

1978 GEOLOGICAL REPORT on the BNOB CLAIM GROUP

Watson Lake Mining District, Y. T.

N. T. S. 105 F - 10

Lat. $61^{\circ} 35' N$ Long. $132^{\circ} 30' W$

by:

J. Mortensen

CYPRUS ANVIL MINING CORPORATION

January 26, 1979

Field Work Done During the Period: July 31-Aug 4/78

014427

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Yukon Territory

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bound in report

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LIST OF CLAIMS -- BNOB CLAIM GROUP

<u>Claims</u>	<u>Grant Nos.</u>	<u>Recording Dates</u>
BNOB 1 - 16	YA 258 - YA 273	July 26, 1976
BNOB 17 - 24	YA 11088 - YA 11095	September 20, 1976

1978 GEOLOGICAL REPORT on the BNOB CLAIM GROUP

INTRODUCTION

The BNOB claim group, consisting of 24 contiguous claims, lies on the eastern slopes of the McConnell River valley, at approximately $61^{\circ} 35' N$ by $132^{\circ} 30' W$ (Figure 1). The claim group was staked in 1976 to cover a highly anomalous zone of base metal geochemical values associated with a showing of sedimentary barite containing trace amounts of galena and sphalerite.

Field work carried out during the 1977 season included magnetic and electromagnetic surveys, in conjunction with geological mapping of the property. Results of the surveys were inconclusive and not particularly promising. During the 1978 field season, the property and surrounding areas were re-mapped as a part of regional mapping of the Devonian-Mississippian volcanic-sedimentary sequence. The results of this work as they relate to the BNOB property are discussed below.

GEOLOGY

Outcrop on the BNOB property is relatively poor (less than 5% exposure), hence some aspects of the stratigraphy and structural geology cannot be satisfactorily resolved. Some general conclusions, however, can be reached.

The geology of the claim group consists of a deformed sequence of intercalated intermediate to felsic volcanic rocks and black phyllites of Upper Devonian to Mississippian age, which has been overthrust by a sheet of Siluro-Devonian

quartzite and carbonate, and cut by a later northwesterly-trending steep fault. Only the Devono-Mississippian section, which is host to the known showings, will be discussed in this report.

In the northwestern part of the property, the lowest stratigraphic unit exposed in this section is a very rusty weathering pyritic felsic tuff and lapilli tuff. Bedding and cleavage are rarely visible. A bed of sucrosic bedded barite with a trace amount of pyrite, galena, and sphalerite (the "main showing") occurs near the top of this unit, reaching a maximum thickness of approximately 10m. The barite is overlain by 30 to 40m of rusty weathering felsic pyroclastic rocks, which are in turn overlain by at least 75m of medium to coarse-grained dark grey brown volcanics (flow or sill).

In the southeastern part of the property, volcanic rocks are much less abundant. Instead, mainly dark grey to black slates and phyllites outcrop. These appear to be facies equivalents of the volcanics farther to the northwest, suggesting that the source of the volcanic rocks was to the north or west of the property. Massive bedded barite (with minor thin-bedded limestone) forms a bed at least 2m thick (the "new showing") within the grey slates. The top of the barite unit is not exposed, therefore total thickness cannot be measured. No sulphides are present in the barite.

The two barite horizons exposed on the property are thought to be situated on opposite limbs of a single northeasterly trending, upright anticline. This structure is also defined by the sparse structural data available.

TABLE I BNOB LITHOLOGIC DESCRIPTIONS

Unit 5
(Mva₂) medium to coarse-grained dark grey-green to brown
flow or sill.

Unit 4
(Mva₁) very rusty weathering, pyritic felsic tuffs and
lapilli tuffs; contains massive sedimentary barite
with traces of pyrite, galena, and sphalerite near
the upper contact.

Unit 3
(uDMs) dark grey to black carbonaceous slates and phyllites,
with narrow interbeds of chloritized intermediate
to felsic volcanic flows and lapilli tuffs; contains
a single bed of sucrosic barite with minor limestone.

~~~~~ thrust contact ~~~~~

Unit 2  
(SDd1)                      buff to pink weathering massive dolomite with abundant  
distinctive quartz, calcite and siderite veining.

Unit 1  
(SDq)                      massive to thin-bedded slightly calcareous, fine-grained  
mature quartzites; locally slightly carbonaceous.

DISCUSSION

The original facies relations of strata exposed on the property are as shown below:-

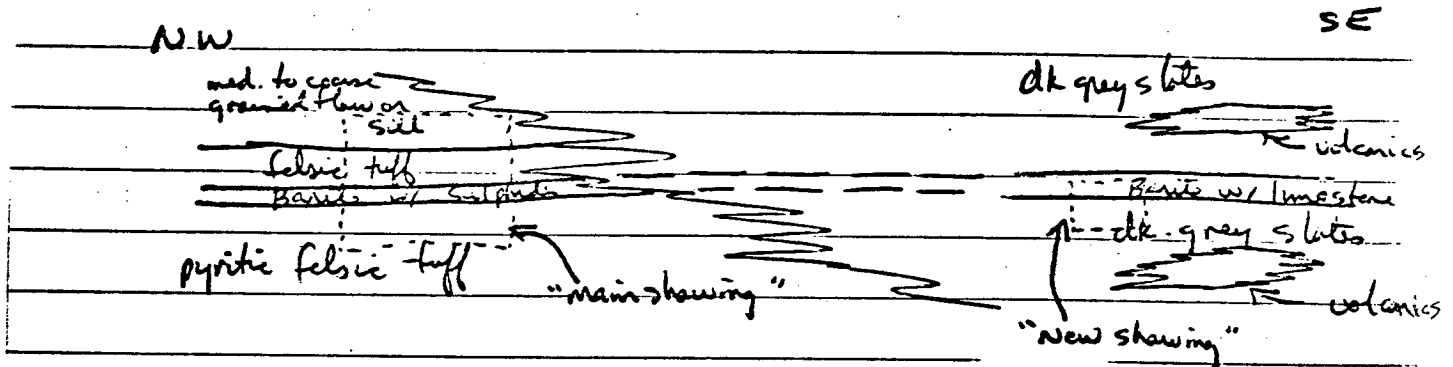


Figure 2: SCHEMATIC RESTORED CROSS-SECTION

Two main lines of evidence suggest that there is good potential for a massive sulphide body to exist farther to the northwest. These are:

- a) base metal sulphide content in the barite increases to the northwest,
- b) the stratigraphy becomes more volcanic-dominated to the northwest, therefore the potential for "proximal" higher grade sulphide ores, rather than "distal" barite ores increases in that direction.

Lack of outcrop to the northwest makes it impossible to follow the barite horizon beyond the "main showing". The various geophysical surveys carried out on the property do not adequately differentiate between rock types, hence diamond drilling will probably be required in order to determine the economic potential of the property.

Respectfully submitted,

J. Mortensen.

January 26, 1979.

LITHOLOGIC DESCRIPTIONS

- Mva<sub>2</sub>
- Mva<sub>1</sub>
- uDMs
- SDd
- SDq

MEDIUM TO COARSE - GRAINED DARK GREY - GREEN TO BROWN FLOW OR SILL.

VERY RUSTY WEATHERING, PYRITIC FELSIC TUFFS AND LAPILLI TUFFS; CONTAINS MASSIVE SEDIMENTARY BARITE WITH TRACES OF PYRITE, GALENA, AND SPHALERITE NEAR THE UPPER CONTACT.

DARK GREY TO BLACK CARBONACEOUS SLATES AND PHYLLITES, WITH NARROW INTERBEDS OF CHLORITIZED INTERMEDIATE TO FELSIC VOLCANIC FLOWS AND LAPILLI TUFFS; CONTAINS A SINGLE BED OF SUCROSIIC BARITE WITH MINOR LIMESTONE

THRUST CONTACT

BUFF TO PINK WEATHERING MASSIVE DOLOMITE WITH ABUNDANT DISTINCTIVE QUARTZ, CALCITE AND SIDERITE VEINING.

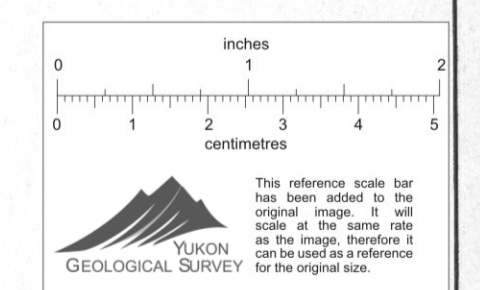
MASSIVE TO THIN - BEDDED SLIGHTLY CALCAREOUS, FINE - GRAINED MATURE QUARTZITES; LOCALLY SLIGHTLY CARBONACEOUS.

SILURIAN DEVONIAN - MISSISSIPPIAN



SYMBOLS

- BEDDING
- S<sub>1</sub> AXIAL PLANE CLEAVAGE
  - F<sub>1</sub> LINEATION OR MESOSCOPIC FOLD AXIS
  - S<sub>2</sub> AXIAL PLANE CLEAVAGE
  - F<sub>2</sub> LINEATION OR MESOSCOPIC FOLD AXIS
  - JOINTING



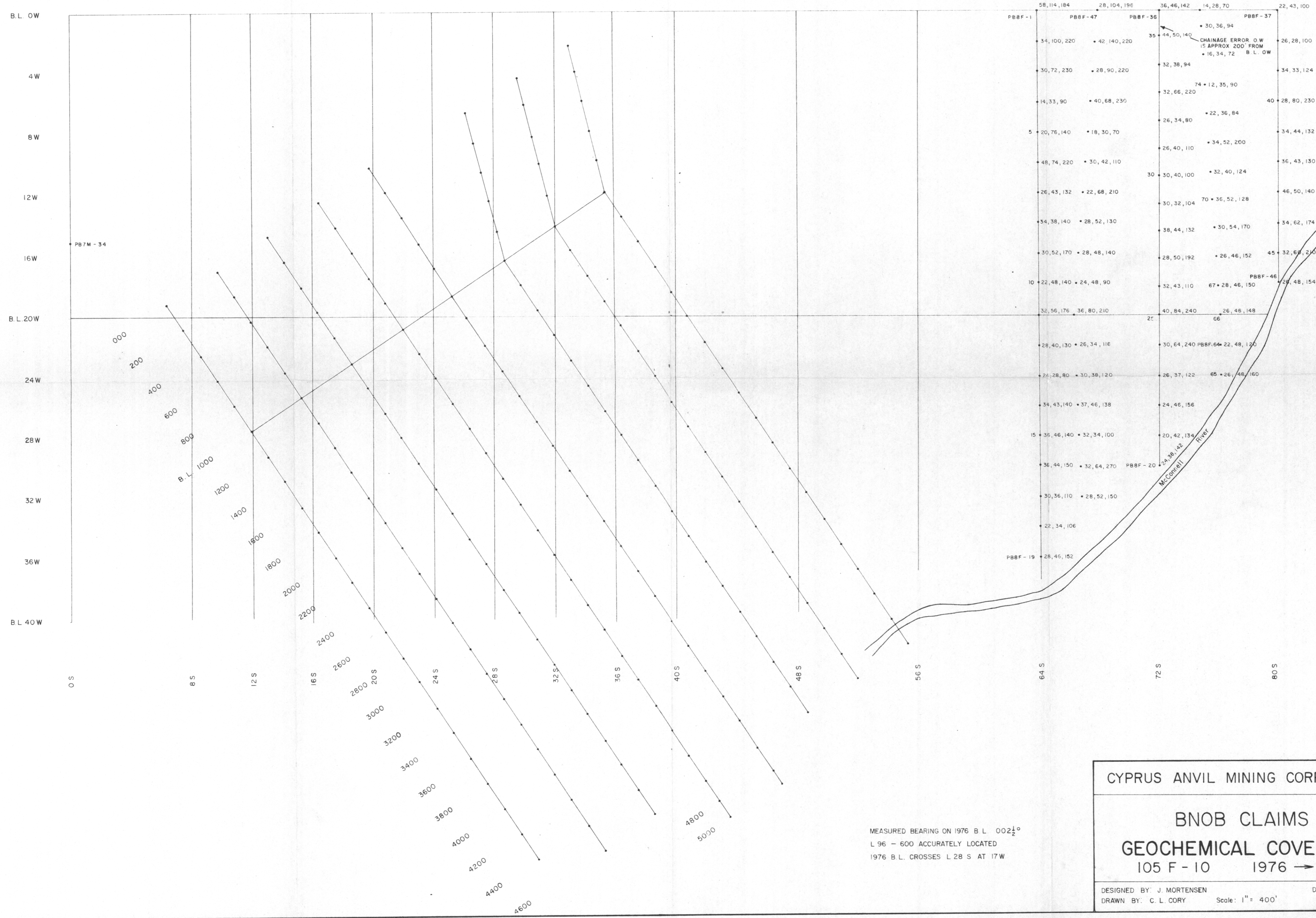
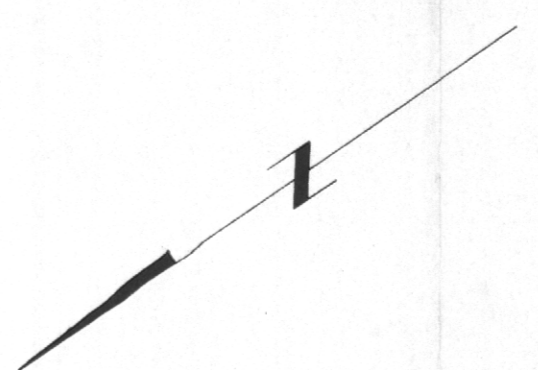
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**BNOB CLAIMS GEOLOGY**

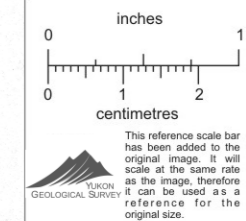
DESIGNED BY J. MORTENSEN  
DRAWN BY C. L. CORY

DATE: SEPT 18, 1978  
REVISED JAN 23 / 79

Scale: 1" = 400'



|            |            |           |              |           |
|------------|------------|-----------|--------------|-----------|
| 58,114,184 | 28,104,196 | 36,46,142 | 14,28,70     | 22,43,100 |
| PBBF - 1   | PBBF - 47  | PBBF - 36 | PBBF - 37    |           |
| 34,100,220 | 42,140,220 | 30,36,94  | 26,28,100    |           |
| 30,72,230  | 28,90,220  | 32,38,94  | 34,33,124    |           |
| 14,33,90   | 40,68,230  | 32,66,220 | 28,80,230    |           |
| 5          | 20,76,140  | 18,30,70  | 22,36,84     | 34,44,132 |
| 48,74,220  | 30,42,110  | 26,40,110 | 34,52,200    | 36,43,130 |
| 26,43,132  | 22,68,210  | 30,40,100 | 32,40,124    | 46,50,140 |
| 34,38,140  | 28,52,130  | 30,32,104 | 36,52,128    | 34,62,174 |
| 30,52,170  | 28,48,140  | 38,44,132 | 30,54,170    | 32,68,210 |
| 10         | 22,48,140  | 24,48,90  | 28,50,192    | 26,46,152 |
| 32,56,176  | 36,80,210  | 32,43,110 | 67,28,46,150 | 32,48,154 |
|            |            | 40,84,240 | 26,46,148    |           |
| 28,40,130  | 26,34,116  | 30,64,240 | PBBF-64      | 22,48,120 |
| 24,28,80   | 30,38,120  | 26,37,122 | 65           | 26,48,160 |
| 34,43,140  | 37,46,138  | 24,46,156 |              |           |
| 15         | 36,46,140  | 32,34,100 | 20,42,134    |           |
| 36,44,150  | 32,64,270  | PBBF - 20 |              |           |
| 30,36,110  | 28,52,150  |           |              |           |
| 22,34,106  |            |           |              |           |
| PBBF - 19  | 28,46,152  |           |              |           |



CYPRUS ANVIL MINING CORPORATION

BNOB CLAIMS  
 GEOCHEMICAL COVERAGE  
 105 F - 10 1976 -> 1978

DESIGNED BY: J. MORTENSEN  
 DRAWN BY: C. L. CORY  
 Scale: 1" = 400'  
 DATE: SEPT 18, 1978

MEASURED BEARING ON 1976 B.L. 002 1/2  
 L 96 - 600 ACCURATELY LOCATED  
 1976 B.L. CROSSES L 28 S AT 17W