

~~GEOLOGICAL~~
GEOCHEMICAL

REPORT ON THE TOM,
RED CHIEF and HAPPY DAY CLAIM GROUPS,
5 miles N.E. of Cranbrook, Forte Steel. M.P.
115° 43' W., 49° N. N.W.

CINDY MINES LTD 82G/12E

By A.C.A. Howe.

July 25-Aug 25, 1967

9415

945

REPORT ON GEOCHEMICAL SURVEY

CINDY MINES LIMITED

CRANBROOK AREA, KOOTENAY DISTRICT, B.C.

BY

A. C. A. HOWE & ASSOCIATES LTD.

This is Exhibit "B" referred to in
the affidavit of William James
sworn before me at Vancouver
in the Province of British Columbia,
this 22 day of February 1966

[Signature]
A Commissioner for taking Affidavits
within British Columbia

Toronto, Ontario
Report No. 27

October, 1966

CONTENTS

| | <u>PAGE NO.</u> |
|---------------------------------|-----------------|
| SUMMARY | 1 |
| LOCATION OF SURVEY | 3 |
| PURPOSE OF THE SURVEY | 3 |
| SURVEY METHOD | 3 |
| ANOMALOUS ZONES | 4 |
| CONCLUSIONS AND RECOMMENDATIONS | 5 |
| CERTIFICATE | |

CONTENTS

| | <u>PAGE NO</u> |
|--------------------------------------|----------------|
| SUMMARY | 1 |
| LOCATION OF SURVEY | 3 |
| PURPOSE OF THE SURVEY | 3 |
| SURVEY METHOD | 3 |
| ANOMALOUS ZONES | 4 |
| CONCLUSIONS AND RECOMMENDATIONS | 5 |
| CERTIFICATE | |
| FURTHER INFORMATION ON SURVEY METHOD | APPENDIX |

MAPS AND ILLUSTRATIONS

| | |
|---------------------------------|-------------|
| GEOCHEMICAL SURVEY MAP <u>I</u> | BACK FOLDER |
|---------------------------------|-------------|

APPENDIX

Further information on sampling methods and soil types as outlined in the section on page 3(three) entitled SURVEY METHOD.

Samples were taken with a grub hoe from the upper part of the B soil horizon, which is devoid of any organic material. They were packaged in paper soil sample bags, sealed with waterproof glue.

SUMMARY

A geochemical survey was carried out on the property of Cindy Mines Limited to follow up a geological survey carried out by J. Willars, Geologist.

There are known copper showings on the property related to diorite dykes. These dykes were outlined by the geological survey and appeared to occur as flat-lying sills trending in a northeasterly direction across the entire western portion of the property.

The purpose of the geochemical survey was to select areas in which concentrations of copper may have occurred on the property. Several areas of anomalous readings were indicated by the geochemical survey. The area in which greatest concentration of copper in the soil is indicated lies close to known copper mineralization. However, indications of copper do occur in the southwestern section of the property.

It is recommended that an induced polarization survey be carried out over selected areas of the property namely those areas in which geochemical anomalies were obtained. Approximately four miles of I.P. Survey is recommended estimated to cost \$1,500.00.

It is recommended also that diamond drilling be

carried out on the property to follow up the results of the induced polarization and geochemical surveys. A minimum of 1500' of drilling is recommended and estimated to cost \$17,000.00.

LOCATION OF SURVEY

The geochemical survey was carried out over the western portion of the property and followed north-south lines previously cut for the geological survey.

PURPOSE OF THE SURVEY

The survey was run in order to outline anomalous areas of copper mineralization, particularly along the strike of the diorite dykes.

SURVEY METHOD

The survey was carried out by the crews of A. C. A. Howe & Associates Ltd. The soil samples were collected by R. Belknap and the soil analysis was carried out under the direction of S. S. Tan.

The samples were collected along a grid cut north-south on the property at 400' intervals. Samples were collected at 100' intervals along these lines. The soil samples were collected in the conventional manner and all samples were dried. All drying was done at a temperature of not more than 250°F. All samples were screened.

Samples were tested using chemicals supplied

from Jens Mogensen's Geochemical Laboratory, 2 Thorncliffe Park Drive, Leaside, Ontario. All results were taken from cold Total Heavy Metal tests, (Ammonium citrate buffer; xylene plus dithizone strips yielding the dithizone solution) and as directed and interpreted according to instructions provided by Mogensen when using the 0.3 gm. pellet size.

ANOMALOUS ZONES

An anomalous area has been indicated overlying the known copper showings in the northern half of the surveyed area. This anomalous area covers lines 0 + 00 to 16 + 00 east from the base line north to 2600' and also lines 20 + 00 to 32 + 00 west inclusive from the base line north to 2000'.

In addition, an anomalous area has been indicated south of the base line on lines 4 + 00 to 32 + 00 west inclusive from 1000' - 3000' south. The diorite dykes run through the northern anomalous areas, and in known copper mineralization makes this area very interesting.

The southern area is related to folding in the sediments on the east side of the dykes and the anomaly is also related to the dykes.

CONCLUSIONS AND RECOMMENDATIONS

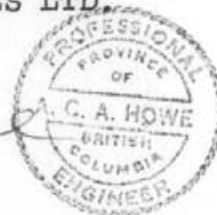
Owing to the fact that geochemical surveys are intended as a method of indicating the presence of anomalous base metal values rather than precisely locating the source of these values, further work to locate the source of the metals is recommended.

The two anomalous areas, north and south sections of the areas surveyed, and as described in the section on Survey Results, should be tested by Induced Polarization Surveys.

It is estimated that a total of four miles of I.P. Survey is required, and this will enable drill targets to be selected more accurately than can be done from results of the geochemical survey alone. However, there is one drill target that should be drilled in any event which is a 500' hole below the known copper showing. This hole will evaluate the known copper zone by indicating whether values increase with depth and whether the diorite dyke has produced replacement zones at depth. Other drill targets will be selected on the basis of the I.P. Survey, however a minimum of 1500' of drilling is recommended. The cost

of the I.P. Survey is estimated to be \$1500.00 and the estimated cost of the diamond drill program is \$15,000.00.

Respectfully submitted,
A. C. A. HOWE & ASSOCIATES LTD.



A. C. A. Howe, P. Eng.

Expiry Date October 20, 1966

CERTIFICATE

I, A. C. A. Howe of the City of Toronto, in the County of York, Province of Ontario, hereby certify that:

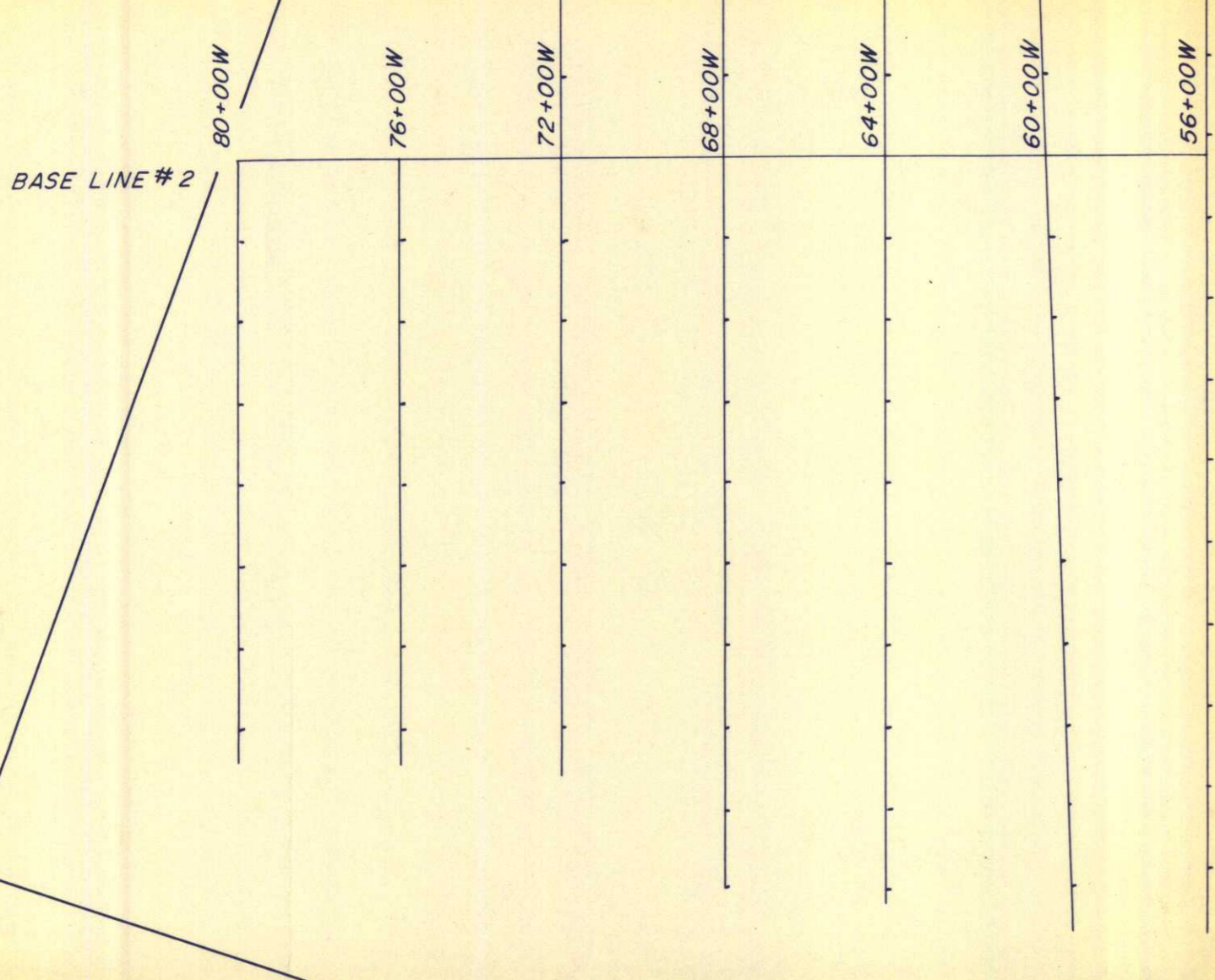
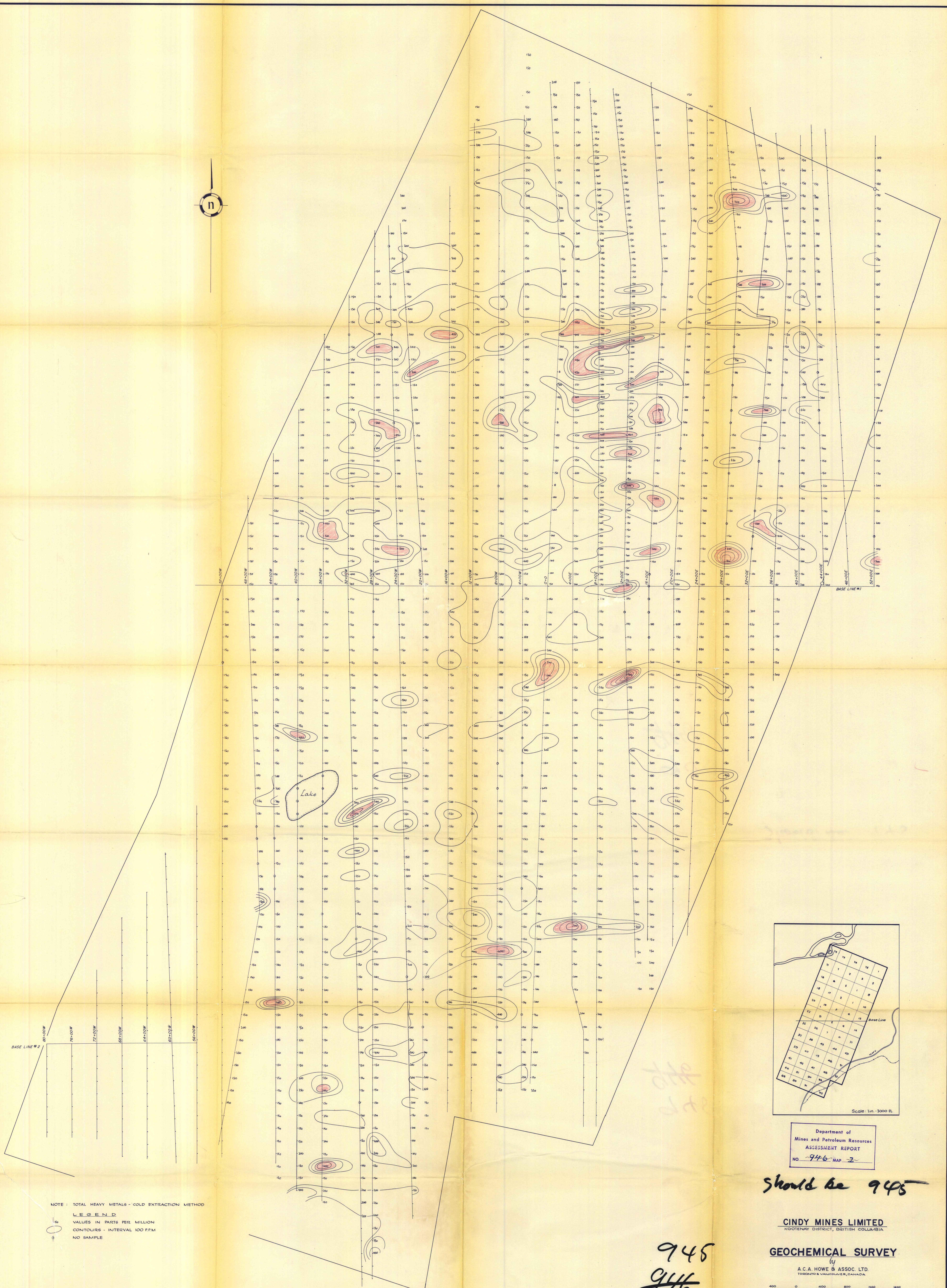
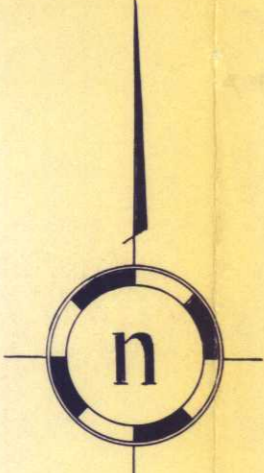
1. I am a Mining Engineer with offices at 826-159 Bay Street, Toronto, Ontario and 201-543 Granville Street, Vancouver, B.C.
2. I am a member of the Association of Professional Engineers of Ontario and the Professional Engineers of British Columbia.
3. I am a graduate of London University, England, B.Sc. in 1949.
4. I have no interest, direct or indirect, in either the property or securities of Cindy Mines Limited, nor do I expect to receive any such interest.
5. This report is based upon results of geological and geochemical surveys conducted on the property under the supervision of A. C. A. Howe & Associates Ltd.

DATED at Toronto, Ontario this 20th day of October, 1966.


A. C. A. Howe, P.Eng.

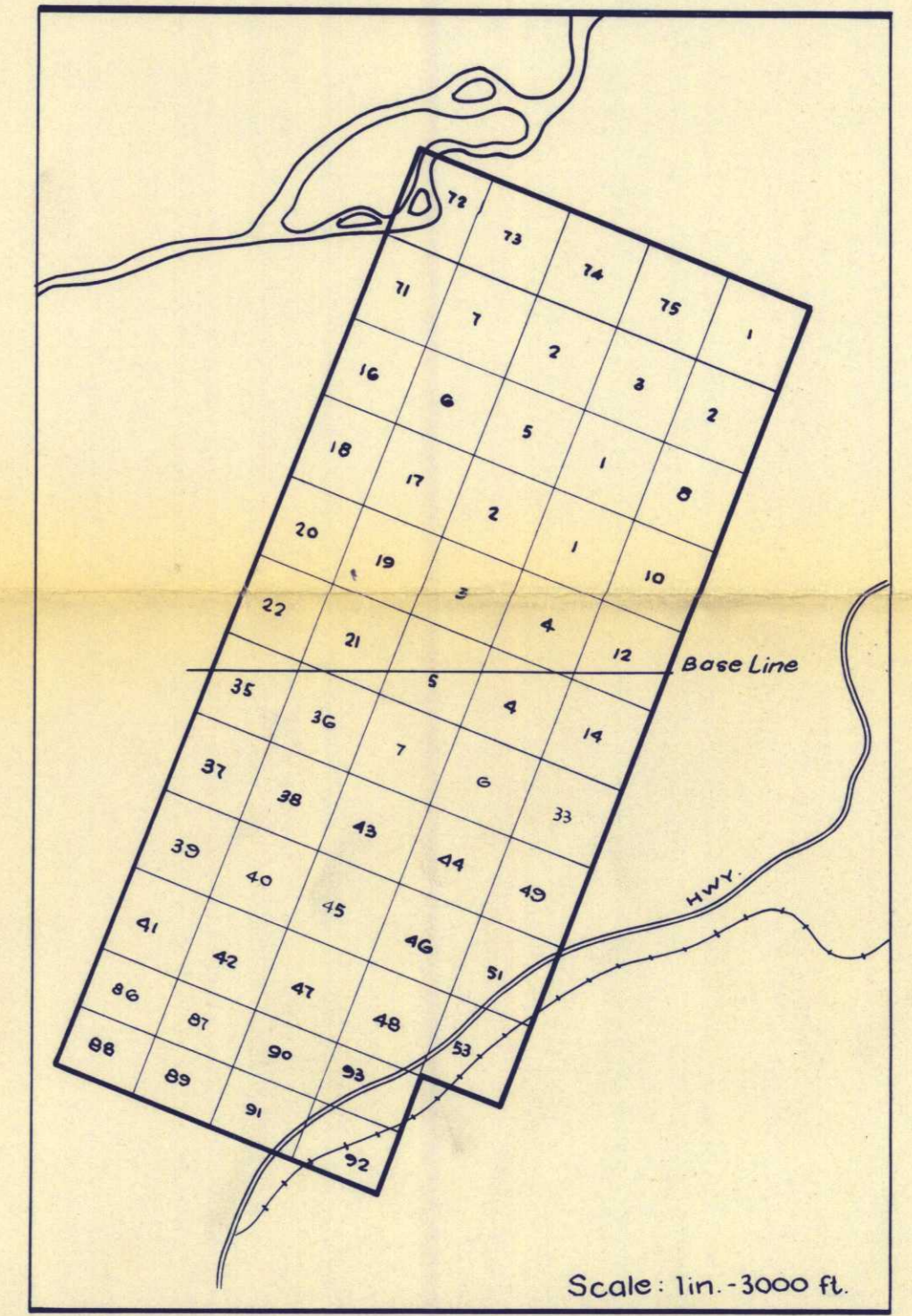


Expiry Date October 20, 1965



NOTE: TOTAL HEAVY METALS - COLD EXTRACTION METHOD

LEGEND
 ○ VALUES IN PARTS PER MILLION
 — CONTOURS - INTERVAL 100 PPM
 ∅ NO SAMPLE



Department of
 Mines and Petroleum Resources
 ASSESSMENT REPORT
 NO. 946 MAP 2

Should be 945

CINDY MINES LIMITED
 ROOSTERYAN DISTRICT, BRITISH COLUMBIA

GEOCHEMICAL SURVEY

by
 A.C.A. HOWE & ASSOC. LTD.
 TORONTO & VANCOUVER, CANADA

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946

To accompany geochemical report by A.C.A. Howe
 on the Tom's Red Chief + Happy Day Groups, near
 Cranbrook in the Fort Steel Mining Division, October, 1966