GEOCHEMICAL SOIL SAMPLING SURVEYS

GUN MINERAL CLAIM GROUP

GRASS LAKES AREA

WATSON LAKE MINING DIVISION

YUKON TERRITORY

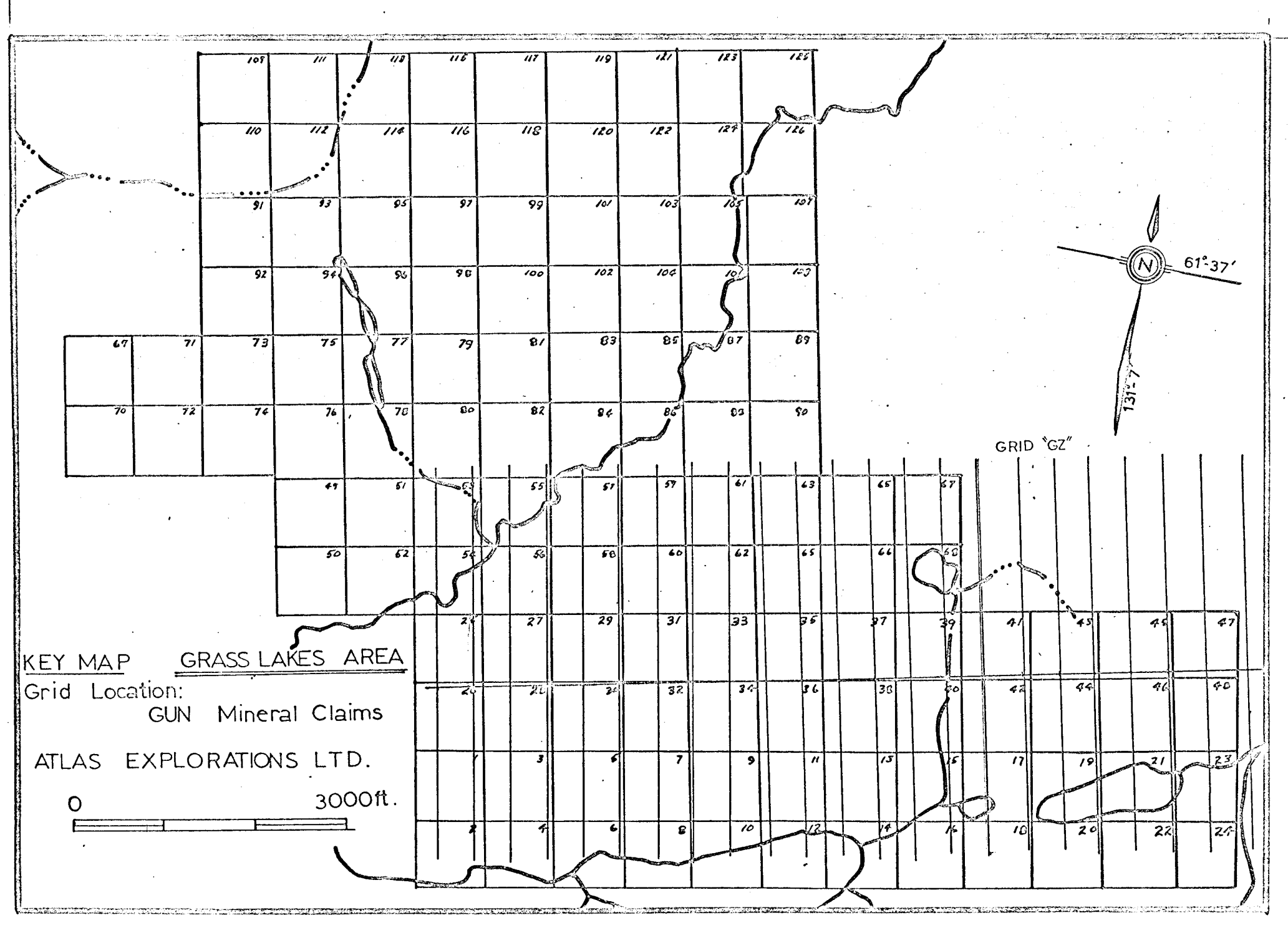
Long. 131° 10' West
Lat. 61° 35' North

by

John S. Brock

ATLAS EXPLORATIONS LIMITED

July 15 - August 6, 1967



KEY MAP GRASS LAKES AREA

Grid Location:

GUN Mineral Claims

ATLAS EXPLORATIONS LTD.

0 3000ft.

LIST OF CLAIMS

Claim No.	Grant Nos.	Date Recorded
GUN 1 - 126	Y7481 - Y7606	May 2, 1966

GEOCHEMICAL SOIL SAMPLING SURVEY

GUN MINERAL CLAIM GROUPS

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330 MARINE BUILDING
355 BURRARD STREET
VANCOUVER 1, B.C.

INTRODUCTION

After mineral claims were acquired by Atlas Explorations in the Fyre Lake area, the Grass Lakes region was flown with airborne electromagnetic and magnetic surveys. As a result of the geophysical surveys outlining anomalies in proximity to known favorable geologic conditions, the Gun group of 126 mineral claims was staked and recorded May 2, 1966.

The claims were staked by Atlas Explorations as part of an intensive follow-up program after completion of the airborne surveys. Ground was obtained in preparation of ground geochemical, geophysical and geologic surveys that were to be employed to delineate airborne anomalies. Commencing July 15, 1966, a crew consisting of geologic, geophysical, geochemical, linecutting and camp support personnel were placed on the property to investigate the anomalous electromagnetic and magnetic airborne responses.

LOCATION AND ACCESS

The Gun mineral claims are located at latitude

61°37' north and longitude 131°10' west on the north shore of Mink Lake on the Finlayson Lake map sheet. Mink Lake is situated at the headwaters of Mink Creek. The Gun group lies between elevations of 3500 and 4000 feet.

The lower elevations of the claim group are on the shores of Mink Lake that consists mainly of heavy muskeg. Higher elevations are mainly covered with dwarf birch (buck-brush) and some sparse spruce stands. This area is one of heavy "burn" and travel on foot is made difficult.

Access to the properties was made with the aid of aircraft only. Mink Lake is suitable for all aircraft equipped with floats and skis. A base camp was established on the northern shores of Mink Lake for examination of the Gun group. The camp was also serviced by helicopter from Ross River. Work on the property was administered from field offices at Ross River, 46 miles north of Mink Lake: constant communication was kept with the camp by means of single side-band radio. All expediting of supplies was done from Ross River.

PREVIOUS WORK

To the knowledge of Atlas Explorations, no previous mineral exploration had been carried out in the Grass Lakes area other than geologic mapping by the Canadian Geologic

Survey. Airborne surveys flown prior to the ground follow-up were completed in April of 1966.

GEOLOGY

The Gun Mineral Claim group lies in an area of low relief and extensive overburden, therefore there are no significant outcrops. However, surrounding outcrops indicate that the area is underlain by north-northeast striking and gently easterly dipping quartz biotite and quartz chlorite schists. Numerous small stocks of granodiorite are intrusive into the schists, one body about two miles in diameter crops out between the Gun and Gil groups. Thus, the geological environment of these claims is essentially identical to that in the Vangorda Creek-Dynasty area. Additional geologic information can be obtained from G.S.C. Map 8-1960, Finlayson Lake, by Wheeler, Green and Roddick.

TOPOGRAPHY AND GROUND CONDITIONS

The Gun mineral claims lie over a region of relatively low elevation which represents a portion of a broad intermontain valley at the junction of the Tintina valley and the Finlayson Lake valley. The claims are on the south slope of a broad hill that reaches elevations of about 4000 feet. The

direction of glaciation is from north to south and accumulations of till and overburden obscure significant outcrops within the area. Slopes into Mink Lake are gentle at about 10 degrees to the south.

Soils are thought to be transported, however, some parental material is evident and in these regions the soils are assumed to be remnant in nature. Over the lower elevations of the survey grid, a thick layer of muskeg provides a well developed "A" or organic zone. The "B" horizon is only partially developed in restricted areas as is the "C" horizon of parental material. Irregularities in local topography, drainage, vegetational cover and permafrost as well as glacial deposition features, prevented sampling of consistent soil horizons.

Vegetational cover consisted mainly of dwarf birch in a large area of burn. All drainage is to the south but locally is not well defined due to seasonal run-off conditions. Collective areas for drainage prevail over the southern end of the grid due to the shore bench of the lake.

SURVEY TECHNIQUES

Linecutting

The soil sampling survey was conducted over the same grids as used for the geophysical surveys, no extra

linecutting was required other than that done for the magnetic and electromagnetic work.[i]

Soil Sampling

The soil sampling survey was carried out in conjunction with the electromagnetic and magnetic survey. One soil sampler was employed for the entire survey.

The samples were obtained by use of a prospector's grub hoe which was found adequate as a tool for cutting through heavy layers of organic material overlying the soil. Samples were taken at 100 foot stations over the same grid area as geophysical data was obtained from.

Due to the inconsistency of specific soil horizons as well as variable depths to favorable horizons, samples were taken from an average depth of approximately one and one-half feet. Soils of the upper B horizon were usually encountered except in areas of much glacial till and over-burden. Soils of large organic content were not sampled. In areas of immature soils, the C horizon was sampled. Approximately 100 grams of soil from each sample site were placed in Kraft bags which were then periodically shipped to the soil testing laboratory at Ross River.

Method Analysis

All samples were analyzed at a complete testing laboratory at Ross River. When the samples were received,

i: See report "Magnetic and Electromagnetic Geophysical Surveys, Gun Mineral Claim Groups"

each was dried while in its Kraft bag, then screened to 80 mesh, weighed out to 0.5 grams and digested in hot aqua regia. Samples were then diluted, clarified for 20 hours and then tested for copper, lead and zinc content on an atomic absorption spectrophotometer. The "AA" unit used was a Perkins Elmer Model 290 and accuracy of the instrument ideally is 1% of the amount of metal present. Individual cathode lamps were used for each element determination, a direct readout is given of the element being tested and two determinations per minute can be made with ease.

Treatment of Data

All results of geochemical tests were returned to the field as soon as possible. Results in parts per million (ppm) were plotted on field data sheets kept by the field soil sampler. The field data sheets were kept as a record of each sample taken, noting particulars concerning drainage, topography, physiography, soil type and depth of sample. This information was compiled for use in further detailed geochemical studies.

Separate maps were preapred using a scale of 1" = 400', as was used for geophysical data, showing values obtained for copper, lead and zinc, profiles of values and contoured values. Contour intervals varied according to results obtained in parts per million. Maps for each element

were compiled separately in order to aid in comparative study of geophysical, geologic and geochemical results. A development map for each area has also been prepared showing general compilation of geochemical-geophysical data.

GEOCHEMICAL RESULTS

2235 geochemical soil samples were taken over the Gun mineral claims grid in the Grass Lakes area. These were analyzed for copper, lead and zinc values in parts per million. Contour and values maps have been prepared for the geochemical results on the same scale as maps used for presentation of geophysical results. A statistical analysis was made using simple frequency against values diagrams to determine background, threshold and anomalous values.

The frequency distribution curve for zinc indicates a mode value of 30 ppm and a background of 60 ppm. Values greater than 160 ppm are considered anomalous with the maximum values in the survey being in the order of 200 ppm. All samples were considered for the statistical analysis. (See Appendix I). All zinc results were contoured over 100 ppm in order that some geochemical trend could be established, if results over background were contoured only, no trend

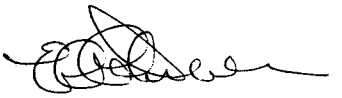
would be evident as values were of a single line nature. Examination of the contoured map for zinc (see map folder) shows that the general trend is northwest-southeast and probably conformable with the stratigraphy. Zinc anomalies are not generally coincident with geophysical results.

The frequency distribution curve for copper indicates a mode value of about 10 ppm and a background of 20 ppm, any values over 100 ppm are considered anomalous. Maximum values are in the order of 130 ppm copper, copper was contoured above 70 ppm. 10 areas over 70 ppm were outlined (see map in folder) most of which are coincident with zinc anomalies. Copper results show no exact coincidence with geophysical results.

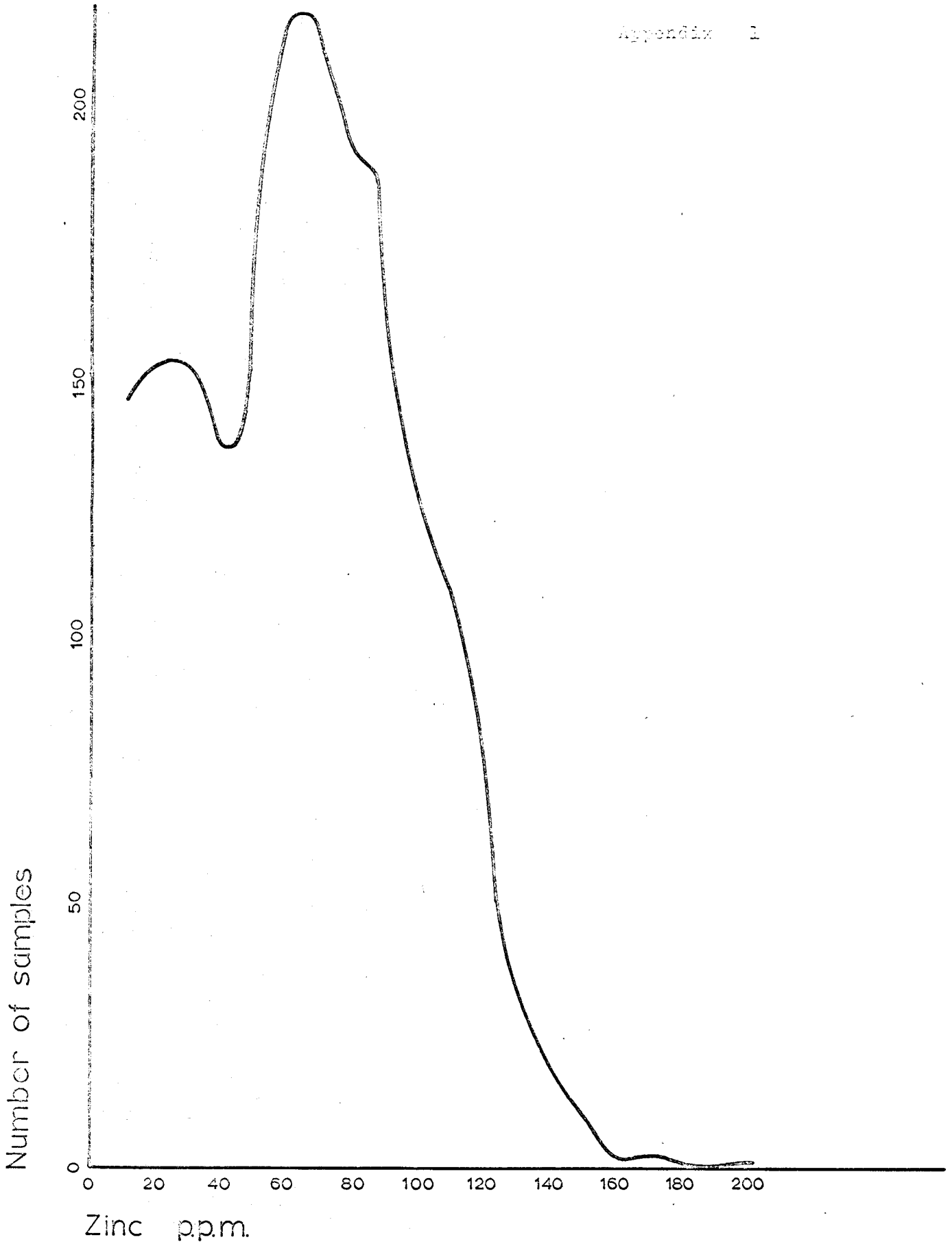
CONCLUSIONS AND RECOMMENDATIONS

Geochemical results do not appear to indicate any extensive zones representative of sulphide mineralization. Copper and zinc contours reflect areas that are probably underlain by geologic units that are normally geochemically high. If geophysical and geochemical results are both taken into consideration, there are no areas that warrant immediate investigation as follow up to results obtained to date.

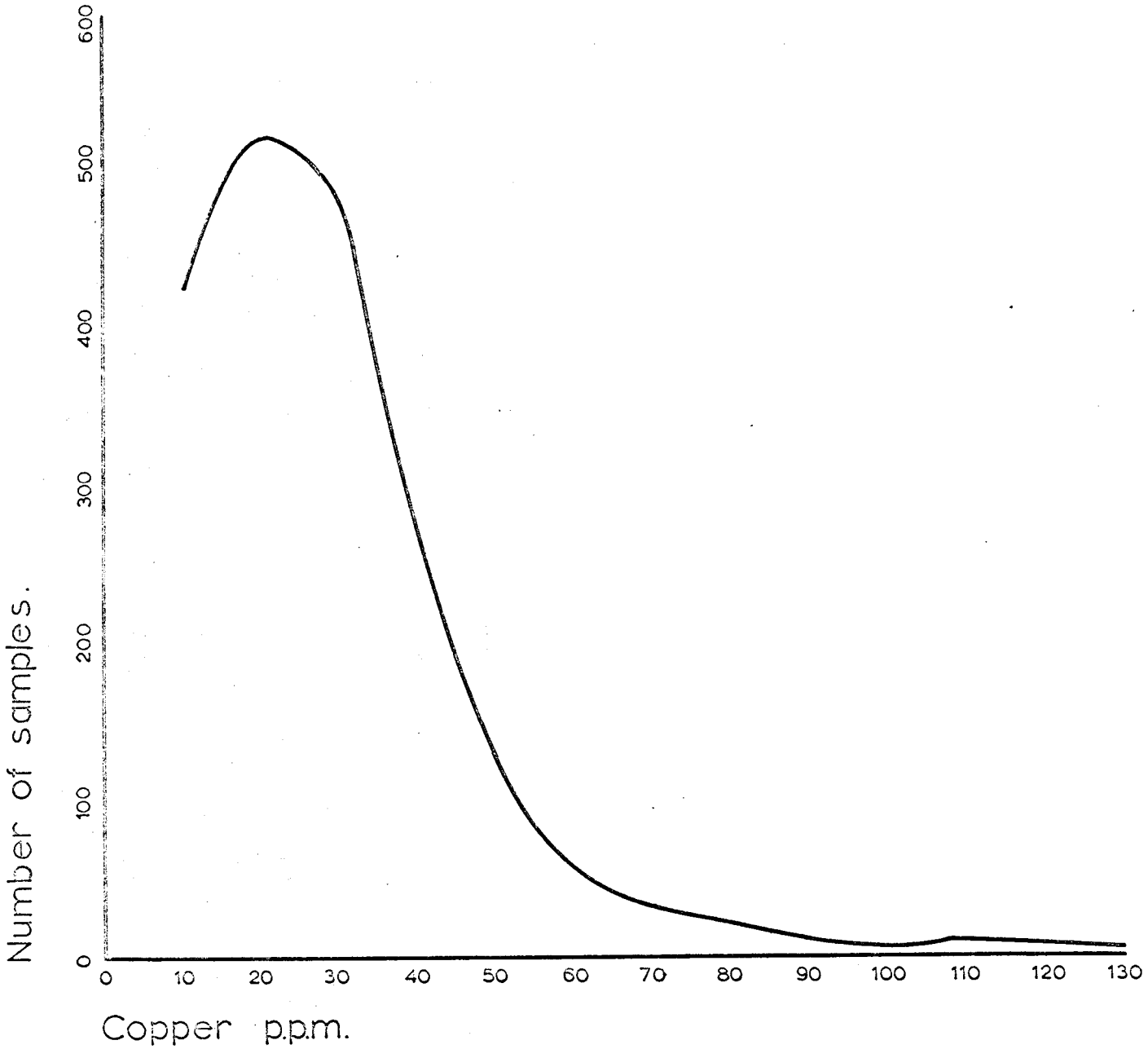
Respectfully submitted,



John S. Brock.



Geochemical Survey, Gun Mineral Claims, Statistical Analysis, Frequency Distribution Curve for Zinc Results, Soils Survey.



Geochemical Survey, Gun Mineral Claims, Statistical Analysis, Frequency Distribution Curve for Copper Results, Soils Survey.

APPENDIX II

GRASS LAKES AREA PROJECT
GUN MINERAL CLAIM GROUPS
GEOCHEMICAL SOIL SAMPLING SURVEY

SUMMARY OF COSTS

1.	Wages and salary, July 15, 1966 to August 6, 1966, 23 days at $20.00/day	$ 460.00
2.	Subsistence, room and board in the field at $12.00/man/day for 23 days	276.00
3.	Overall supervision of sampling survey at pre-rated cost of $10.00/man/day	230.00
4.	Aircraft support charges, fixed wing service from Ross River to Mink Lake, round trip 92 miles with Beaver aircraft @ $.75/mile, 4 trips total =	276.00
5.	Total cost analysis of samples for trace element content by atomic absorption photospectrometer method, 2235 samples at $2.50 each	5,587.50
6.	Preparation of report and presentation of data	500.00
	TOTAL	$ 7,329.50

TELEPHONE 685-4331

APPENDIX III

ATLAS EXPLORATIONS LIMITED
(N.P.L.)
330 MARINE BUILDING
355 BURRARD STREET
VANCOUVER 1, B.C.

AFFIDAVIT SUPPORTING SUMMARY OF COSTS

I, ~~JOHN S. BROCK, Assistant~~ E. O. Chisholm Exploration Manager of Atlas Explorations Limited, of Ross River, Yukon Territory, do hereby state that to the best of my knowledge and belief, the statement of costs as presented in this report "Geochemical Soil Sampling Survey - Gun Mineral Claim Groups" (Appendix II) is both correct and true.

~~John S. Brock~~
E. O. Chisholm

May 9, 1967.
Date

A Commissioner of Oaths in
and for the Yukon Territory

APPENDIX IV

PERSONNEL

B. Spanier	Soil Sampler	Vancouver, B. C.
R. W. Harvey	Party Chief	Vancouver, B. C.
J. S. Brock	Assistant Exploration Manager	Ross River, Y.T.
E. Clegg	Chief Soils Analyst	Ottawa, Ontario

All above-mentioned employees were under the employ of Atlas Explorations Limited as field exploration personnel for the year of 1966.

ATLAS EXPLORATIONS LTD.
ROSS RIVER YUKON
GRASS LAKES AREA
GUN MINERAL CLAIMS "GZ" GRID
GEOCHEMICAL - SOIL SAMPLING SURVEY
Cu, Pb & Zn RESULTS BY ATOMIC ABSORPTION
SPECTROPHOTOMETER ANALYSIS

Results in p.p.m. - Cu, Pb & Zn - 50, 67, 45
Soil sampler: H. Cameron
Partey chief: R. Harvey
Date: July, 1966 CLAIM POST 53/54 | 55/56
Drawn by:
Checked by:

SCALE
400 0 400 800 1200
1 inch to 400 feet

N

GUN 49/50 | 51/52

GUN 53/54 | 55/56

GUN 57/58 | 60

GUN 61/62 | 63/64

GUN 65/66 | 67/68

GUN 33/34 | 35/36

GUN 37/38 | 39/40

GUN 41/42 | 43/44

GUN 9/10 | 11/12

GUN 13/14 | 15/16

GUN 1/2 | 3/4

GUN 5/6 | 7/8

GUN 17/18 | 19/20

GUN 21/22 | 23/24

GUN 25/26 | 27/28

32N
28N
24N
20N
16N
12N
8N
4N
0
4S
8S
12S
16S
20S
24S
28S
32S
36S

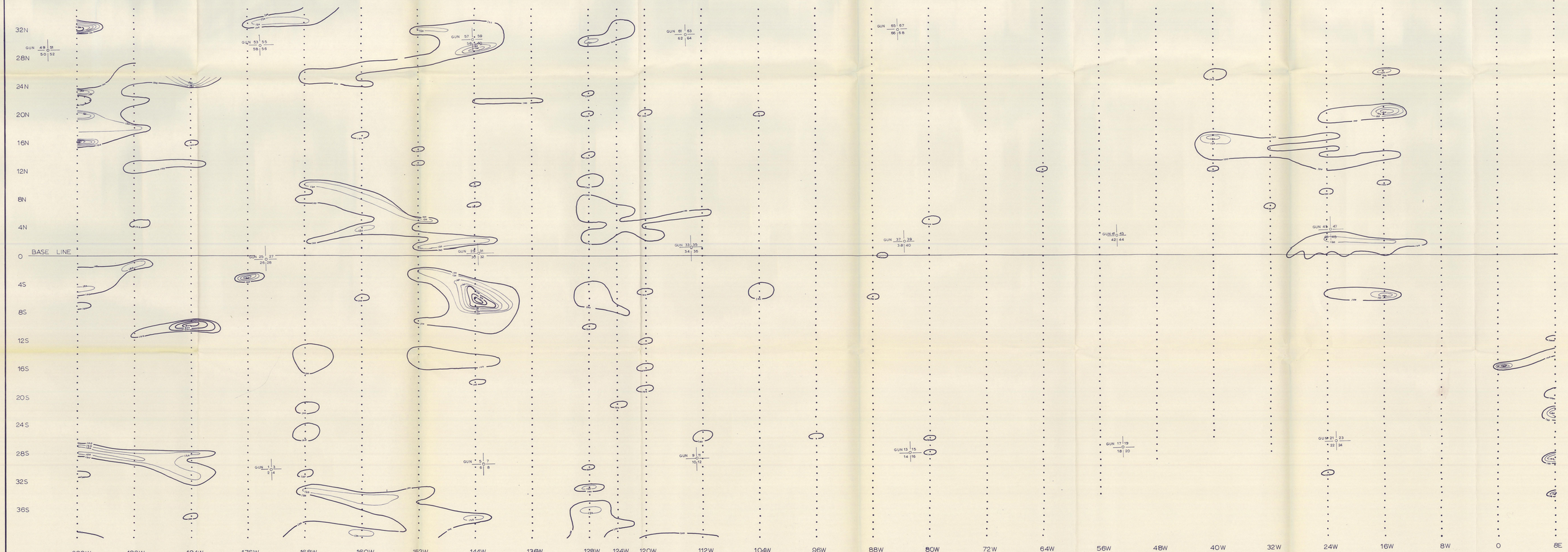
200W 192W 184W 176W 168W 160W 152W 144W 136W 128W 120W 112W 104W 96W 88W 80W 72W 64W 56W 48W 40W 32W 24W 16W 8W 0 8E

ATLAS EXPLORATIONS LTD.
ROSS RIVER, YUKON
GRASS LAKES AREA
GUN MINERAL CLAIMS "GZ" GRID
GEOCHEMICAL SOIL SAMPLING SURVEY
ZINC CONTOUR MAP

Contoured above 100 ppm
Contour interval 20ppm
Soil sampler: H Cameron
Party chief : R Harvey
Date : July 1966
Drawn by:
Scale 1" = 400'

CLAIM POST GUN 55 | 53 / 56 | 54

N



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ROSS RIVER, YUKON
GRASS LAKES AREA
GUN MINERAL CLAIMS "G.Z." GRID
GEOCHEMICAL SOIL SAMPLING SURVEY
COPPER CONTOUR MAP

Contoured above 70ppm
Contour interval: 10ppm
Soil sampler: H.Cameron
Party chief: R.Harvey
Date: July, 1966
Drawn by:
Scale: 1": 400'

CLAIM POST 53 | 55 / 54 | 56