

SPECTROGRAPHIC REPORT

| | | | | | |
|---|---|---|---|---|---|
| 1 | Si ___ Al ___ Mg ___ Ca ___ Fe ___ Pb ___ Cu ___ Zn ___ Mn ___ Ag ___ V ___ Ti ___ Ni ___ Co ___ Na ___ K ___ W ___ | 2 | Si ___ Al ___ Mg ___ Ca ___ Fe ___ Pb ___ Cu ___ Zn ___ Mn ___ Ag ___ V ___ Ti ___ Ni ___ Co ___ Na ___ K ___ W ___ | 3 | Si ___ Al ___ Mg ___ Ca ___ Pb ___ Cu ___ Zn ___ Mn ___ Ag ___ V ___ Ti ___ Co ___ Na ___ K ___ W ___ |
| 4 | Si ___ Al ___ Mg ___ Ca ___ Fe ___ Pb ___ Cu ___ Zn ___ Mn ___ Ag ___ V ___ Ti ___ Ni ___ Co ___ Na ___ K ___ W ___ | 5 | Si ___ Al ___ Mg ___ Ca ___ Fe ___ Pb ___ Cu ___ Zn ___ Mn ___ Ag ___ V ___ Ti ___ Ni ___ Co ___ Na ___ K ___ W ___ | 6 | Si ___ Al ___ Mg ___ Ca ___ Pb ___ Cu ___ Zn ___ Mn ___ Ag ___ V ___ Ti ___ Co ___ Na ___ K ___ W ___ |

X-RAY DIFFRACTION REPORT AND COMMENTS

28211 HP-84-1-45 m The circled whitish mineral is ROZENITE, $FeSO_4 \cdot 6H_2O$.

28212 HP-84-1-278 m The circled clay mineral is ILLITE. A small amount of remnant (?) K-FELDSPAR has also been detected in the x-ray sample.

28213 HP-84-3-190 m. The circled clay mineral is ILLITE.

28214 HP-84-4-388 m. Sulfides identified include ARSENOPIRITE and PYRITE.

28215 HP-84-4-102 m The circled greenish mineral is SCORODITE, $FeAsO_4 \cdot 2H_2O$.

28216 AH-84-1 The black copper mineral is TENNANTITE (actually a tetrahedrite-tennantite solid solution with ~75% by mole of the tennantite end-member). Other minerals identified from the sample include QUARTZ, BARITE and COVELLITE.

Alberts Hamp
KEY

HP = Hart Peaks
Drill Hole 84-1, 3, 4.

| | | | | | |
|------|---------------|------|-----------|------|------------------|
| TRCT | trachyte | SKRN | skarn | SNDS | sandstone |
| TUFF | tuff | GOUG | gouge | SHLE | shale |
| AMPB | amphibolite | ARGL | argillite | SLSN | siltstone |
| CLCC | calc-silicate | CHRT | chert | MRLZ | mineralization |
| GNSS | gneiss | COAL | coal | MVSP | massive sulphide |
| MRBL | marble | DLMT | dolomite | DISS | disseminated |
| PLLT | phyllite | LMSN | limestone | SCKK | stockwork |
| SCST | schist | MARL | marl | VEIN | vein |
| HRFL | hornfels | QRTZ | quartzite | ALRZ | alteration |

ANALYTICAL METHOD

| | |
|----|--------------------|
| AA | ATOMIC ABSORPTION |
| AH | HYDRIDE GENERATION |
| FA | FIRE ASSAY |
| ES | EMMISSION SPEC |
| XR | X-RAY FLUORESCENCE |
| WC | WET CHEMICAL |
| CL | COLORIMETRIC |
| CV | COLD VAPOUR |

COLUMN 34 SAMPLE TYPE

| | |
|---|----------------------|
| 1 | Single grab sample |
| 2 | Channel/chip |
| 3 | Composite sample |
| 4 | Drill core |
| 5 | Talus or transported |
| 6 | Soil |
| 7 | Silt |
| 8 | Other |

COLUMN 35 % SULPHIDE

| | |
|---|-------|
| 0 | <0.5 |
| 1 | 0.5-1 |
| 2 | 1-10 |
| 3 | 10-50 |
| 4 | >50 |

SAMPLE PREPARATION

| | |
|---|------------------|
| W | TUNGSTEN CARBIDE |
| C | CERAMIC |
| S | STEEL |

| | | | | | | | | | | | | | | | |
|----|-----------------|----|---------------|----|---------------|----|---------------|----|------------|----|----------|----|---------------|----|---------------|
| 95 | Hadrynian | 16 | Silurian | 24 | Permian | 30 | Mesozoic | 36 | Cretaceous | 40 | Cenozoic | 42 | Tertiary | 44 | Quaternary |
| 10 | Paleozoic | 18 | Devonian | 25 | Mississippian | 26 | Pennsylvanian | 27 | Jurassic | 28 | Triassic | 29 | Carboniferous | 31 | Unknown |
| 11 | Prot.-Paleozoic | 20 | Carboniferous | 21 | Mississippian | 22 | Pennsylvanian | 23 | Devonian | 24 | Permian | 25 | Triassic | 26 | Carboniferous |

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| <p>1</p> <p>Si ___ Al ___ Mg ___ Ca ___ Fe ___</p> <p>Pb ___ Cu ___ Zn ___ Mn ___ Ag ___ V ___ Ti ___ Ni ___</p> <p>Co ___ Na ___ K ___ W ___</p> | <p>2</p> <p>Si ___ Al ___ Mg ___ Ca ___ Fe ___</p> <p>Pb ___ Cu ___ Zn ___ Mn ___ Ag ___ V ___ Ti ___ Ni ___</p> <p>Co ___ Na ___ K ___ W ___</p> | <p>3</p> <p>Si ___ Al ___ Mg ___ Ca ___</p> <p>Pb ___ Cu ___ Zn ___ Mn ___ Ag ___ V ___ Ti ___</p> <p>Co ___ Na ___ K ___ W ___</p> | <p>4</p> <p>Si ___ Al ___ Mg ___ Ca ___ Fe ___</p> <p>Pb ___ Cu ___ Zn ___ Mn ___ Ag ___ V ___ Ti ___ Ni ___</p> <p>Co ___ Na ___ K ___ W ___</p> | <p>5</p> <p>Si ___ Al ___ Mg ___ Ca ___ Fe ___</p> <p>Pb ___ Cu ___ Zn ___ Mn ___ Ag ___ V ___ Ti ___ Ni ___</p> <p>Co ___ Na ___ K ___ W ___</p> | <p>6</p> <p>Si ___ Al ___ Mg ___ Ca ___</p> <p>Pb ___ Cu ___ Zn ___ Mn ___ Ag ___ V ___ Ti ___</p> <p>Co ___ Na ___ K ___ W ___</p> |
|--|--|--|--|--|--|

X-RAY DIFFRACTION REPORT AND COMMENTS

29217 HP-40. The submitted sample is relatively fresh dominated by QUARTZ and K-FELDSPAR and a trace amount of PYRITE. Alteration products (referred to as clay?) detected in minor amount include ILLITE and JAROSITE.

29218 HP-41 QUARTZ, ILLITE, JAROSITE and minor amounts of K-FELDSPAR and KAOLINITE has been confirmed from the submitted specimen.

29219 HP-07 The only silver-containing mineral confirmed is PYRRARGYRITE, Hg_3SbS_3 .

29220 HP-32 TRIDYMIT, K-FELDSPAR (probably SANIDINE) and KAOLINITE have been identified from the submitted sample.

29221 HP-43 The white fracture-filling material is MELANTERITE ($FeSO_4 \cdot 7H_2O$) mixed with some ROZENITE ($FeSO_4 \cdot 4H_2O$). The latter mineral could be a partial dehydration product of the former mineral.

Locations
to come

KEY

COLUMNS 28-31

| | | | | |
|-------------------|----------------------|--------------------|----------------|-----------------------|
| UMFC ultramafic | GRNS greenstone | TRCT trachyte | SKRN skarn | SNDS sandstone |
| ANDS andesite | MNZN monzonite | TUFF tuff | GOUG gouge | SHLE shale |
| BSLT basalt | OBSD obsidian | AMPB amphibolite | ARGL argillite | SLSN siltstone |
| CRBN carbonatite | PNLT phonolite | CLCC calc-silicate | CHRT chert | MRLZ mineralization |
| DCIT dacite | QZPP quartz porphyry | GNSS gneiss | COAL coal | MVSP massive sulphide |
| DORT diorite | RYLT rhyolite | MRBL marble | DLMT dolomite | DISS disseminated |
| GBBR gabbro | SRPN serpentinite | PLLT phyllite | LMSN limestone | SCKK stockwork |
| GRNT granite | SNKN shonkinite | SCST schist | MARL marl | VEIN vein |
| GRDR granodiorite | SYNT syenite | HRFL hornfels | QRTZ quartzite | ALRZ alteration |

COLUMNS 32 - 33

| | | | |
|--------------------|------------------|------------------|---------------|
| 04 Proterozoic | 12 Cambrian | 21 Mississippian | 34 Jurassic |
| 05 Helikian | 14 Ordovician | 22 Pennsylvanian | 36 Cretaceous |
| 06 Hadrynian | 16 Silurian | 24 Permian | 40 Cenozoic |
| 10 Paleozoic | 18 Devonian | 30 Mesozoic | 42 Tertiary |
| 11 Prot.-Paleozoic | 20 Carboniferous | 32 Triassic | 44 Quaternary |
| | | | 50 Unknown |

COLUMN 34

SAMPLE TYPE

| | |
|---|----------------------|
| 1 | Single grab sample |
| 2 | Channel/chip |
| 3 | Composite sample |
| 4 | Drill core |
| 5 | Talus or transported |
| 6 | Soil |
| 7 | Silt |
| 8 | Other |

COLUMN 35

% SULPHIDE

| | |
|---|-------|
| 0 | <0.5 |
| 1 | 0.5-1 |
| 2 | 1-10 |
| 3 | 10-50 |
| 4 | >50 |

ANALYTICAL METHOD

| | |
|----|--------------------|
| AA | ATOMIC ABSORPTION |
| AH | HYDRIDE GENERATION |
| FA | FIRE ASSAY |
| ES | EMISSION SPEC |
| XR | X-RAY FLUORESCENCE |
| WC | WET CHEMICAL |
| CL | COLORIMETRIC |
| CV | COLD VAPOUR |

SAMPLE PREPARATION

| | |
|---|------------------|
| W | TUNGSTEN CARBIDE |
| C | CERAMIC |
| S | STEEL |

COLUMNS 36 - 43

Property Number or property name

COLUMNS 44 - 80

Comments

