



This report has been examined by  
the Geological Evaluation Unit.  
Approved as to technical worth by:  
D. C. Fridlay  
RESIDENT GEOLOGIST

Approved as to cost in the a. month  
of \$ 1931.00  
H. E. Hudson  
FIDELITY & SECURITY

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

REPORT ON THE GEOLOGY AND GEOCHEMISTRY

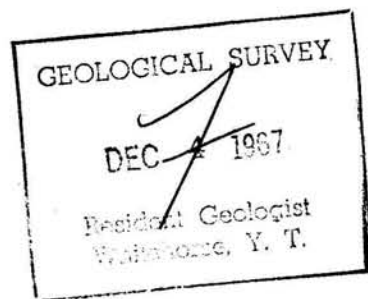
OF THE AH MINERAL CLAIMS

Longitude: 136° 04'

Latitude: 61° 43'

N. T. S. 115-H-9

June 3 - June 9, 1967



by

Robert J. Darney

ATLAS EXPLORATIONS LIMITED

Approved  
[Signature]

## T A B L E   O F   C O N T E N T S

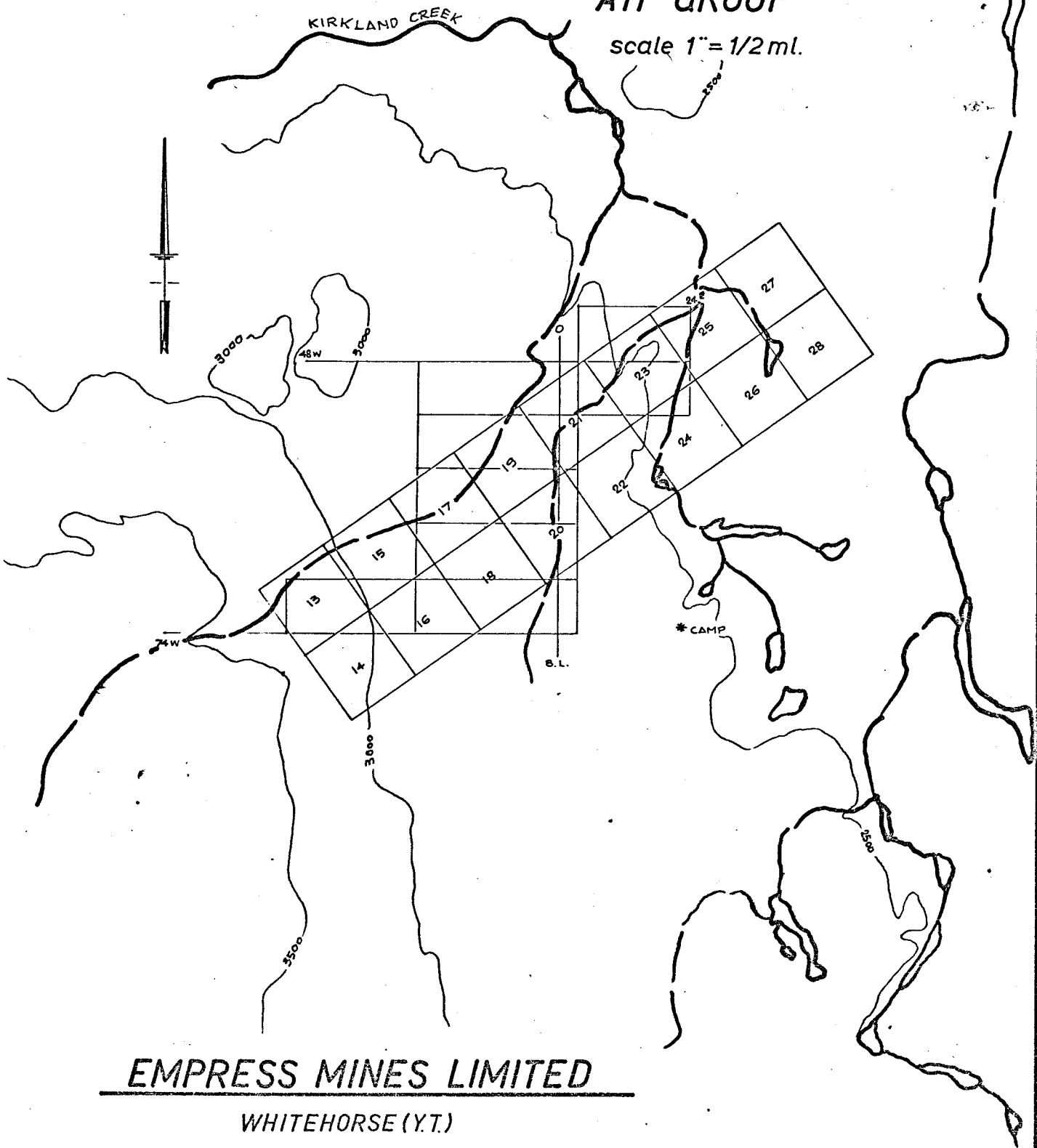
|                                 | <u>Page</u>                     |
|---------------------------------|---------------------------------|
| Key Map                         | -                               |
| List of Claims                  | -                               |
| Introduction                    | 1                               |
| Location and Access             | 1                               |
| Geology                         | 2                               |
| Geochemistry                    | 3                               |
| Method of Analysis              | 3                               |
| Conclusions and Recommendations | 4                               |
| <br>                            |                                 |
| Appendix   I                    | Summary of Costs                |
| Appendix   II                   | Affidavit                       |
| Appendix   III                  | Personnel                       |
| Appendix   IV                   | Map Folder - Geology            |
| Appendix   V                    | Map Folder - Geochemical Values |
|                                 | - Geochemical Cu Contours       |
|                                 | - Geochemical Silt Samples      |

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# KEY MAP OF CLAIMS + GRID

## AH GROUP

scale 1" = 1/2 ml.



**EMPRESS MINES LIMITED**

WHITEHORSE (Y.T.)



L I S T   O F   C L A I M S

| <u>Claim Numbers</u> | <u>Grant Numbers</u> | <u>Date Recorded</u> |
|----------------------|----------------------|----------------------|
| AH 13-28             | Y11181 - Y11196      | November 18/66       |

## Introduction

On November 18, 1966, the AH 13-28 mineral claims were staked in a geologically favourable area within a belt of aeromagnetic highs. Staking was carried out for the Atlas Hossie Syndicate under the direction of Ivor Mast of Whitehorse, Y.T. The claims were then transferred to Empress Mines Limited on December 28, 1966.

## Location and Access

The AH 13-28 mineral claims are located 78 air miles N.N.E. of Whitehorse on claims sheet 115-H-9 - Longitude  $136^{\circ}04'$ , Latitude  $61^{\circ}43'$ . During summer months, access to the property can be made by wheeled vehicle to the Twin Lakes area and then 5 miles by helicopter from Twin Lakes to the property. Twin Lake is also suitable for float-equipped aircraft.

## Geology

Regional geology was done by R. Chaplin and A. Reinsbacken in the summer of 1966, and follow-up mapping on a 1" = ½ mile scale was done by R. Vogwill, Atlas Explorations, in the summer of 1967.

The mineral claims lie in a "structurally favourable area" of Mesozoic volcanic rocks which border a diorite intrusive. The volcanics consist of a volcanic breccia and andesite. In the N.E. portion of the claims, the breccia is composed entirely of volcanic fragments, while, to the S.W., some sedimentary fragments (chert, limestone) appear. The andesite is fine-grained, dark grey, and usually contains associated pyrite and magnetite.

The area is cut by a number of N.E.-S.W.-trending faults, and in the N.E. portion of the claims the volcanic breccias and andesites are highly sheared, metamorphosed, and contains calcite veins along joints. Associated dyke rocks consist of feldspar, probably hornblende and augite porphyries.

A small showing at 3 + 00 on the base line consists of andesite breccia and fine-grained andesite containing minor chalcopyrite.

## Geochemistry

Several high copper results were obtained in a regional geochemical silt sampling program in the summer of 1966. As a follow-up, in the summer of 1967, samples were taken upstream from previous high values at 400' or 500' spacings. Where no appreciable sediment was available, soil samples were taken from the stream banks instead of silts.

Soil sampling was also carried out at 300' intervals on a grid with lines 1000 ft. apart running East-West. Results following this sampling procedure proved favourable, therefore intermediate lines at 300' spacings were sampled at 200' intervals on the North section of the grid. Within the North section, 6 anomalous highs were outlined. They are arranged in a circular pattern and peak values vary between 150 and 350 p.p.m. Several of these anomalous highs have not yet been closed to the North.

A total of 257 samples were taken in the area.

## Method of Analysis

All samples were analyzed at a complete testing laboratory at Ross River. When the samples were received, 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 303 and accuracy of the instrument ideally is 1% of the amount of metal present.

Conclusions and Recommendations

The geochemical anomalies are peripheral to an intrusive diorite plug. Their association with highly sheared and brecciated rocks in an area of high airborne magnetics suggests a porphyry-type situation. In an attempt to determine if some form of relationship can be made between the geochemistry and ground magnetics, a cut grid, for control, should be put over the area of interest.

The area is quite heavily covered by overburden and very little copper mineralization is visible. It is therefore necessary to do geological mapping and prospecting on a much more detailed scale.

Because the anomalous area lies in the north portion of the grid area and off the North side of the claim block, I recommend that a double row of claims to the north and double row to the south be staked for protection measures.

Respectfully, submitted



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R. DARNEY

SUMMARY OF COSTS

| <u>Wages</u>                  |   | \$         |
|-------------------------------|---|------------|
| R. Vogwill                    | - 7 days @ \$20.83/day (Geology)                    | 145.81     |
| L. Bill                       | - 7 days @ \$20.00/day (Geochemistry)               | 140.00     |
| C. Green                      | - 7 days @ \$15.83/day (Geochemistry)               | 110.81     |
| D. Lightfoot                  | - 7 days @ \$14.16/day (Geochemistry)               | 99.12      |
| <br><u>Analysis Cost</u>      |   |            |
|                               | 146 @ \$1.90/sample                                 | 277.40     |
|                               | 40 @ \$2.40/sample                                  | 96.00      |
|                               | 71 @ \$1.90/sample                                  | 134.90     |
| <br><u>Subsistence Cost</u>   |   |            |
|                               | 28 man/days @ \$8.00 per day                        | 224.00     |
| <br><u>Travel</u>             |   |            |
|                               | Vehicle - approximately 200 miles<br>@ 15¢ per mile | 30.00      |
| <br><u>Helicopter Support</u> |   |            |
|                               | 3.8 hours @ \$110.00                                | 418.00     |
|                               | 2.5 hours @ \$102.00                                | 255.00     |
|                               |   | <hr/>      |
|                               |   | \$1,931.00 |
|                               |   | <hr/>      |

AFFIDAVIT SUPPORTING SUMMARY OF COSTS

I, Richard I.J. Vogwill, Geologist for Atlas Explorations Ltd., of Whitehorse, Y.T. do hereby swear that I believe the SUMMARY OF COSTS as presented in this report "Geochemical Surveys and Geological Mapping. AH13-28, Twin Lakes area", is both true and correct to the best of my knowledge and belief.

Richard I.J. Vogwill  
Richard I.J. Vogwill.

August 27/1967  
Date.

Richard I.J. Vogwill  
A commissioner of Oaths in  
and for the Yukon Territory.

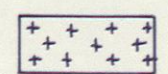
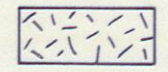
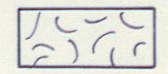
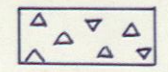
Whitehorse, Y.T.  
Delivered at Whitehorse, Y.

PERSONNEL


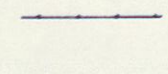


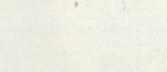
Richard Vogwill - Party Chief Geologist  
Chris Green . Soil Sampler  
Dave Lightfoot - Soil Sampler  
Lawrence Bill - Soil Sampler

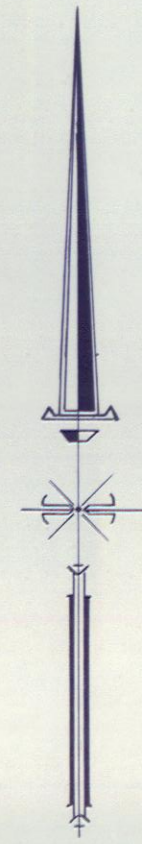
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LEGEND:

-  DYKE ROCKS
-  DIORITIC INTRUSIVE
-  ANDESITE
-  VOLCANIC BRECCIA

SYMBOLS:

-  DIP & STRIKE OF BEDDING + CONTACTS
-  JOINTS
-  POSSIBLE FAULTS
-  DIP + STRIKE OF MAJOR CALCITE FILLED JOINTS
-  STREAMS



**EMPRESS MINES LIMITED**  
**WHITEHORSE (Y.T.)**  
**A.H. MINERAL CLAIMS**  
**GEOLOGY**

GEOLOGY BY: R. VOGWILL      DRAWN BY: R.J.F. VLASWELD  
 DATE: NOV. 1967

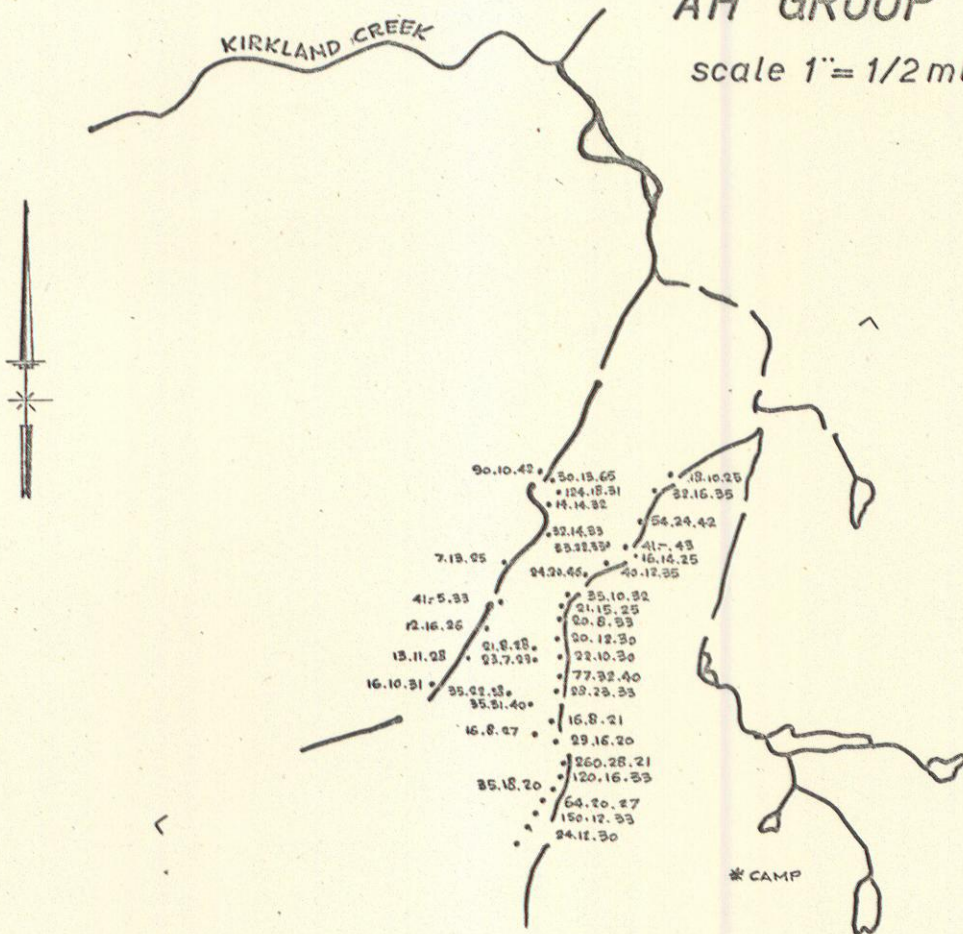
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 SCALE IN FEET

# GEOCHEMICAL SOIL SAMPLING SURVEY

## Cu, Pb, Zn. Results

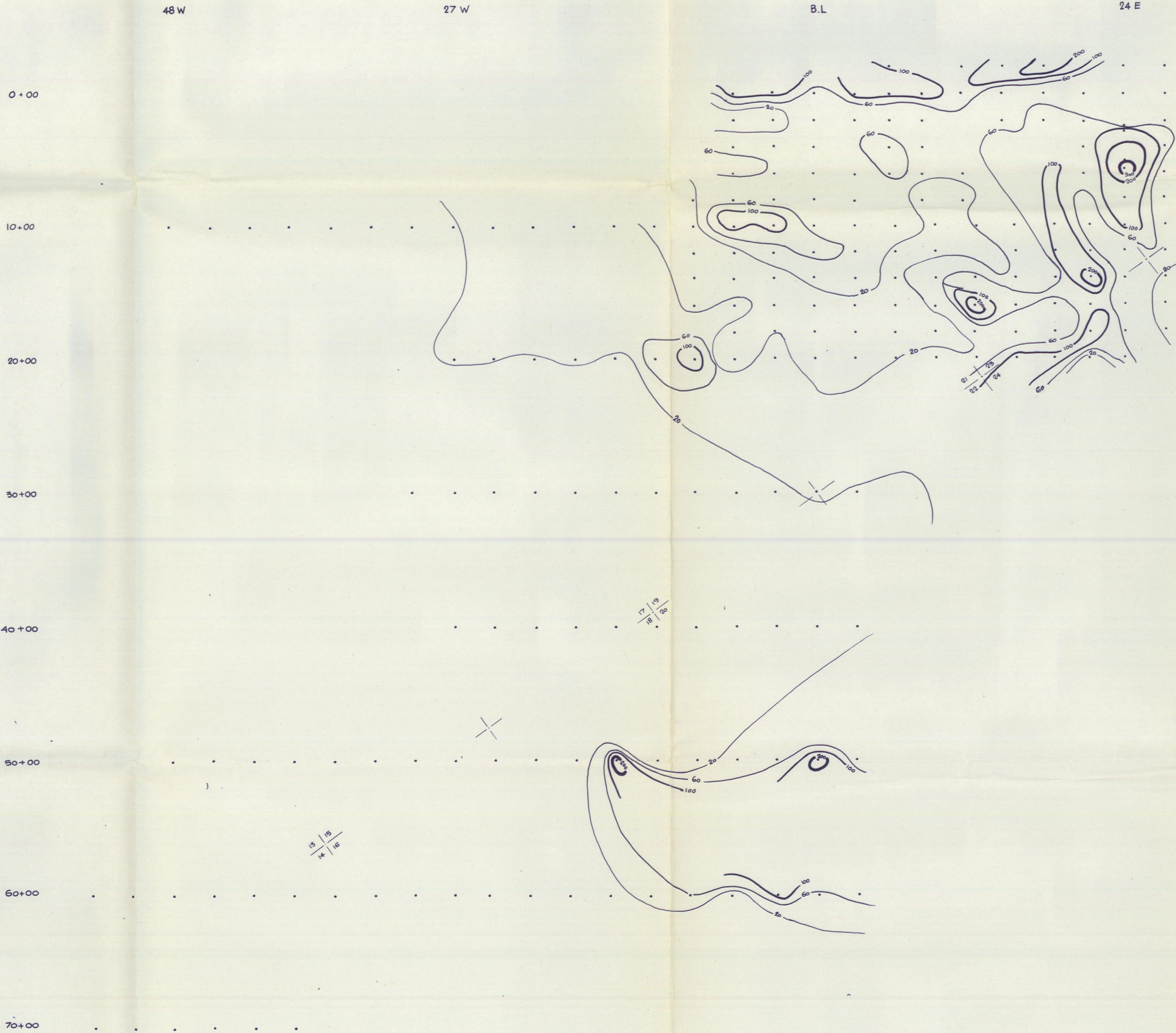
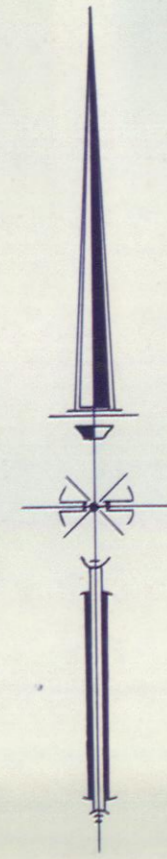
### AH GROUP

scale 1" = 1/2 ml.



EMPRESS MINES LIMITED

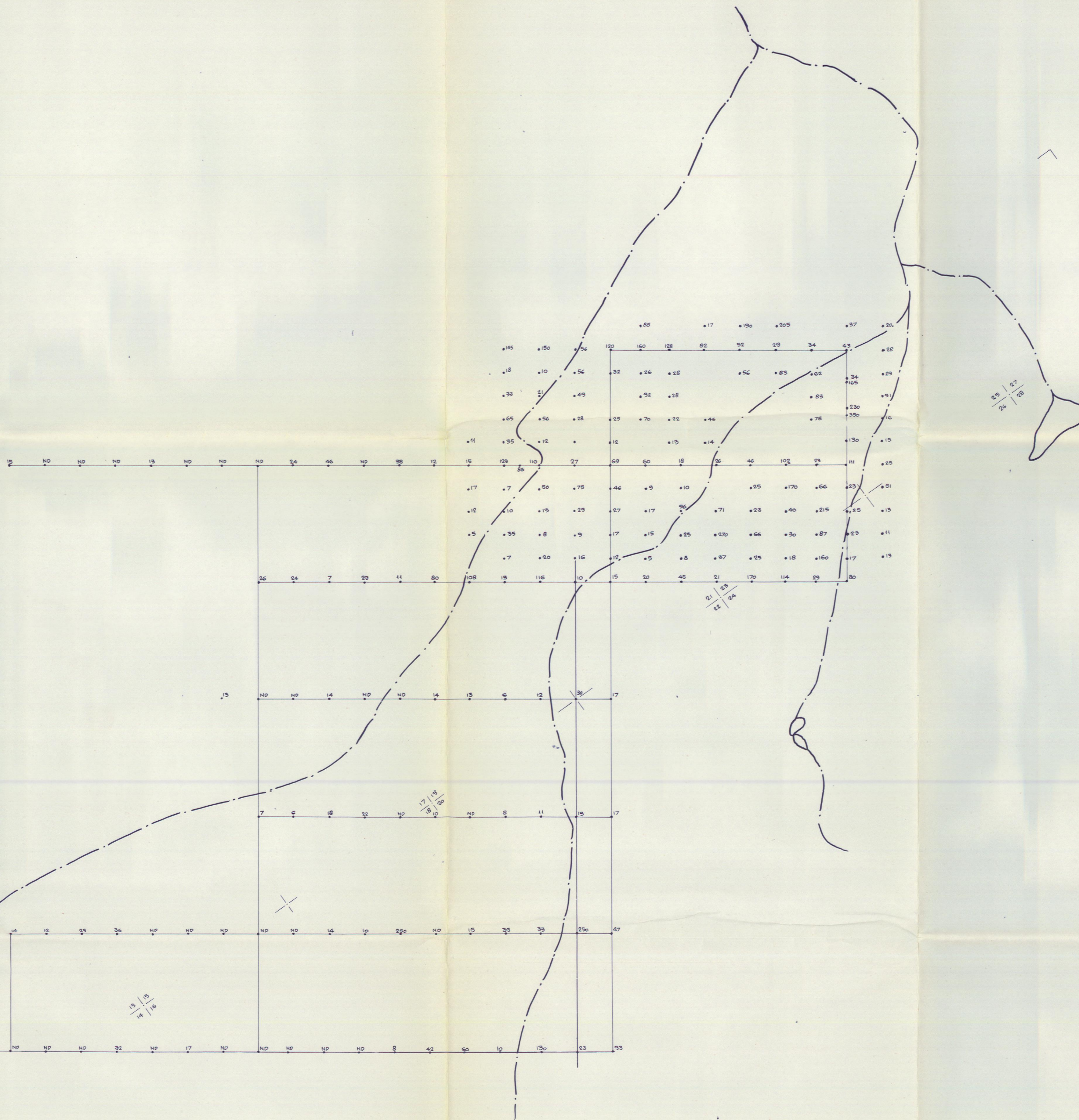
WHITEHORSE (Y.T.)



**EMPRESS MINES LIMITED**  
**WHITEHORSE (YT)**  
**A.H. MINERAL CLAIMS**  
**GEOCHEMICAL SOIL SAMPLING SURVEY**  
**CONTOURS** Cu

SOIL SAMPLERS: C. GREEN 20, 60, 100, 200, 500 p.p.m. DRAWN BY: R.J.F. VASVELD  
P. LIGHTFOOT DATE: NOV. 1967

500 0 500 1000  
SCALE IN FEET CLAIM POST 17 19  
18 20



44 12 4 12 7 8

**EMPRESS MINES LIMITED**  
**WHITEHORSE (Y.T.)**  
A.H. MINERAL CLAIMS  
GEOCHEMICAL SOIL SAMPLING SURVEY  
VALUES CU

SOIL SAMPLERS: C. GREEN  
D. LIGHTFOOT

DRAWN BY: P.J. VLASVELD  
DATE: NOV. 1967

SCALE IN FEET

CLAIM POST  $\frac{17}{18} \frac{19}{20}$