# GEOLOGICAL AND GEOCHEMICAL

# REPORT ON THE REN 1

# MINERAL CLAIM

Vernon Mining Division

NTS 82E/15E

| | | |
|---|---|---|
| Claim | : | REN 1 |
| Location | : | 49°54'N<br>118°33'W |
| Owner | : | Kelvin Energy Ltd. |
| Operator | : | Kelvin Energy Ltd. |



By: Alan M. White B.Sc.(hons)
Kelvin Energy Ltd.
January, 1980

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## A. INTRODUCTION

### General Statement

The Ren 1 mineral claim was geologically mapped, geochemically sampled and prospected by Kelvin Energy Ltd. personnel during the 1979 summer field season, as part of an evaluation of Kelvin Energy Ltd.'s extensive holdings in the Kettle River-Granby River area. The main purpose of the program was to evaluate the base metal potential of this claim, due to its proximity to the Au, Silver Spot, lead, zinc, silver, copper prospect, however all geochem samples were also analysed for uranium and scintillometers were carried at all times to check for radiometrically anomalous areas.

The results of this geologic mapping, geochemical sampling and prospecting program on the Ren 1 mineral claim are presented on a series of maps and discussed in this report.

### Location, Access and Topography

The Ren 1 mineral claim is located in the Vernon Mining Division at approximately 49°54'N, 118°33'W on NTS map sheet 82E/15E. It is two kilometers north of Lightning Peak on Waterloo Creek. (Figure 1)

The property is easily accessible by a good summer road. From Highway #6 it is approximately 23 kilometers up the Banting Creek road, to the property.

The property covers a fairly flat lying area between 1675m and 1770m elevation on the north slope of Lightning Peak. The property is drained by Waterloo Creek but there are still many swampy areas. The trees have not been cut or burned in recent years so there are many quite large trees.

There are abundant possible camp locations with adequate fresh water supplies on the property.

### Claim

The Ren 1 mineral claim is owned by Kelvin Energy Ltd., 434 Calgary House, 550 - 6th Avenue S.W, Calgary, Alberta T2P OS2.

| Claim | # of units | Date of Record | Record No. |
|---|---|---|---|
| Ren 1 | 12 | May 24, 1978 | 439 |

The claim overlaps some previously staked claims (GRIZ 1, GRIZ 2, GRIZ 3 and GEO 1) so instead of the 300 hectares claimed, it actually consists of 210 to 220 hectares.

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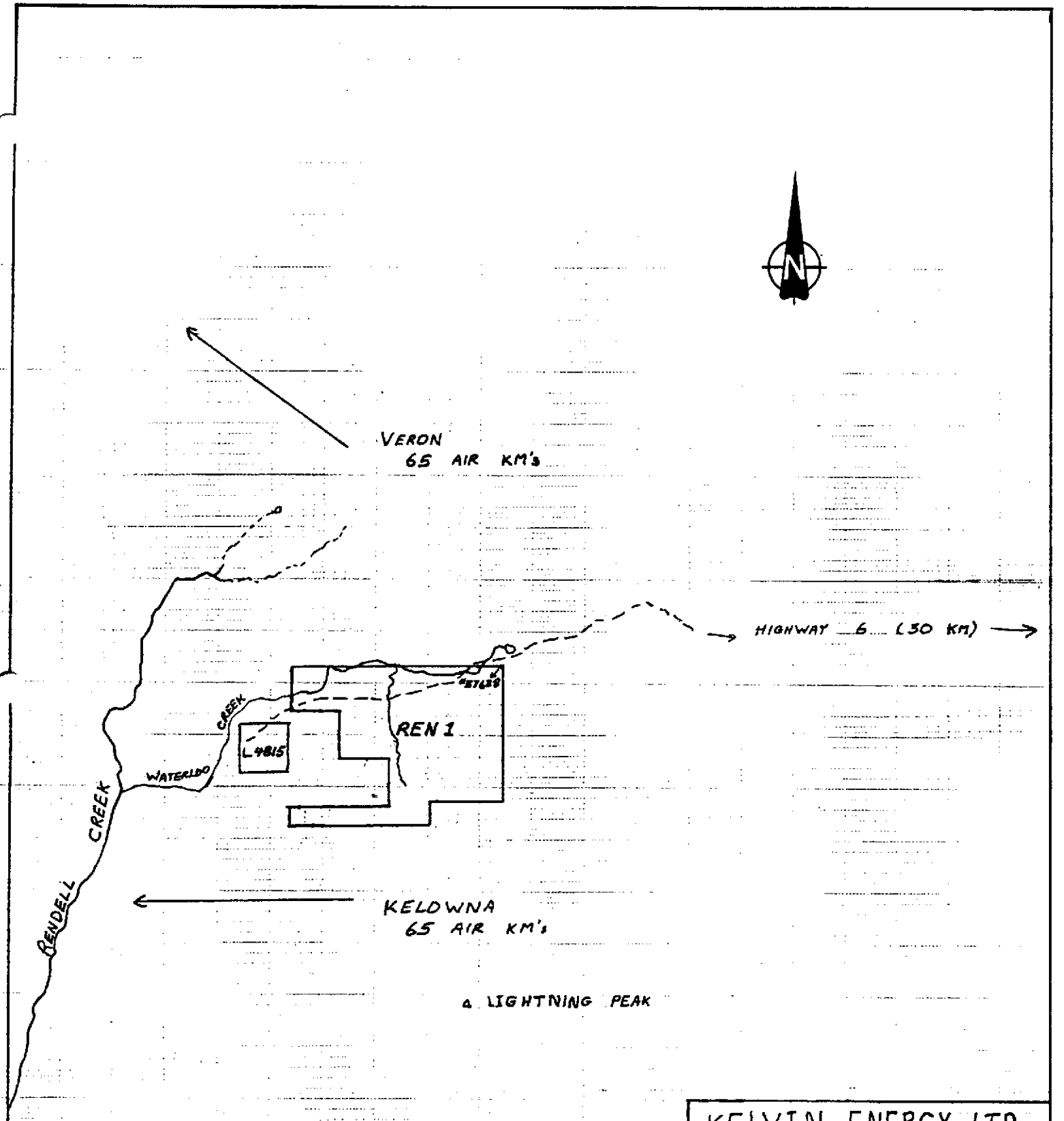



KELVIN ENERGY LTD.

# LOCATION MAP OF REN "1" CLAIM

FIGURE 1

| | | |
|---|---|---|
| TO ACCOMPANY REPORT BY: A. wolfe | SCALE 1:50,000 | DATE AUG. 14/79 |
| | NTS 82 E/15 | DRAWN BY A. WHITE |

B. GEOLOGY

Scope of Geologic Mapping and Prospecting Program

The property was geologically mapped at a scale of 1:15,840 using British Columbia Government airphotos of the same scale for control. Observations in the field were plotted on mylar overlays of these photos, and were later transferred to base maps of the same scale, made from a blow up of 1:50,000 topographic map 82E/15 (Figure 2).

Outcrop areas apparent on the airphotos were examined in the field and prospected. Pace and compass traverses, between recognizable points, were made to find and examine outcrop areas not visible on the airphotos.

During daily traverses an Urtec scintillometer was carried by each crew member to monitor background radioactivity and locate anomalously high radioactive areas.

Results of the Geologic Mapping and Prospecting Program

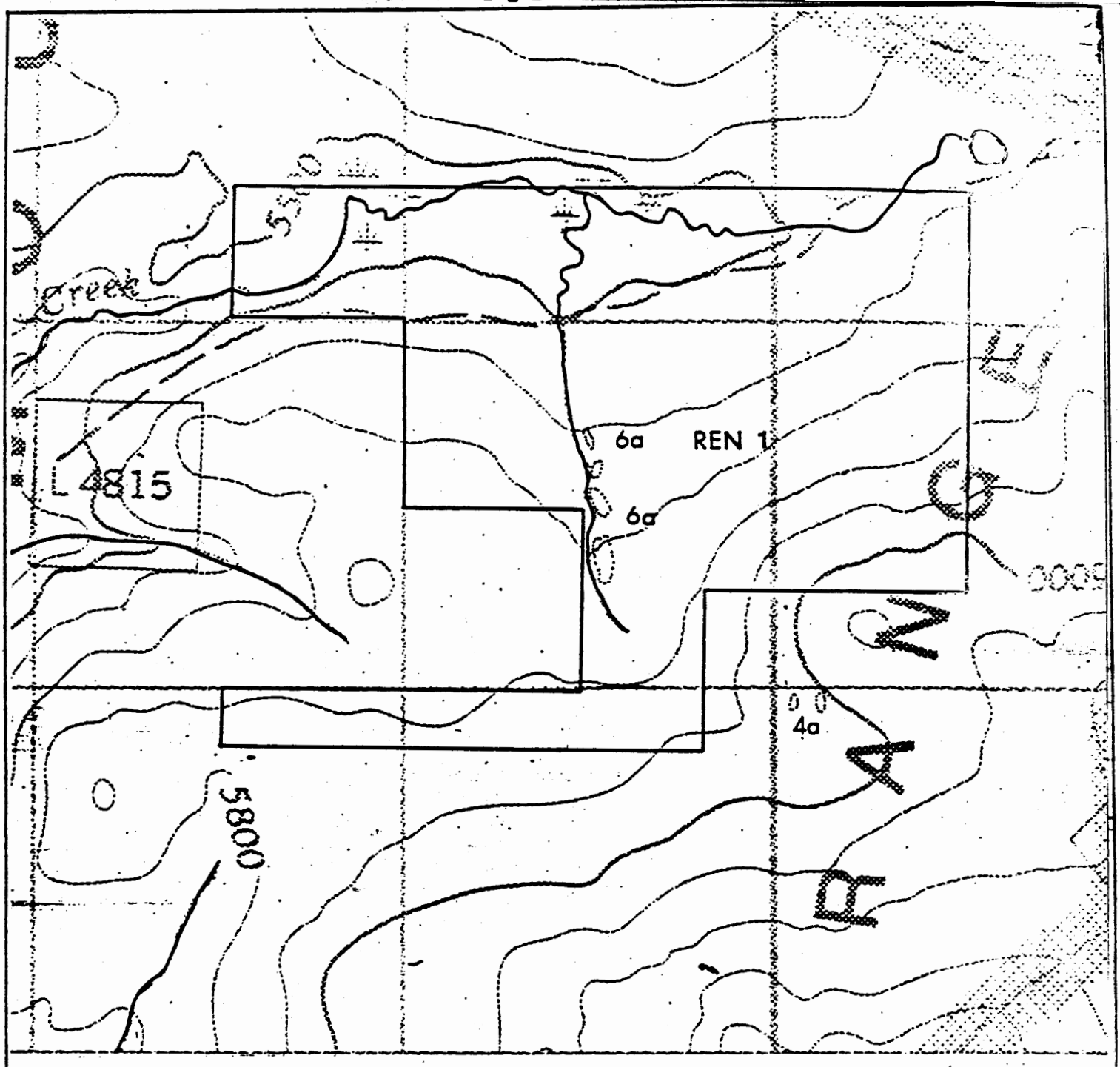
Less than 1% of the property is rock outcrop. These occur along the small creek draining north into Waterloo Creek. A number of outcrops in the southwest corner on the GEO 1 claim were also checked.

The outcrops on the GEO 1 claim consisted mainly of coarse grained to pegmatitic Quartz Monzonite containing white quartz and creamy pottasic feldspars. There was a little minor, reddish staining on some of the outcrop. A few small trenches in this area cut narrow veins of white quartz with up to 15% Pyrite and minor Galena and Chalcopyrite.

The outcrops along the creek on the REN 1 mineral claim consist mainly of slightly schistose andesite frequently cut by dykes of granodiorite related to the Nelson pluton. The andesite is medium grey, fine grained, slightly schistose at 346°/78°NE, commonly contains very minor disseminated pyrite and occasionally some minor clear to yellowish mica (phlogopite?).

Scintillometer counts ranged from 100 to 140 counts per second. No 'hot spots' were found on the property.

The outcrop exposure is too small to be of much help in evaluating the property but the rock types seen are similar to those on the Au, Silverspot prospect. The small veins in the trenches just off the south west corner are also encouraging.




LEGEND

- 4a — QUARTZ MONZONITE
- 6a — ANDESITE
- OUTCROP AREA
- REN 1 — CLAIM BOUNDARY AND NAME

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## GEOLOGIC MAP

FIGURE 2

| | | |
|---|---|---|
| TO ACCOMPANY REPORT BY: A. WHITE | SCALE 1:15,840 | DATE Jan 11/82 |
| | NTS | DRAWN BY |

## C. GEOCHEMISTRY

### Scope of Geochemical Sampling Program

A total of 68 soil, sediment and rock chip samples were collected and analysed for uranium, copper, lead, zinc, molybdenum and silver. Of these, 61 were soil samples,6 were stream sediment samples and one was a rock chip sample.

Care was taken to collect the soil samples from the 'B' horizon wherever possible. The rock chip sample was taken from within an area of less than one square meter. Stream sediment samples were taken from small feeder streams not previously sampled.

All samples were submitted to Barringer Magenta Ltd. of Calgary, Alberta for analysis. Details of digestion and analytical techniques are presented in Appendix II.

The sample location sites and sample location numbers are presented in Figure 3. Figures 4 through 9 are a series of single element maps with the analytical results plotted beside the sample locations.

### Results of the Geochemical Sampling Program

Statistical analysis of the data was not undertaken due to the small number of samples taken. Instead, threshold limits were taken from a regional geochemical survey performed by Barringer Magenta Ltd. for Kelvin Energy Ltd. in this area in 1978.

The threshold and anomalous values from this survey are presented in the table below.

a) Stream Sediments

| | Threshold | First Order Anomalous (ppm) | Second Order Anomalous (ppm) | Third Order Anomalous (ppm) |
|---|---|---|---|---|
| U | 8.1 | > 20.0 | 13.1 - 20.0 | 8.1 - 13.0 |
| Cu | 21 | > 40 | 25 - 40 | 21 - 24 |
| Mo | 5 | > 9 | 5 - 9 | - |
| Pb | 29 | > 40 | 29 - 40 | - |
| Zn | 66 | > 100 | 86 - 100 | 66 - 85 |
| Ag | 2.3 | > 3 | 2.3 - 3 | - |

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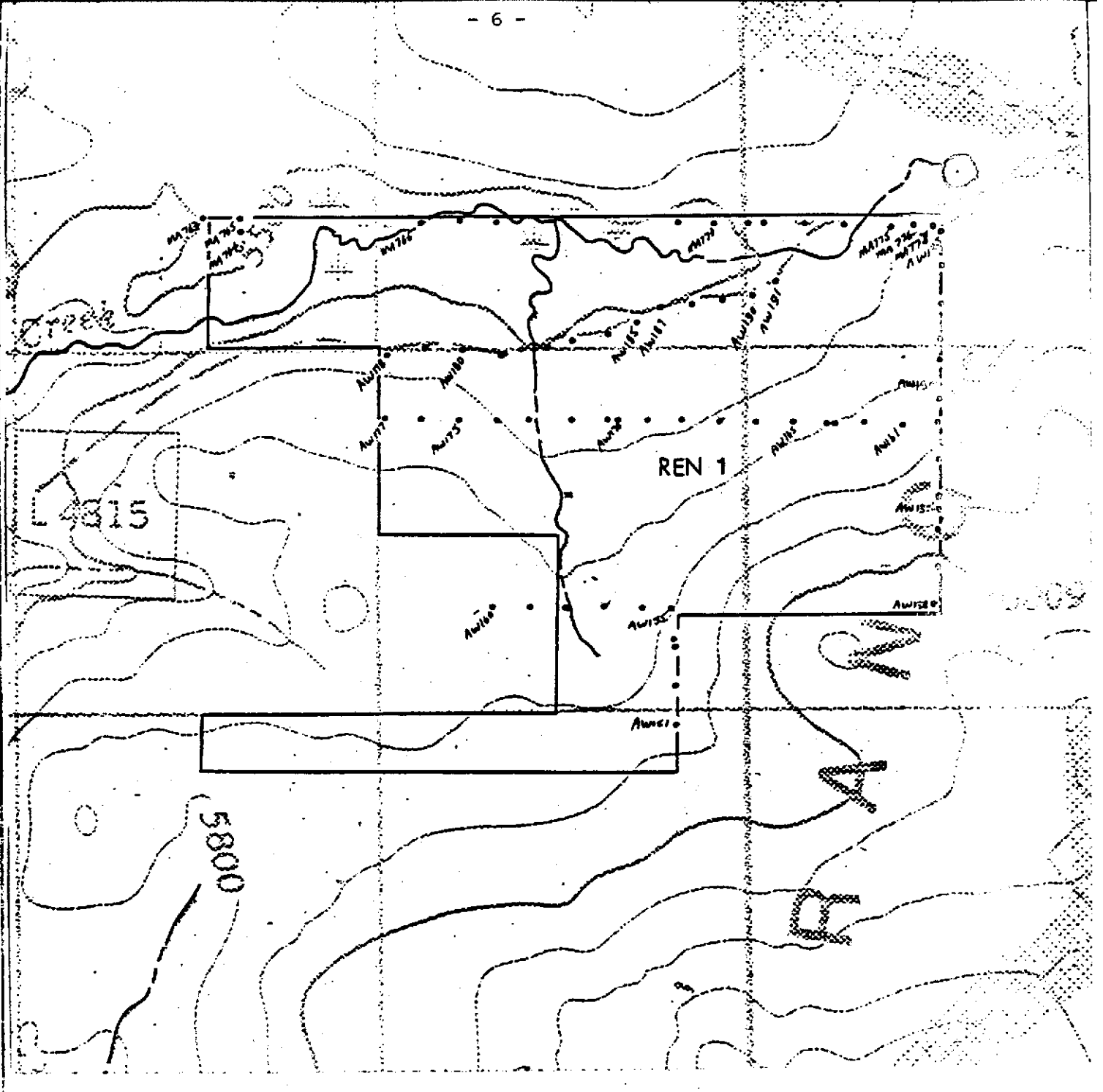



## LEGEND

- SOIL SAMPLE LOCATION AND NUMBER
- STREAM SEDIMENT SAMPLE LOCATION AND NUMBER
- ROCK CHIP SAMPLE LOCATION AND NUMBER
- GR 2 · CLAIM BOUNDARY WITH NAME AND NUMBER

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SAMPLE LOCATION MAP

FIGURE 3

| | | |
|---|---|---|
| TO ACCOMPANY REPORT BY: A. White | SCALE 1:15,840 | DATE Jan 11/86 |
| | NTS 82E/15 | DRAWN BY A. White |

b) Soils

| | Threshold | First Order Anomalous (ppm) | Second Order Anomalous (ppm) | Third Order Anomalous (ppm) |
|---|---|---|---|---|
| U | 3.0 | > 20 | 9.1 - 20 | 3.1 - 9.0 |
| Cu | 18 | > 40 | 19 - 40 | - |
| Mo* | 4 | > 6 | 5 - 6 | - |
| Pb | 20 | > 40 | 21 - 40 | - |
| Zn | 65 | > 100 | 66 - 100 | - |
| Ag | 1.0 | > 2 | 1.1 - 2.0 | - |

* Threshold and anomalous limits for molybdenum determined by visual inspection of data.

The results of the geochemical analyses (Appendix III) indicate only a few areas of interest in any of the metals. By far the best anomaly is a copper anomaly at sample location sites AW-152, 153 and 154 on the common boundary with the GEO 1 claim. It has a high of 180 ppm Cu at AW-153 with some support from AW-152 at 44 ppm Cu. AW-154 is from a small stream starting in the immediate area. This sample had a value of 83 ppm Cu.

Samples AW-152 and 153 also have slightly anomalous zinc values.

There are a few other widely scattered second order anomalous values in other metals but none of these are of sufficient strength to justify a follow-up program.

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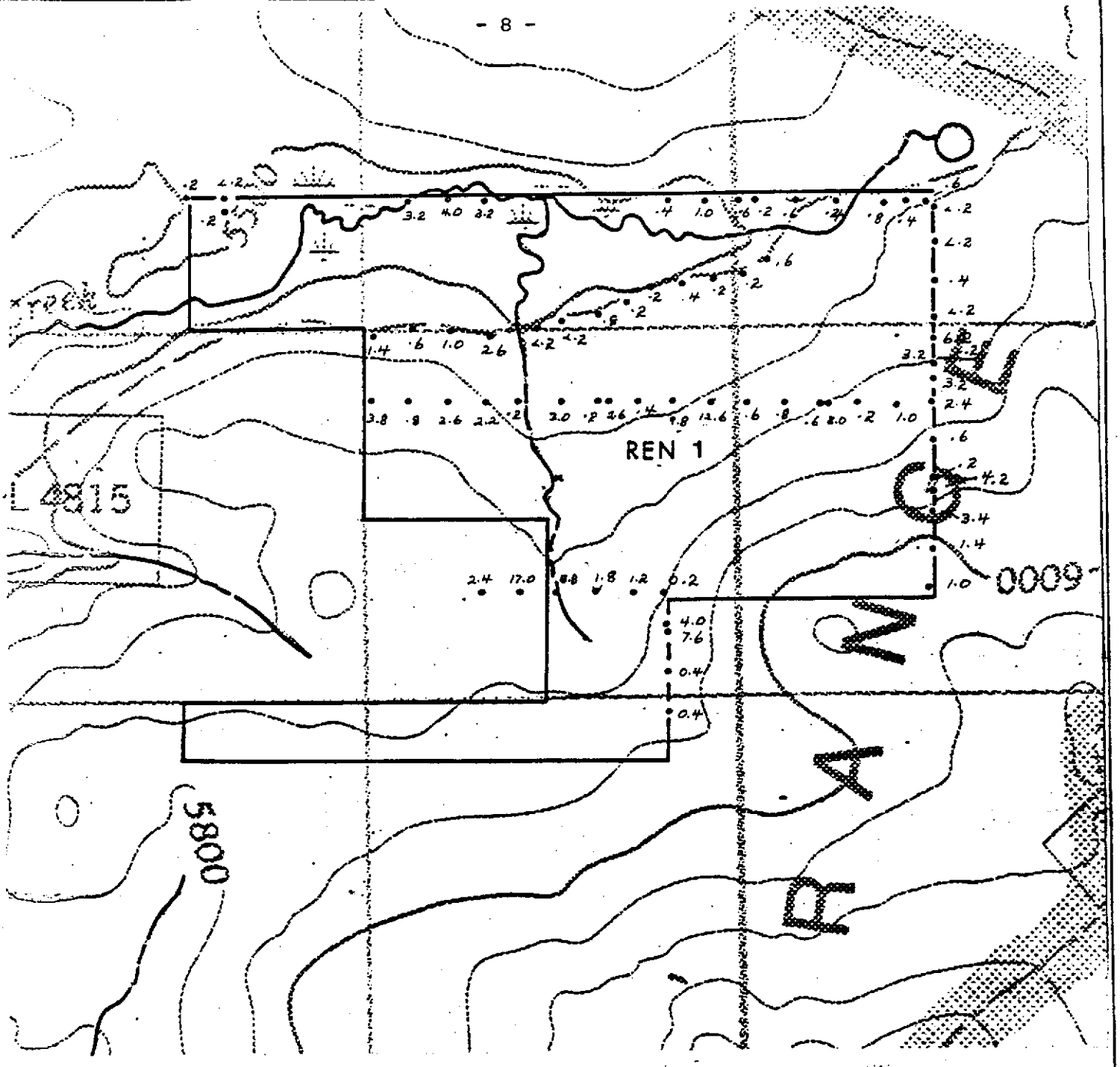
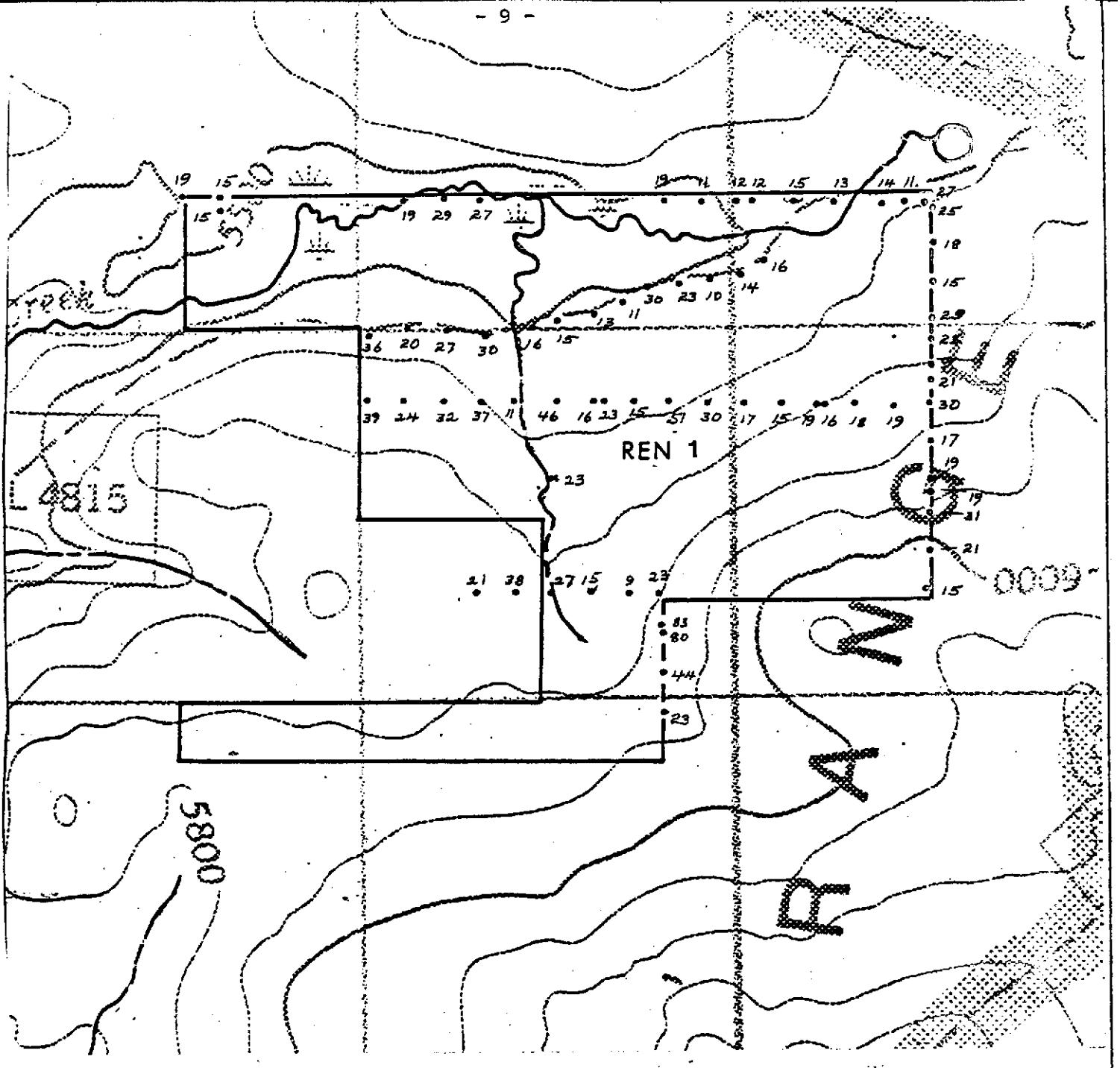




## LEGEND

- SOIL SAMPLE LOCATION AND NUMBER
- STREAM SEDIMENT SAMPLE LOCATION AND NUMBER
- ROCK CHIP SAMPLE LOCATION AND NUMBER
- GR 2. CLAIM BOUNDARY WITH NAME AND NUMBER

| KELVIN ENERGY LTD. | | |
|---|---|---|
| URANIUM GEOCHEMISTRY | | |
| FIGURE 4 | | |
| TO ACCOMPANY REPORT BY: A. White | SCALE 1:5,840 | DATE JAN 11/86 |
| | NTS 82E/15 | DRAWN BY A. White |





## LEGEND

- SOIL SAMPLE LOCATION AND NUMBER
- STREAM SEDIMENT SAMPLE LOCATION AND NUMBER
- ROCK CHIP SAMPLE LOCATION AND NUMBER
- GR 2 · CLAIM BOUNDARY WITH NAME AND NUMBER

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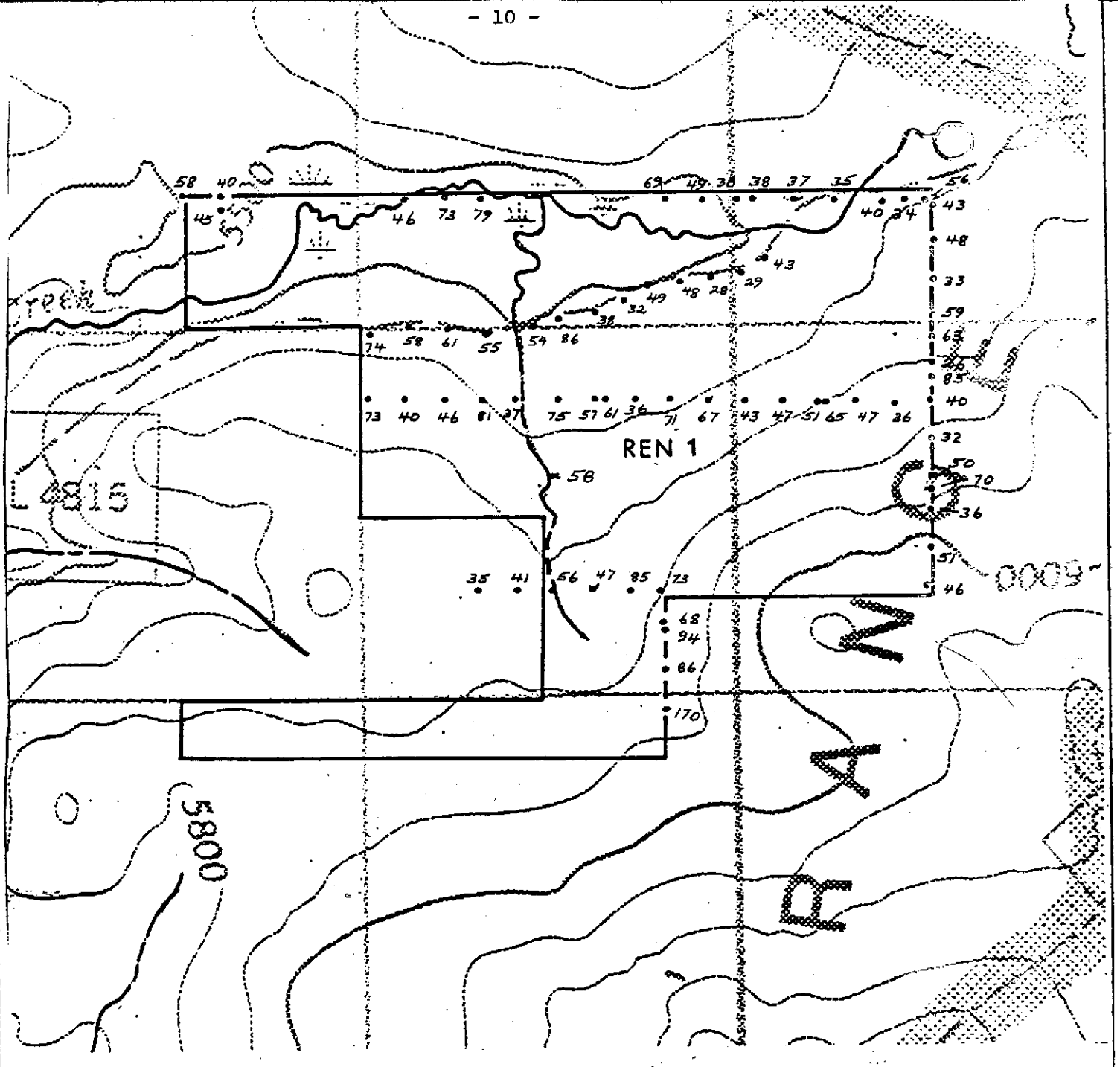
COPPER GEOCHEMISTRY

FIGURE 5

| | | |
|---|---|---|
| TO ACCOMPANY REPORT BY: A. White | SCALE 1:2,500 | DATE Jan. 11/90 |
| | NTS 82E/15 | DRAWN BY A. White |





## LEGEND

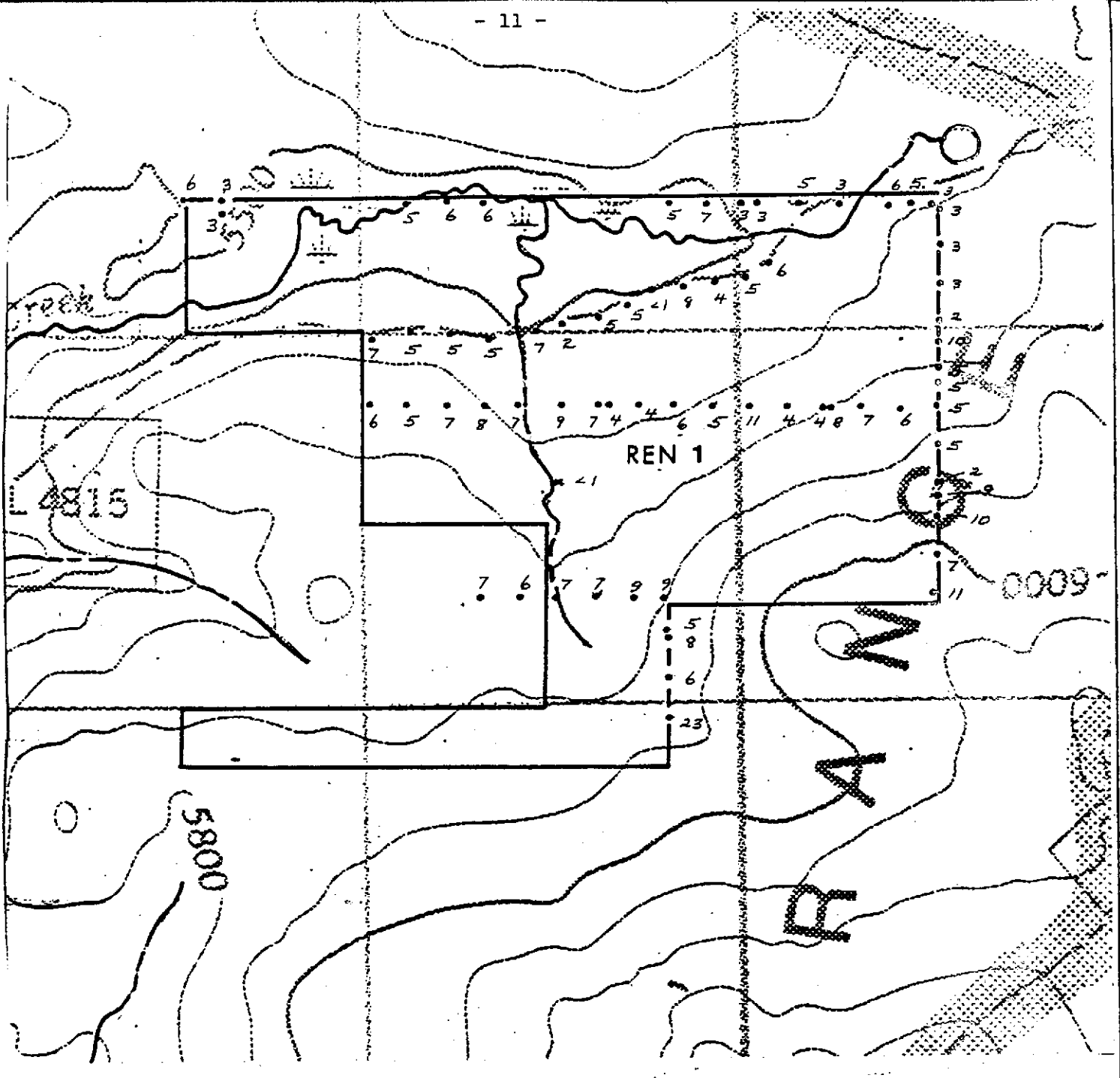
- SOIL SAMPLE LOCATION AND NUMBER
- STREAM SEDIMENT SAMPLE LOCATION AND NUMBER
- ROCK CHIP SAMPLE LOCATION AND. NUMBER
- GR 2. CLAIM BOUNDARY WITH NAME AND NUMBER

KELVIN ENERGY LTD.

ZINC GEOCHEMISTRY

FIGURE 6

| | | |
|---|---|---|
| TO ACCOMPANY REPORT BY: A. White | SCALE 1:5,840 | DATE Jan. 11/80 |
| | NTS 82E/15 | DRAWN BY A. White |





## LEGEND

- o SOIL SAMPLE LOCATION AND NUMBER
- • STREAM SEDIMENT SAMPLE LOCATION AND NUMBER
- x ROCK CHIP SAMPLE LOCATION AND NUMBER
- GR 2 · CLAIM BOUNDARY WITH NAME AND NUMBER

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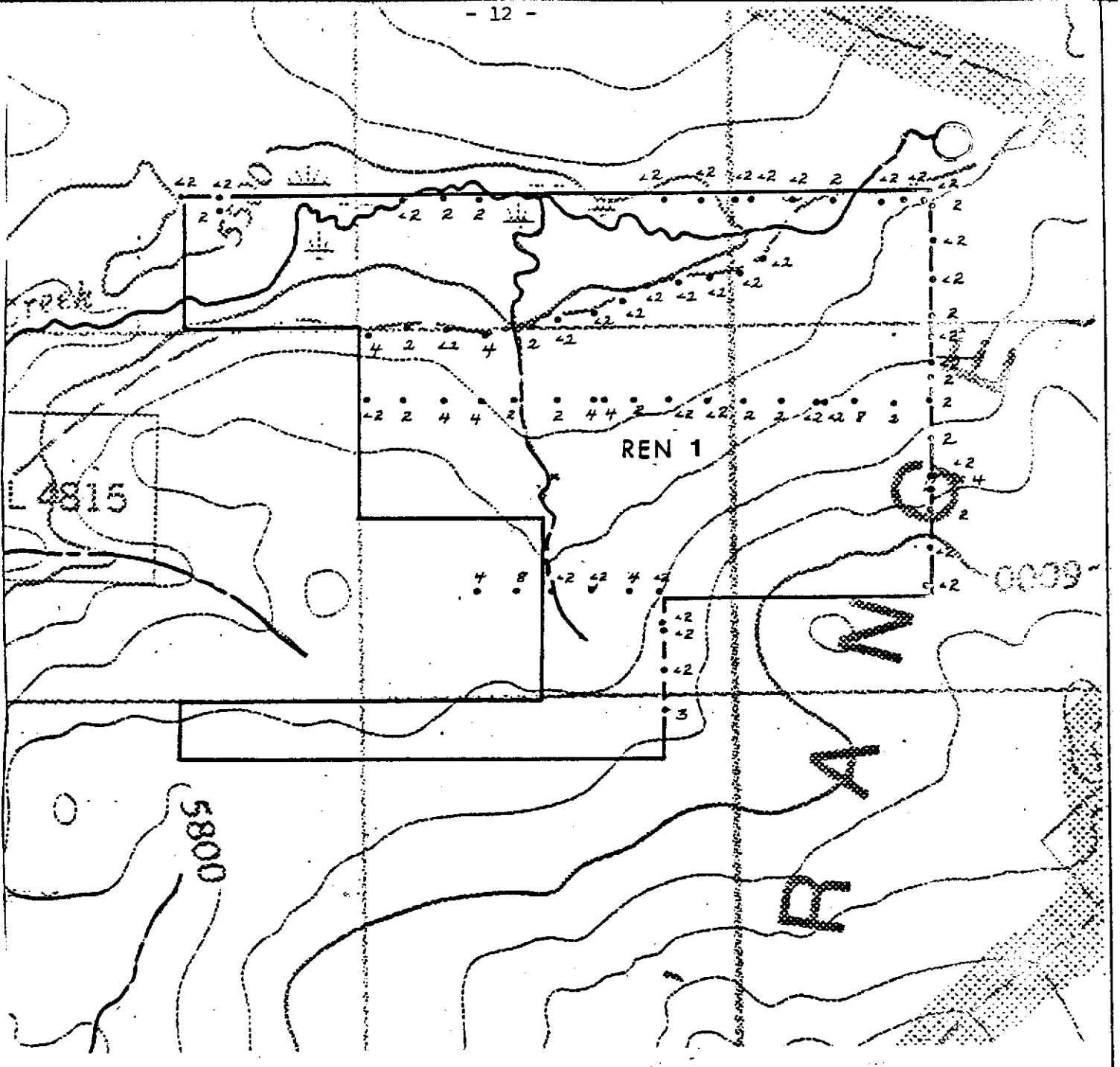
LEAD GEOCHEMISTRY

FIGURE 7

| | | |
|---|---|---|
| TO ACCOMPANY REPORT BY: A. White | SCALE 1:5,000 | DATE Nov 11/86 |
| | NTS 82F/15 | DRAWN BY A. White |





## LEGEND

- SOIL SAMPLE LOCATION AND NUMBER
- STREAM SEDIMENT SAMPLE LOCATION AND NUMBER
- ROCK CHIP SAMPLE LOCATION AND NUMBER
- GR 2. CLAIM BOUNDARY WITH NAME AND NUMBER

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MOLYBDENUM GEOCHEMISTRY

FIGURE 8

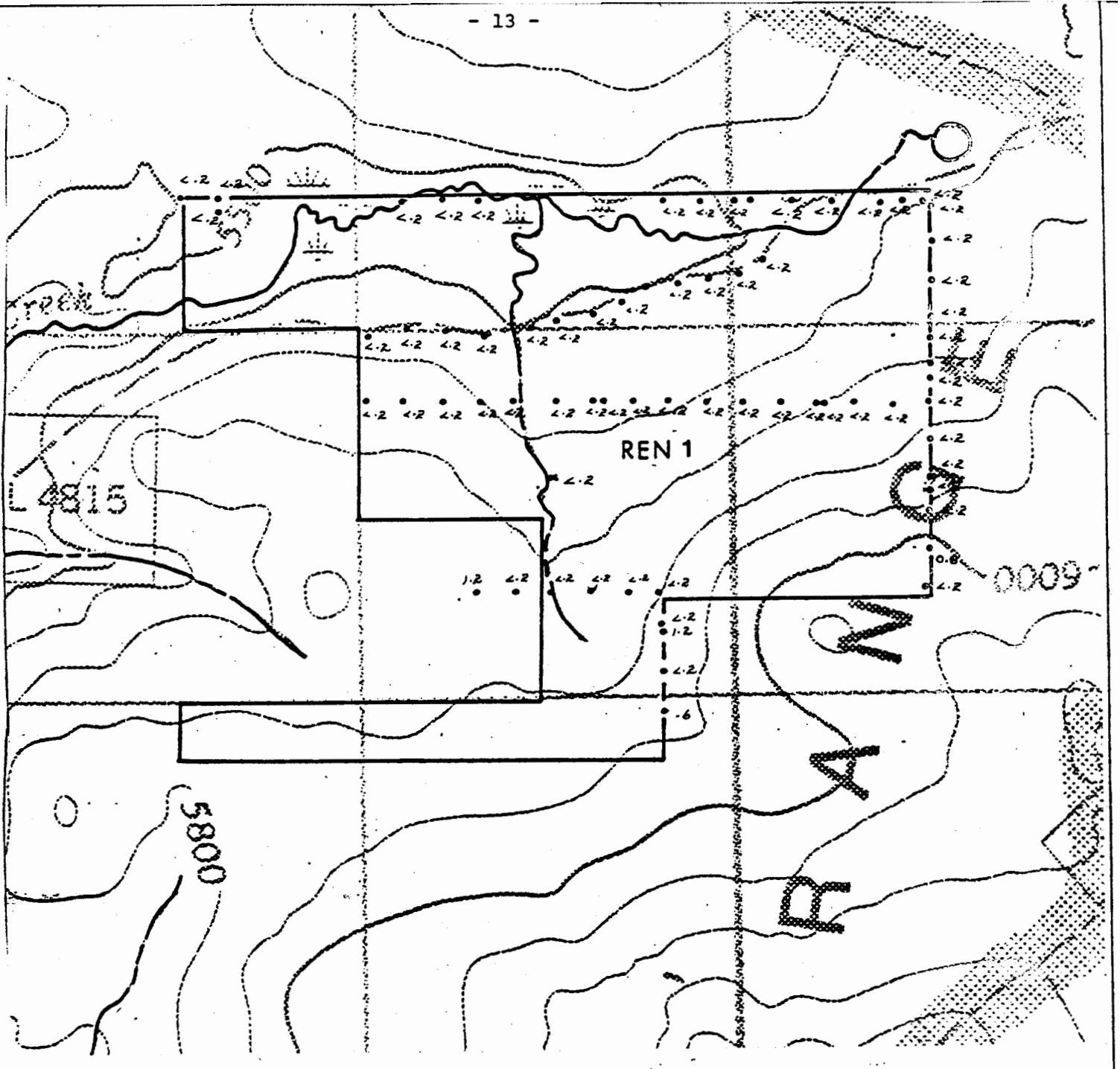
TO ACCOMPANY REPORT BY: A. White

SCALE 1:5,840

DATE 11/80

NTS 82E/15

DRAWN BY A. White





## LEGEND

- SOIL SAMPLE LOCATION AND NUMBER
- STREAM SEDIMENT SAMPLE LOCATION AND NUMBER
- ROCK CHIP SAMPLE LOCATION AND NUMBER
- GR 2. CLAIM BOUNDARY WITH NAME AND NUMBER

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**SILVER GEOCHEMISTRY**

FIGURE 9

| | | |
|---|---|---|
| TO ACCOMPANY REPORT BY: A. White | SCALE 1:15,840 | DATE Jan. 11/80 |
| | NTS 82 E/15 | DRAWN BY A. White |

## D. DISCUSSION OF RESULTS

Based on the results of both the geologic mapping and geochemical sampling program the potential for any type of mineral deposit appears to be quite low. The mapping program was inconclusive, however, due to the lack of outcrop on the property. The outcrops on the property, however, are encouraging in as much as they are of the same type of rock as that which is hosting the Au lead, zinc, silver prospect.

The geochemical sampling program revealed only one area of interest. This is a copper anomaly, weakly supported by a second order zinc anomaly in the south east corner of the property. There is a possibility this anomaly may be due to the small trenched veins on the GEO 1 mineral claim but some check sampling in the area of sample # AW-153 may be warranted to find the extent and configuration of the anomaly.

No radiometric 'hot-spots' were discovered during any of the traverses, nor did the geology or geochemistry indicate any potential for uranium mineralization.

## E. CONCLUSIONS

1) The REN 1 mineral claim has very low potential for uranium mineralization of any significant quantity.

2) Only one anomaly was encountered during the geochemical sampling program. This was a copper anomaly in the southeast corner of the property.

## F. RECOMMENDATIONS

1) A small geochemical sampling follow-up program to verify the anomaly at sample location AW-153 is recommended. A 100 meter square grid with samples taken every 50m would cover the area sufficiently.

2) At the same time two or three pace and compass east-west lines of VLF across the property may encounter some target zones for further follow-up with a grid and a more sophisticated geophysical instrument.

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## G. STATEMENT OF EXPENDITURES

A. PERSONNEL:

| | | | |
|---|---|---|---|
| Geologist | Field: | 5 days @ $100.00/day | $ 500.00 |
| | Office: | 2 days @ $100.00/day | 200.00 |
| Assistant | Field: | 4 days @ $70.00/day | 280.00 |

B. PERSONAL SUBSISTENCE:

9 man days @ $20.00 per man day 180.00

C. SCINTILLOMETER RENTAL:

9 days @ $8.00/day 72.00

D. GEOCHEMICAL ANALYSIS: 68 samples @ $7.50/sample 510.00

E. TRUCK RENTAL: 5 days @ $30/day 150.00

F. MAPS AND AIRPHOTOS: 10.00

G. DRAFTING AND REPRODUCTION: 50.00

TOTAL $1,952.00

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## H. CERTIFICATE OF QUALIFICATIONS

1) I, Alan White, am a geologist employed by Kelvin Energy Ltd. of 434, 550 - 6th Avenue S.W, Calgary, Alberta T2P OS2.

2) I graduated from the University of Waterloo with a B.Sc. (hons., Earth Sciences major) in October, 1978.

3) I have practised my profession continuously since May, 1977.

4) I personally examined the REN 1 mineral claim.

5) Work was carried out on the REN 1 mineral claim under my direction.

Alan White
Kelvin Energy Ltd.

# APPENDIX I

## PERSONNEL EMPLOYED

## ON THE

## REN 1 MINERAL CLAIM

## PERSONNEL

| | | | | |
|---|---|---|---|---|
| A. White | B.Sc(hons) | Geologist | Mapping<br>Geochemistry<br>Prospecting | July 1<br>Aug. 5,6,7,8 |
| M. Archambault | Geol.Student | Assistant | Geochemistry<br>Prospecting | Aug. 5,6,7,8 |

# APPENDIX II

# ANALYTICAL TECHNIQUES

## ANALYTICAL TECHNIQUES

Stream sediment and soil samples were analyzed at the Barringer Magenta Ltd. laboratory in Calgary, Alberta. The samples were first oven dried at a temperature of 45°C and then seived through an 80 mesh nylon screen. A .500 gram portion of this was placed in a glass test tube and perchloric acid was added. The test tube was then placed in an aluminum heating jacket and heated for 4 hours. After cooling and diluting to the final volume, the solution was then directly aspirated into a Varian Techtron atomic absorption spectrophotometer and the concentrations of copper, molybdenum, lead, zinc, and silver were read directly in ppm.

The uranium was determined fluorimetrically by using the following procedure. A .250 gram sample was weighed into a glass test tube and 5 ml. of nitric acid was added. The samples were then digested on a sand bath for 2 1/2 hours. After cooling and diluting to the final volume, an aliquot of solution was pipetted onto a platinum dish and evaporated to dryness. Flux was added to the dish and fused with the sample. After cooling,the dish was compared with fresh standards using a Jarrell-Ash Fluormeter.

The limits of detection for copper, lead, zinc, molybdenum, and uranium are 1,1,1,.2,1 and .2 ppm respectively.

Rock chip samples were first put through a jaw crusher, pulverizer, and a - 200 mesh nylon sieve. A .500 gram portion of the sample was then subjected to the same procedure used to analyse the stream sediment samples.

# APPENDIX III

# ANALYTICAL RESULTS

| Sample Number | U ppm | Cu ppm | Pb ppm | Zn ppm | Mo ppm | Ag ppm | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| MA-777D | 0.6 | 27 | 3 | 56 | < 2 | < 0.2 | | | | |
| MA-763D | 0.2 | 19 | 6 | 58 | < 2 | < 0.2 | | | | |
| 764D | 0.2 | 15 | 3 | 45 | 2 | < 0.2 | | | | |
| 765D | < 0.2 | 15 | 3 | 40 | < 2 | < 0.2 | | | | |
| 766D | 3.2 | 19 | 5 | 46 | < 2 | < 0.2 | | | | |
| 767D | 4.0 | 29 | 6 | 73 | 2 | < 0.2 | | | | |
| 768D | 3.2 | 27 | 6 | 79 | 2 | < 0.2 | | | | |
| 769D | 0.4 | 19 | 5 | 69 | < 2 | < 0.2 | | | | |
| 770D | 1.0 | 11 | 7 | 49 | < 2 | < 0.2 | | | | |
| 771D | 0.6 | 12 | 3 | 36 | < 2 | < 0.2 | | | | |
| 772D | 0.2 | 12 | 3 | 38 | < 2 | < 0.2 | | | | |
| 773D | 0.6 | 13 | 5 | 37 | < 2 | < 0.2 | | | | |
| 774D | 0.4 | 15 | 3 | 35 | 2 | < 0.2 | | | | |
| 775D | 0.8 | 14 | 6 | 40 | < 2 | < 0.2 | | | | |
| 776D | 0.4 | 11 | 5 | 34 | < 2 | < 0.2 | | | | |

| Sample Number | U ppm | Cu ppm | Pb ppm | Zn ppm | Mo ppm | Ag ppm | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| AW-125D | < 0.2 | 25 | 3 | 43 | 2 | < 0.2 | | | | |
| 126D | < 0.2 | 18 | 3 | 48 | < 2 | < 0.2 | | | | |
| 127D | 0.4 | 15 | 3 | 33 | < 2 | < 0.2 | | | | |
| 128D | < 0.2 | 29 | 2 | 59 | 2 | < 0.2 | | | | |
| 129S | 6.2 | 23 | 10 | 63 | < 2 | < 0.2 | | | | |
| 130D | 0.2 | 9 | 5 | 26 | < 2 | < 0.2 | | | | |
| 131S | 3.2 | 21 | 5 | 85 | 2 | < 0.2 | | | | |
| 132D | 2.4 | 30 | 5 | 40 | 2 | < 0.2 | | | | |
| 133D | 0.6 | 17 | 5 | 32 | 2 | < 0.2 | | | | |
| 134D | 0.2 | 19 | 2 | 50 | < 2 | < 0.2 | | | | |
| 135S | 4.2 | 19 | 9 | 70 | 4 | < 0.2 | | | | |

| Sample Number | U ppm | Cu ppm | Pb ppm | Zn ppm | Mo ppm | Ag ppm | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| AW-136D | 3.4 | 31 | 10 | 36 | 2 | 0.8 | | | | |
| 137 | 1.4 | 21 | 7 | 51 | < 2 | < 0.2 | | | | |
| 138D | 1.0 | 15 | 11 | 46 | < 2 | < 0.2 | | | | |
| 152D | 0.4 | 44 | 6 | 86 | < 2 | < 0.2 | | | | |
| 153D | 7.6 | 180 | 8 | 94 | < 2 | 1.2 | | | | |
| 154S | 4.0 | 83 | 5 | 68 | < 2 | < 0.2 | | | | |
| 155D | 0.2 | 23 | 9 | 73 | < 2 | < 0.2 | | | | |
| 156D | 0.8 | 9 | 9 | 85 | 4 | < 0.2 | | | | |
| 157D | 1.2 | 15 | 7 | 47 | < 2 | < 0.2 | | | | |
| 158D | 8.8 | 27 | 7 | 56 | < 2 | < 0.2 | | | | |
| 159D | 17.0 | 38 | 6 | 41 | 8 | < 0.2 | | | | |
| 160D | 2.4 | 21 | 7 | 35 | 4 | 1.2 | | | | |
| 161D | 1.0 | 19 | 6 | 36 | 2 | < 0.2 | | | | |
| 162D | 0.2 | 18 | 7 | 47 | 8 | < 0.2 | | | | |
| 163S | 3.0 | 16 | 8 | 65 | < 2 | < 0.2 | | | | |
| 164D | 0.6 | 19 | 4 | 51 | < 2 | < 0.2 | | | | |
| 165D | 0.8 | 15 | 4 | 47 | 2 | < 0.2 | | | | |
| 166D | 0.6 | 17 | 11 | 43 | 2 | < 0.2 | | | | |
| 167D | 12.6 | 30 | 5 | 67 | < 2 | 1.0 | | | | |
| 168D | 9.8 | 51 | 6 | 71 | < 2 | < 0.2 | | | | |
| 169D | 0.4 | 15 | 4 | 36 | 2 | < 0.2 | | | | |
| 170S | 2.6 | 23 | 4 | 61 | 4 | < 0.2 | | | | |
| 171D | 0.2 | 16 | 7 | 57 | 4 | < 0.2 | | | | |
| 172D | 3.0 | 46 | 9 | 75 | 2 | < 0.2 | | | | |
| 173D | 0.2 | 11 | 7 | 37 | 2 | < 0.2 | | | | |
| 174D | 2.2 | 37 | 8 | 81 | 4 | < 0.2 | | | | |
| 175D | 3.6 | 32 | 7 | 46 | 4 | < 0.2 | | | | |

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| Sample Number | U ppm | Cu ppm | Pb ppm | Zn ppm | Mo ppm | Ag ppm | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| AW-176D | 0.8 | 24 | 5 | 40 | 2 | < 0.2 | | | | |
| 177D | 3.8 | 39 | 6 | 73 | < 2 | < 0.2 | | | | |
| 178D | 1.4 | 36 | 7 | 74 | 4 | < 0.2 | | | | |
| 179D | 0.6 | 20 | 5 | 58 | 2 | < 0.2 | | | | |
| 180D | 1.0 | 27 | 5 | 61 | < 2 | < 0.2 | | | | |
| 181D | 2.6 | 30 | 5 | 55 | 4 | < 0.2 | | | | |
| 182R | 0.6 | 23 | <1 | 58 | 2 | < 0.2 | | | | |
| 183D | < 0.2 | 16 | 7 | 54 | 2 | < 0.2 | | | | |
| 184D | < 0.2 | 15 | 2 | 86 | < 2 | < 0.2 | | | | |
| 185D | 0.8 | 13 | 5 | 38 | < 2 | < 0.2 | | | | |
| 186D | 0.2 | 11 | 5 | 32 | < 2 | < 0.2 | | | | |
| 187D | 0.2 | 30 | <1 | 49 | < 2 | < 0.2 | | | | |
| 188D | 0.4 | 23 | 8 | 48 | < 2 | < 0.2 | | | | |
| 189D | 0.2 | 10 | 4 | 28 | < 2 | < 0.2 | | | | |
| 190D | 0.2 | 14 | 5 | 29 | < 2 | < 0.2 | | | | |
| 191D | 0.6 | 16 | 6 | 43 | < 2 | < 0.2 | | | | |