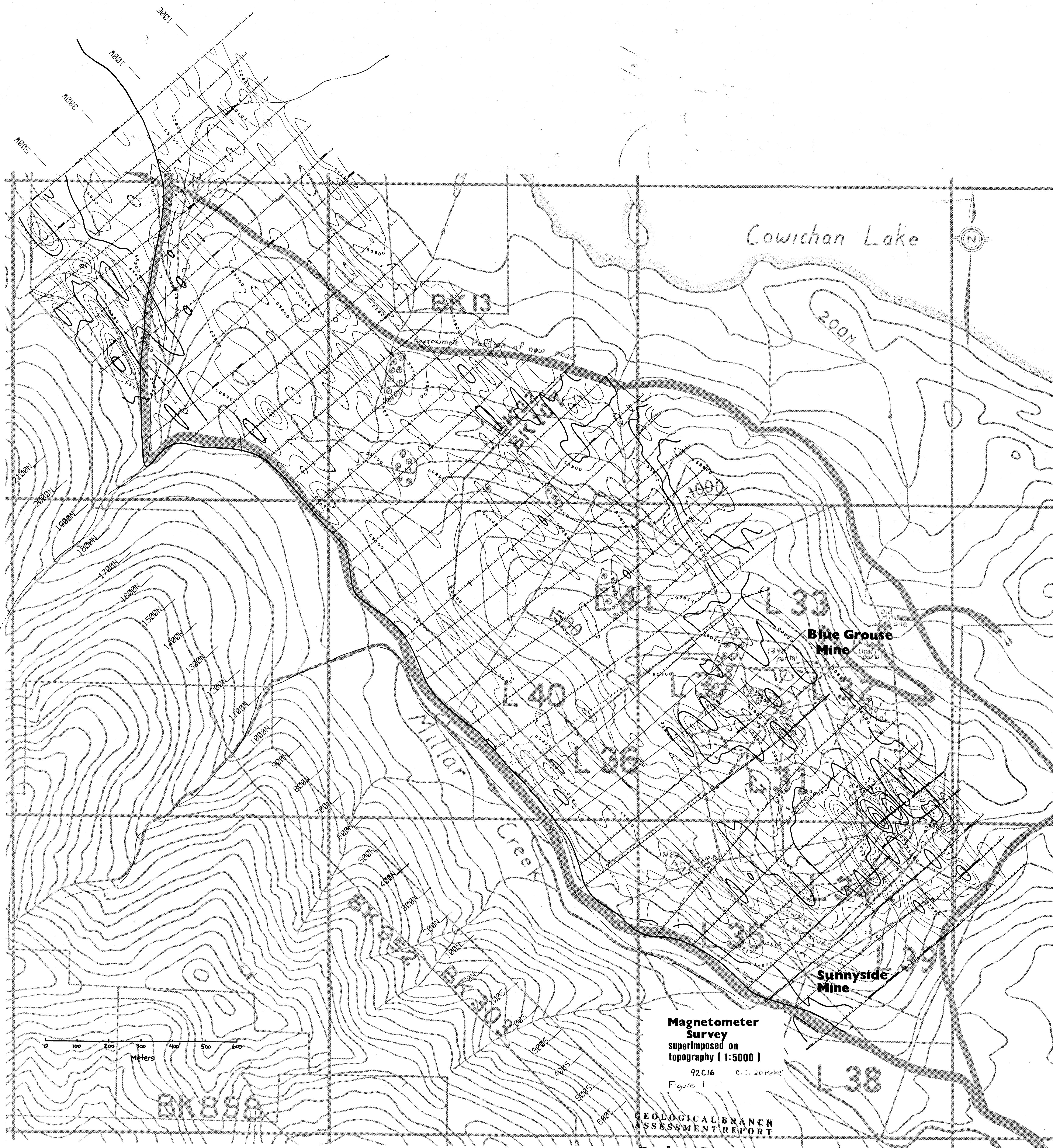
The final paragraph of Fletcher Challenge's response is as follows:

"We are willing to grant to Mr. Renning our usual standard form agreement for the necessary access rights related to mineral exploration however we are not prepared, at this time, to negotiate an agreement for base metal rights."

We will be pursuing this item more fully in the very near future. Contact me if you wish at 749-6585.

Sincerely,

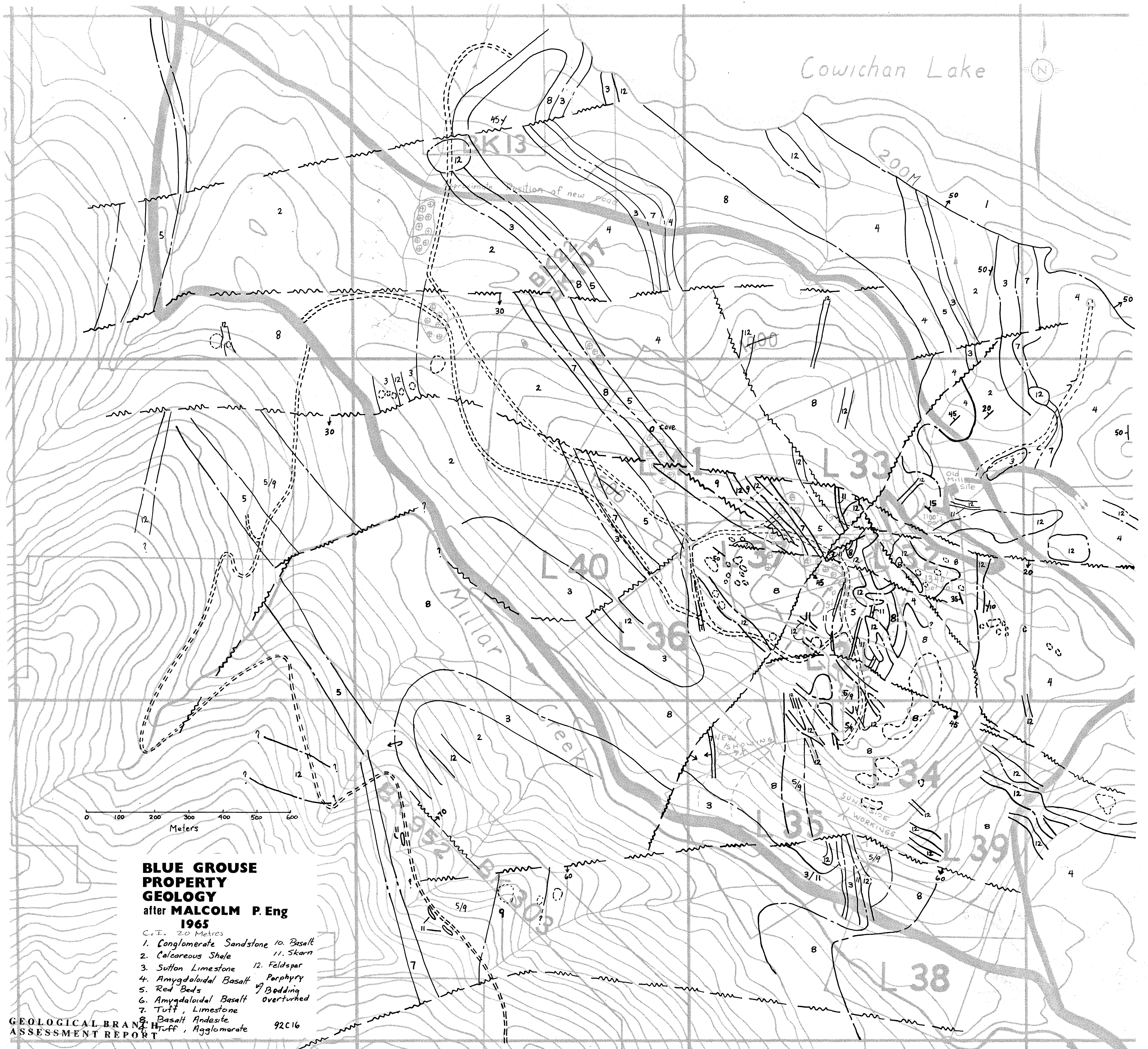
Joe Allan
Director, Electoral Area F



Magnetometer Survey
 superimposed on
 topography (1:5000)

92C16 C.I. 20 Metres
 Figure 1

GEOLOGICAL BRANCH
 ASSESSMENT REPORT



**BLUE GROUSE
PROPERTY
GEOLOGY**
after MALCOLM P. Eng
1965

- C.I. 20 Metres
- | | |
|---------------------------|--------------|
| 1. Conglomerate Sandstone | 10. Basalt |
| 2. Calcareous Shale | 11. Skarn |
| 3. Sutton Limestone | 12. Feldspar |
| 4. Amygdaloidal Basalt | Porphyry |
| 5. Red Beds | Bedding |
| 6. Amygdaloidal Basalt | Overtured |
| 7. Tuff, Limestone | |
| 8. Basalt Andesite | |
| 9. Tuff, Agglomerate | |

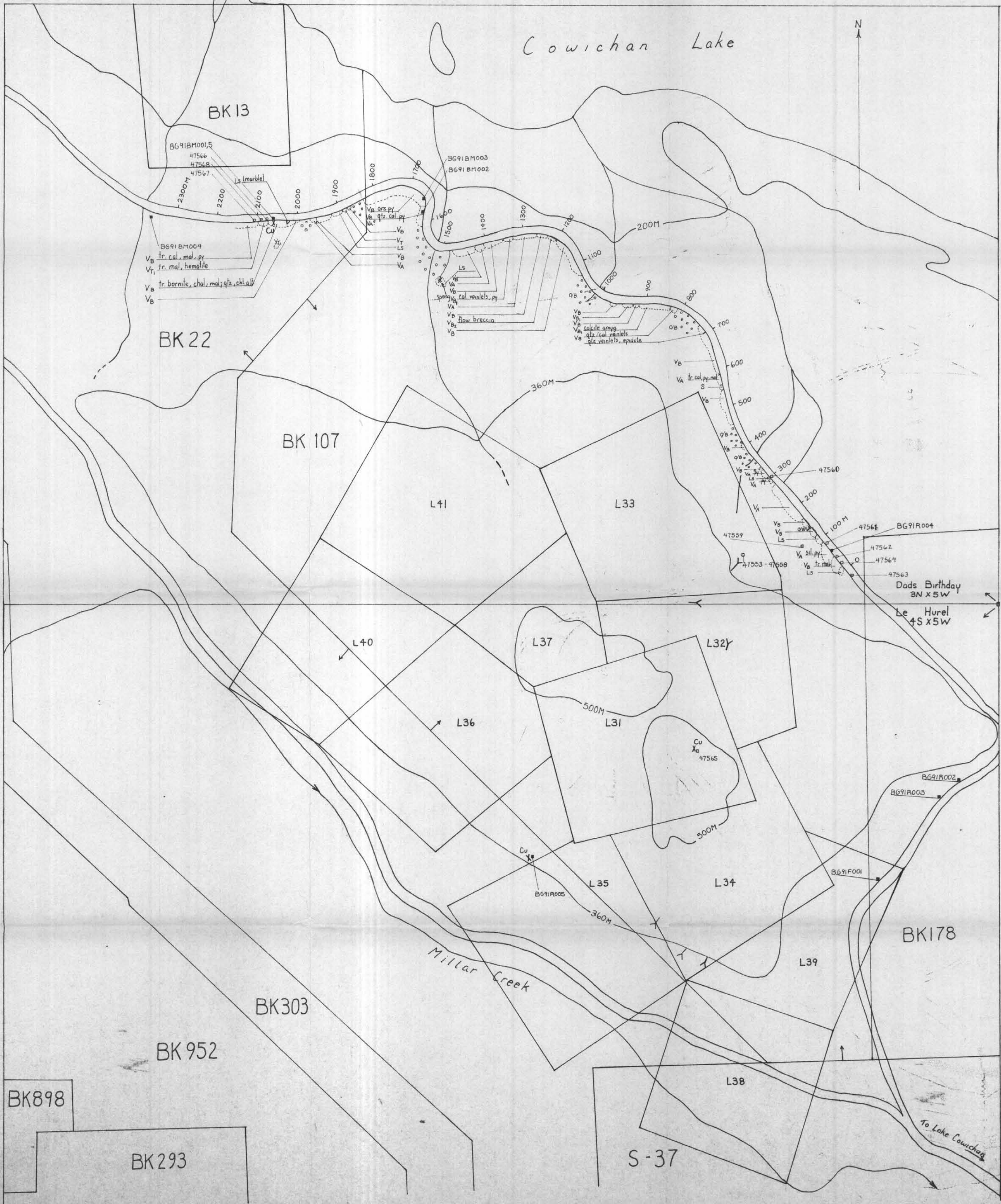
GEOLOGICAL BRANCH
ASSESSMENT REPORT 92C16

A.R. 21391

A.R. 21391

Cowichan Lake

1990-1991 Mapping and Sample Locations
Figure 3



Legend

Sediments

- Ls - (Quaisino) limestone
- S - black thinly bedded siltstone

Volcanics

- V_A - medium grey to green black basalt/andesite; sometimes porphyritic
- V_B - medium brown to dark green brown basalt (Karmuisen?)
- V_{B2} - dark black basalt with calcite stringers
- V_{B2} - flow breccia containing rounded and angular clasts
- V_T - light grey tuff
- V_{T1} - maroon tuff (red bed)

Y - adit

X - copper showing
Cu - copper showing

Sub Surface Rights

1. Crown Grants

- BK 107 - All base metals
- BK 22 - none BK 13 - none

All other Crown Grants are unresearched at this time.

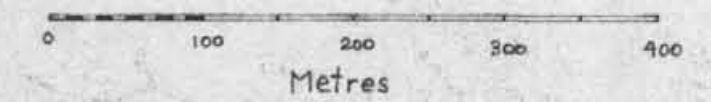
2. Reverted Crown Grants

- L31 - L41 - All precious metals, coal, coal oil, fire clay - subject to Mineral Tenure Act. L35, L36, L38 and L40 also may include base metals outside BK107.

3. Modified Grid Claims

- Dads Birthday - All metals, minerals etc., subject to Mineral Tenure Act, within BK13+22 only.*
- Le Hurel - All metals, minerals etc., subject to Mineral Tenure Act, within BK 22 only; possibly excluding portions of those reverted crown grants outside BK107.
- Title searches on Crown grants BK303, BK 952, BK 293, BK 178 and S-37 have not yet taken place.*

* All precious metals except those areas covered by reverted crown grants are also included in the claim.



Drafted by Michael Renning 1991