



GEOLOGICAL AND GEOCHEMICAL REPORT

ON THE

ROD CLAIMS 1 - 100

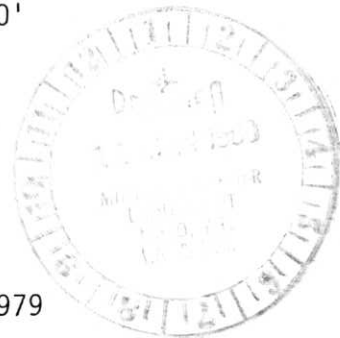
N.T.S. 106-C-4 & 106-D-1

LAT.  $64^{\circ}12'$  LONG.  $134^{\circ}00'$

By

B.Y. Kim

WORK DONE JUNE - SEPT. 1979



090 611



This report was prepared by the  
Geological Survey and is recom-  
mended to the Board of Mines to be con-  
sidered as representation work in the amount of  
\$ 40,000




~~Resident Geologist or~~  
Resident Mining Engineer

Considered as representation work under  
Section 50 (4) Yukon Quartz Mining Act.

  
E. R. BAXTER

~~Supervising Mining Recorder~~

 Commissioner of Yukon Territory

11a

## TABLE OF CONTENTS

|                                  | <u>PAGE</u> |
|----------------------------------|-------------|
| I. SUMMARY                       | 1           |
| II. INTRODUCTION                 | 2           |
| 1) Location, Access and Property | 2           |
| 2) History of Previous Work      | 3           |
| III. GEOLOGY                     | 4           |
| 1) Introduction                  | 4           |
| 2) Stratigraphy                  | 6           |
| A. Hadrynian "Grit Unit"         | 6           |
| B. Road River Formation          | 7           |
| 3) Structure                     | 7           |
| 4) Mineralization                | 8           |
| IV. GEOCHEMISTRY                 | 10          |
| 1) Field Procedures and Analysis | 10          |
| 2) Results                       | 10          |
| V. CONCLUSIONS & RECOMMENDATIONS | 11          |

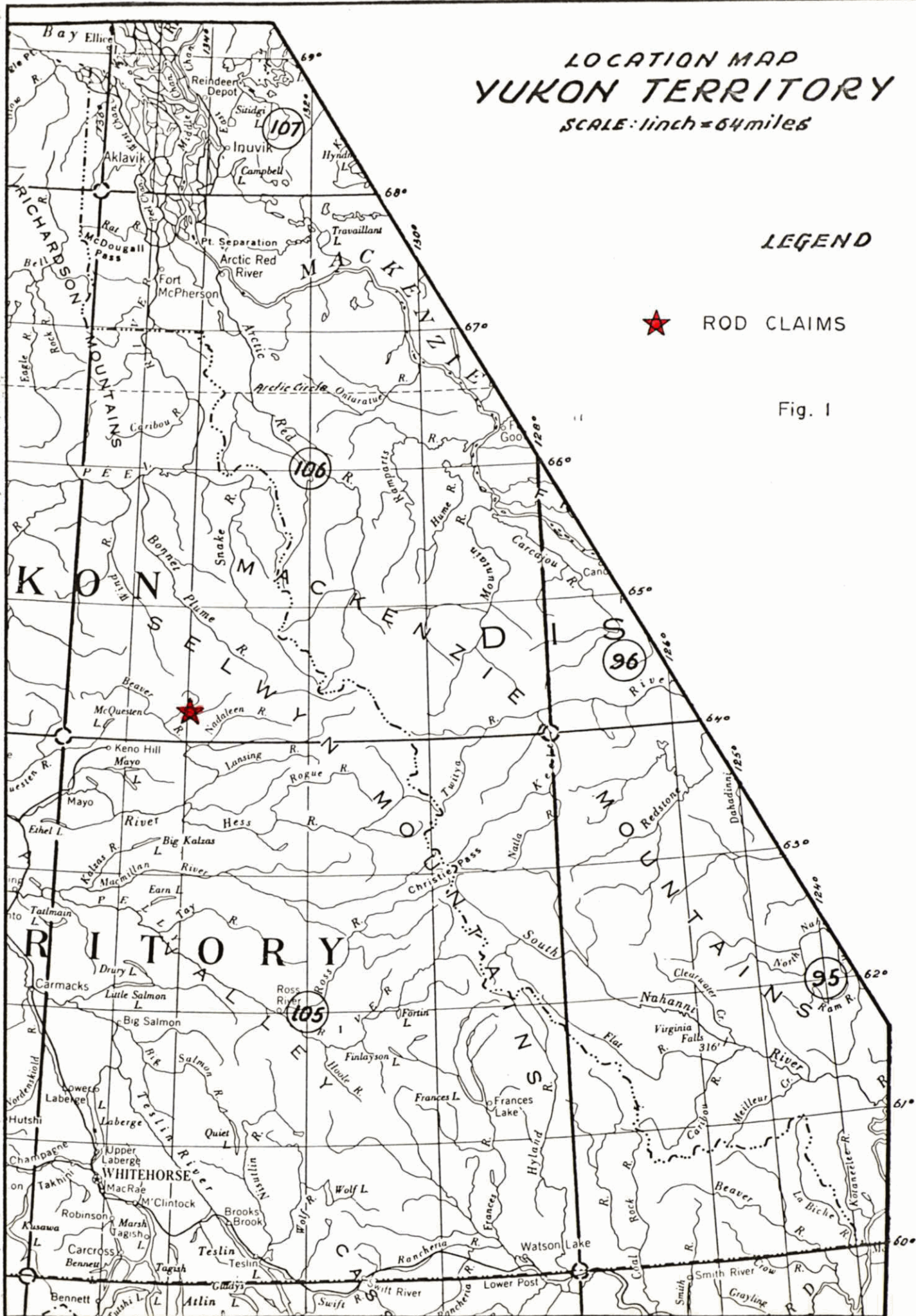
# LOCATION MAP YUKON TERRITORY

SCALE: 1 inch = 64 miles

## LEGEND

★ ROD CLAIMS

Fig. 1



I. SUMMARY

- i) A follow-up program in 1979 on the Rod claims consisted of prospecting, geological mapping, soil sampling and trenching.
- ii) The program revealed high grade silver-lead-zinc mineralization on a northeasterly fault. Two trenches exposed 15 - 30 feet width of ore grade vein in a dolomite-limestone host. The length of this vein may be 1000 ft.
- iii) The nature and source of high grade galena float in shale talus is uncertain and remains to be properly tested.
- iv) The possibility for the stratabound Ba-Zn mineralization seems to be minor and of little economic interest.
- v) A further follow-up program should be concentrated on the high grade silver-lead-zinc vein on the northeasterly striking fault.

## II. INTRODUCTION

The 1979 program conducted on the Rod claim group was a part of Canadian Superior Exploration Ltd.'s Craig project. The project covers approximately 300 square miles near the headwaters of the Nadaleen River in central eastern Yukon. There are 8 separate claim blocks in the project area controlled by McIntyre Mines Ltd. (Map 2)

The Rod claims consist of 100 contiguous claims located in the extreme west of the project area. The property is mostly underlain by Paleozoic carbonaceous clastic rocks in thrust contact with Proterozoic sediments.

Previous work had shown that stratabound Pb-Zn-Ag mineralization may occur within the claim area.

### 1. Location, Access and Property

The property is situated in the Mayo Mining District, near the junction of Rackla and Beaver River. The approximate center of the claim block lies at  $64^{\circ}12'N$ . latitude and  $134^{\circ}00'W$ . longitude in N.T.S. 106-C-4 and 106-D-1. It is located about 75 miles northeast of Mayo and 40 miles from the nearest road at the Keno Hill Mining area. (Fig. 1)

Access to the property is by helicopter, since the nearest lake accessible by float plane is 8 miles to the northwest of the property at Kathleen Lakes. The 1979 work program was carried out from the Tara Lake camp, 30 miles east of the property.

The property consists of 100 contiguous mineral claims and covers an area of approximately 8 square miles. It is 1.7 miles wide and 4.7 miles long with a general rectangular shape. (Map 8) The claim block is located on the northern slope of an east-trending range of high mountains. It covers ground almost from the mountain crest halfway to the valley of the East Rackla River. The property is bounded to the east by the Cooker claims, owned by Edina Explorations Ltd., and to the west by the Bag claims. Claim

details are as follows:

| <u>Claims Nos.</u> | <u>Date Recorded</u> | <u>Expiry Date</u> | <u>Record Nos.</u> |
|--------------------|----------------------|--------------------|--------------------|
| Rod 1 - 100        | June 28, 1977        | June 28, 1980      | YA15176-15275      |

## 2. History of Previous Work

The property was staked in 1976 by McIntyre Mines Ltd. following the discovery of a mineralized belt on the Craig claims. The area was first detected by a regional silt sampling program.

A field program carried out in 1977 included prospecting, geological mapping (1"=1000') and soil/silt sampling. Soil sampling was done along the ridges and a number of geochemically interesting areas were delineated. The most interesting area was on the Discovery ridge, a north trending spur in the eastern part of the claims, where many high grade galena boulders were found. A number of minor showings were also detected by the 1977 program.

The objectives of the 1979 program were to define the nature of mineralization and confirm the sources of geochemical anomalies. During the period June 15 to Sept. 14, 1979 Canadian Superior Exploration conducted an exploration program covering the entire property. The program consisted of:

1. Geological mapping: 1"=500' of the entire property and more detailed mapping of the Discovery Ridge area.
2. Prospecting
3. Soil sampling covering the entire property
4. Trenching: 2 trenches on the Discovery Ridge around the showings and other minor trenches.

The camp for 1979 program was situated at Tara Lake, 30 miles east of the property. Transportation was provided by Hughes 500C helicopter of Transwest Helicopters Ltd.

### III. GEOLOGY

#### 1. Introduction

The claim block straddles the Dawson Thrust Fault, an extensive structure trending east-southeast across the central Yukon. This thrust fault, which brings presumed Proterozoic rocks into contact with Paleozoic strata, is considered by some to be the northern boundary of the Selwyn Basin (S. Blusson 1974)

The claim area is divided in half by the thrust. To the south the higher elevations are underlain by the Hadrynian grit unit, an assemblage of impure clastics and interbedded carbonates. To the north of the thrust the valleys and lower ridges are underlain by the dark carbonaceous clastics of Ordovician to Devonian age, which are referred to as the Road River Formation. Minor volcanoclastics are interlayered with the Hadrynian unit (cf. L.H. Green 1972).

All rock units strike eastward with a gentle to moderate southward dip and all formations seem to be modestly warped by local northeasterly trending faults. No major folds were noticed during the program.

The most interesting mineralization in the claim area consists of fracture-filling, coarse grained argentiferous galena and sphalerite emplaced within northeasterly faults and shear zones.

The table of formations is given below in stratigraphic order. The thickness of each unit was approximately measured by traversing along the Discovery Ridge. (Map. 3 & 4)

TABLE 1

| <u>PERIOD</u> | <u>MAP UNIT</u>  | <u>LITHOLOGY</u>                         | <u>THICKNESS (ft.)</u> |
|---------------|------------------|--|------------------------|
| Quaternary    |                  | Glacial drift, talus,<br>stream deposits |                        |
|               | - unconformity - |  |                        |
| Ordovician    | 13               | shale                                    | 250                    |
| Silurian      | 12               | shale, argillite & chert                 | 200                    |
| (Road River   | 9                | shale                                    | 150                    |
| Formation     | 10               | argillite & chert                        | 50                     |
| below thrust) | 11               | shale                                    | 200                    |
|               | 10               | argillite & chert                        | 50-100                 |
|               | 9                | shale                                    | 600                    |
|               | 8                | shale & limestone                        | over 500               |
| Proterozoic   | 6                | limestone                                | over 100               |
| Cambrian (?)  | 2                | maroon shale-argillite                   | 100                    |
| (Hadrynian    | 7                | argillite & siltstone                    | 100                    |
| grit unit     | 2                | maroon shale-argillite                   | 250                    |
| above thrust) | 6                | limestone                                | 100                    |
|               | 5                | Brown shale-argillite                    | 50                     |
|               | 4                | quartzite                                | 100                    |
|               | 3                | Volcanic clastic layer                   | 150                    |
|               | 2a               | Greenshale-argillite                     | 50                     |
|               | 2b               | maroon shale-argillite                   | 150                    |
|               | 1                | Ferrodolomite                            | 20                     |

## 2. Stratigraphy

### A) Hadrynian Grit Unit

The unit is composed of impure quartzite, grit, quartz-pebble conglomerate, argillite, limestone and minor chert. The quartzite is commonly thick bedded, light buff to gray brown in color, and consists of fine quartz grains with minor sericite and brown flecks of limonite. The quartzite grades through grit containing coarser grains to quartz-pebble conglomerate with grains up to 10 mm in diameter. Argillites, locally altered to schists or slates, are interbedded with the gritty members. Most of these argillites are distinctively maroon and green colored with strong paper-thin cleavages. They seem to be made up of very fine grained minerals including much white mica. Limestone of various colors and textures occur throughout the map area. Except for thin interbedded bands within dominant clastics, the limestones are usually micritic, fine grained, gray to dark gray, and massive to thick-bedded.

Basaltic volcanoclastic rocks occur in the Hadrynian unit near the major thrust. They include dark greenish gray coarse agglomerates and breccias with minor interlayered tuffaceous beds. They are usually calcareous probably due to local alteration. The volcanic unit is up to 400 feet thick but locally pinches out almost completely.

A typical agglomerate layer is underlain by breccia with excellent textures at a peak on the Discovery Ridge (Map 6). The agglomerate contains abundant subangular to rounded pebbles usually 1 - 3 mm in diameter up to 10 mm and rare limestone inclusions or lenses. It has fairly well-defined contact with the underlying breccia, which displays some distinctive textures with large subangular to angular boulders and pebbles in a lighter greenish gray matrix.

An orange colored crackled ferrodolomite unit occurs frequently in the hanging wall of the thrust fault. It has light felsic and brownish micritic clasts in brown recrystallized carbonate. It locally contains weak tectonic breccias, often with strong silicification, sulphide, and mariposite

mineralization. The origin of the ferrodolomite is uncertain, but it may have resulted from volcanic and/or tectonic activities associated with the thrust fault system.

### B) Road River Formation

The Paleozoic unit referred to the Road River Formation (R. Arnold & A. Floyd 1977) is composed mostly of black carbonaceous shales, argillites, minor interbedded limestones and cherts. Throughout the map area this unit is in thrust fault contact with the overlying Hadrynian grit unit. The most predominant black shale is very recessive and fissile. It shows graphitic sheen on some partings and includes some paper-thin shales. The uppermost Paleozoic horizon in the map area is a very recessive, soft brownish black to dark gray shale with low silica content. It forms a topographic saddle on the ridges near the thrust contact. Black chert laminations are interbedded with siliceous argillites and shales in places. These cherty beds are as dark-colored as the shales and 10 to 50 mm thick. In the lower part of the formation limestone occurs as thin-bedded layers and lenses. These are dark gray to black, and usually carbonaceous with a fair amount of argillaceous material. Minor barite occurrences with some coarse sphalerite are associated with the limestone horizons.

### 3. Structure

A major thrust fault striking N80<sup>0</sup>W places the Hadrynian unit on top of the Road River Formation along the full length of the 4 mile long claim block. (Map 3) The thrust is referred to as a branch of the Dawson thrust system. The strikes of both the Hadrynian unit and the Road River Formation are slightly warped probably as a result of large scale deflections in the major thrust. They strike east to east-southeast and dip southerly 20 - 50<sup>0</sup>.

A number of minor cross faults have been noticed in the Hadrynian unit but they are not seen in the Road River Formation due to the lack of adequate exposure. These cross structures are northeast striking normal faults that dip steeply to the southeast.

No major or minor folds were observed on the Rod claims. Foliation or cleavage is locally well developed in the Proterozoic assemblage, but absent in the Paleozoic. This foliation, which strikes east-southeast and dips southward at a steeper angle than the bedding, is the only structural event recognized on the claims. However, some tight folds were seen in the adjacent property to the east.

#### 4. Mineralization

A number of mineral occurrences have been located on the Rod claims by prospecting and mapping. They can be classified as the following 4 types of mineralization:

- 1) Fracture vein of galena-silver-sphalerite associated with the northeast trending structures.
- 2) High grade float boulders of galena-silver in fissile weathering products of carbonaceous, silvery weathering shale of the Road River Formation.
- 3) Galena-silver-sphalerite mineralization in ferrodolomite related to the thrust.
- 4) Minor banded Ba-Zn showings associated with the Paleozoic limestone-shale unit.

1) Fracture vein of galena-silver-sphalerite associated with the northeast trending structures: Eight showings of this type have been located. The two most significant showings occur along a northeasterly striking fault (Map 6). On those showings massive coarse galena clusters and platy masses with minor sphalerite occur in a broken dolomitized limestone along the fault. Two hand trenches were made on the fault (Map 6). Trench #1 is located at the original Discovery showing. It is a 15 ft. long side-cut on a slope across the northeasterly fault and fractures. Assays of a channel sample for the entire trench length are 6.9 oz./ton Ag, 13.25% Pb and 1.15% Zn (Map 7). Trench #2 is located at 4100W + 830S (Map 6). It is also a side-hill cut 38 feet long. Assays of channel samples averaged approximately 4-5 oz./ton.

Ag, 8% Pb & Zn combined for the entire length. At the original Discovery showing the host dolomite is disturbed, probably by a frost heaving, and heavily stained by limonite and hydrous manganese oxide. The mineralization at both trenches is heavy for 1 - 2 feet from the well-defined hanging wall argillite, and fades out towards the limestone. Dolomitization seems to be the only significant alteration with local coarse sugary texture. Minor silicification occurs along the extension of the fault, and is sometimes accompanied by minor brecciation and associated colloform dolomite containing a fair amount of sphalerite.

Since no other silver bearing minerals have been noticed, and since high silver values are usually associated with high lead values, it may be concluded that the silver is in the galena lattice.

The other six minor showings are geologically similar to the above but of less interest. Two of the six showings are hosted by the volcanoclastic unit which contains small fractures filled with solid galena.

2) High grade float boulders of galena-silver in shale talus.

Hundreds of solid galena boulders (up to football size) are scattered on "Kill zone" mounds and slopes. The boulders are generally rounded with coarse to medium grained galena covered by whitish soft secondary minerals which may contain anglesite or cerrusite. Some of the boulders contain minor quartz seams with weak yellow staining. A trench, 4 feet deep at 4300W + 600N (Map 6) did not reach the bedrock, but tens of fist-size galena boulders were dug out. The showings might originally have been similar to the (1) above fracture-filled coarse galena veins, (perhaps with minor horizontal extensions parallel to the bedding planes).

3) Galena-Silver-Sphalerite mineralization in ferrodolomite related to the thrust: A minor galena-sphalerite showing has been located at 2400W + 200N immediately adjacent to the thrust fault (Map 3). It has sporadic coarse galena clusters and seams in a weakly brecciated and siliceous ferrodolomite, and is similar to the showings on the neighboring Cooker claims. However, the volume and grade are much less significant on the Rod claims. A chip sample assayed 1.4 oz/ton Ag, 1.7% Pb, 0.9% Zn.

4) Minor banded Ba-Zn showings associated with the Paleozoic limestone-shale unit:

Tens of minor showings of this type are scattered over the claim block. Mineralization is mostly zinc oxides with very minor visible red-brown sphalerite associated with barite and/or quartz veins. They probably belong to a stratabound type, which appears to be of little economic interest here, due to their limited extent.

IV. GEOCHEMISTRY

1) Field Procedure and Analysis

An earlier program of soil geochemistry was restricted to the ridges (R. Arnold & A. Floyd 1977). Single or double sampling lines were run following the ridge crest and samples were taken every 100-200 foot intervals. This sampling program turned out to be especially useful for lead values. The lead anomaly corresponded well with the area of high grade galena float.

The 1979 program was carried out in the areas covering valleys and slopes (Map 5). A baseline was made on the middle line of three parallel claim lines (Map 8). In essence two cross lines parallel to ridges were made on slopes, one at  $\frac{1}{4}$  way point between the ridge and the valley (creek) and the other at the  $\frac{3}{4}$  way point.

A total of 376 samples were collected and shipped to the assay laboratory (Bondar-Clegg & Co. at Whitehorse). Analyses were made for lead, zinc and silver by atomic absorption. Initially the analysis was done by both Hot extraction (using  $\text{HNO}_3\text{-HCl}$ ) and Cold extraction (in HCL). The assay values by the latter extraction were not very useful for delineation of anomalous zones. Subsequently only the hot extraction was carried out.

2) Results

A number of anomalous values were detected by the soil sampling program. Some of the anomalous readings correspond with the known mineral

showings and the area of mineralized float. Overall they appear to be too erratic to follow and confirm the sources of the anomalies. This situation could be partly due to the poor geochemical environment, and partly to irregular occurrences of black shales with high metal contents. The metal contents of some of the shales have been assayed up to 1% zinc and 1.4 oz. silver per ton (R. Arnold & A. Floyd 1977).

Residual soils exhibit poor highly disturbed profiles. The soils on higher plateau-like grounds along ridges are low in organic material whereas those on most of the slopes and valleys contain much organic material with muck, peat and boggy soils.

Soil-geochemical surveys do not appear to be an adequate tool for locating mineralized zones in this area. They are useful only for a reconnaissance survey to detect general areas of interest.

#### V. CONCLUSIONS & RECOMMENDATIONS

1. High grade silver-lead-zinc mineralization was discovered on a northeasterly fault. Two trenches were dug 400 feet apart across the fault and exposed mineralized dolomite-limestone with 15-30' width of ore grade material (Map 4). Minor float mineralization corresponding with a silver-lead anomaly occurs on the northeastern extension of the fault. It is located at 3900W + 400S.
2. The exact nature and source of high grade galena float associated with the silvery weathering black shale unit is uncertain. The erratic and frequent occurrence of zinc showings, usually as oxide, do not appear to be interesting from an economic point of view.
3. The results of the program carried out in 1979 on the Rod claim group merit further follow-up work. Investigation for the next stage should include the following:

- i) The Discovery showing
  - a. 500 ft. diamond drill program (2 holes)
  - b. A trench at 3900W + 400S
  
- ii) Area of highgrade galena float.
  - A trench near 4300W + 600N
  
- iii) Prospecting

LIST OF ILLUSTRATIONS

Fig. 1. Location Map

Maps (in pocket)

|                                       |           |
|---------------------------------------|-----------|
| 1. Regional geology                   | 1:500,000 |
| 2. Location of claim blocks           | 1:500,000 |
| 3. General geology (Rod)              | 1"=500'   |
| 4. Cross Section                      | 1"=500'   |
| 5. Soil geochemistry                  | 1"=500'   |
| 6. Detailed geology (Discovery Ridge) | 1"=100'   |
| 7. Trench geology                     | 1"=5'     |
| 8. Claim Sketch                       | 1"=1000'  |

REFERENCES:

1. Green, L.H. (1972) Geology of Nash Creek, Larsen Creek and Dawson Map Area.
2. Arnold, R & Floyd, A (1977) Summary Report on Rod Claims
3. Blusson, S. (1974) G.S.C. Open File Report No. 205.
4. Blusson, S. (1978) G.S.C. Paper 78-1A, p.77-80.
5. Private Report (1979) Geological Report on Nadaleen River Area, Y.T. by  
V. Zay Smith Associates Ltd.

STATEMENT OF EXPENDITURES

ROD CLAIMS 1979

HELICOPTER:

Hughes 500C 54.2 hours @ \$300/hr. \$16,260.00

FIXED WING:

Proportion of man days on Rod vs. total  
man days for Craig Project 126/870 x 20,000 2,896.00

SALARIES & BENEFITS:

Supervision (Potter) 3 days @ \$115/day  
Geologist (Kim) 46 days @ 85/day  
Prospector (Marini) 32 days @ 85/day  
Assistant (Coolidge) 33 days @ 45/day  
Assistant (McGuinty) 12 days @ 45/day

Total: 9,000.00

CAMP COSTS: 126/870 x 34,175.00 4,949.00

TRENCHING: J. Moreau & Co. 6 days @ \$400/day 2,400.00

MOBILIZATION & DEMOBILIZATION 1,700.00

ASSAYS AND GEOCHEMICAL ANALYSES 2,573.00

REPORT WRITING, DRAFTING ETC.  
20 man days @ \$85/day 1,700.00

TOTAL: \$41,478.00

I certify the above expenditures to be a true and accurate account of expenses incurred.

Dated on December 6, 1978 in Vancouver, B.C.

  
\_\_\_\_\_  
R.G. Potter, P.Eng.

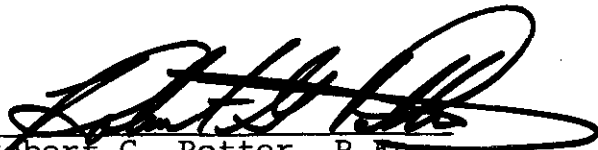
CERTIFICATE

I, Robert G. Potter, do hereby certify that:

1. I am a practicing geological engineer with residence at Fulford Harbour, B.C.
2. I am a graduate of the University of British Columbia (BASc 1961) and of McGill University (MSc Applied, 1972).
3. I am a member in good standing of the Association of Professional Engineers of B.C.
4. I have been engaged in the practice of mining exploration in Canada and Europe since graduation.
5. I personally supervised the geological work on the Rod Claims described in this report.
6. I have no financial interest in the subject property.

Dated at Vancouver, British Columbia

December 6, 1979

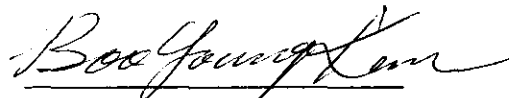
  
Robert G. Potter, P.Eng.

CERTIFICATE

I, Boo Young Kim, of the City of New Westminster, in the Province of British Columbia, certifies as follows:

1. That I am a geologist, residing at 222 Ash Street, New Westminster, B.C.
2. That I have practised my profession continuously since being graduated in 1964 with B. Sc in Geology from the Seoul National University in Seoul, Korea, and that I have continuously engaged in geological and mining exploration work for the past fifteen years.
3. That I am a temporary employee of Canadian Superior Exploration Ltd. in Vancouver, B.C.
4. That I have no interest in the property herein described.

Dated at Vancouver, B.C. this 14th day of November, 1979.



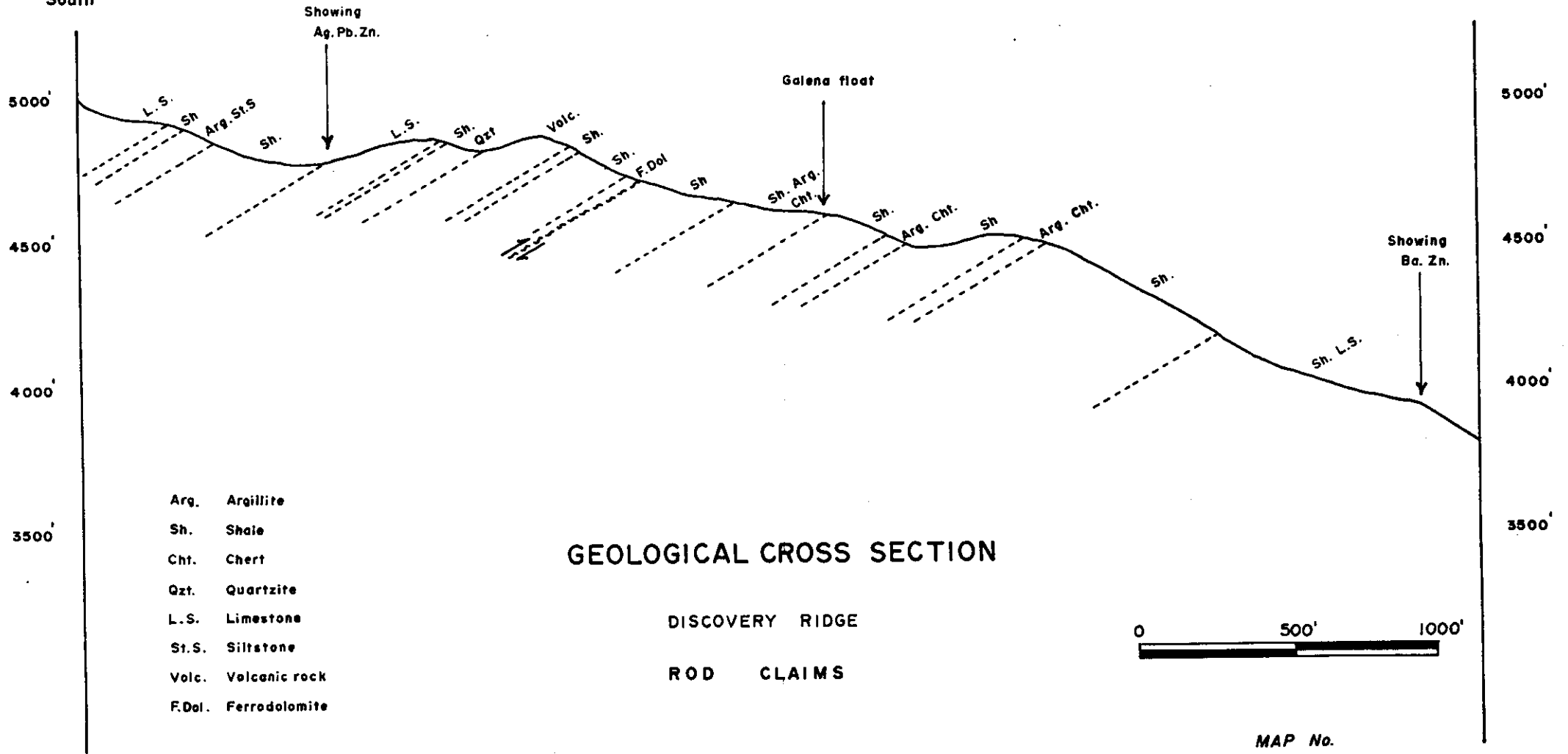
Boo Young Kim

Hadrynian

Paleozoic

South

North



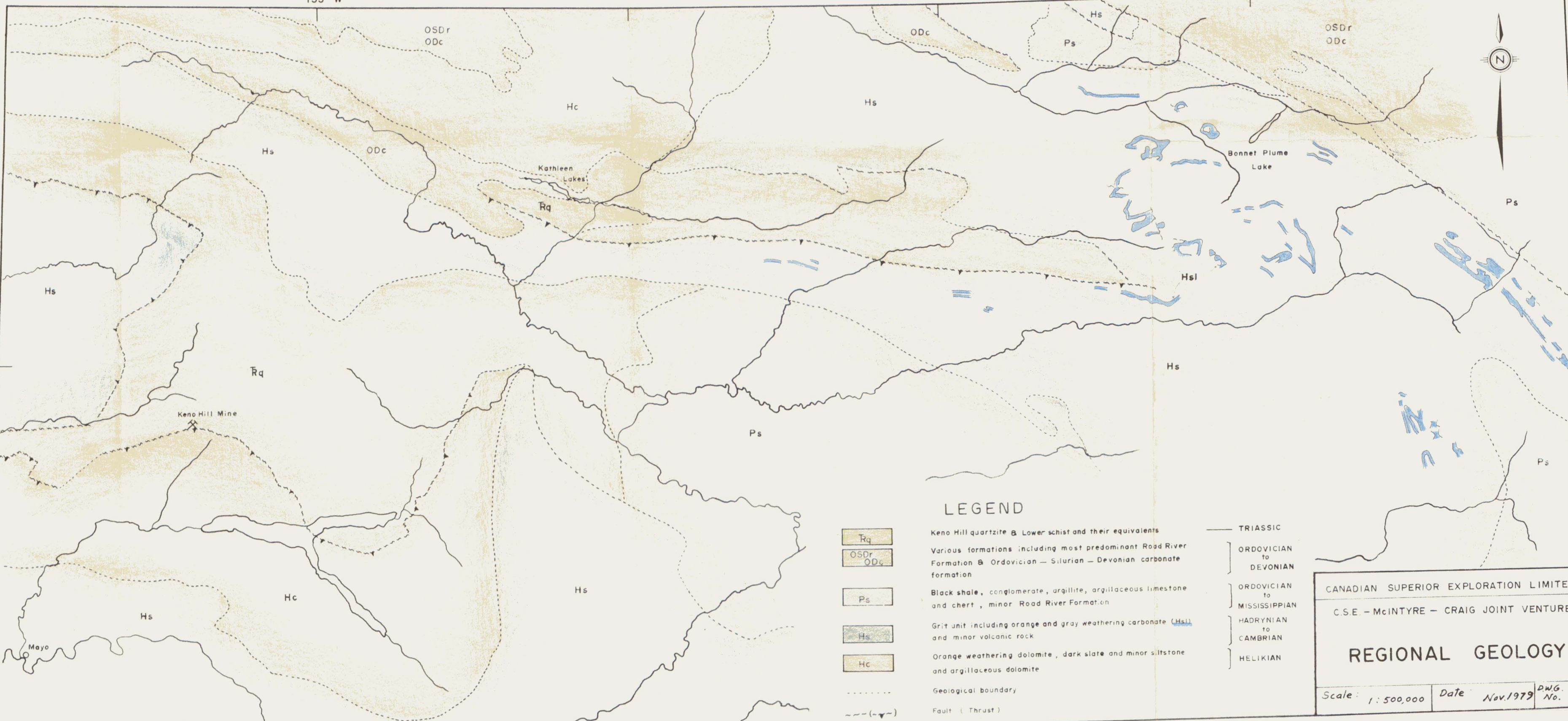
### GEOLOGICAL CROSS SECTION

DISCOVERY RIDGE

ROD CLAIMS



MAP No.



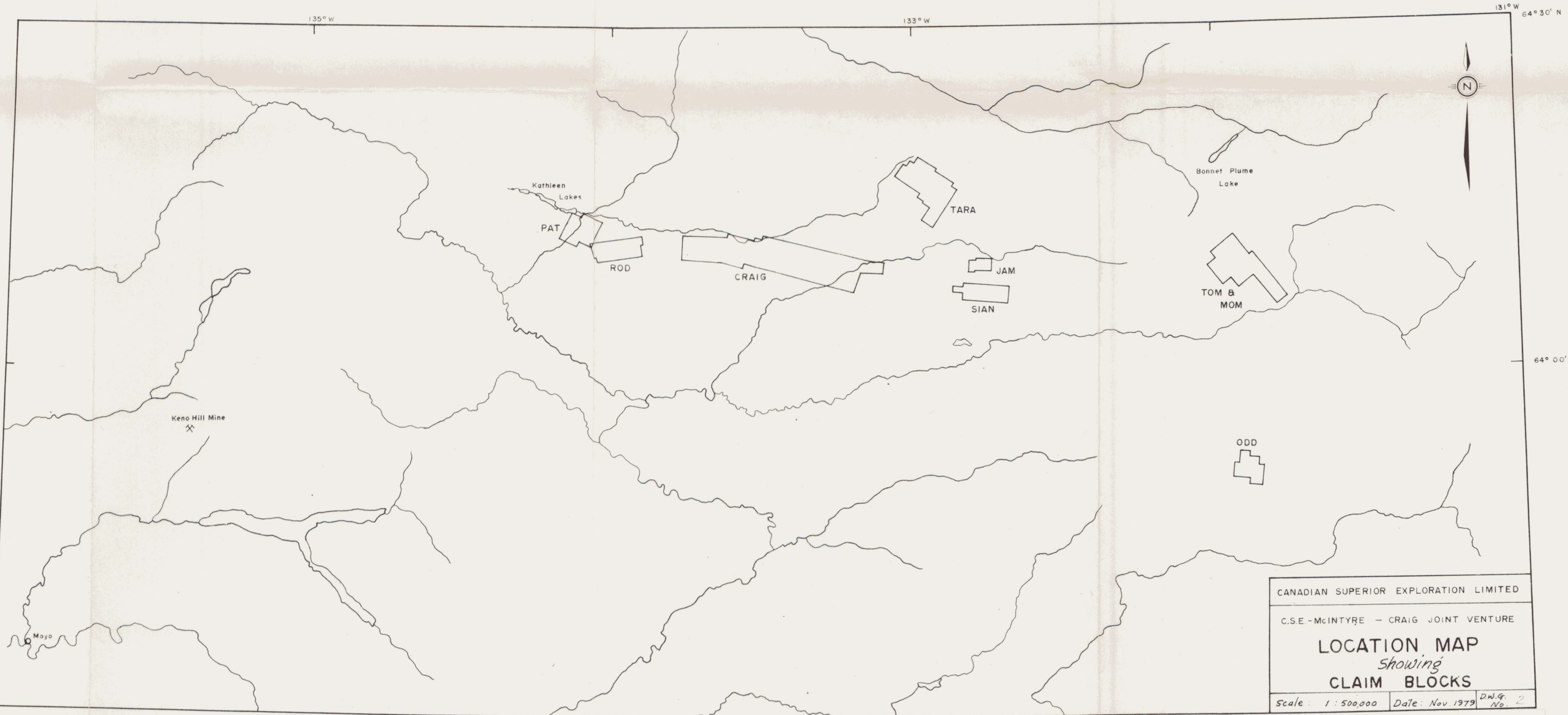
### LEGEND

- Rq Keno Hill quartzite & Lower schist and their equivalents
- OSDr  
ODc Various formations including most predominant Road River Formation & Ordovician - Silurian - Devonian carbonate formation
- Ps Black shale, conglomerate, argillite, argillaceous limestone and chert, minor Road River Formation
- Hs Grit unit including orange and gray weathering carbonate (Hsl) and minor volcanic rock
- Hc Orange weathering dolomite, dark slate and minor siltstone and argillaceous dolomite

- Geological boundary
- - - - - Fault (Thrust)

- TRIASSIC
- ORDOVICIAN to DEVONIAN
- ORDOVICIAN to MISSISSIPPIAN
- HADRYNIAN to CAMBRIAN
- HELIKIAN

CANADIAN SUPERIOR EXPLORATION LIMITED  
 C.S.E. - McINTYRE - CRAIG JOINT VENTURE  
**REGIONAL GEOLOGY**  
 Scale: 1:500,000    Date: Nov. 1979    DWG. No. 1



135° W

133° W

131° W 64° 30' N



Kathleen Lakes

Bonnet Plume Lake

PAT

ROD

CRAIG

TARA

JAM

SIAN

TOM & MOM

Keno Hill Mine

ODD

Mayo

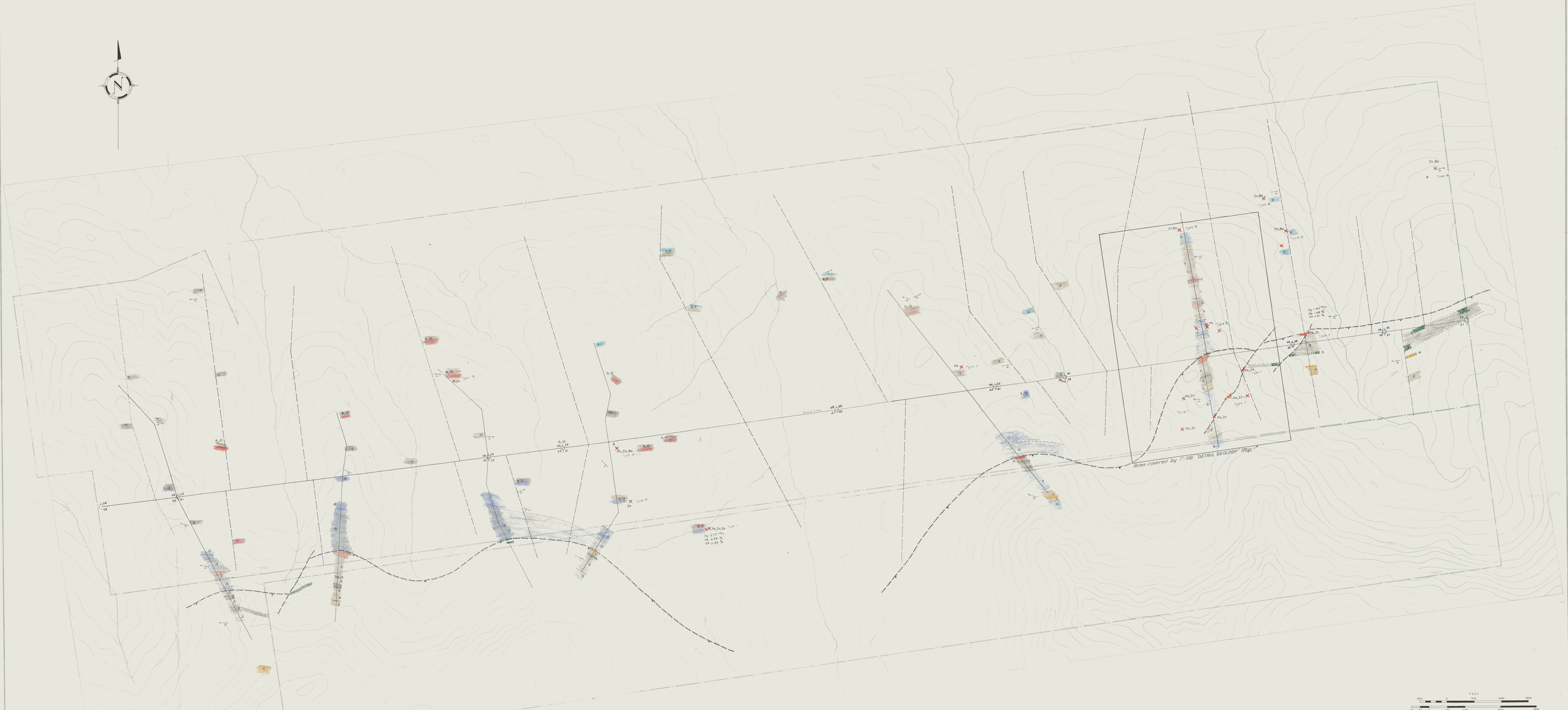
64° 00' N

CANADIAN SUPERIOR EXPLORATION LIMITED

C.S.E.-McINTYRE - CRAIG JOINT VENTURE

### LOCATION MAP *showing* CLAIM BLOCKS

Scale: 1:500,000 Date: Nov. 1979 DWG. No. 2

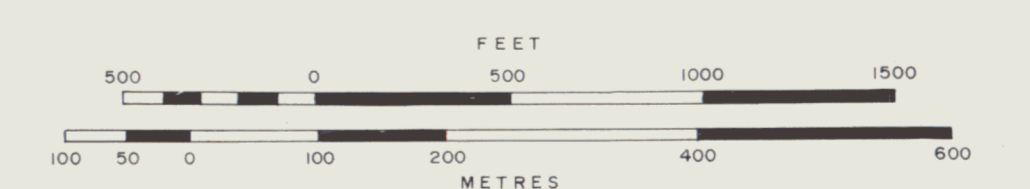


**SYMBOLS**

- Geological boundary
- Thrust fault
- Fault
- Mineral Showing
- Bedding
- Grid - geology & geochemistry

**LEGEND**

- |  |   |
|--|---|
| <b>ORDOVICIAN - SILURIAN (Road River Formation)</b>  | <b>HYDRINIEN (Grit Unit)</b>  |
| Shale, gray to dark gray, fissile, recessive, light rusty gray weathering  | Limestone, gray, massive to thick bedded, usually argillaceous  |
| Shale, Argillite and Chert, dark gray to black, locally strong carbonaceous and siliceous, frequent alterations usually silvery weathering | Quartzite, brownish gray to gray, argillaceous, quartz-eyes in finer-grained matrix (grit & quartzite)                            |
| Shale, gray to dark brownish gray, fissile, recessive, brown-gray weathering   | Volcanic Rock, greenish gray, clastics of agglomerate, breccia and minor interlayered tuff of intermediate to basic composition   |
| Argillite and Chert, dark gray to black, resistant to weathering, siliceous with frequent thin chert layers, gray to silver weathering     | Shale to Argillite, gray to maroon and green, mostly very fissile, occasional silty layers associated with gray coarser argillite |
| Shale, dark gray to black, siliceous, weakly altered to argillite, gray weathering   | Ferrodolomite, usually orange coloured, cracked (breccia textured) with quartz seams and local malpaisite                         |
| Shale and Limestone with Chert, dark gray to black shale, with occasional gray to dark gray interlaminae                                   |   |



CANADIAN SUPERIOR EXPLORATION LIMITED  
C.S.E.-MCINTYRE - CRAIG JOINT VENTURE  
ROD CLAIM GROUP  
**GENERAL GEOLOGY**

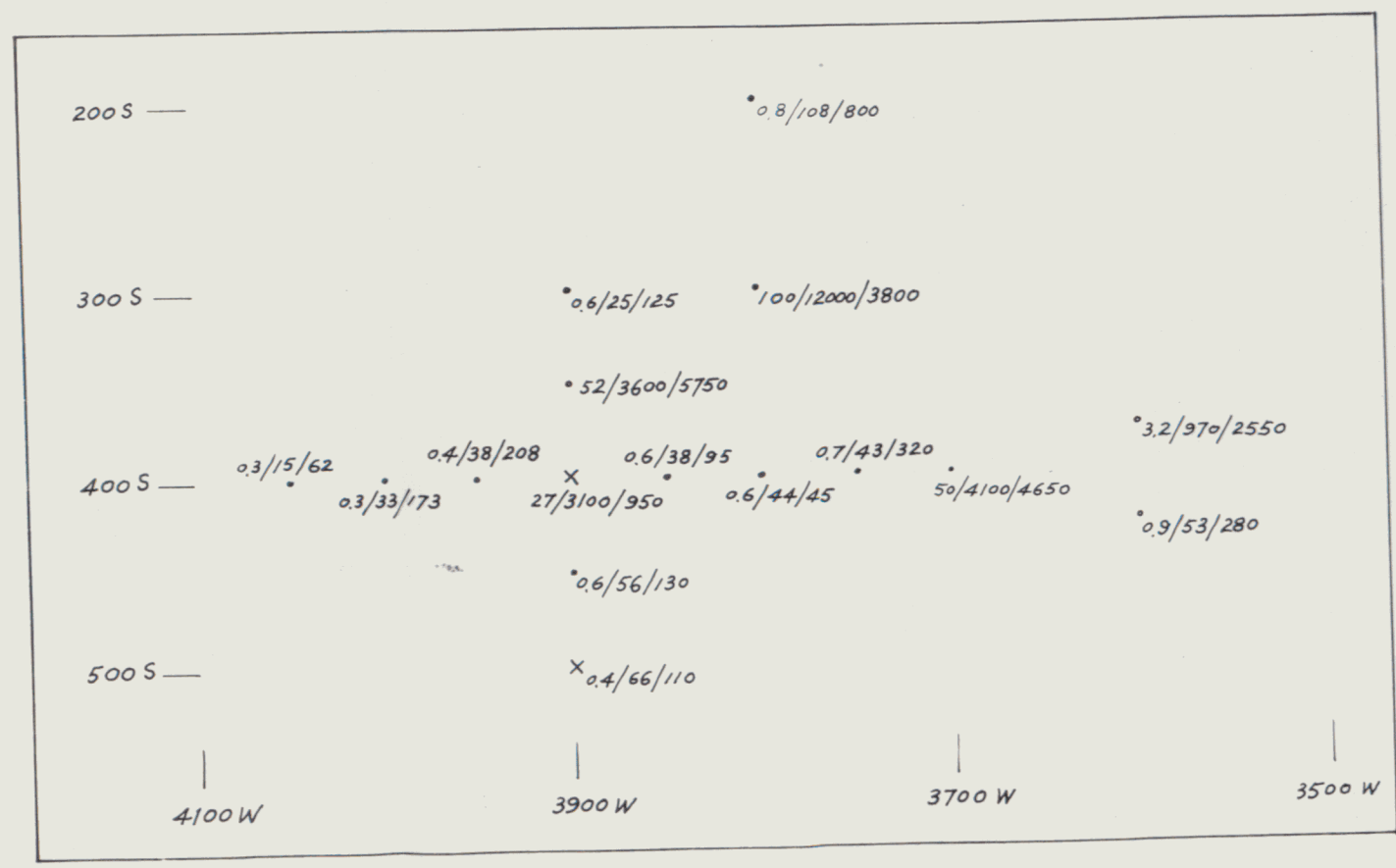
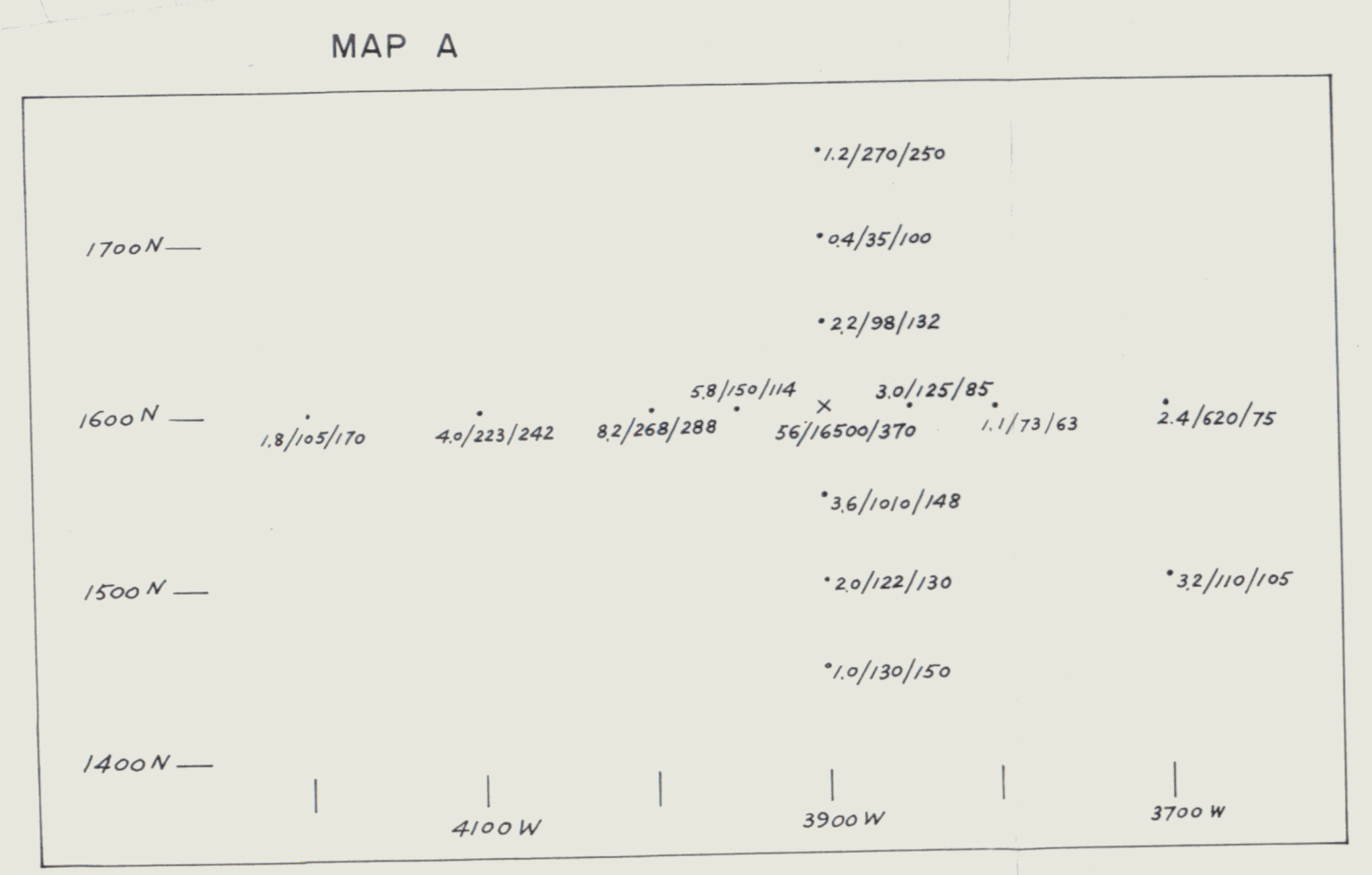
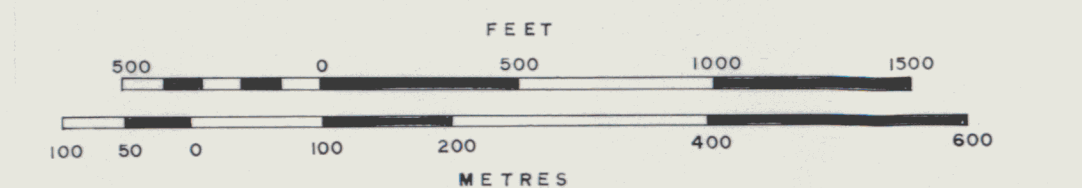
|                             |                     |            |           |
|-----------------------------|---------------------|------------|-----------|
| DRAWN BY: A. R. Guntler     | WORK BY: B. Y. Kim  | REVISIONS: | DWG. NO.: |
| SCALE: 1" = 500', 1cm = 60M | DATE: October, 1979 |            | FIG. NO.: |

Map #3



LEGEND

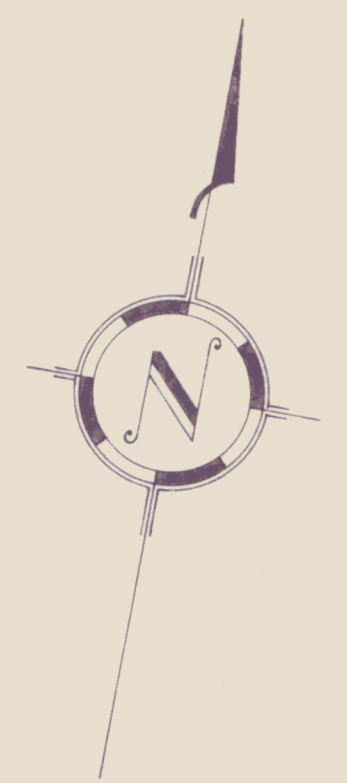
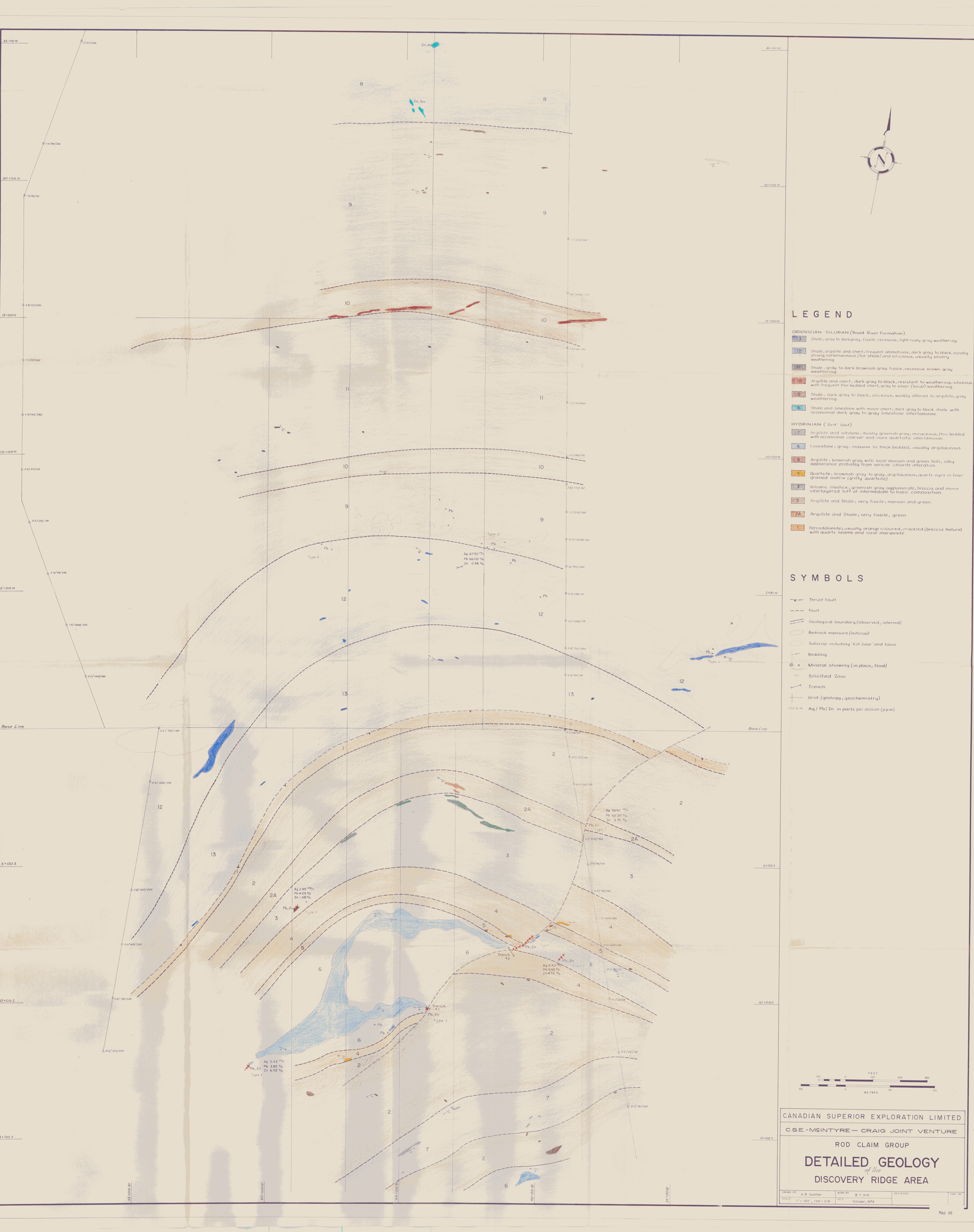
0.2/56/20 Silver/Lead/Zinc in parts per million (PPM)



CANADIAN SUPERIOR EXPLORATION LIMITED  
C.S.E. - MCINTYRE - CRAIG JOINT VENTURE

ROD CLAIM GROUP  
SOIL GEOCHEMISTRY

DRAWN BY: B.P.K. WORK BY: B.P.K. REVISIONS: DATE: October, 1979

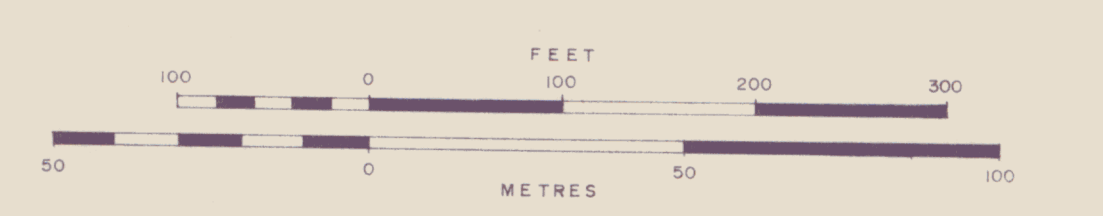


**LEGEND**

- ORDOVICIAN - SILURIAN (Road River Formation)**
- 13 Shale, gray to dark gray, fissile, recessive, light rusty gray weathering
  - 12 Shale, argillite and chert, frequent alterations, dark gray to black, locally strong carbonaceous (for shale) and siliceous, usually silvery weathering
  - 11 Shale, gray to dark brownish gray, fissile, recessive, brown gray weathering
  - 10 Argillite and chert, dark gray to black, resistant to weathering, siliceous with frequent thin bedded chert, gray to silver (local) weathering
  - 9 Shale, dark gray to black, siliceous, weakly altered to argillite, gray weathering
  - 8 Shale and limestone with minor chert, dark gray to black shale with occasional dark gray to gray limestone interlaminae
- HYDRINIAN ('Grit' Unit)**
- 7 Argillite and siltstone, mostly greenish gray, micaceous, thin bedded with occasional coarser and more quartzitic interlaminae
  - 6 Limestone, gray, massive to thick bedded, usually argillaceous
  - 5 Argillite; brownish gray with local maroon and green tints, silky appearance probably from sericite-chlorite alteration
  - 4 Quartzite; brownish gray to gray, argillaceous, quartz eyes in finer grained matrix (gritty quartzite)
  - 3 Volcanic clastics, greenish gray agglomerate, breccia and minor interlayered tuff of intermediate to basic composition
  - 2 Argillite and Shale; very fissile, maroon and green
  - 2A Argillite and Shale; very fissile, green
  - 1 Ferrudolomite, usually orange coloured, cracked (breccia texture) with quartz seams and local marposite

**SYMBOLS**

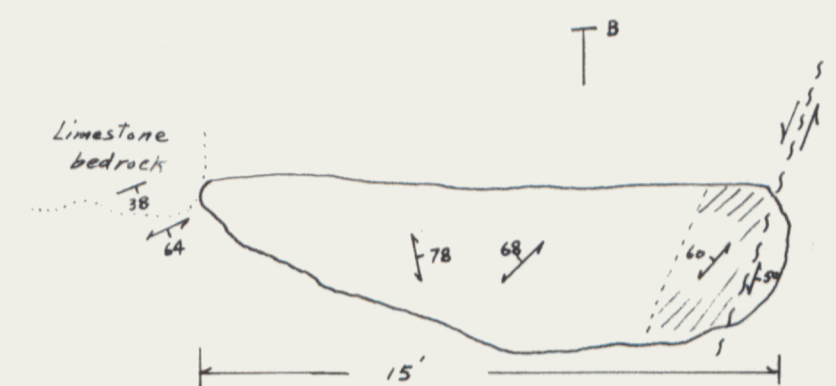
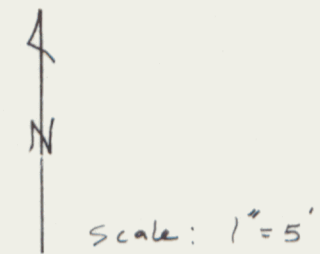
- Thrust Fault
- Fault
- Geological boundary (observed, inferred)
- Bedrock exposure (outcrop)
- Subcrop including 'kill zone' and talus
- Bedding
- Mineral showing (in place, float)
- Silicified Zone
- Trench
- Grid (geology, geochemistry)
- Ag/Pb/Zn in parts per million (ppm)



CANADIAN SUPERIOR EXPLORATION LIMITED  
 C.S.E.-MSINTYRE-CRAIG JOINT VENTURE  
 ROD CLAIM GROUP  
**DETAILED GEOLOGY**  
*of the*  
**DISCOVERY RIDGE AREA**

Drawn by: A. R. Gunther    Work by: B. T. Kim    Revision: 50  
 Scale: 1" = 100', 1cm = 12m    Date: October, 1979

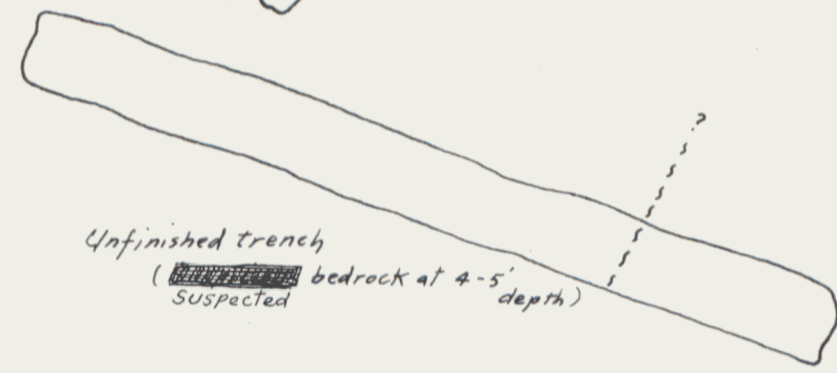
TRENCH # 1



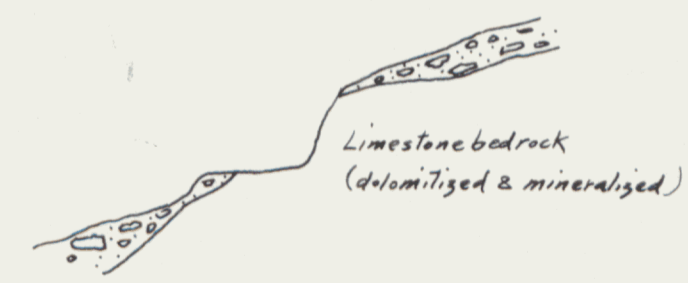
Sample No.  
Assay: Ag 6.9 %/T  
Pb 13.25 %  
Zn 1.15 %

Large cracked boulders of dolomitized and mineralized limestone. Dark brown gray heavy stain of manganese-limonite. Most of mineralization is heavy clusters of coarse PbS associated with the fractures parallel to the fault. Minor brown ZnS as fracture filling and dissemination. Shaded area (2' width) showing fist-size solid PbS. Contact with limestone to the west is sharp with clean limit of staining, also sharp fault contact with creamy brown micaceous argillite to the east. Fault expression is minor with well-defined limit of mineralization on the hanging wall argillite.

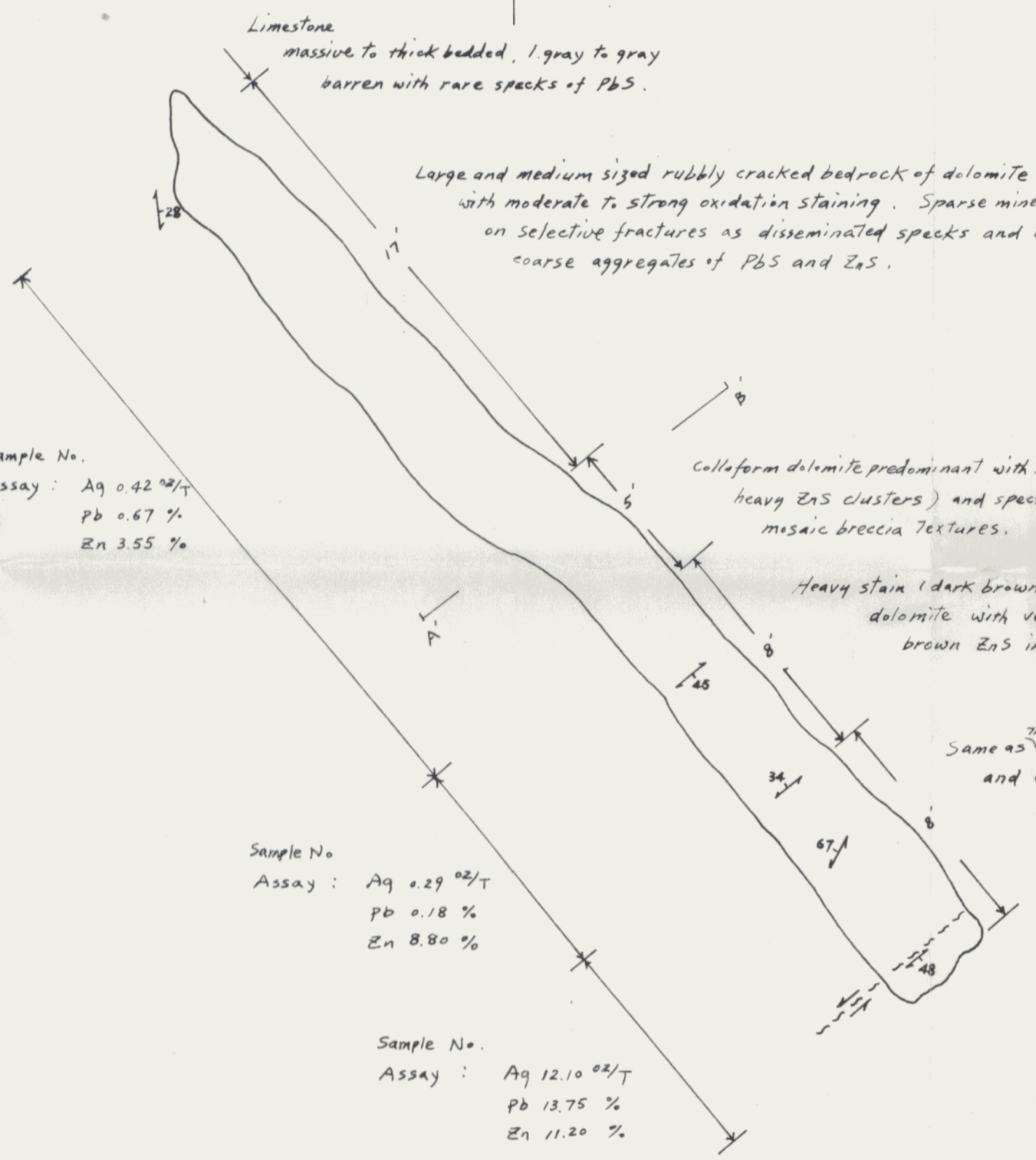
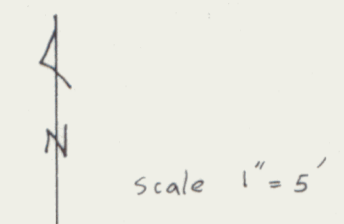
Outcrop of moderate silicification, probably of quartzite in Grit unit



CROSS SECTION (Non-scale) A - B  
looking west



TRENCH # 2



Sample No.  
Assay: Ag 0.42 %/T  
Pb 0.67 %  
Zn 3.55 %

Sample No.  
Assay: Ag 0.29 %/T  
Pb 0.18 %  
Zn 8.80 %

Sample No.  
Assay: Ag 12.10 %/T  
Pb 13.75 %  
Zn 11.20 %

Limestone massive to thick bedded, 1 gray to gray barren with rare specks of PbS.

Large and medium sized rubbly cracked bedrock of dolomite with moderate to strong oxidation staining. Sparse mineralization on selective fractures as disseminated specks and occasional coarse aggregates of PbS and ZnS.

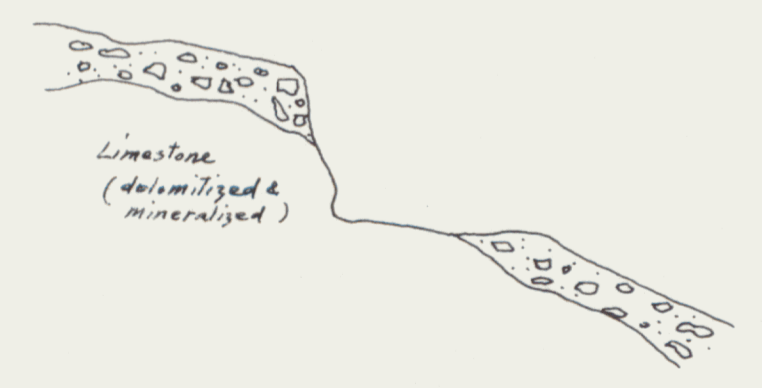
Colloform dolomite predominant with minor ZnS (very local heavy ZnS clusters) and specks of PbS. local mosaic breccia textures.

Heavy stain (dark brown gray) of manganese-limonite on massive dolomite with very minor quartz fractures. Amount of dark brown ZnS increased with less PbS.

Same as above Zn-rich zone, 10-15% PbS as fracture coatings and coarse cube aggregates with brown ZnS. Weak breccia texture dark.

Argillite, creamy brown, altered and gauged by a normal fault with 1-2" thick PbS lenses on the fault fracture.

CROSS SECTION (Non-scale) A' - B'  
looking NW



|  |                   |            |                   |
|--|-------------------|------------|-------------------|
| CANADIAN SUPERIOR EXPLORATION LIMITED                            |                   |            |                   |
| C.S.E. - MCINTYRE - CRAIG JOINT VENTURE                          |                   |            |                   |
| <b>ROD CLAIM GROUP<br/>TRENCH GEOLOGY<br/>ON DISCOVERY RIDGE</b> |                   |            |                   |
| Drawn by: B.Y. Kim   | Work by: B.Y. Kim | Revisions: | Dwg. No. P.184-79 |
| Scale: 1" = 5'   | Date: Oct 1979    |            |                   |

106-D-1  
106-C-4



|  |              |         |           |
|--|--------------|---------|-----------|
| CANADIAN SUPERIOR EXPLORATION LIMITED                              |              |         |           |
| <b>LOCATION MAP</b><br><i>showing</i><br><b>CLAIMS &amp; POSTS</b> |              |         |           |
| Drawn by   | BYK          | Date    | Oct. 1979 |
| N.T.S.   | 106-C-4, D-1 | Map No. | 8         |