

CYPRUS ANVIL MINING CORPORATION
GEOLOGICAL REPORT
EXPLORATION IMPACT OF RAISING THE
MILL RESERVOIR WATER LEVEL

L.C. Pigage
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C O N T E N T S

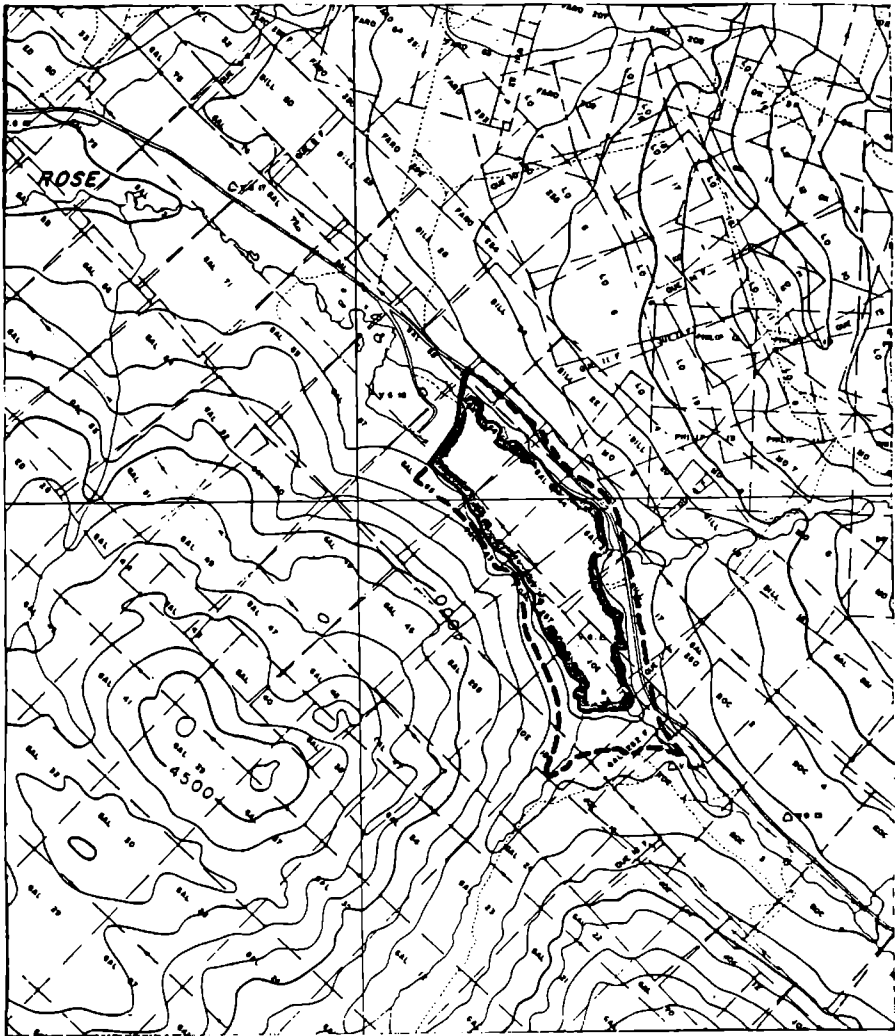
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INTRODUCTION

During 1984, initial feasibility studies were completed on raising the dam level of the mill reservoir at the Faro minesite by 7 to 15 metres. Raising the water level by this amount would drown portions of several claims and several outcrops along the western shoreline of the reservoir. A geological traverse along the western reservoir margin was completed in September 1984 to observe and sample these outcrops. This report summarizes that traverse; it includes field notes for the outcrops, and petrographic descriptions of representative samples from the field stations. The report also assesses the impact of the change in reservoir level on exploration in the area.

LOCATION AND ACCESS

The mill reservoir is located immediately southwest of the Mine access road approximately 5 kilometres southeast of the Minesite. Access to the western shoreline is readily gained by dirt roads to both the northwest and southeast ends of the reservoir. Figure 1 shows mineral claims in the reservoir area. Claims which would be affected by raising the water level of the reservoir are GAL 63-66, 257, 259-260, 262F, BILL 17, 20, 22, 24, JOE 17-18, ROC 1-2 and QUE 7F.



Scale: 1 inch = 2000 feet

Figure 1. Claims Map

Shaded line indicates outline of present reservoir

Dashed line corresponds to outline of reservoir if water level were raised 15 metres.



Figure 2. Outcrop map of reservoir area. Dashed line indicates shoreline if water level is raised 15 metres.

PREVIOUS WORK

The western margin of the reservoir was covered by the ground and airborne surveys completed in the 1960's and early 1970's. Ground surveys covering the area include soil geochemistry, Turam electromagnetic, CEM electromagnetic, and ground magnetic. Airborne surveys include magnetic and electromagnetic. The results of these surveys are compiled on sheet E-6 of the 1976 Anvil District Compilation Series maps. Two diamond drill holes were completed in 1968 in the valley bottom presently covered by the reservoir. Locations of these drill holes are plotted on Figure 2; collar co-ordinates were calculated from the CAMC Mine co-ordinates noted in the original drill logs.

The soil geochemistry, CEM electromagnetic, and airborne electromagnetic surveys do not contain anomalous values in the immediate reservoir area. The airborne magnetic survey shows a reasonably strong (3140 gammas) elongate "bullseye" anomaly which extends uphill from the shoreline to the northwest. The anomaly trends in the same direction as the outcrop pattern in this area. The ground magnetic survey shows a less intense anomaly (1000 gammas) in the same area. The Turam electromagnetic grid contains isolated anomalies in the reservoir area.

Drill holes 68-PR-1 and 68-PR-2 contained an intercalated sequence of marbles, noncalcareous schists, and calc-silicates. Mineralization was not intersected. The drill logs are presented in Appendix 3. The core was not re-examined as part of the study.

GEOLOGY

The dominant foliation (S2) in the reservoir area dips gently to the southwest. Correlation of major marble units between surface exposures north of the Mine road and drill holes 68-PR-1 and 68-PR-2 shows that lithologic units also dip to the southwest (fig. 4). Figures 3 and 4 show the surface geology and cross-section for the reservoir area.

The shoreline outcrops consist of finely laminated, dark brown and pale green, generally noncalcareous calc-silicate with lesser interbands of medium dark green amphibolite and pale grey marble. Although typically noncalcareous, the calc-silicate weathers with a dull white, calcareous, drusy coating. The brown and green laminations occur on a scale of centimetres to millimetres. Commonly this banding is subparallel to the pervasive S2 foliation; locally it defines microlithons (within which the S1 foliation is preserved between the dominant S2 folia). Minor disseminated pyrrhotite porphyroblasts weather to rusty orange, isolated patches. Locally the calc-silicate is dark grey because of abundant, disseminated, graphite "dust". Field descriptions of the outcrops are presented in Appendix 1.

Petrographically the calc-silicate consists of finely interlaminated pelite (brown) mineral assemblages and calc-silicate (grey-green) mineral assemblages. The pelitic bands typically consist of biotite-quartz + muscovite + calcic plagioclase. In contrast the calc-silicate assemblage is clinozoisite-quartz + calcic plagioclase + actinolite/tremolite. Minor constituents of both assemblages are opaques and carbonate. Petrographic descriptions of representative samples are presented in Appendix 2.

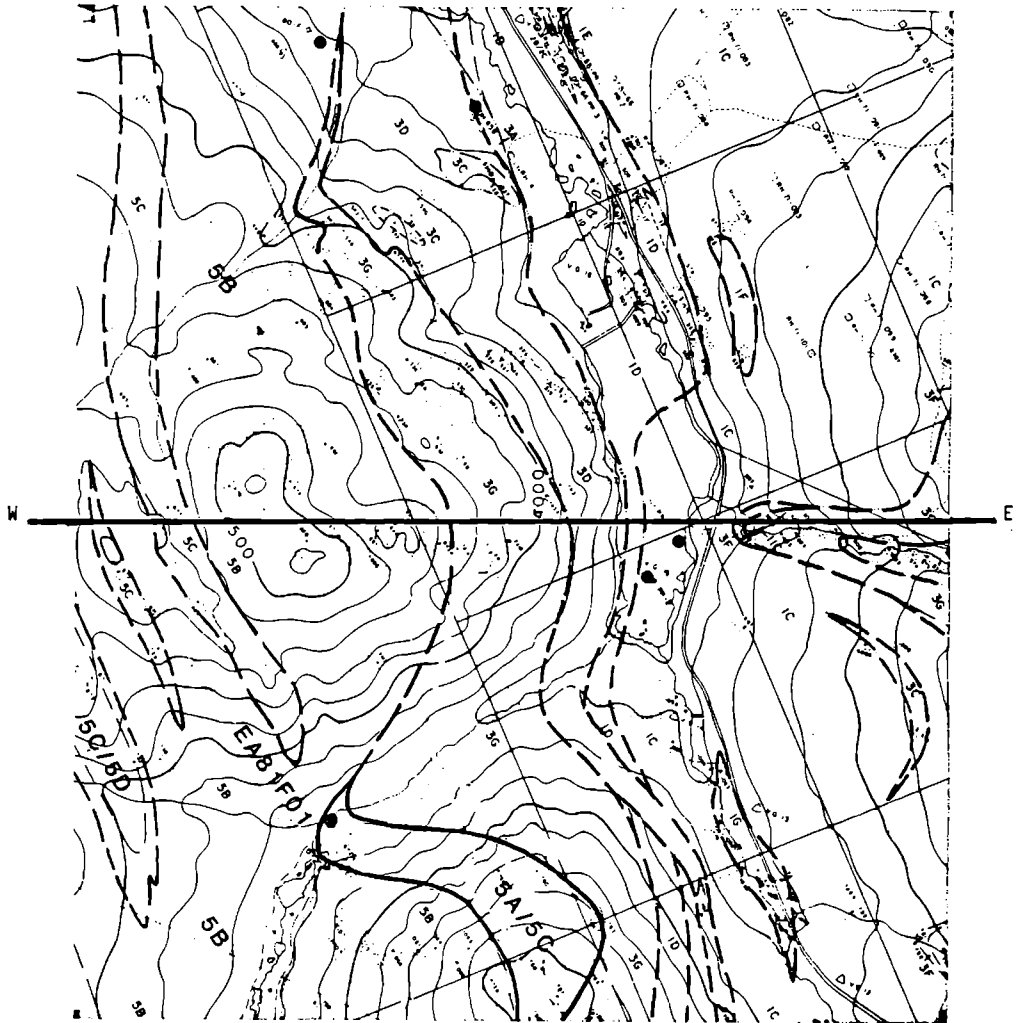


Figure 3. Geology map of reservoir area

Scale 1 inch = 2000 feet

Location of W-E cross-section marked by heavy line

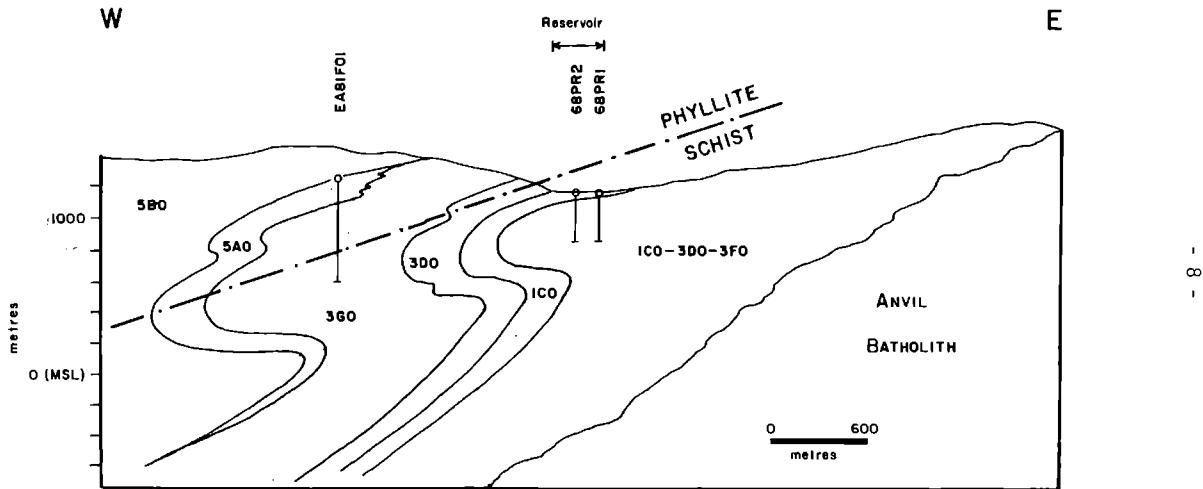


Figure 4. West-East cross-section through reservoir area

Scale 1 inch = 2000 feet

Minor intercalated lithologies in the calc-silicate unit include coarsely crystalline grey marble (station 84-334, 84-338), noncalcareous biotite-muscovite schist (station 84-334), and medium dark green amphibolite (stations 84-334, 84-336, 84-337, 84-338). The marble is up to 5 metres thick and typically contains abundant thin biotitic calc-silicate bands. The amphibolites also range up to 5 metres in thickness.

DISCUSSION

Comparison of Figures 3 and 4 with the structural/stratigraphic sequences at Faro and the Vangorda Plateau results in some interesting correlations. The reservoir calc-silicate outcrops are structurally overlain by noncalcareous phyllites (3G0) and underlain by noncalcareous biotite-muscovite schists (1C0). Both the schist and phyllite units belong to the Mount Mye formation. They have been metamorphosed to differing metamorphic grades. Previously, however, the overlying phyllite has been considered a noncalcareous member of the Vangorda formation and the reservoir calc-silicates to be the basal Vangorda formation. Correlation of the surface exposures of which marble (3F0) with similar marbles intersected in drill holes 68-PR-1 and 68-PR-2 indicates that the lithologic units in the reservoir area dip gently (approximately 10°) to the southwest. The reservoir calc-silicate unit occurs about 75 metres above the projected position of the 3F0 marble (also called 1G0 in more highly metamorphosed parts of the District). The total thickness between the 3F0 marble and the basal calcareous phyllites of the Vangorda formation is approximately 600 metres.

On the Vangorda Plateau the 3F0 marbles are known to occur within the footwall sequence (or the ore) of Mount Mye phyllites/schists. Thicknesses between mineralized horizons and the marbles are unknown because of unresolved structural complications due to extensional faulting.

Comparison with the lithologic/structural sequence at Faro is more informative (and speculative). Drilling on Section 118 at Faro was completed to provide a regional stratigraphic sequence for the Faro ore lens. Although fault complications are present, compilation of difference intersections on Section 118 suggest that the total thickness between basal

Vangorda formation (Unit 3A) and the uppermost coarsely crystalline white marble in the Mount Mye formation (3F0) is on the order of 600 metres. The Faro mineralization occurs about 75 metres beneath the base of the Vangorda formation. Drill hole 456-75-14 located southwest of the Faro deposit, intersected an 80 metre thick sequence of carbonaceous, siliceous phyllites with lesser interbands of the calc-silicate and metabasite/amphibolite structurally about 160 metres above the uppermost (and only) white 3F0 marble.

The sequence of units and thicknesses described for Faro Section 118 and the reservoir area (Figure 4) are very similar. By this comparison the reservoir calc-silicate unit would correlate with the calc-silicate/carbonaceous phyllite/metabasite unit intersected in the lower part of drill hole 456-75-14. This unit appears to be approximately 450 metres beneath the Faro mineral deposit. Therefore, the most favourable exploration target in the reservoir area would be located further west (upslope) from the reservoir outcrops.

Drill hole EAB1F01 (see Figures 3 and 4) was collared in basal Vangorda formation and intersected a 470 metre thick sequence of Mount Mye phyllites and schists. It did not intersect either the calc-silicate reservoir package or the 3F0 marble package. If the structural dip in the reservoir area were extended to this drill hole (see Figure 4), both the reservoir calc-silicate unit and underlying 3F0 marble should have been intersected. This absence of the expected lithologies is interpreted in Figure 4 as being due to a large scale SW-verging phase 2 fold which has structurally lowered the elevation of the entire lithologic/structural sequence.

The airborne and ground magnetic anomalies associated with the reservoir outcrops can be readily explained by the common occurrence of amphibolite/metabasite units up to 5 metres thick. In the Anvil District these metabasites typically contain minor disseminated magnetite.

CONCLUSIONS

Reservoir outcrops define a calc-silicate unit within an upright sequence of noncalcareous phyllites belonging to the Mount Mye formation. This calc-silicate is tentatively correlated with a similar unit in the Faro area which occurs approximately 450 metres beneath the Faro mineral deposit. The most favourable exploration target area would be upslope, to the west of the reservoir.

Structural trends for the reservoir area indicate that outcrops along the reservoir margin would also be well represented by similar outcrops further upslope to the northwest. Therefore, the outcrops are not structurally or lithologically "unique".

Finally, the impact of raising the reservoir level an additional 15 metres is minimal compared to the initial impact of creating the reservoir in the first place. Additional area represented by the increase in dam height is less than 10%.

In conclusion, raising the water level of the reservoir would have a minimal effect on the geologic interpretation for the area. In addition, under the present interpretation, it would not drown areas of favourable stratigraphy for mineral exploration.

FIELD NOTES / OUTCROP STATIONS - ANVIL DISTRICT

NOTES TO ACCOMPANY OUTCROP STATIONS FROM FIELD MAPPING

STATION NUMBER: 84-332 GEOLOGGIST: LCP
DATE: SEPTEMBER 9, 1984

NTS MAP SHEET: 105K/6 ANVIL DISTRICT MAP SHEET: E-6
UTM COORDINATES
NORTHING : 6909624.C
EASTING : 586760.C
ELEVATION :

UNIT: MT MYE FORMATION
LITHOLOGY: 1CC

STRUCTURE:

FEATURE : PS2
ORIENTATION: 010/16 W

FEATURE : CSN - POST S2 CLEAVAGE
ORIENTATION: 158/34 SW

FEATURE : LN - POST L2 CRENULATION LINEATION
ORIENTATION: 293/11
EXCELLENT CHEVRON STYLE MINOR FOLDS WITH
EASTERN VERGENCE. AMPLITUDE ONLY A FEW
INCHES.

DESCRIPTION:

SAME ROCK AS IMMEDIATELY UPSTREAM (STATION 84-331).
COARSE-GRAINED, HOMOGENEOUS, NONCALCAREOUS, MICACEOUS
BIOTITE-MUSCOVITE SCHIST. FINELY LAMINATED WITH THIN
QUARTZOSE BANDS.

PS2 CLEAVAGE IS STRONGLY CRENULATED BY A POST-D2
CRENULATION CLEAVAGE. THIS CLEAVAGE FORMS EXCELLENT
CHEVRON STYLE MINOR FOLDS WITH EASTERN VERGENCE. FOLD
AMPLITUDE IS ONLY A FEW INCHES.

OTHER WORK COMPLETED:

FIELD NOTES / OUTCROP STATIONS - ANVIL DISTRICT

NOTES TO ACCOMPANY OUTCROP STATIONS FROM FIELD MAPPING

STATION NUMBER: E4-334 GECLOGIST: LCP

DATE: SEPTEMBER 9, 1984

ATS MAP SHEET: ANVIL DISTRICT MAP SHEET:

UTM COORDINATES

NORTHING : 6910308.0

EASTING : 536105.0

ELEVATION :

UNIT: MT MYE FORMATION ??

LITHOLOGY: 300 CALC-SILICATE (300[1FC],3FC[1GC])

STRUCTURE:

FEATURE : PS2 METABASITE

ORIENTATION: 114/07 S POSSIBLY SLUMPED

FEATURE : PS2

ORIENTATION: 156/27 W

FEATURE : PS2 NORTH END OF OUTCROP

ORIENTATION: 168/31 W

DESCRIPTION:

SOUTH END OF OUTCROP STRUCTURALLY OVERLIES THE REST OF THE OUTCROP. IT CONSISTS OF MEDIUM GREEN, GENERALLY NONCALCAREOUS, PCCRLY FOLIATED, AMPHIBOLITE/METABASITE.

THE MAJORITY OF THE OUTCROP CONSISTS OF LAMINATED CALC-SILICATE. IN DETAIL HERE, PURPLISH BROWN BICTITE BANDS ARE INTERLAMINATED WITH THINNER PALE GREEN, NONCALCAREOUS TO SLIGHTLY CALCAREOUS, CALC-SILICATE BANDS. BANDING IS ON A SCALE OF 2M TO 2CM. BIOTITE BANDS ARE LOCALLY BOLDINAGED. PROPORTION OF BICTITE BANDS IS 50-70%.

OVERALL THE ROCK IS VERY TOUGH, BLOCKY, ANGULAR WEATHERING. LOCALLY IT HAS A WHITE CRUSY COATING. OVERALL IT IS FINE GRAINED.

THE OUTCROP CONTAINS MINOR MARBLE WITH ABUNDANT CALC-SILICATE BIOTITE BANDS.

THE LOWERMOST PART OF THE OUTCROP CONSISTS OF VERY RUSTY GRANGE BROWN WEATHERING, NONCALCAREOUS, BIOTITE-MUSCOVITE-QUARTZ SCHIST. THE SCHIST IS TRANSITIONAL TOWARD PHYLLITE. THIS LOWERMOST UNIT FITS COMFORTABLY IN THE MT MYE UNIT.

OVERALL THIS UNIT HAS VERY STRONG SIMILARITIES TO THE MINE 30-CALC-SILICATE UNIT. STRONGLY BANCED-VERY BICTITIC. IT DOES NOT RESEMBLE THE VANGCRDA CALC-SILICATE WHICH IS LOCATED ON THE NORTH END OF THE SKI HILL.

AT THE NORTH END OF THE OUTCROP THE LOWERMOST UNIT IS A 500 AMPHIBOLITE/METABASITE. THEREFORE THE CALC-SILICATE UNIT IS STRUCTURALLY SANDWICHED BETWEEN METABASITES.

OTHER WORK COMPLETED:

THIS SECTION DESCRIPTION

FIELD NOTES / OUTCROP STATIONS - ANVIL DISTRICT

NOTES TO ACCOMPANY OUTCROP STATIONS FROM FIELD MAPPING

STATION NUMBER: E4-335 GEOLOGIST: LCP
DATE: SEPTEMBER 9, 1984

NTS MAP SHEET: 105K/6 ANVIL DISTRICT MAP SHEET: E-6
UTM COORDINATES

NORTHING : 6910391.0
EASTING : 586067.0
ELEVATION :

UNIT: MT MYE FORMATION ??
LITHOLOGY: EDC CALC-SILICATE

STRUCTURE:
FEATURE : PS2
ORIENTATION: 162/24 SW

FEATURE : CROSSCUTTING FRACTURE
ORIENTATION: 060/63 NW

DESCRIPTION:

DOMINANTLY THE SAME THICKLY LAMINATED CALC-SILICATE AS AT THE LAST STATION (E4-334). BANDING IS ON A SCALE OF MM TO A FEW CM. LOCALLY THE OUTCROP WEATHERS WITH A WHITE CALCAREOUS COATING. GENERALLY THE CALC-SILICATE BANCS ARE NONCALCAREOUS. SPECIMENS ARE BANDED BROWN AND BLUE-GREEN TO PALE GREEN. PROPORTION OF BICTITE RANGES FROM 50% TO 70%.

OTHER WORK COMPLETED:
THIN SECTION DESCRIPTION

FIELD NOTES / OUTCROP STATIONS - ANVIL DISTRICT

NOTES TO ACCOMPANY OUTCROP STATIONS FROM FIELD MAPPING

STATION NUMBER: E4-337 GEOLOGIST: LCP
DATE: SEPTEMBER 9, 1984

NTS MAP SHEET: 105K/6 ANVIL DISTRICT MAP SHEET: E-6
UTM COORDINATES

NORTHING : 6910553.C
EASTING : 566013.C
ELEVATION :

UNIT: MT MYE FORMATION ??

LITHOLOGY: 3DC CALC-SILICATE (1FC [3CC])

STRUCTURE:

FEATURE : PS2 AMPHIBOLITE
ORIENTATION: 102/21 S

FEATURE : PS2 CALC-SILICATE
ORIENTATION: 062/15 SE

FEATURE : PS2 CALC-SILICATE
ORIENTATION: 110/16 S

DESCRIPTION:

STATION LOCATED AT NORTH END OF OUTCROP ALSO DESCRIBED
BY STATION 84-336.

OUTCROP CONSISTS OF FOLIATED, MEDIUM TO DARK GREEN,
NONCALCAREOUS METABASITE/AMPHIBOLITE AT THE VERY BOTTOM.

OVERLYING THE METABASITE IS A LAMINATED CALC-SILICATE
UNIT. CALC-SILICATE CONSISTS OF INTERBANDS OF BROWN BICTITE
AND PALE GREEN CALC-SILICATE. THE CALC-SILICATE IS LOCALLY
SLIGHTLY CALCAREOUS. CALC-SILICATE GENERALLY CONTAINS
DISSEMINATED PYRRHOTITE WHICH WEATHERS AS RUSTY BROWN SPCTS.
THE COLOUR OF THE CALC-SILICATE BANDS AT THIS LOCATION
SUGGESTS THAT EPIDOTE IS A MAJOR CONSTITUENT MINERAL.

OTHER WORK COMPLETED:

FIELD NOTES / OUTCROP STATIONS - ANVIL DISTRICT

NOTES TO ACCOMPANY OUTCROP STATIONS FROM FIELD MAPPING

STATION NUMBER: 84-38F GEOLOGIST: LCF
DATE: SEPTEMBER 9, 1984

NTS MAP SHEET: 10SK/6 ANVIL DISTRICT MAP SHEET: E-6

LTM COORDINATES
NORTHING : 4910700.0
EASTING : 585873.0
ELEVATION :

UNIT: MT MYE FORMATION ??
LITHOLOGY: 300 CALC-SILICATE (300 [1FC])

- STRUCTURE:
- FEATURE : PS2 CALC-SILICATE
ORIENTATION: 130/27 SW

 - FEATURE : PS2 CALC-SILICATE-NORTH END
ORIENTATION: 108/15 S

 - FEATURE : PS2 AMPHIBOLITE-NORTH END
ORIENTATION: 108/24 S

DESCRIPTION:
CALC-SILICATE CONSISTS OF INTERBANDED TO THICKLY LAMINATED BICTITE PURPLISH BROWN BANDS AND PALE GREEN CALC-SILICATE BANDS. CALC-SILICATE BANDS MORE OBVIOUSLY CONSIST OF EPIDOTE-QUARTZ-PYRRHOTITE+CALCITE. PYRRHOTITE WEATHERS AS RUSTY BROWN SPOTS.

OUTCROP WEATHERS WITH A MUCH MORE CONSISTENT WHITE CALCAREOUS COATING. OVERALL THE OUTCROP LOOKS MORE FRIABLE AND PHYLLITIC OR SCHISTOSE - NOT AS HARD, ANGULAR, OR BLOCKY AS THE PREVIOUS CALC-SILICATE OUTCROPS.

UNIT CONTAINS MINOR THIN BANDS OF MEDIUM CRYSTALLINE, MEDIUM DARK GREY MARBLE.

AMPHIBOLITE/METABASITE OCCURS RIGHT AT THE BASE OF THE OUTCROP. METABASITE IS PS2 FOLIATED, NONCALCAREOUS, DARK GREEN. THE METABASITE APPEARS TO BE OVER 9M THICK.

IMMEDIATELY ABOVE THE METABASITE AT THE BASE OF THE OUTCROP, THE CALC-SILICATE/SCHIST IS OFF-WHITE AND WEATHERS TO A VERY RUSTY ORANGE-BROWN. THIS IS POSSIBLY AN ALTERATION ASSOCIATED WITH METABASITE INTRUSION. THE ALTERATION EXTENDS FOR LP TO 3-5 M ADJACENT TO THE METABASITE.

BOUDINAGE IS COMMON IN THE PS2 FOLIATED CALC-SILICATE.

AT THE NORTH END OF THE OUTCROP THE ROCKS ARE LESS OBVIOUSLY CALC-SILICATE BANDED. INSTEAD MUCH OF THE UNIT LOOKS LIKE A FINELY LAMINATED, HARD, PURPLISH BROWN BICTITE UNIT. THE HARD TEXTURE IS SIMILAR TO A HORNfels.

OTHER WORK COMPLETED:

THIN SECTION DESCRIPTION

THIN SECTION NOTES / ANVIL DISTRICT

NOTES TO ACCOMPANY OUTCROP STATIONS FROM FIELD MAPPING

STATION NUMBER: 84-334 GEOLOGIST: LCP
DATE: SEPTEMBER 9, 1984

OUTCROP MAP SHEET: 105K/6 ANVIL DISTRICT MAP SHEET: E-6
UTM COORDINATES

NORTHING : 6910308.0
EASTING : 586105.0
ELEVATION :

THIN SECTION DESCRIPTION
DATE : JULY 11, 1985
DESCRIBED BY: LCP

UNIT: MT MYE FORMATION ??

LITHOLOGY: 300 CALC-SILICATE (3C011F01,3F011G01)

HAND SPECIMEN DESCRIPTION:
FINE GRAINED, BLOCKY, PURPLISH BROWN PHYLLITE WITH
LESSER INTERLAMINAE OF DARK GREEN CALC-SILICATE. CALC-
SILICATE WEATHERS TO A SLIGHTLY ORANGE TAN WITH SMALL
HOLES (CARBONATE?). COMPOSITIONAL BANDING IS PARALLEL
S2 FOLIATION. S2 FOLIATION SURFACES ARE GENERALLY PURPLISH;
ALTHOUGH LOCALLY THEY HAVE A SILVERY GREY TINT. NO
MICROLITHONS VISIBLE.

THIN/POLISHED SECTION DESCRIPTION:

| * NOTES | * MINERAL | * AMOUNT(%) | * |
|----------------------------|----------------|-------------|---|
| * BIOTITE PLEOCHROISM- | * QUARTZ | * 40 | * |
| * PALE TAN-REDDISH BROWN | * PLAGIOCLASE | * 25 | * |
| * | * BIOTITE | * 15 | * |
| * CLINOZOISITE PINKISH HUE | * CLINOZOISITE | * 15 | * |
| * BIAxIAL + / INCLINED EXT | * MUSCOVITE | * 5 | * |
| * | * CARBONATE | * TR | * |
| * CHLORITE | * CHLORITE | * TR | * |
| * ANOM BLUE & BROWN INTERF | * OPAQUES | * TR | * |
| * COLOURS | * | * | * |

COMMENTS:

SAMPLE IS STRONGLY PS2 FOLIATED. PS2 FOLIATION IS
CRINKLED BY A LATER DEFORMATION.
SAMPLE CONSISTS OF INTERBANDED LITHOLOGIES ON A MM SCALE.
INTERBANDED HAVE SHARP CONTACTS. DIFFERENT LITHOLOGIES ARE:
CLINOZOISITE-QUARTZ +- BIOTITE
QUARTZ-BIOTITE-PLAGIOCLASE
PLAGIOCLASE-OPAQUE DUST-BIOTITE
MUSCOVITE-QUARTZ-BIOTITE-PLAGIOCLASE

CLINOZOISITE FORMS BANDS AND IRREGULAR LENSES OF LARGE,
XENOBlastic, PORPHYROBLASTIC AGGREGATES. PLAGIOCLASE IS
ELONGATE IN THE S2 FOLIATION.

THIN SECTION NOTES / ANVIL DISTRICT

NOTES TO ACCOMPANY OUTCROP STATIONS FROM FIELD MAPPING

STATION NUMBER: 84-335 GEOLOGIST: LCP
DATE: SEPTEMBER 9, 1984

NIS MAP SHEET: 10SK/6 ANVIL DISTRICT MAP SHEET: E-6
UTM COORDINATES
- NORTHING : 6910391.0
EASTING : 586067.0
ELEVATION :

THIN SECTION DESCRIPTION
DATE : JULY 11, 1985
DESCRIBED BY: LCP

UNIT: M1 MYE FORMATION ??
LITHOLOGY: 3D0 CALC-SILICATE

HAND SPECIMEN DESCRIPTION:
BANDED GREENISH GREY AND BROWN CALC-SILICATE. BROWN BANDS
ARE BIOTITE RICH. DOMINANT FABRIC IS PARALLEL S2. MICROLITHONS
ARE DENOTED BY BANDING. WEATHERED SURFACE SHOWS DARK BROWN AND
PALE TAN WEATHERING COLOURS.

THIN/POLISHED SECTION DESCRIPTION:

| * NOTES | * MINERAL | * AMOUNT(%) | * |
|----------------------------|----------------|-------------|---|
| * BIOTITE PLEUCHROISM | * PLAGIOCLASE? | * 60 | * |
| * PALE TAN/REDDISH TAN | * QUARTZ | * 15 | * |
| * CLINOZOISITE PINKISH HUE | * CLINOZOISITE | * 15 | * |
| * CHLORITE- BLUE INTERF. | * BIOTITE | * 10 | * |
| * COLOURS | * CHLORITE | * TR | * |
| | * TOURMALINE | * TR | * |
| | * OPAQUES | * TR | * |

COMMENTS:

SAMPLE IS CS2 FOLIATED WITH LITHONS BEING DEFINED
LARGELY BY OPAQUES AND MINOR BIOTITE. COMPOSITIONAL
BANDING IS PARALLEL S2.

BANDS AND LENSES OF QUARTZ-CLINOZOISITE. QUARTZ IS
EQUANT, IRREGULAR. CLINOZOISITE FORMS LARGE XENOBLASTIC,
POIKILOBLASTIC GRAINS.

BIOTITE FORMS SMALL EQUANT GRAINS WHICH ARE CRUDELY
ALIGNED ALONG THE S1 MICROLITHONS. BIOTITIC BANDS DOMINATED
BY A MINERAL WHICH HAS BEEN TENTATIVELY IDENTIFIED AS
PLAGIOCLASE ALTHOUGH THE RELIEF LOOKS SLIGHTLY HIGH FOR
TYPICAL PLAGIOCLASE.

CONVERSION OF DATA POINTS BETWEEN GRID SYSTEMS

| NAME | ORIGINAL GRID = CAMCHINE | | | UTM GRID | | | NEW GRID = | | |
|---------|--------------------------|----------|--------|------------|-----------|--------|------------|---------|--------|
| | NORTHING | EASTING | ELEV * | NORTHING | EASTING | ELEV * | NORTHING | EASTING | ELEV * |
| 68-PR-1 | -5740.00 | 20210.00 | * | 6910347.74 | 586387.00 | * | | | |
| 68-PR-2 | -6350.00 | 20050.00 | * | 6910161.46 | 586333.69 | * | | | |

ANVIL MINING CORPORATION LIMITED

Whitehorse, Yukon BILL 17 (JELLY RIVER MINES)

PROPERTY NAME

LOCATION ROSE CREEK

DATE DRILLED MAY 22-JUNE 9, 1968

SCALE OF LOG 1" = 40'

LOGGED BY V. GONDI

DATE JUNE 10, 1968

HOLE NO. 68 PR.1

DEPTH 1002

COLLAR ELEVATION

CORE SIZE

1.0

INCLINATION TESTS

BEARING

MAG OR TRUE DIP

20°

CO-ORDINATES 5740

N. 20230

E.

SURFACE OR UNDERGROUND

TOTAL RECOVERY 91.4%

| ROCK TYPES AND ALTERATION | MINERALIZATION AND STRUCTURES | FOOTAGE BLOCKS | % RECOVERY | INTERVAL | | | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------|------------|---------|--|--|--|--|
| | | | | SAMPLE NO. | FROM TO | | | | |
| 0-103' - OVERBURDEN. | | | | | | | | | |
| 40' - OVERBURDEN | | | | | | | | | |
| 80' - OVERBURDEN. | | | | | | | | | |
| 103'-143' - QUARTZ BIOTITE CHLORITE SERICITE SCHIST. GREENISH BROWN TO GREENISH WHITE, COARSELY FOLIATED. QUARTZ BIOTITE CHLORITE SCHIST CONSISTS OF SERICITE | FOLIATION - 78° PYRITE AND MARCASITE - 115° FILLING CAVITIES AND FRACTURES IN A BAND OF QUARTZ | 103 110 118 | 6.8 7.8 | | | | | | |
| 143'-183' - QUARTZ BIOTITE CHLORITE SERICITE SCHIST. ENRICHED IN CHLORITE AND SEGREGATED BANDS OF BIOTITE AND CHLORITE AT PLACES. | 115.5'-116' - CRENULATED 117.5' - FINELY DISSEMINATED PYRITE, ASSOCIATED WITH QUARTZ. 124.6' - FINELY DISSEMINATED PYRITE. | 127 142 | 14.5 7.8 | | | | | | |
| 183'-224' - QUARTZ BIOTITE CHLORITE SERICITE SCHIST - FINELY FOLIATED QUARTZ BIOTITE CHLORITE SCHIST CONSISTS OF DIOPSIDE AND TREMOLITE IN PLACES | FOLIATION - 82° AT 147'; 72° AT 179° | 150 | 9.0 | | | | | | |
| 190.5' - 193' - LICH IN CHLORITE. | FINELY DISSEMINATED PYRITE OCCASIONALY. | 161 173 | 12 | | | | | | |
| 224'-278' - QUARTZ CALCITE CHLORITE DIOPSIDE EPIDOTE SERICITE SCHIST. GREENISH WHITE TO WHITE CALCITE SCHIST WITH A MIXED AMOUNT OF | 185' - CRENULATED FOLIATION - 84° 188' - LIMY 196' - " 212' - " | 185 198 | 12.6 | | | | | | |
| | 233' FOLIATION - 68° | 207 217 223 | 8.7 9 7 | | | | | | |
| | | 230 | 10.1 | | | | | | |

PROPERTY NAME

HOLE NO. 68 PR-1

SCALE OF LOG

1" = 90'

| 240 | ROCK TYPES AND ALTERATION | MINERALIZATION AND STRUCTURES | FOOTAGE BLOCKS | RECOVERY | INTERVAL | | | | | | |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------|------------|------|--|--|--|--|----|
| | | | | | SAMPLE NO. | FROM | | | | | TO |
| | | | | | | | | | | | |
| 240 | SERICITE AND EPIDOTE. PURE LIMESTONE GREENISH IN SOME PLACES DUE TO INCLUSION OF CHLORITE. FINELY FOLIATED SERICITE OCCURS TO A LESSER EXTENT. 246'-278' - VERY RICH IN LIMB - 278'-310' - QUARTZ CALCITE BIOTITE CHLORITE DIOPSIDE SERICITE SCHIST. BIOTITE OCCURS AS THIN | - 224'-248' - RICH IN CALCITE. PURE LIMESTONE BANDS 3'-5' WIDE OCCUR AT SEVERAL PLACES. 248'-249.5' - RICH IN CHLORITE. STYLOLITE STRUCTURE; COMMON 250'-248' WIDE. RICH IN LIMBSTONE 262' - MINOR AMOUNT OF DOLOMITE | 242 | 4.2 | | | | | | | |
| | | | 248 | 4.5 | | | | | | | |
| | | | 278 | U | | | | | | | |
| | | | 278 | | | | | | | | |
| 280 | SEGREGATED BANDS. FINELY DISSEMINATED CALCITE IS ASSOCIATED THROUGHOUT THE SCHIST. MARBLE OCCURS AS SMALL VEINLETS CUTTING ACROSS THE SCHIST LimestONE OCCURS AS THIN BANDS AT SEVERAL INTERVALS AND IS USUALLY GREENISH IN COLOR. | 269 - FINELY DISSEMINATED PYRITE IN LIMESTONE. - 307' - FOLIATION 72° 293' - 293.5' - QUARTZ BAND 307 - 307.6' - | 288 | 3.5 | | | | | | | |
| | | | 292 | 1.3 | | | | | | | |
| | | | 299 | 1 | | | | | | | |
| | | | 307 | 1.1 | | | | | | | |
| 320 | - 310'-358' - QUARTZ CALCITE CHLORITE SERICITE SCHIST FINELY FOLIATED GREENISH CALCITE SCHIST CONSISTS OF FINE SERICITE AND TO A LESSER EXTENT BIOTITE. QUARTZ BANDS ARE SEEN BARELY | FOLIATION - 68° CHLORITE IS THE PREDOMINANT MINERAL. CALCITE OCCURS AS THIN BANDS. MARBLE IS OCCASIONALLY PRESENT IN VEINLETS. | 322 | 18 | | | | | | | |
| | | | 327.5 | 5 | | | | | | | |
| | | | 343 | 10.5 | | | | | | | |
| | | | 358 | 8.5 | | | | | | | |
| 360 | - 358'-398' - SOIL AS ABOVE | FOLIATION - 83° | 358 | | | | | | | | |
| | | | 369 | 10.5 | | | | | | | |
| | | | 377 | 7.5 | | | | | | | |
| | | | 383 | 5.5 | | | | | | | |
| 400 | - 398'-407' - QUARTZ CALCITE BIOTITE CHLORITE SERICITE SCHIST. - GREENISH BROWN, COARSELY FOLIATED CALCITE SCHIST CONSISTS OF FINE SERICITE AND MEDIUM GRAINED ALMANDITE. GARNET. - 407'-475' - QUARTZ BIOTITE CHLORITE SERICITE SCHIST. - BROWNISH GREEN | FOLIATION: - 71° QUARTZ BANDS OF 1/2" - 1" WIDE OCCUR AT SEVERAL INTERVALS AND CALCITE IS PRESENT THROUGHOUT. - FOLIATION - 81° | 397 | 19 | | | | | | | |
| | | | 407 | 10 | | | | | | | |
| | | | 417 | 1.4 | | | | | | | |
| | | | 431 | | | | | | | | |
| 440 | BIOTITE CHLORITE SCHIST, OCCASIONAL SPECIES OF PYRITE, RICH IN QUARTZ. | 445.5' - 446' - LIMB BAND | 445.5 | 10 | | | | | | | |
| | | | 459 | 8 | | | | | | | |
| | | | 469.5 | 10.2 | | | | | | | |
| | | | 474.5 | 10 | | | | | | | |
| 480 | 475'-518' - QUARTZ CALCITE BIOTITE CHLORITE SCHIST - GREENISH WHITE CALCITE SCHIST CONSISTS OF SEVERAL SEGREGATED BANDS OF LIMESTONE AND MARBLE CHLORITE AND BIOTITE OCCUR AS THIN BANDS ALTERNATING, SERICITE IS FINE GRAINED. 518'-505' - QUARTZ CHLORITE BIOTITE SERICITE SCHIST. | 475' - 476.5' - PURE ROCKCRYSTALLINE LIMESTONE BAND - FOLIATION - 78° 494' - 498' - LIMESTONE BAND 515' - TROMOLITE IS PRESENT IN SMALL BANDS. MINOR SPACES OF PYRITE OCCUR BARELY 503 - 509.5' - ALSO MARBLE BANDS 510.5 - 511' - | 475 | 24 | | | | | | | |
| | | | 494 | 16 | | | | | | | |
| | | | 498 | 7.5 | | | | | | | |
| | | | 503 | 5.5 | | | | | | | |
| 510 | | | 503 | 10 | | | | | | | |
| | | | 505 | 5.5 | | | | | | | |
| 518 | | | 518.5 | | | | | | | | |

- 30 -

PROPERTY NAME

HOLE NO. 68-PR-2

SCALE OF LOG 1" = 40'

| ELEVATION | ROCK TYPES AND ALTERATION | MINERALIZATION AND STRUCTURES | FOOTLOG BLOCKS | DEPTH | SAMPLE INTERVAL | | REMARKS | CORRECTIONS | REMARKS |
|-----------|---------------------------------------------------------|---------------------------------------------------------------------------|----------------|-------|-----------------|---------|---------|-------------|---------|
| | | | | | NO. | FROM TO | | | |
| 800 | | | | | | | | | |
| | | | 806 | 4 | | | | | |
| | | | 810 | 6 | | | | | |
| | | | 816 | 8 | | | | | |
| | | | 819 | 11 | | | | | |
| | | | 830 | 9.5 | | | | | |
| 840 | 829 - 1000' - (Quartz) biotite chlorite sericite schist | 819 stringers of pyrrhotite with traces of chalcopyrite with some quartz. | 840 | 10 | | | | | |
| | | | 855 | 1 | | | | | |
| | | | 861 | 9 | | | | | |
| | | | 862 | 4 | | | | | |
| | | | 866 | 7 | | | | | |
| | | | 874 | 10 | | | | | |
| 880 | | | | | | | | | |
| | | | 886 | 6 | | | | | |
| | | | 895 | 9.5 | | | | | |
| | | | 900 | 9.5 | | | | | |
| | | | 904 | 10 | | | | | |
| | | | 918 | 9.5 | | | | | |
| 920 | | | | | | | | | |
| | | | 929 | 5 | | | | | |
| | | | 937 | 10.5 | | | | | |
| | | | 945 | 10 | | | | | |
| | | | 953 | 9.5 | | | | | |
| 960 | | | | | | | | | |
| | | | 966 | 10 | | | | | |
| | | | 976 | 3 | | | | | |
| | | | 981 | 4 | | | | | |
| | | | 985 | 5 | | | | | |
| | | | 990 | 10 | | | | | |
| 1000 | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

DIAMOND DRILL HOLE 88-PR-2 - 37 -
 LOGGED BY DSJ
 DEPTHS ARE IN FEET

0.0 99.0 OVERBURDEN

99.0 133.0 MUSCOVITE-BIOTITE & ANDALUSITE SCHIST

LIGHT GREY, THINLY BANDED, MODERATELY PORPHYRITIC MUSCOVITE >
 BIOTITE STAUROLITE SCHIST; NONCALCAREOUS; 2-6" ROLL QUARTZ
 PODS 123-127'; COMPLETE D2 TRANSPOSITION; S2=80 DEGREES TO CORE
 AXIS @ 104.5; STAUROLITE IS ROSIN BROWN AND SHOWS S SYMMETRY F2
 FOLDS IN INDIVIDUAL STAUROLITE PORPHS @ 126'

130.0 138.0 METABASITE

MEDIUM GREY GREEN, WEAKLY BANDED, HEAVILY FOLIATED METABASITE
 WITH ANKERITIC ALTERATION 135-138

138.0 147.0 VARIABLY GRAPHITIC/MUSCOVITE, BIOTITE SCHIST

BEIGE TO BLACK, THINLY TO LAMINARLY BANDED MUSCOVITE>BIOTITE
 SCHIST; COMPLETE D2 TRANSPOSITION.

147.0 167.0 BIOTITE-MUSCOVITE-ANDALUSITE?-GARNET-SCHIST

MEDIUM DARK GREY, FINELY CRYSTALLINE, FINELY PROPHYROBLASTIC BIOTITE
 > MUSCOVITE PELITIC SCHIST; COMPLETE D2 TRANSPOSITION WITH
 PERVASIVE THINLY BANDED, S2 BOUNDED LITHONS; S2 80 DEGREES TO CORE
 AXIS AT 160'; NOT SIMILAR TO TOP OF SCHIST UNIT OR ANY OF SCHIST
 UNIT IN 456-75-12

167.0 175.0 MUSCOVITE-BIOTITE-ANDALUSITE-SCHIST

TAN, THINLY BANDED, MODERATELY PORPHYRITIC MUSCOVITE > BIOTITE
 PELITIC SCHIST; NONCALCAREOUS; COMPLETE D2 TRANSPOSITION

175.0 198.0 SILICATED MARBLE

LIGHT GREY, VERY FINELY CRYSTALLINE, CALCITIC MARBLE WITH DARK OLIVE
 GREEN CPX?? BANDS PARALLEL TO S2; S SYMMETRY @ 180 AND 190'; S2
 = 60 DEGREES TO CORE AXIS AT 195'

198.0 224.5 PORPHYRITIC HORNBLENDE DIORITE DYKE/SILL

LIGHT MEDIUM GREEN, FINELY CRYSTALLINE DIORITE WITH 0.05"-0.01"
 HORNBLENDE AND PLAGIOCLASE PHENOCYSTS IN MEDIUM LIGHT GREEN
 APHANITIC MATRIX. CORE BROKEN AND BLOCKY @ CONTACT MAKING CONTACT
 ANGLES INDETERMINATE (PROBABLY 70 DEGREES TO CORE AXIS)

224.5 447.0 CALC SILICATE PHYLLITE/SCHIST

MEDIUM GREEN BROWN, THINLY BANDED, FINELY TO MEDIUM CRYSTALLINE
 ALTERNATING 1-8" BANDS OF BIOTITE, PHYLLITE/SCHIST AND MEDIUM
 BLUE GREEN CLINOAMPHIBOLE BEARING CALC-SILICATE BANDS; PELITIC
 BANDS MORE SCHISTOSE THAN SIMILAR PELITIC BANDS IN CALC-SILICATE
 UNIT @ PIT; MINOR STAUROLITE IN PELITIC BANDS @ 296.5'; INTERVAL
 IDENTICAL TO MUCH OF CALC-SILICATE IN 456-75-12 EG. 385-415';
 SYMMETRY SUMMARY: PERVASIVE S2-224.5-293, 297.5-S, 299-Z;

PERVASIVE S2 300-352, 353.5-S; 396-M, 408-S, 415-S, 439-Z;
METABASITE OR CALC-SILICATE BAND 372.5-377; S2=75 DEGREES TO
CORE AXIS @ 250'; S2 = 80 DEGREES TO CORE AXIS @ 297.5; S2=80
DEGREES TO CORE AXIS AT 353.5; S2=80 DEGREES TO CORE AXIS @ 408;
S2=80 DEGREES TO CORE AXIS @ 446'

447.0 450.5 SILICATED MARBLE WITH CALC-SILICATE INTERBANDS

LIGHT GREY TO DARK GREEN, THINLY BANDED (0.5-1.0"), FINELY CRYSTAL-
LINNE CALCITIC MARBLE WITH DARK GREEN CALC SILICATE BANDS; 50%
MARBLE BANDS, 50% CALC-SILICATE BANDS

450.5 453.0 CALC-SILICATE PHYLLITE/SCHIST

AS 224.5-447.0

453.0 455.5 CALC-SILICATE PHYLLITE AND SILICATED MARBLE

SIMILAR TO 447.0-450.5 WITH 70% CALC-SILICATE PHYLLITE AND 30%
SILICATED MARBLE

455.5 458.5 CALC-SILICATE PHYLLITE/SCHIST

AS 224.5-447.0 MINOR PYRALSPITE GARNET

458.5 485.5 QUARTZ-MUSCOVITE-SCHIST WITH LAMINAR MARBLE
INTERBANDS

TAN, LAMINARLY BANDED, QUARTZ-MUSCOVITE SCHIST WITH MINOR (<<1%
ANDALUSITE (?) PORPHS AND THIN MEDIUM GREY CALCITIC MARBLE
INTERBANDS (90% SCHIST, 10% MARBLE INTERBANDS); 1' GOUGE ZONE
@ 45 DEGREES TO CORE AXIS @ 484.5-485.5;
S SYMMETRY F2 @ 465'

485.5 561.0 CALC-SILICATE PHYLLITE/SCHIST

AS 224.5-447.0; ALL CALC-SILICATE PHYLLITE OR SCHIST IN THIS HOLE
VERY SIMILAR TO CALC-SILICATE UNIT ON TAY RIVER MINES "A" GROUP;
MANY EXAMPLES OF GARNET AND ANDALUSITE (?) PORPHS (<1% IN PELTIC
BANDS, THUS DIFFERENT THAN @ MINE AREA; INTERVAL BECOMING
INCREASINGLY CALCAREOUS TOWARDS BASE; S SYMMETRY @ 490.5.
PERVASIVE S2 OVER 490-561; S2=85 DEGREES TO CORE AXIS @ 500';
S2=80 DEGREES TO CORE AXIS @ 550'

561.0 579.5 CALC-SILICATE PHYLLITE WITH MARBLE INTERBANDS

AS 453.0-455.5 APPROXIMATELY 60-70% CALC-SILICATE BANDS WITH
30-40% FINELY CRYSTALLINE, LIGHT GREY MARBLE BANDS

579.5 608.5 SILICATED MARBLE

WHITE TO LIGHT GREY, FINELY TO MEDIUM CRYSTALLINE CALCITIC
MARBLE WITH BIOTITE (PHLOCOPIITE??) FOLIAE AND TREMOLITE-
ACTINOLITE NEEDLES; COMPLETE D2 TRANSPOSITION; S2=80 DEGREES
TO CORE AXIS AT 598'

608.5 695.0 BIOTITE-MUSCOVITE-GARNET-STAUROLITE SCHIST

MEDIUM DARK BROWN, THINLY TO LAMINARLY BANDED, MODERATELY
PORPHYROBLASTIC, MEDIUM CRYSTALLINE, BIOTITE > MUSCOVITE PELTIC

SCHIST; INTERVAL SIMILAR TO QUARTZO FELDSPATHIC MEMBER OF SCHIST MAP UNIT AS SEEN IN 456-75-12 IN THAT INTERVAL HAS SAME METAMORPHIC MINERAL ASSEMBLAGE AND PROBABLE BULK COMPOSITION BUT IS MORE PERVASIVELY S2 FOLIATED; S SYMMETRY @ 612,617.5; Z SYMMETRY @ 638'; IN GENERAL UNIT IS PERVASIVELY S2 FOLIATED; S2=80 DEGREES TO CORE AXIS @ 650'

695.0 696.0 SILICATED MARBLE

AS 579.5-608.5

696.0 734.0 BIOTITE-MUSCOVITE-STAUROLITE-GARNET & ANDALUSITE (?) SCHIST

AS 608.5-695; BIOTITE > MUSCOVITE PELITIC SCHIST WITH COARSE ROSIN BROWN STAUROLITE, PINK PYPALSPITE GARNET AND DARK BLUE GREEN FEATHERY ANDALUSITE (?) PORPHYROBLASTS; S2=75 DEGREES TO CORE AXIS AT 714'; PERVASIVE S2 DEVELOPEMENT

734.0 773.0 INTERBANDED SILICATED MARBLES AND CALC-SILICATE SCHISTS

AS 447.0-450.5; APPROXIMATELY 50% SILICATED MARBLE, 50% CALC-SILICATE SCHIST; NUMEROUS EXAMPLES OF PELITIC SCHIST BANDS BOUNDED BY CLINOMPHIBOLE BEARING CALC-SILICATE ASSEMBLAGES SUGGESTING P.M. ORVILLE'S MECHANISM OF "AMPHIBOLITE" FORMATION BETWEEN ADJACENT PELITIC AND CARBONATE BANDS; PERVASIVE S2 DEVELOPMENT; S2 =80 DEGREES TO CORE AXIS @ 754'

793.0 889.0 CALC-SILICATE SCHIST

AS 224.5-447.0; 485.5-561.0; MANY EXCELLENT EXAMPLES OF D1/D2 METASOMATIC DEVELOPMENT OF CALC-SILICATE ASSEMBLAGES @ SCHIST/MARBLE CONTACTS A LA ORVILLE; S SYMMETRY @ 843', 881', 888'; S2=80 DEGREES TO CORE AXIS AT 800'; S2=85 DEGREES TO CORE AXIS AT 843'; S2=85 DEGREES TO CORE AXIS @ 885'; NOTE 889-1000' NOT IDENTIFIABLE IN SEQUENCE OF WEATHERED CORE BOXES, BUT PROBABLY CALC-SILICATE SCHIST.

NOTE*

CALC-SILICATE SCHIST IN THIS HOLE PROBABLY EQUIVALENT TO SKI HILL MARBLE PACKAGE IN UPPER PART OF SCHIST UNIT; MUCH OF CALC-SILICATE PHASE ASSEMBLAGES IN UNIT ARE RESULT OF ORVILLE'S "METASOMATIC" REACTION BETWEEN PELITIC AND CARBONATE BANDS IN A THINLY INTERLAYERED SEQUENCE.
