CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
1520 West Adams St.
Phoenix, AZ 85007
602-771-1601
http://www.azgs.az.gov
inquiries@azgs.az.gov

PRINTED: 11-14-2006

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: PACIFIC

ALTERNATE NAMES:
SUNNSIDE, MS 2803, PAT.
PATENTED CLAIMS MS 2803
SILVER MOUNTAIN
O'BRIEN

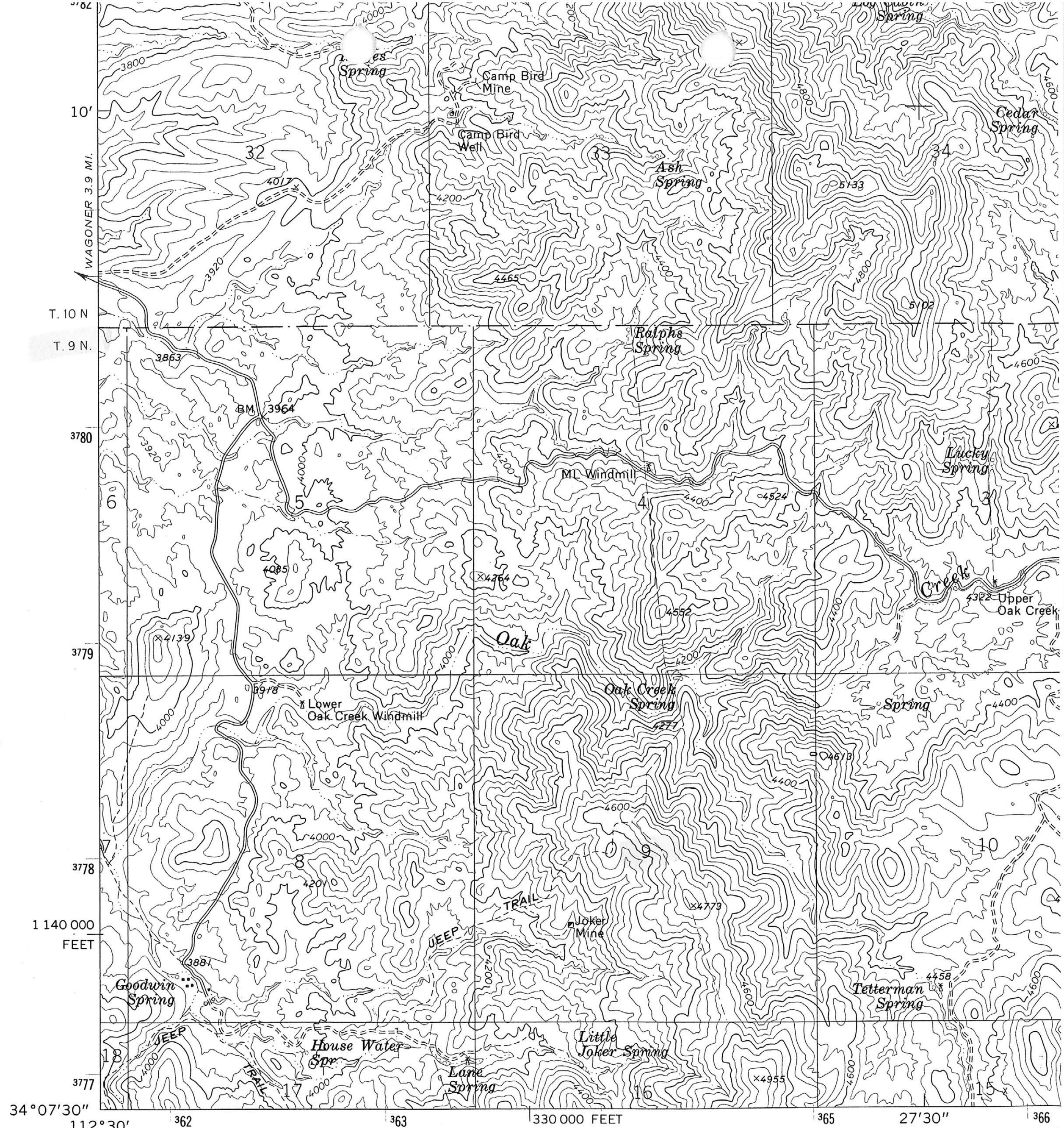
YAVAPAI COUNTY MILS NUMBER: 852

LOCATION: TOWNSHIP 9 N RANGE 1 W SECTION 9 QUARTER W2
LATITUDE: N 34DEG 07MIN 55SEC LONGITUDE: W 112DEG 22MIN 34SEC
TOPO MAP NAME: MINNEHAHA - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:
COPPER SULFIDE
GOLD
SILVER

BIBLIOGRAPHY:
ADMMR PACIFIC FILE
LINDGREN, W. ORE DEPTS OF JEROME & BRADSHAW MTN QUADS USGS BULL 782 1926 P 178
YAVAPAI MAGAZINE JUNE 1918 P 12 SHARLOT HALL MUSEUM PRESCOTT, AZ
WEED, W.H., 1913, THE COPPER HANDBOOK, W.H. WEED CO., HOUGHTON, MI., VOL. 11, PP 689-699
BLM MINING DISTRICT SHEET 207
CLAIMS EXTEND INTO SEC. 8 & 17
WEED,W.H.,1918, THE MINES HANDBOOK, W.H. WEED CO.,N.Y.,N.Y., VOL. 13, P.380



(MORGAN BUTTE)
3452 II SE

Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

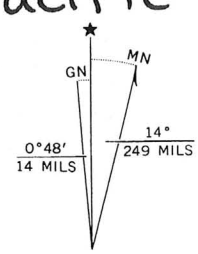
Topography by photogrammetric methods from aerial photographs taken 1968. Field checked 1969

Polyconic projection. 1927 North American datum
10,000-foot grid based on Arizona coordinate system, central zone
1000-meter Universal Transverse Mercator grid ticks, zone 12, shown in blue

Fine red dashed lines indicate selected fence lines

Where omitted, land lines have not been established

Pacific



UTM GRID AND 1969 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

MINNEHAHA 7.5 MIN

FOR S
A

(re-typed)

PRELIMINARY REPORT
SILVER MOUNTAIN PROPERTY
Phase 1

by

Robert C. Winegar
GEOPLAN, INC.

for
D.W. Litchfield and Associates, Inc.

Approved by:

(signed)
Robert C. Winegar, Pres.
GEOPLAN, INC.
2425 Mary Avenue
Missoula, MT 59801
(406) 543-5850

Date: Feb. 24, 1978

These accompanying maps should be used when reading this report:

Silver Mountain Base and Traverse Map (North Half)

Silver Mountain Geology (North Half)

Silver Mountain Base and Traverse Map (South Half)

Silver Mountain Geology (South Half)

Cross Section Sheet, Silver Mountain Property

Table of Contents

List of Figures

List of Plates

Preliminary Report Silver Mountain Property, Phase 1

Introduction

Location

The property consists of 28 patented and 66 unpatented claims in T9N, R1W and T9N, R2W Yavapai County, Arizona (Fig. 1).

Access is by gravel and paved roads, a total of 55 miles from downtown Phoenix. Lake Pleasant is about 35 miles from downtown Phoenix. The property is another 20 miles on a gravel road from Lake Pleasant.

Elevations on the property range from a low of 3490 ft. on the southernmost claim (Florida) to 5897 ft. on the Silver Mountain ridge. The greatest relief is on the southern half of the property, 2407 ft. The lowest point on the northern half is 4340 ft. on the #1 claim, giving a total relief of 1157 ft.

Water is available on the property in limited amounts. Jones (1970) states, "Water runs in Silver Creek about seven (7) months a year. The Humbug Creek, located one-half mile east of the property, has water running ten (10) months of the year." A drift at the Recluse Cabin and the No. 10 Patent Tunnel contain some water but neither would constitute a real supply. Silver Creek and Jones Gulch would probably give the best yield by utilizing shallow wells.

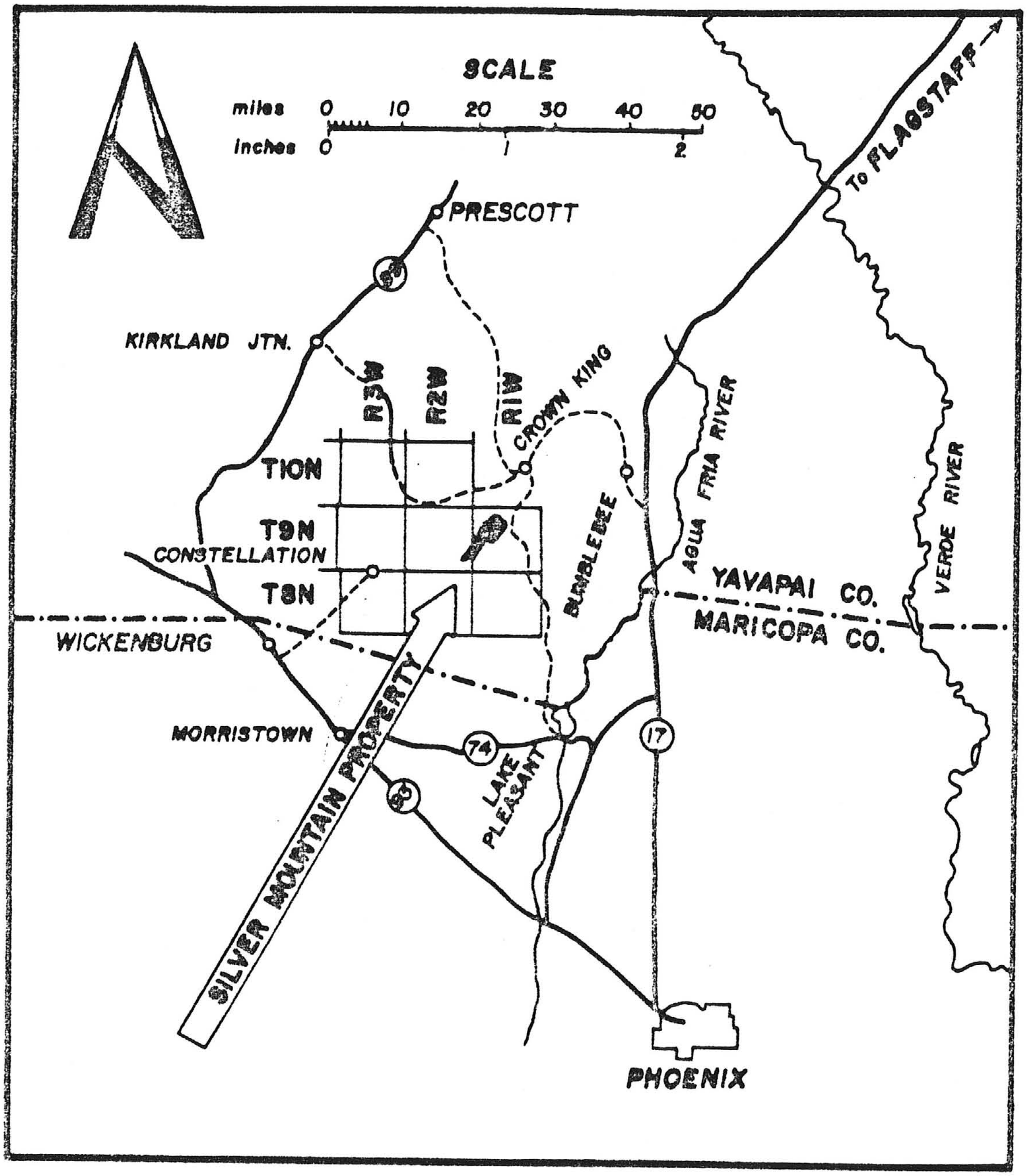


FIGURE 1

INDEX MAP

Purpose

Primarily the interest in this property is its potential for copper. All exploration efforts are to develop a perspective on the property to allow for decisions on the option by September 30, 1978.

Exploration is by phases to enable Olin Corporation to examine the results after each phase. Phase 1 is the surface and accessible underground geology mapping. This includes the beginnings of a geophysical program by Applied Geophysics, Inc. This report covers Phase 1 and makes recommendations on drilling and other exploration methods to take place in Phase 2.

Literature Search

Published material regarding the property or surrounding nearby area is very scant. What little exists is very old; Blandy (1897, 1889), Lindgren (1926). Lindgren has a good section on the geology of the Bradshaw Mountains Quadrangle. This report is helpful in producing a good general geology background of the area.

Creasey (1951) covers the Iron King Mine. Some good information and ideas on lithologies are offered.

Unpublished material is also scant, but several reports were located by D. W. Litchfield and Associates, Inc. on the Pacific Mine and surrounding area. One Master's thesis (De Witt, 1976) is on order but has not arrived for use in this report. It covers the geology of the Mayer area and deals with the same geology and rock types that are found in the Silver Mountain area.

A report by G. A. Russell (1956 or 1970) mentions a couple of assays from the property but most of the report is a series of generalizations:

> "The massiveness of these gossans is not known as the underbrush is so dense in some areas visibility is nil -- but what is visible shows that the widths will run from 200 to 3,000 ft. with a length of at least three miles."

> "The workings of the old Pacific shaft show that the oxide zone extends to 50 or 60 ft. from the shaft collar, and that the porphyry dike carries commercial values across its widths."

Likewise a report by Higbie (1969) supplies little information. However, each person did spend time on the property and concluded that the potential for a producing mine was very high.

> "In my opinion this property offers good possibilities for development into a well-paying mine." (Higbie, 1969).

> "The Pacific Mine has the potential of being a major producer." (Russell, 1970?).

> "The Pacific Group has a tremendous potential." (Jones, 1970).

Heinrichs Geoexploration Company conducted a reconnaissance geophysical survey in 1968. This has been made available to Applied Geophysics Inc. and will be used in their report.

Geology

General Geology

The property lies within the mountain physiographic province, well south of "the breaks" which bound the plateau region of flat lying Paleozoic sediments. The desert region lies to the south (Lindgren, 1926).

Figure 2 is a modified reproduction of a portion of Lindgren's Bradshaw Mountains Quadrangle. The Yavapai Schist forms an antiform structure around a core of Precambrian granite and the Crooks Complex (Plate 1). Younger granitic bodies cut the schist,

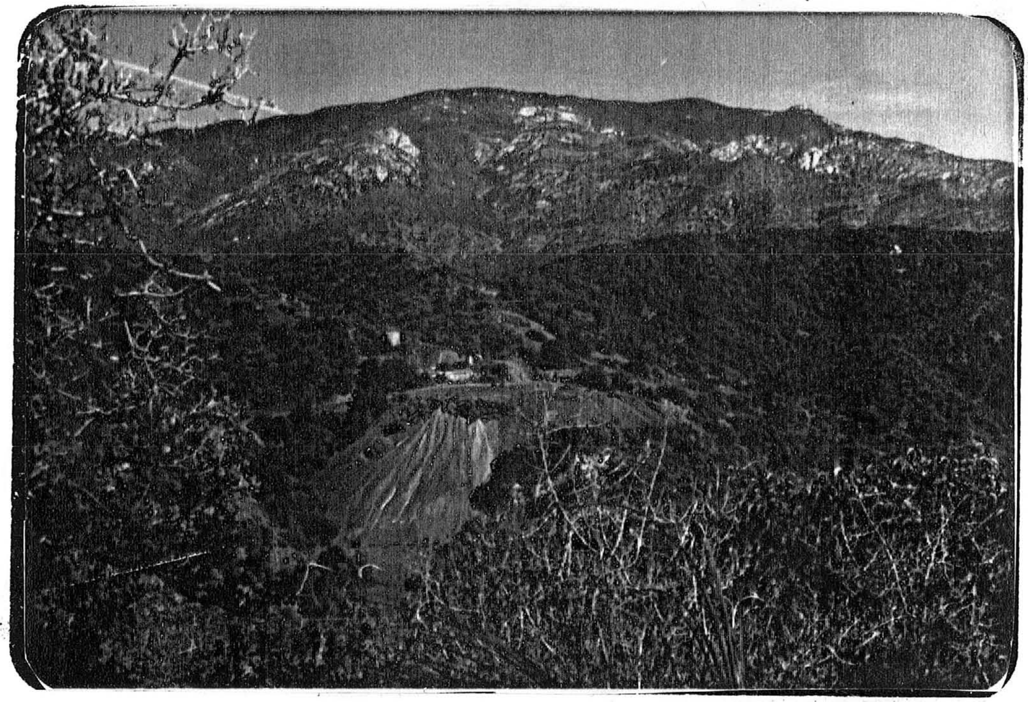


Plate 1. Bradshaw Mountains viewed from the southwest. The Yavapai Schist is trending from the lower right-hand corner of the picture through the Pacific Mine and toward the upper left-hand corner. Crooks Complex is the lineated rock in the foreground of the Bradshaw Mountains. Bradshaw Granite is the light colored rock occurring in the pine covered higher elevations.

see area around Crown King, and younger latite dikes (Lindgren's quartz porphyry) are concordant with the foliation of the Yavapai Schist. Tertiary volcanics outcrop in the southern portion of the map. These volcanics were encountered on the southern end of the property. The vein structure occurs within the Yavapai Schist, often in association with the latite dike bodies.

Silver Mountain Geology

Stratigraphy

Figure 3 is the stratigraphic column interpreted for the property. The oldest rock is the quartzite (iq). Lithologies are designated on the map without age reference, therefore, several different iq units exist. The eastern most iq unit is the oldest. The rock is banded with some phyllite bedding. Mica content is low, probably a trace to 1% (Plate 2). At Location W33 there is a small crosscut tunnel into this unit. It contains abundant iron as hematite and magnetite in this area. These quartzites often contain iron, hence the designation as iron quartzite (iq).

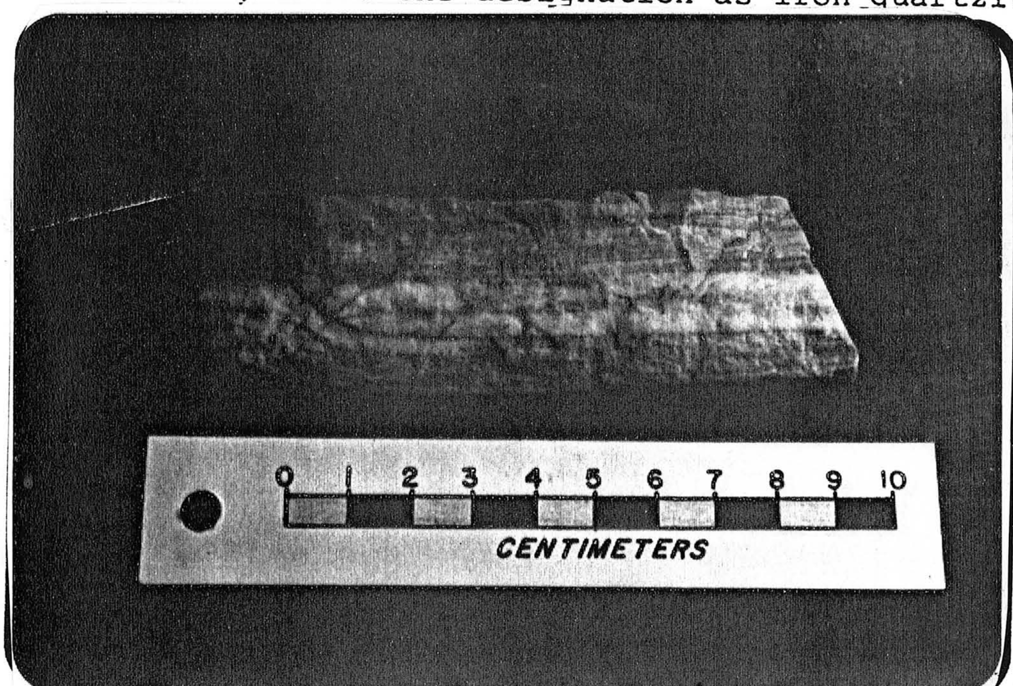


Plate 2. Quartzite with phyllite bedding partings.

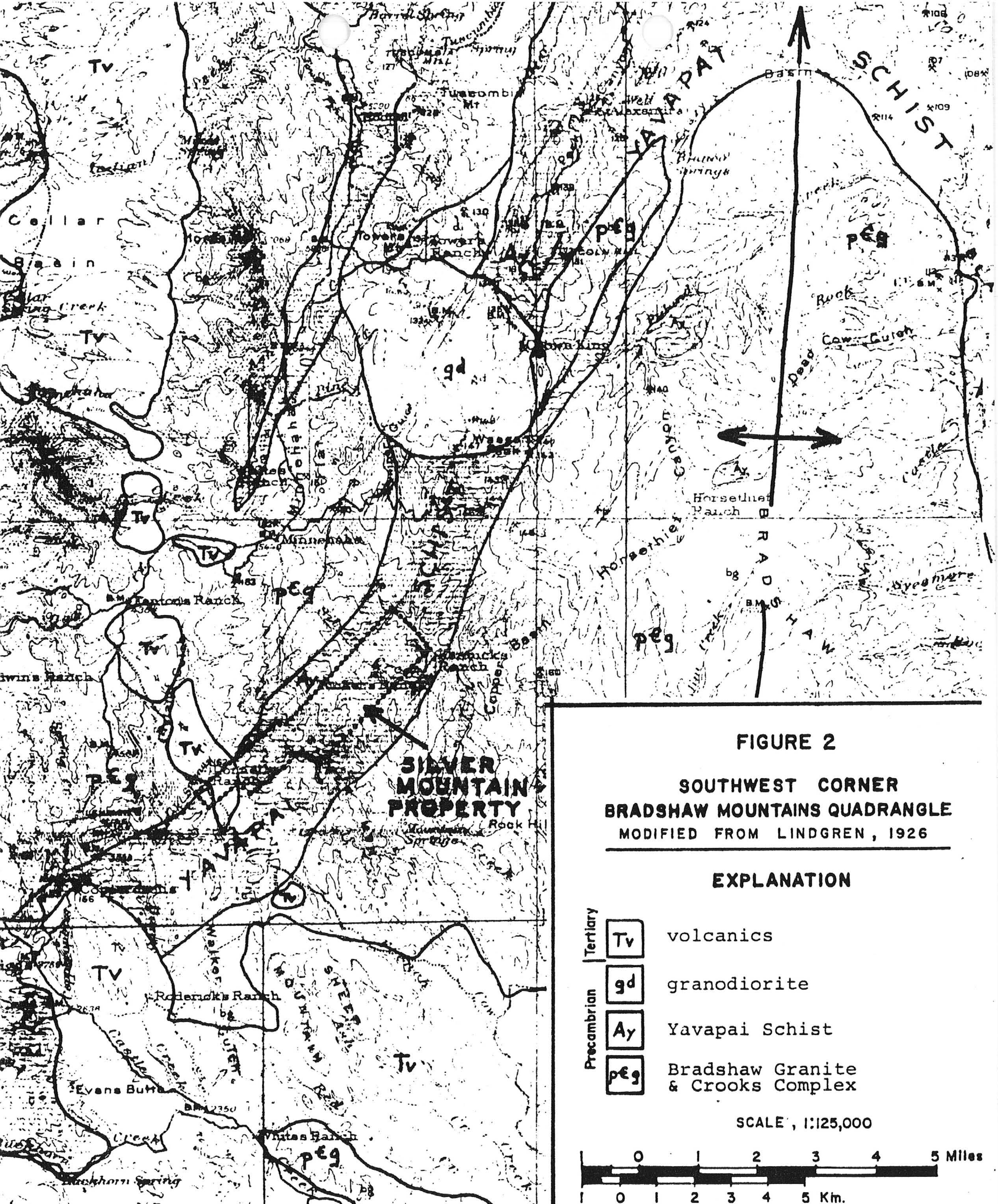


FIGURE 2

SOUTHWEST CORNER
BRADSHAW MOUNTAINS QUADRANGLE
MODIFIED FROM LINDGREN, 1926

EXPLANATION

Tertiary	Tv	volcanics
Precambrian	gd	granodiorite
	Ay	Yavapai Schist
	pЄg	Bradshaw Granite & Crooks Complex

SCALE 1:125,000

1 0 1 2 3 4 5 Miles

1 0 1 2 3 4 5 Km.

FIGURE 3

Generalized Geologic Column

for Silver Mountain Property

Quaternary	Qls	Landslide deposits
	Qal	Alluvial deposits
	Qp	Pediment deposits. Thin veneers of poorly-graded subangular gravels, sand and cobbles.
Tertiary	Tv	Andesites of volcanic or shallow intrusive origin. Rock is typically red or maroon with numerous feldspar phenocrysts.
	ag	Altered fault gouge. Red, white and maroon clays plus sheared and altered phyllites.
	b	Basalt. Narrow dikes of dark green, olivine basalt.
	g	Gossan or mineralized vein. Includes phyllites with hematite coatings, magnetite-hematite-quartz breccias, white-brown dolomite with sulphides and true hematite-limonite gossans.
Precambrian	la	Latite. Thick dikes and/or sills roughly conformable to foliation.
	p	Pegmatites. Narrow pegmatite dikes commonly rich in black tourmaline (shorl).
	s	Schist. Feldspar-quartz muscovite schists ± biotite, commonly showing two or more deformations.
	iq	Iron quartzite. Recrystallized quartzite and gneissic quartzite, locally having hematite-limonite coatings.
	ph	Mica phyllites. Locally includes sequences of hornblende schist, tremolite schist. Boudins are common, 3"-3' in lengt
	qph	Quartz phyllites. Quartz-rich phyllites characteristically banded and with numerous quartz boudins and ptygmatic veinlet
	iq	Iron quartzite. Recrystallized quartzite and gneissic quartzite, locally having hematite-limonite coatings.
	s	Schist. Feldspar-quartz-muscovite schist.
	iq	Iron quartzite. Recrystallized quartzite and gneissic quartzite, locally having hematite-limonite coatings.

Schist is the next unit. This is a well developed quartz-mica schist. Like other rocks in the section this schist is very continuous and is mapped from Jones Gulch (north end) to the Nob Claim (south end), a distance of approximately 5 miles.

Adjacent to this schist on the west side is a less continuous quartzite unit (iq), but it does occur most of the length of the north sheet. It also contains abundant iron as hematite and magnetite. Westward from this unit (up section) the rocks become more mica-rich forming phyllite. This appears to be a gradational change from the predominately quartzite rocks to the east. The qph unit is a transitional quartzite-phyllite.

In general, rocks west of the vein structure are phyllite (ph). Mica content is low. The apparent schistosity throughout the Yavapai Schist is built from intense shearing. Other minerals such as tremolite, actinolite, epidote and hornblende are more abundant in the phyllite section than in the quartzitic section.

On hilltops where the ph unit is weathered it has a good phyllite appearance (Plate 3), but in fresh rock, found in the incised drainages throughout the area, it looks like a slate or amphibolite (Plate 4).

Another notable iq unit appears in the section. This rock is a clean vitreous quartzite (Plates 5 and 6). Slickensides are well developed at Location C34 and indicate a great deal of bedding plane movement. Whether this movement is the result of flexural slip associated with the antiform structure is not clear.

Plate 3. Weathered rock of the ph unit. Location W27 is on hill above Silver Creek.

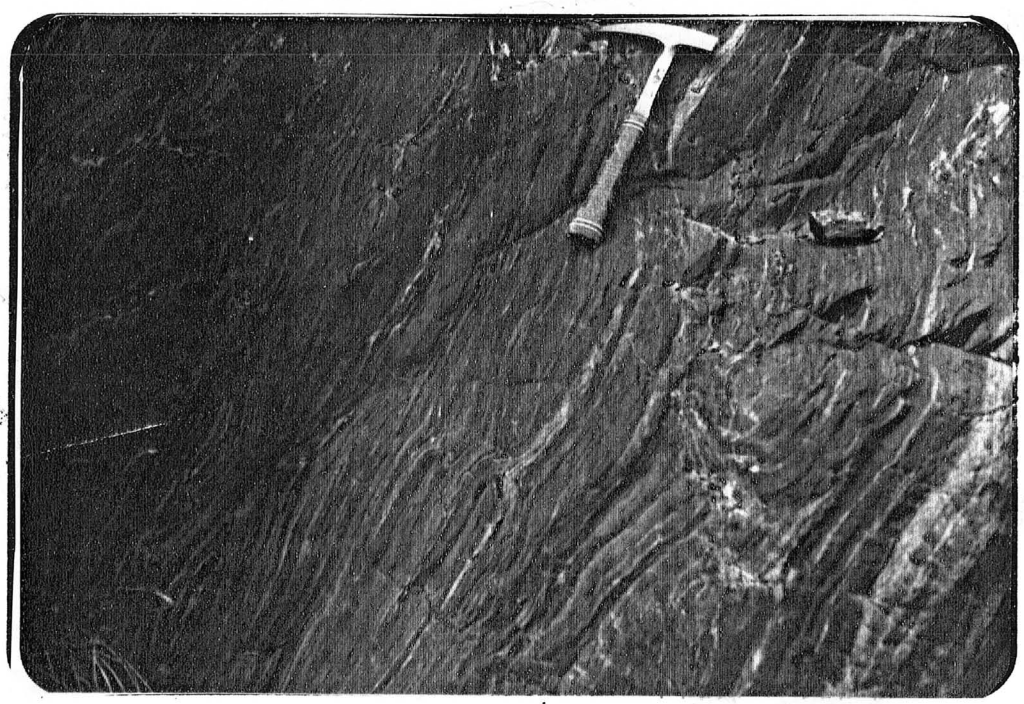


Plate 4. Fresh rock of the ph unit. Location W24 is just west of vein in the bottom of Silver Creek. The rock here is a green to black amphibolite. Location W24 is in the same stratigraphic position as Location W27.

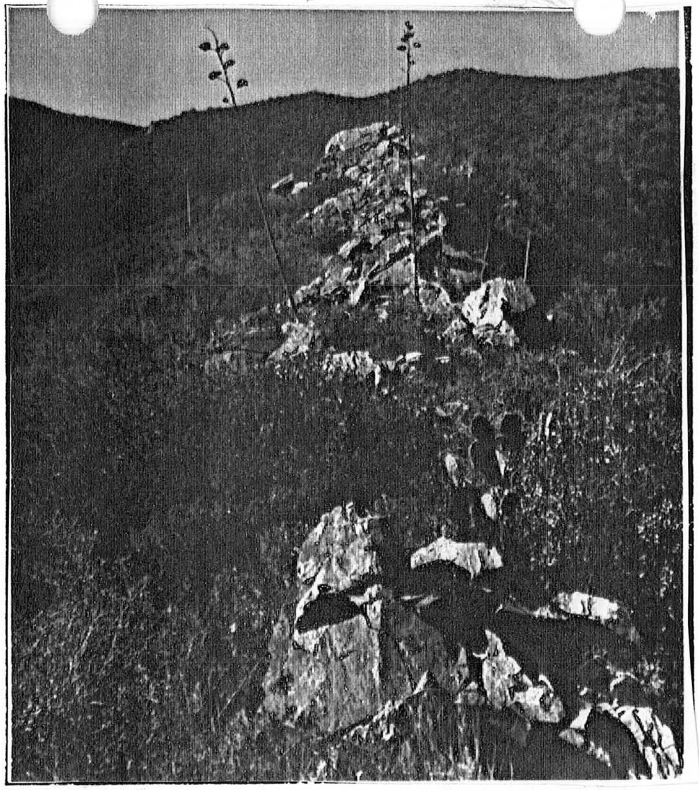


Plate 5. Quartzite at Location C34. This unit forms a very resistant ledge up section (west) of the Buffalo shaft.

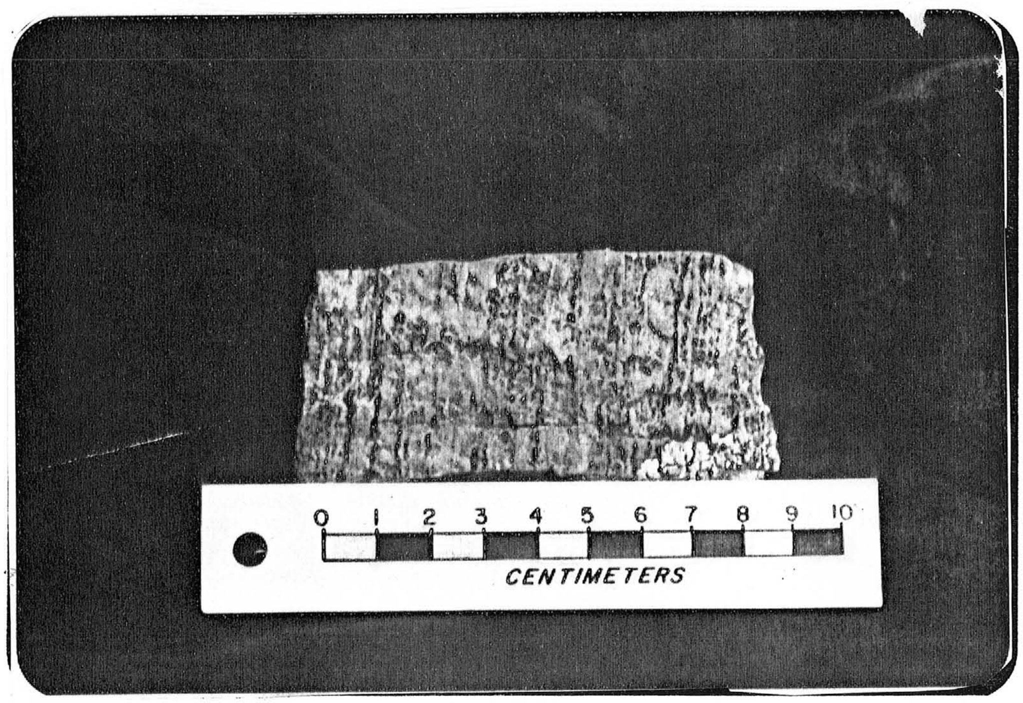


Plate 6. Slickensides in Sample C34.

Youngest in the sedimentary section is another schist (s). It is referred to as the western schist and is very similar to the eastern schist. Mica content is high and in some areas garnet, andalusite, and staurolite are present. Quartz content is also high. Sample Z4 is typical (Plate 7).

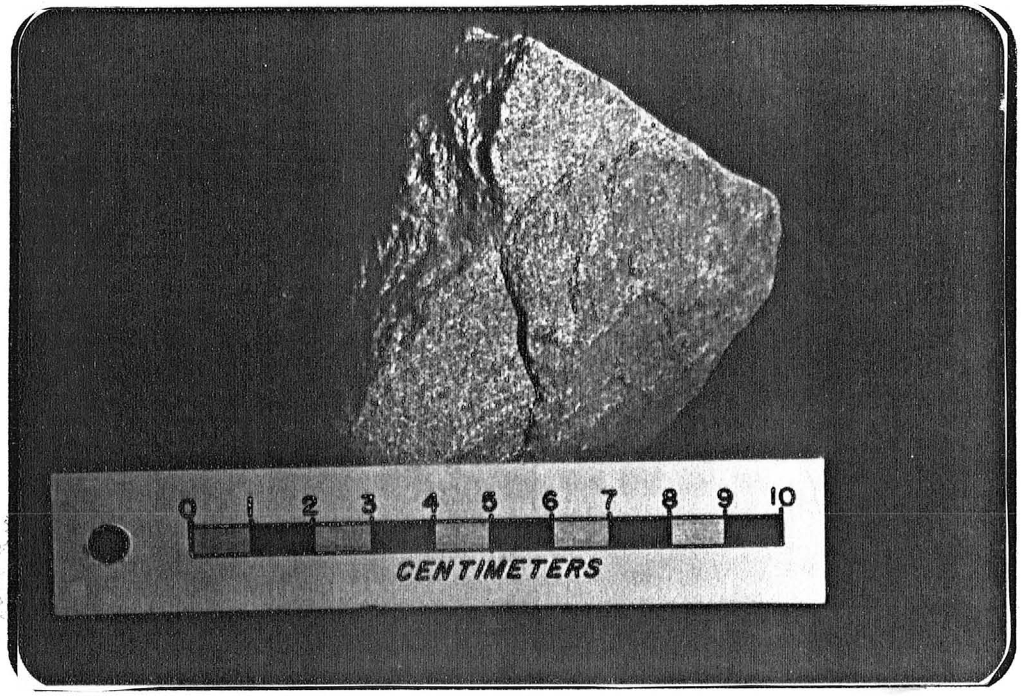


Plate 7. Quartz-mica schist from Location Z4.

The remaining rock units in the column with the exception of recent gravel deposits are Precambrian and Tertiary igneous rocks. The oldest igneous rock is Precambrian tourmaline pegmatite. These pegmatites occur as dikes cutting the schistosity. Their mineralogy is simple: 30% quartz, 60% feldspar, 10% tourmaline and traces of pyrite, biotite and hornblende (Plate 8).

Plate 8. Tourmaline pegmatite from Location W96. The tourmaline is often radiating perpendicular from the pegmatite contact with the phyllite.

Latite dikes occur predominately to the west of the western schist. They are younger than the pegmatites. These dikes are usually concordant with the foliation and can rightly be called sills. Two or more of these bodies are spatially associated with the vein structure. Mineralogy is obscured by the fine grain size and quartz is not visibly present. Phenocrysts of feldspar make-up 40%. A grey to brown aphanitic groundmass is 60%. Biotite and perhaps pyrite form a trace. Clay, probably kaolinite, is replacing the feldspar to varying degrees. This can be attributed to weathering or other alteration of the rock.

In time-stratigraphic position, the vein structure is next. Discussion of the vein development and occurrence will follow the remaining stratigraphic section discussion.

A few basaltic dikes occur on the southwest slope of Silver Mountain. They crosscut the foliation and the vein. However, in one place (Location W104) the basalt terminates at the vein. Tentatively, the basalts are placed in the column younger than the vein structure because of the relations exposed at Location W100 (Plate 9), despite the ambiquity at Location W104.

Plate 9. Basalt dike cutting the vein structure. Gossan vein material is center of photo (Location W100).

An extensive altered gouge rock (ag) occurs in the pediment developed on the south end of the property. This rock may be fault gouge of a major fault along the southwest boundary of Silver Mountain. This fault gave vent to a volcanic complex (Tv) which trends northwest (Fig. 2, p. 6). These volcanics are a homogeneous purple andesite.

12

The stratigraphic column contains 15 different age rock units. This may appear to be complex in terms of lithology and the number of mappable rock units. This would be a wrong perspective. Actually the rock section is a monotonous sequence of quartzitic-phyllite and phyllite with an interesting, very consistent copper-silver vein structure in the middle. The remainder of the report is focused on the vein and its structural aspects.

Vein Structure

Mapping proceeded from north to south (December, 1977 to February, 1978). Discussion of the vein(s) will be the same, from Jones Gulch on the north end of the property through the Pacific Mine, Buffalo Mine and Copper Ash to the No. 10 and Comet on the south end.

At Jones Gulch the vein is poorly exposed. On the ridge and the next drainage south, exposures are better and the geology more apparent. Cross section A-A' shows 80 ft. of latite on the west side of the vein.[1] The latite does not exhibit any apparent mineralization. The vein structure itself is 75 ft. thick but gossan development indicates unaltered phyllite on both sides of the gossan. The mineralized portion is probably 40 ft. thick. On the east side of the vein another latite is present, 35 ft. thick. Plate 10 shows the two latites flanking the vein structure.

---

[1] The cross sections are on the Cross Section Sheet accompanying this report. The maps include a north sheet (Sheet 2) and a south sheet (Sheet 1). Refer to the Geology and Base and Traverse maps as needed while reading the report.

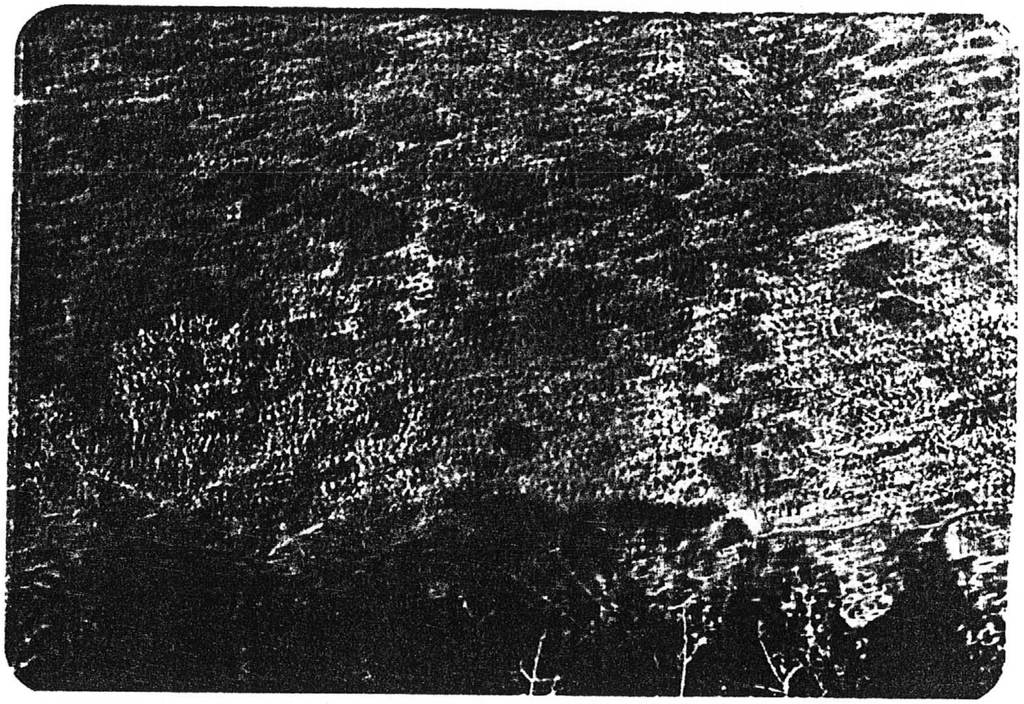
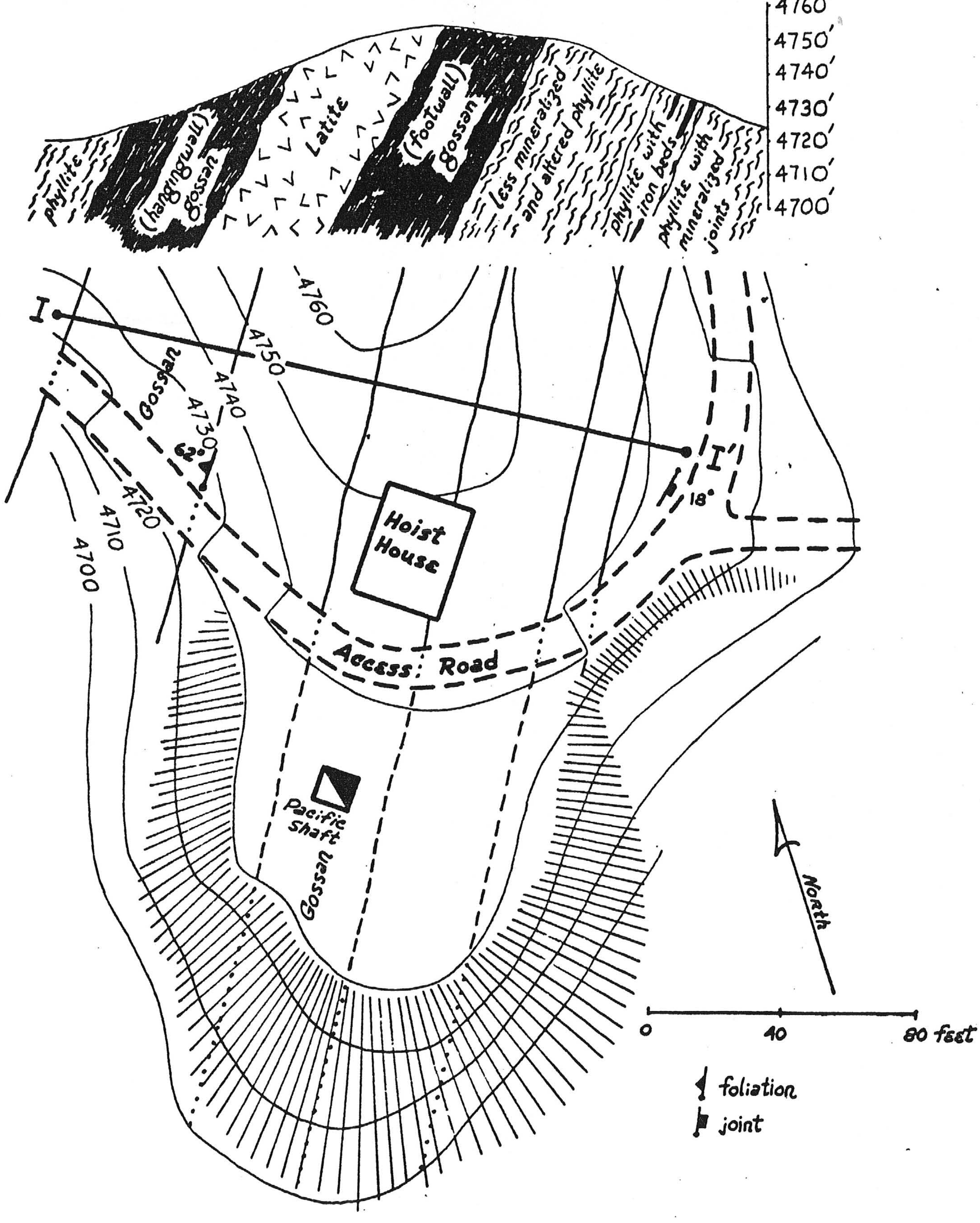


Plate 10. Vein structure at Jones Gulch. View is north from Location C32. The latite is also visible on the north side of Jones Gulch in the top of the picture.

The vein is less consistent and less developed from Jones Gulch to the Pacific Mine than anywhere else on the property. Keep in mind that this observation is based on poor surface exposures. At the Pacific Mine the vein is well developed and split by a 40 ft. latite dike into a footwall and hanging wall gossan (Plate 11). Figure 4 is a cross section constructed along the roadcut and across the face in Plate 11. The Pacific shaft is in the footwall gossan.

/3

FIGURE 4. Cross section I-I'. Total structure is 148 ft. thick. Good gossan is developed over 42 ft. thick, perhaps to a depth of 60 ft. according to Jones (1970).



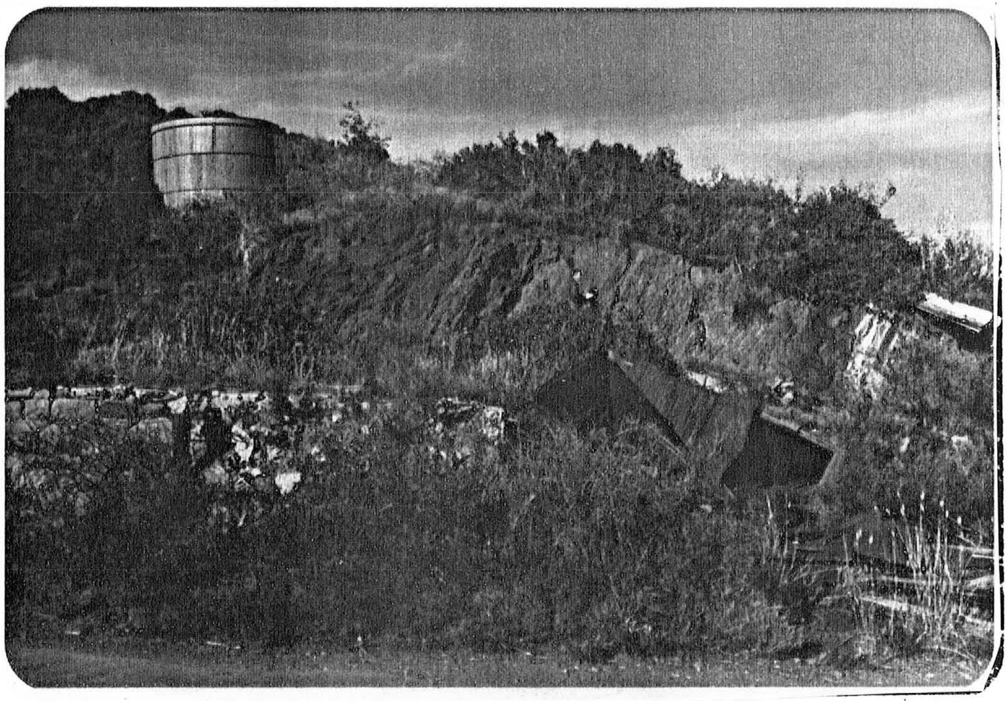


Plate 11. Exposure of footwall gossan behind the old hoist platform at the Pacific Mine.

Proceeding southwest along the vein to Location W28, total structure is 73 ft. thick. (Unless stated as apparent, the thickness given is true.) The latite still splits the gossan. This location is the only one that shows surface evidence of the latite being mineralized (Plates 12, 13 and 14). The latite is fractured and hematite occupies the openings. The iron may have replaced mineralized vein material or it could be iron precipitation from weathering. Petrographic examination analyzing texture would reveal if the iron was replacement or weathering. The hanging wall gossan is 7 ft. thick, fractured latite 24 ft. thick, and the footwall gossan in two separate veins total 12 ft. thick. Much of the material seen in the gossan and the latite may be a copper pitch.

Plate 12. Hanging wall gossan (right side) and latite exposed at Location W28.

Plate 13. Close-up of vein fragments in Plate 12.

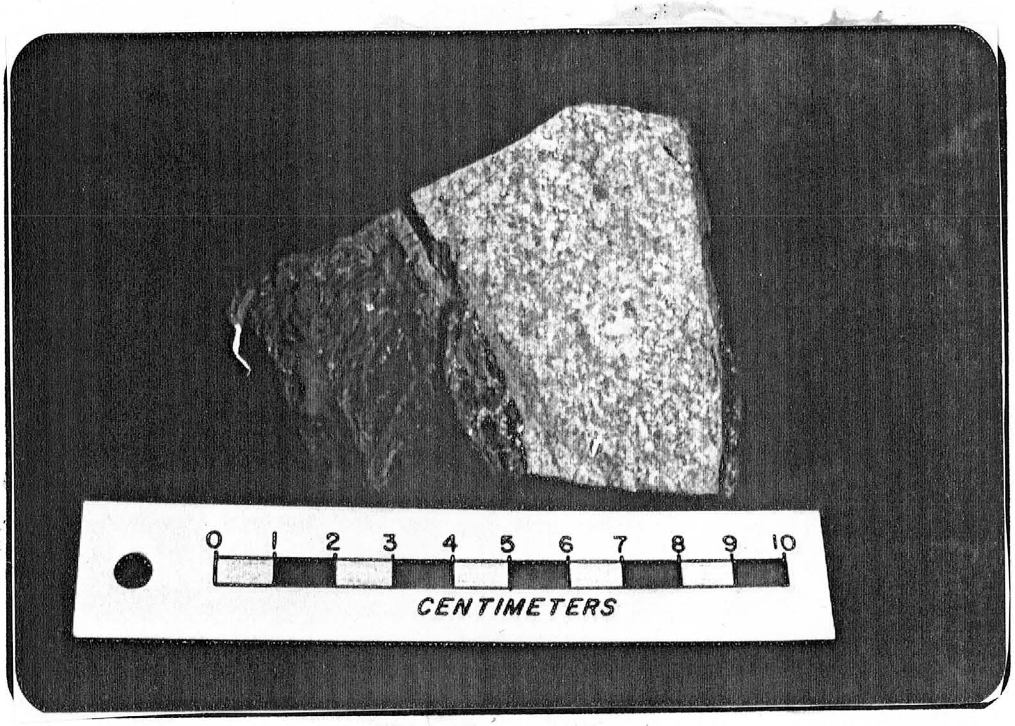


Plate 14. Sample W28, latite with iron vein.

Just southwest of Silver Creek a significant apparent strike-slip fault with right lateral movement has displaced the vein about 900 ft. This has produced a drag fold on the northeast side. From Location W28 proceeding south the vein is significantly thickened. This could be attributed to plastic flow into the fold axis. Cross section C-C' (Cross Section Sheet) shows this synclinal fold. Plates 15 and 16 show the gossan as it occurs in the thickened south limb of the fold.

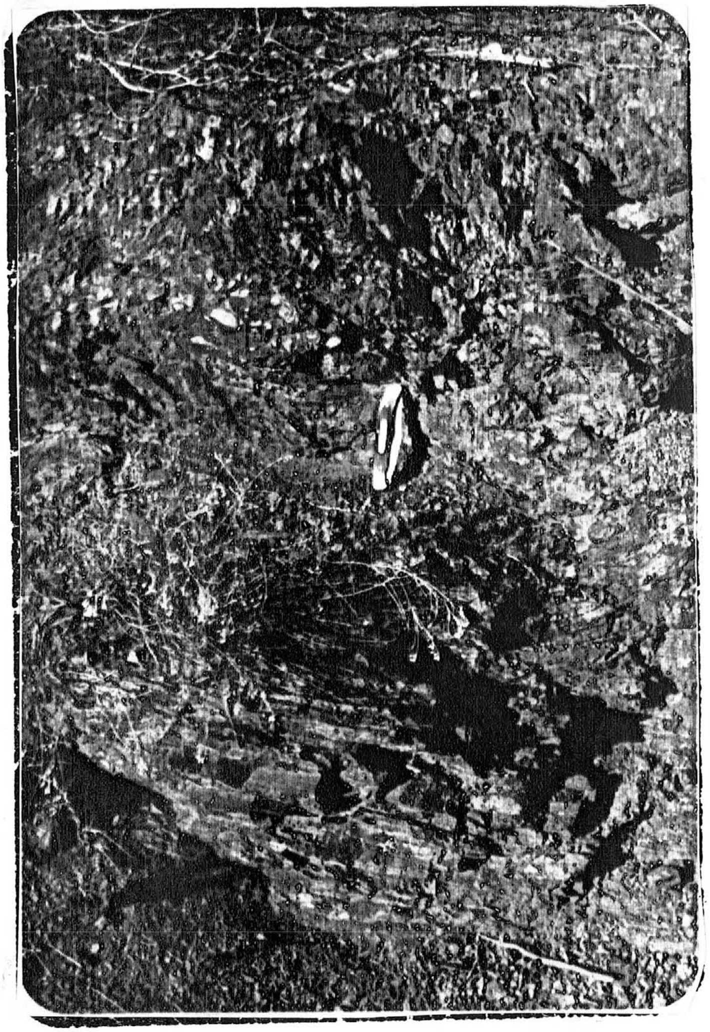


Plate 15

Gossan at Location C18. Brecciation is apparent at top of photo. Iron-stained phyllite is visible at the bottom. The gossan always appears to be developed from mineralization in the phyllite.

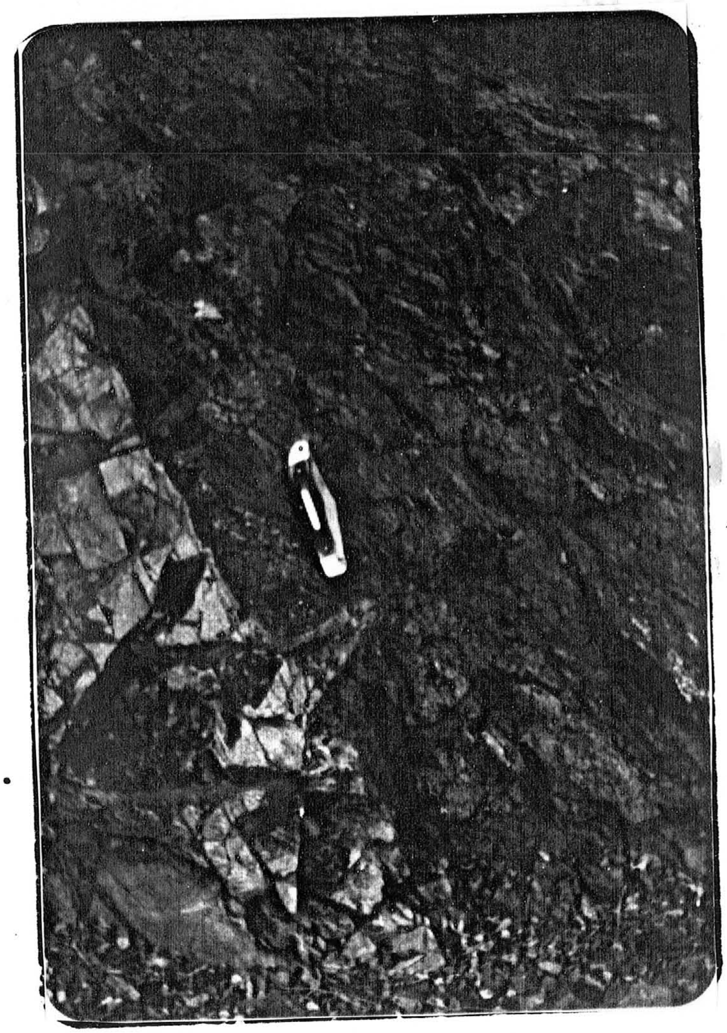


Plate 16

Gossan and latite at Location C20. Note intrusion of latite into gossan-like phyllite. The last movement of ore, however, post-dates the latite.

The vein structure has changed across the fault. At Location W43 the gossan is approximately 100 ft. thick and separated from the latite dike by 100 ft. of phyllite. Figure 5 is a small crosscut tunnel at Location W44. Plate 17 shows the Wellington tunnel.

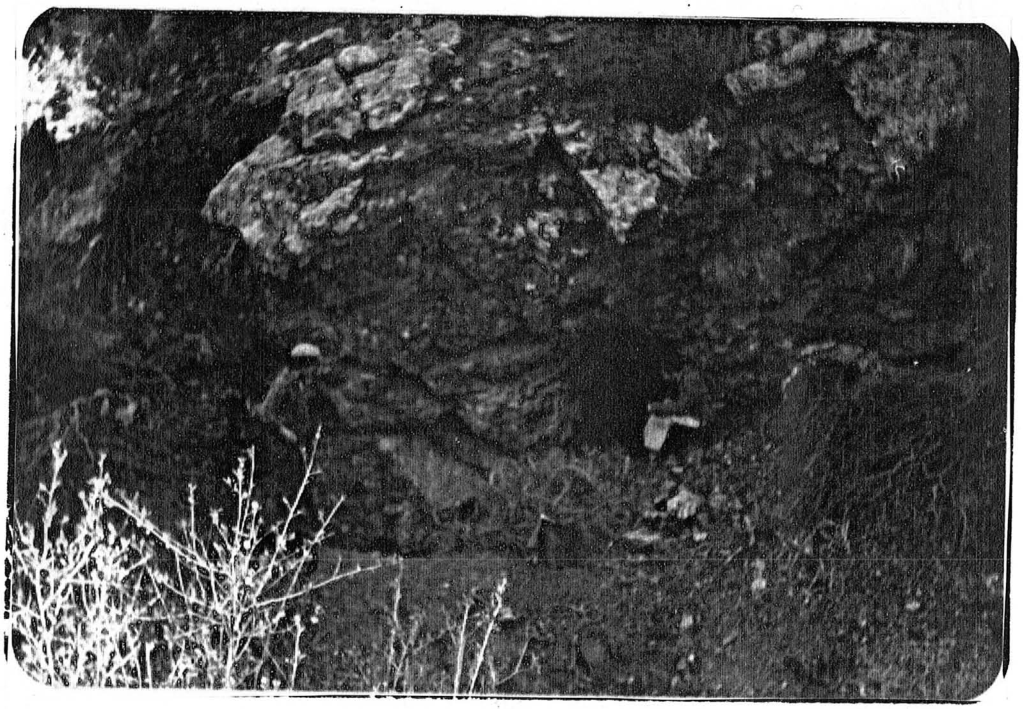


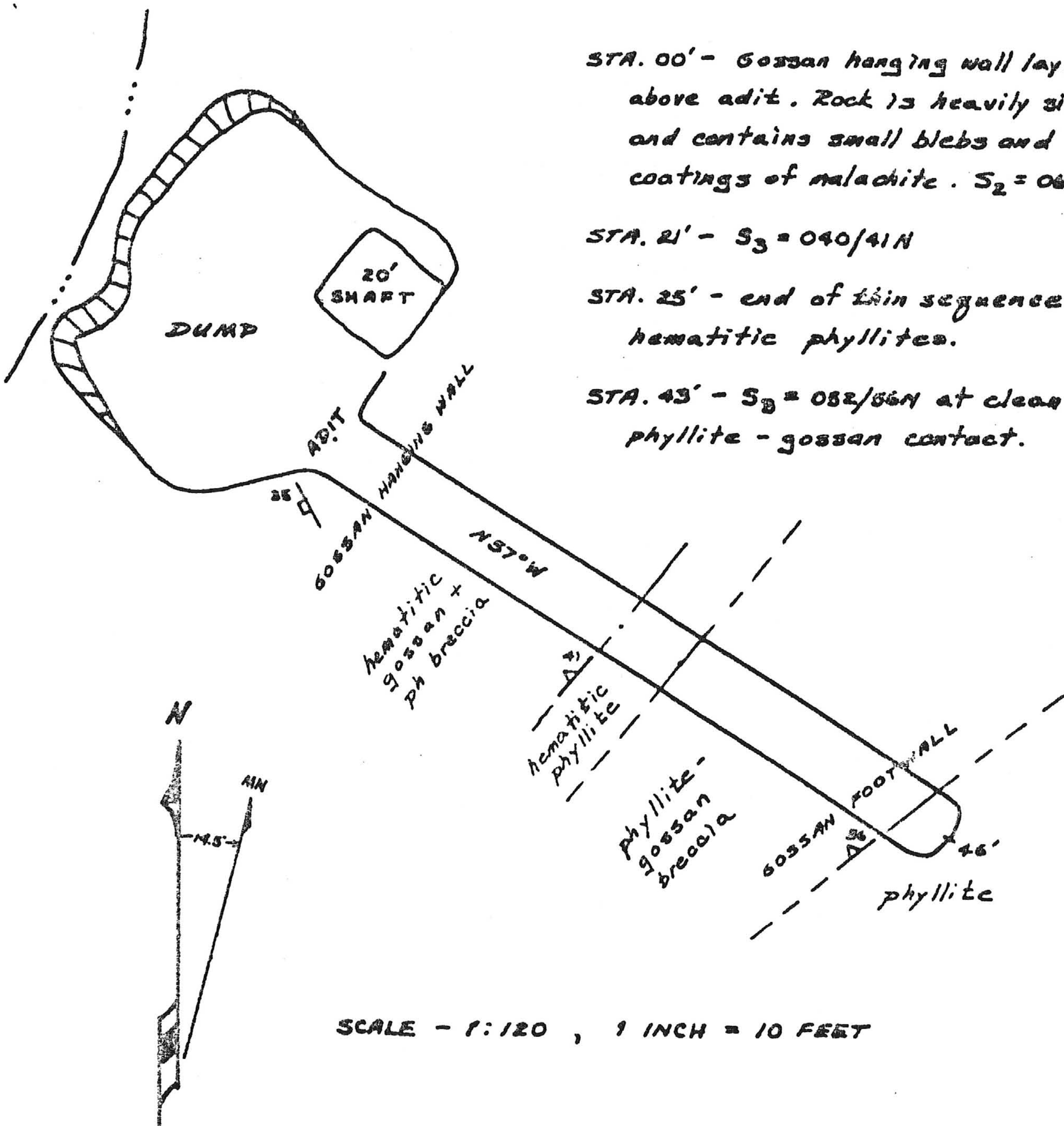
Plate 17. Wellington Patent Tunnel. The 20 ft. shaft is behind Clarence Zink on the left of the photo.

The vein thins south of the Recluse Cabin (Location C22), but thickens to 50 ft. at the Buffalo shaft. The latite has pinched out but the vein structure remains very continuous. Cross section D-D' goes through the Buffalo shaft. Vein character exposed at the Buffalo continues south over Silver Mountain.

SILVER MOUNTAIN PROPERTY
WELLINGTON PATENT TUNNEL - Location W44
UNDERGROUND MAP

FIGURE 5

MAPPED BY BRUCE COX (GEOPLAN, INC.) AND
CLARENCE ZINK (D.W. LITCHFIELD + ASSOC. INC.)
FOR
OLIN CORPORATION - 1978



STA. 00' - Gossan hanging wall lays just above adit. Rock is heavily silicified and contains small blebs and coatings of malachite. S_2 = 068/55N.

STA. 21' - S_3 = 040/41N

STA. 25' - end of thin sequence of hematitic phyllites.

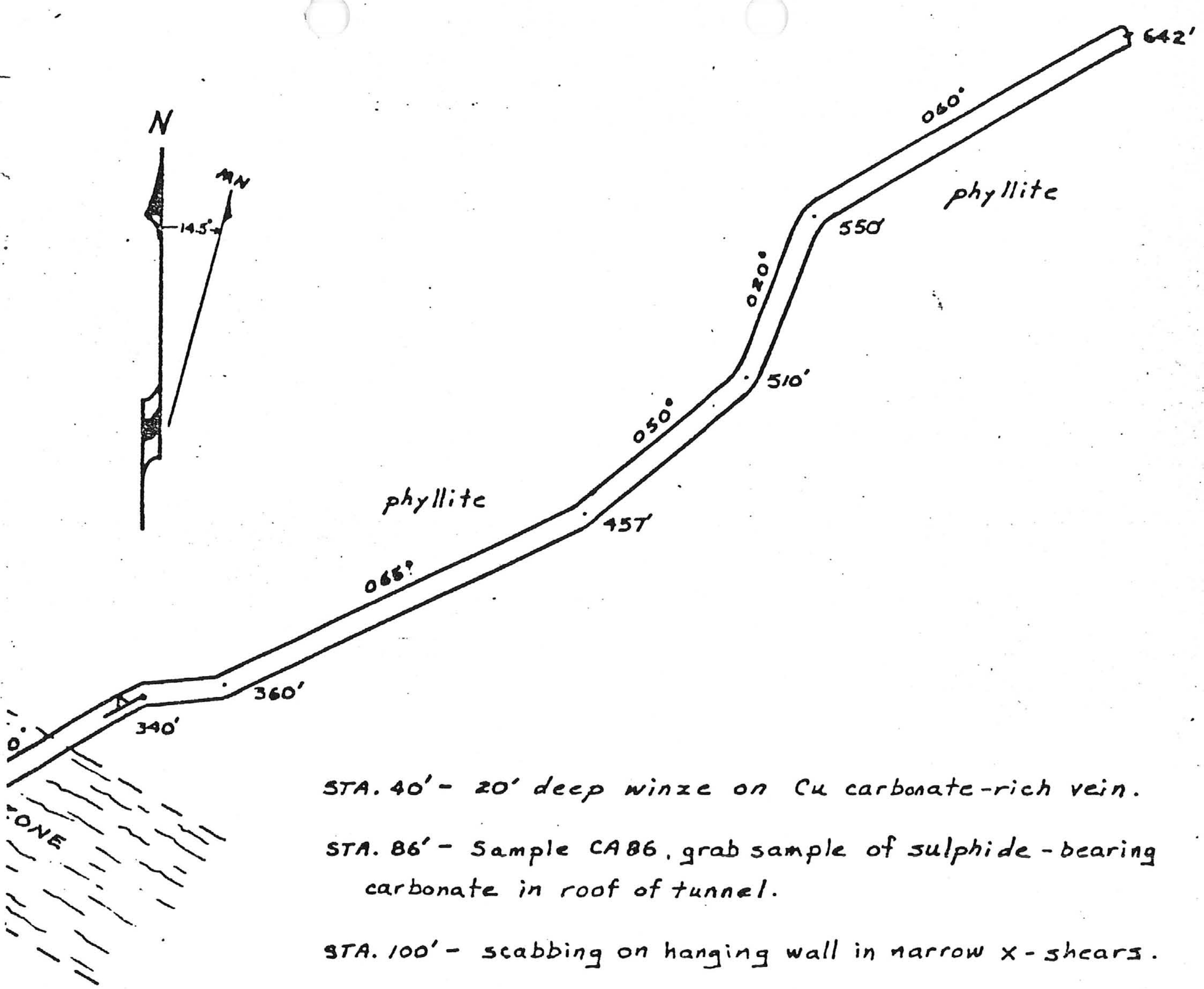
STA. 43' - S_3 = 082/66N at clean phyllite - gossan contact.

SCALE - 1:120 , 1 INCH = 10 FEET

A new vein structure appears on the Silver Mountain ridge (Location W72). It is associated with a latite dike which splits the vein and remains until the vein structure disappears in the pediment on the south end of the property. For the remainder of the report this will be the "Copper Ash Vein". The vein followed from Jones Gulch through the Pacific Mine to here will be the "Pacific Vein".

The Copper Ash Patent Tunnel (Fig. 6) provides the best look at this new vein structure. Once again the tunnel is in the footwall side of the vein. The copper is in a 1.5 ft. thick vein of limonite, hematite, azurite, malachite and chalcopyrite (Plates 18 and 19). It is a good possibility that uranium and possibly cobalt occur in the vein. Cobalt occurs in several areas near the property. The older Precambrian terrain of granitics and pegmatites could be a source. The very red colored hematite which occurs at the Copper Ash Tunnel is indicative of a uranium-cobalt-copper-silver enviroment.

A fault, which is not apparent at the surface above the tunnel, displaces the vein at Station 250 (Plate 20). The displacement must be small, probably only a few feet.



STA. 40' - 20' deep winze on Cu carbonate-rich vein.

STA. 86' - Sample CA86, grab sample of sulphide-bearing carbonate in roof of tunnel.

STA. 100' - scabbing on hanging wall in narrow x-shears.

STA. 128' - 41' winze on hanging wall vein structure. PHOTO SM8-vein = foliation = 066/73N. Sample CA 128: grab of chalcopyrite-rich material, center of W winze wall.

STA. 148' - Sample CA 148: 18" channel sample across Cu carbonate + limonite zone in hanging wall.

STA. 167' - 32' winze follows vein of azurite, malachite and chalcopyrite on footwall side of an altered latite dike: hand sample taken from vein. Vein ~ 1½' wide and flanked on S by phyllite gossan. PHOTO SM8-

STA. 184' - 6' x-cut on hanging wall does not expose vein.

STA. 250' - 8' hanging wall cut. S_1 = 075/56S ; Pitch = 29°W

STA. 260' - entering a 50-70' section of clay + chlorite fault gouge S_1 = 0300/36 S, L_0 = 60°S PHOTO SM8-3 of gouge-gossan contact. S_2 = 060/64N in this area.

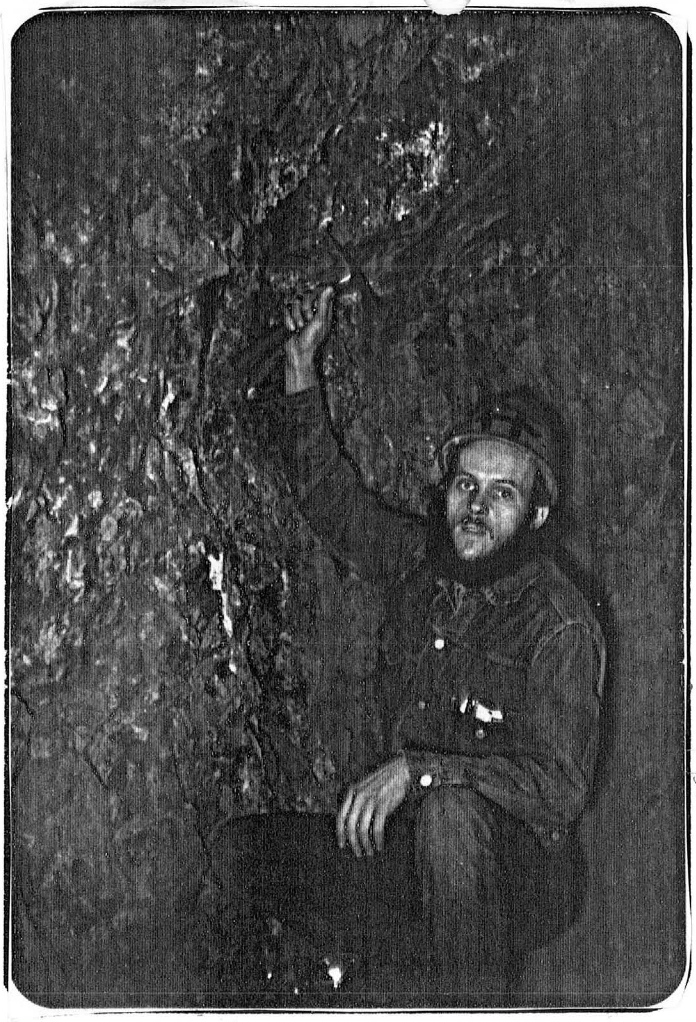


Plate 18

Winze at Station 128. Winze goes down on vein indicated with Bruce's hammer.

Plate 19

Copper vein at Station 167. Cross section E-E' goes through the tunnel at this station. Note abnormally red hematite in upper left of photo.

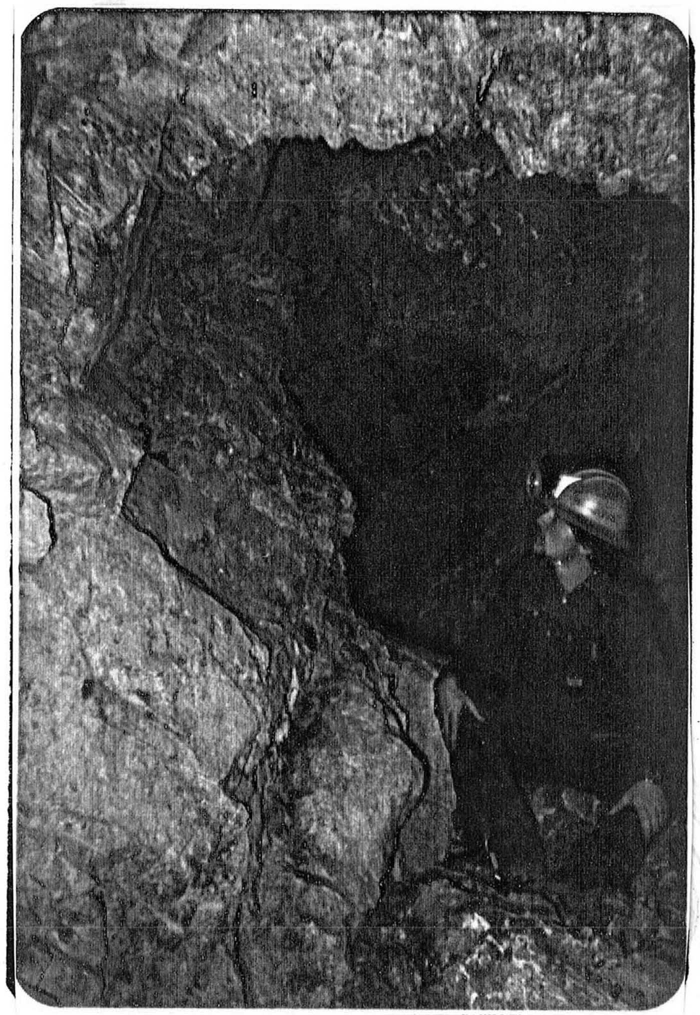


Plate 20

Fault gouge clay at Station 260. The vein gossan and slickensides are visible behind Clarence Zink.

The Pacific Vein changes character at Location C63. It is still very continuous but dolomite becomes an abundant gangue mineral and lead mineralization is more apparent.

The Copper Ash Vein, proceeding south from the Copper Ash Tunnel, becomes more "chopped up" (Cross section F-F') and mineralization seems to increase. At a small sliver of the gossan (Location C57), a 20 ft. drift exposes galena, cerussite and perhaps scheelite (Plate 21).

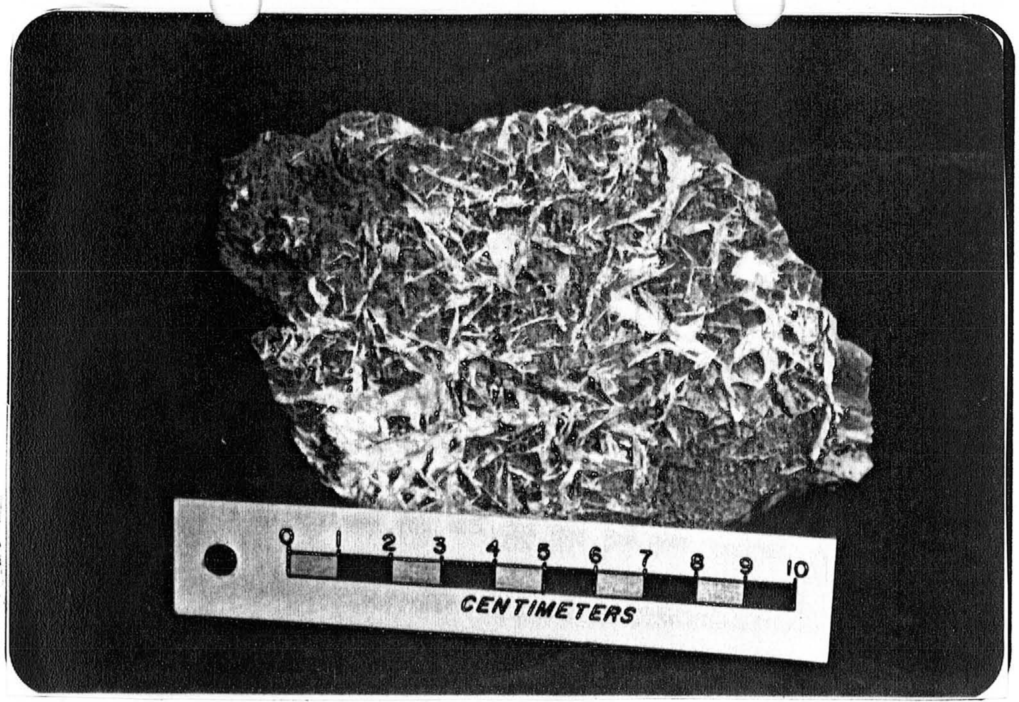


Plate 21. Cerussite (white mineral) from a 1 ft. vein at Location C57.

No. 10 Patent Tunnel (Fig. 7 and Plate 22) is the best exposure of the Pacific Vein on the south end of the property. Plate 23 shows two specimens from the dump. The drift ends in an andesite dike at Station 453 (Plate 24).

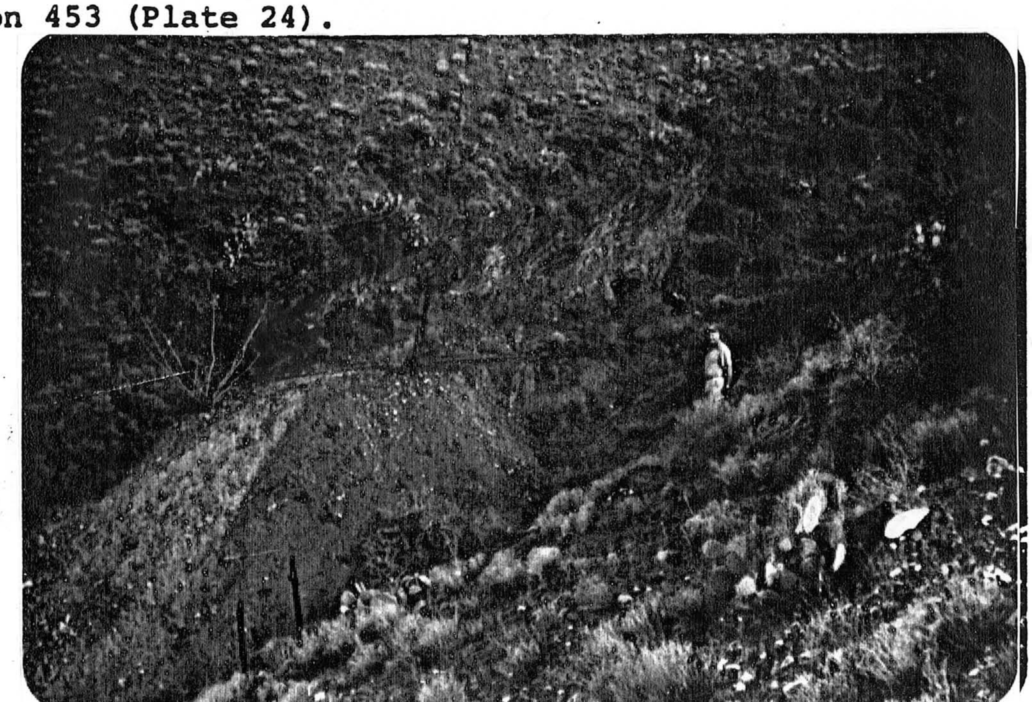


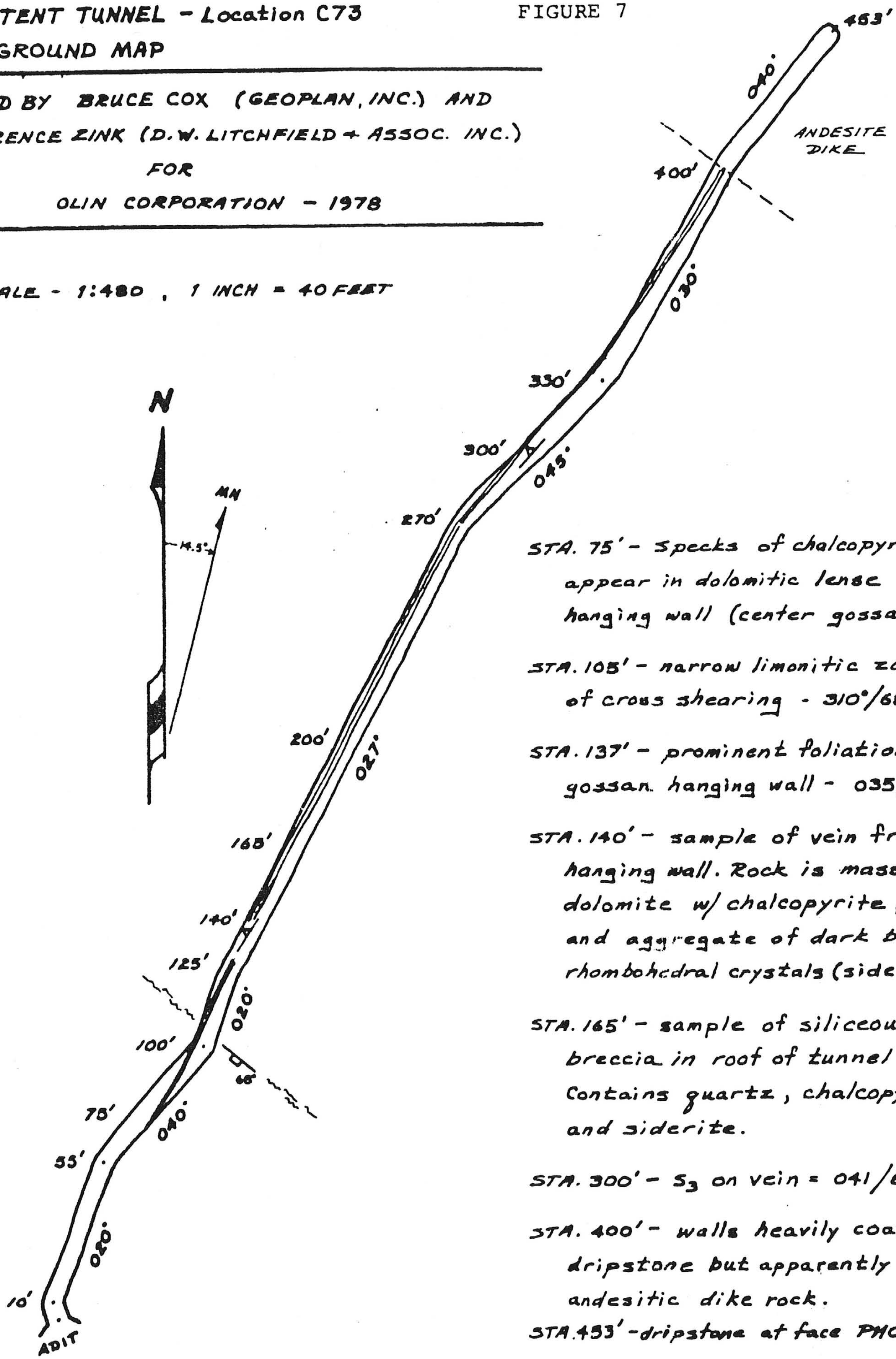
Plate 22. Adit of the No. 10 Patent Tunnel. Note sulfide color of dump. Adit is just above and left of Dean's head.

SILVER MOUNTAIN PROPERTY
#10 PATENT TUNNEL - Location C73
UNDERGROUND MAP

FIGURE 7

MAPPED BY BRUCE COX (GEOPLAN, INC.) AND
CLARENCE ZINK (D.W. LITCHFIELD + ASSOC. INC.)
FOR
OLIN CORPORATION - 1978

SCALE - 1:480 , 1 INCH = 40 FEET



STA. 75' - Specks of chalcopyrite appear in dolomitic lense on hanging wall (center gossan).

STA. 105' - narrow limonitic zone of cross shearing - 310°/68S.

STA. 137' - prominent foliation on gossan hanging wall - 035/60W.

STA. 140' - sample of vein from hanging wall. Rock is massive dolomite w/ chalcopyrite, quartz and aggregate of dark brown rhombohedral crystals (siderite ?).

STA. 165' - sample of siliceous breccia in roof of tunnel (grab). Contains quartz, chalcopyrite and siderite.

STA. 300' - S_3 on vein = 041/61N

STA. 400' - walls heavily coated w/ dripstone but apparently in andesitic dike rock.

STA. 453' - dripstone at face PHOTO SMB-1

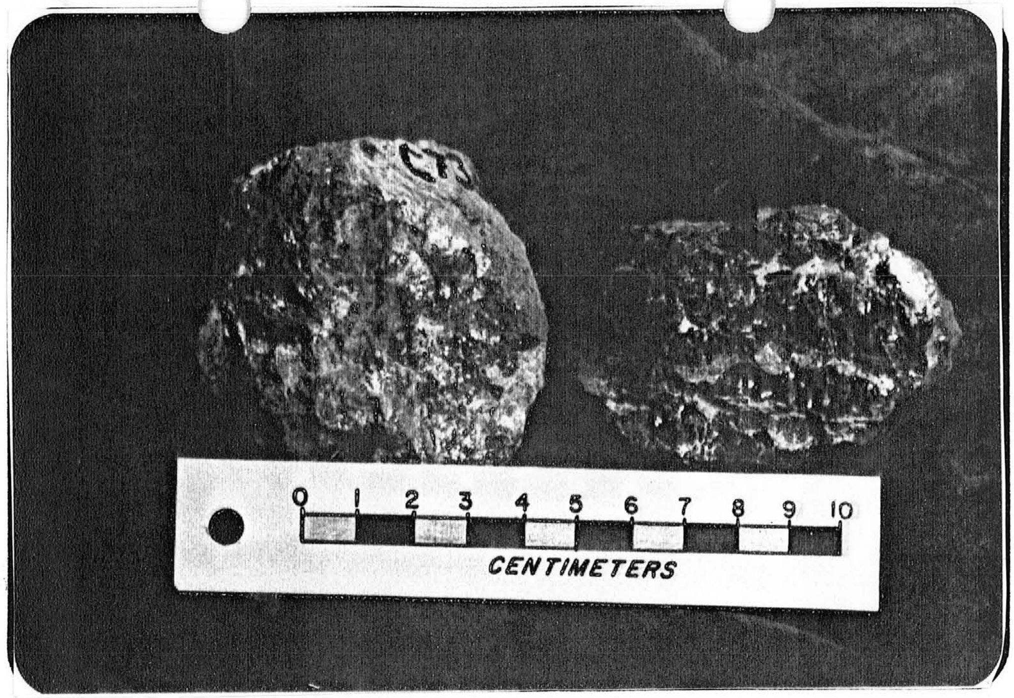


Plate 23. Samples from Location C73. Most of the yellow is chalcopyrite and the brown is ferroan-dolomite and hematite. Siderite is the black shiny mineral in the sample on the right.

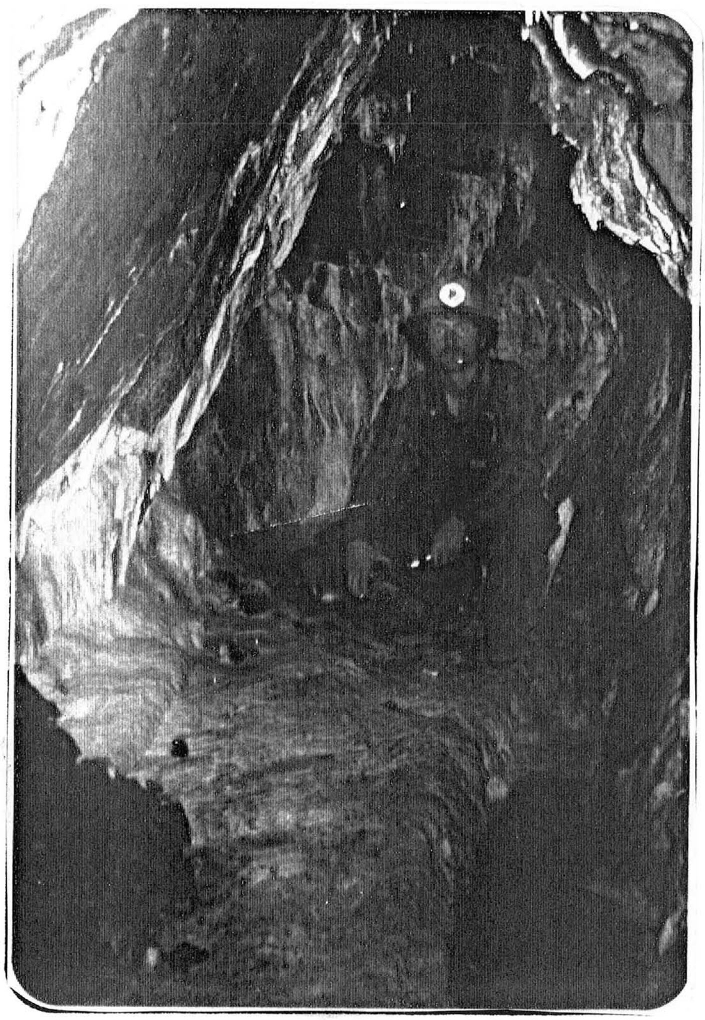


Plate 24

Dripstone coats the andesite at the end of the No. 10 Tunnel.

The Copper Ash Vein exhibits copper carbonates at the surface for about 1800 ft. along strike (Plate 25).

Plate 25. Small prospect pit at Location W103. Malachite occurs in a 6 inch shear zone in gossan material (5 ft. thick) in the footwall side of the latite.

The last good exposure of this vein is the Comet Patent Tunnel (Fig. 8). There is no copper showing at the adit, but a grab sample at Station 75 contained malachite.

This is essentially the end of the vein structures on the property. Mapping continued out onto the pediment. The veins become discontinuous and faulted (Cross section H-H'). The foliation in many places changes strike by 90° and parallels the main fault. This fault is parallel to the mountain front N45W. A pile of purple andesite volcanic rock is extruded along this fault. The vein structures were located south of the volcanic rock off the property and may merit attention at a later date.

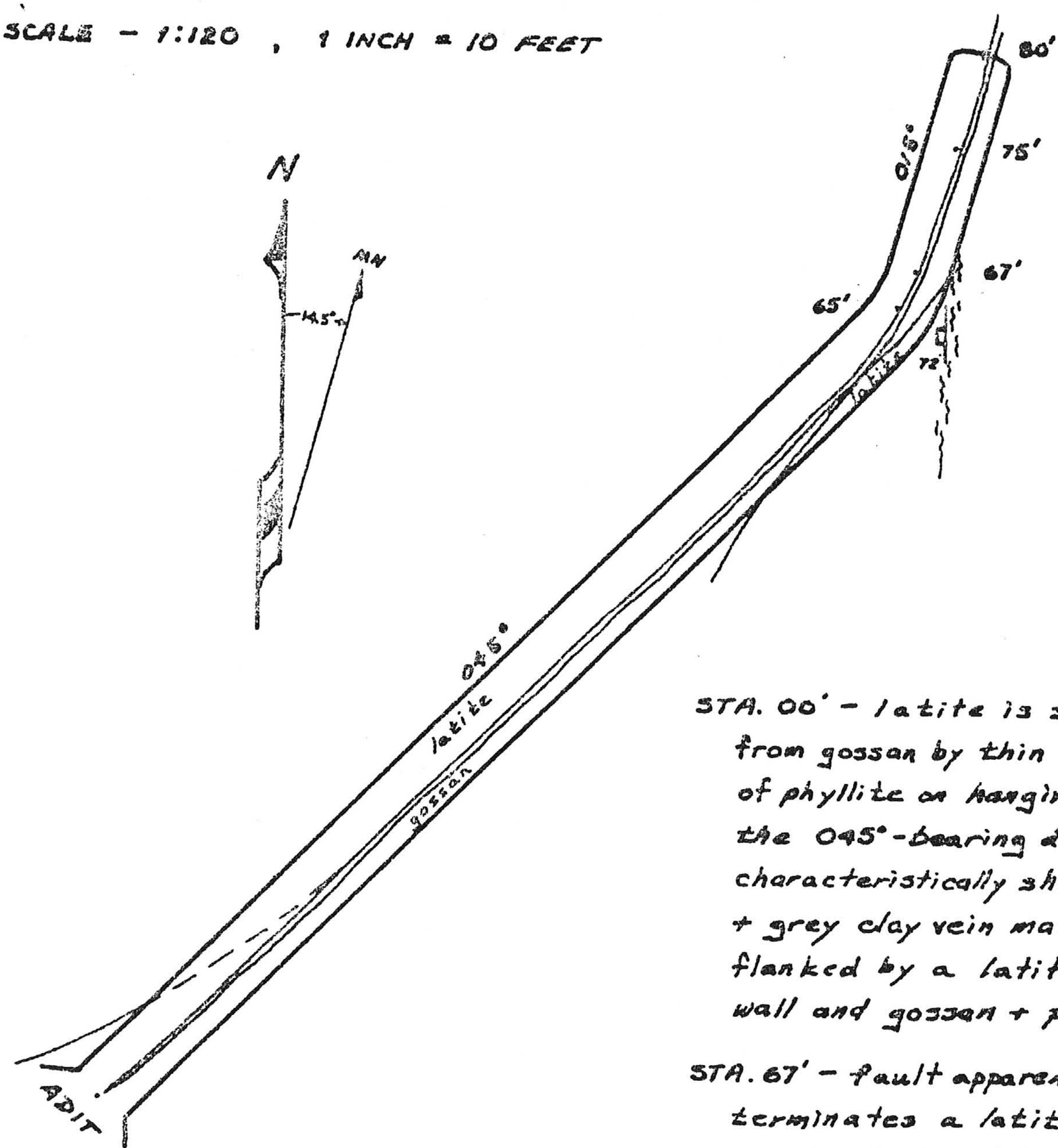
2

SILVER MOUNTAIN PROPERTY
COMET PATENT TUNNEL - Location W108
UNDERGROUND MAP

FIGURE 8

MAPPED BY BRUCE COX (GEOPLAN, INC.) AND
CLARENCE ZINK (D.W. LITCHFIELD + ASSOC. INC.)
FOR
OLIN CORPORATION - 1978

SCALE - 1:120 , 1 INCH = 10 FEET



STA. 00' - latite is separated from gossan by thin sequence of phyllite on hanging wall: the 045°-bearing drift characteristically shows gossan + grey clay vein material flanked by a latite hanging wall and gossan + ph footwall.

STA. 67' - fault apparently terminates a latite sliver on the footwall, S_2 = 00/72W

STA. 75' - grab sample of grey clay vein material plus gossan with malachite (footwall).

These vein structures are a very continuous occurrence. They have been mapped for the entire length of the property and continue both north beyond Jones Gulch and south beyond the mountain front fault and volcanics. The vein rarely or possibly never crosscuts the foliation. Mineralization appears to occur in the footwall gossan. These factors suggest a true strata-bound deposit of primary sedimentary deposition. Ferroan-dolomite occurring on the south end of the property may indicate the environment of the greatest copper mineralization (Plates 26 and 27). More copper is apparent on the surface in that area. This could also be attributed to the steeper terrain, faster erosion and deeper exposure of the vein.

Remobilization of the ore has occurred since initial sedimentation. Everywhere the vein and surrounding rocks are sheared and sometimes folded. Quartz has moved into many "lower pressure" areas produced by the deformation, resulting in thickened fold axes, deposition between boudin structures, and deposition in other cracks and fissures (Plates 28 through 31).

Plate 26. Dolomite bed at Location W97 (Copper Ash Vein). The mineralization is consistently in the dolomite. The same is true of the Pacific Vein in this area. The rock could be sedimentary dolomite or dolomitized at the time of mineralization by Mg-rich ore fluids.

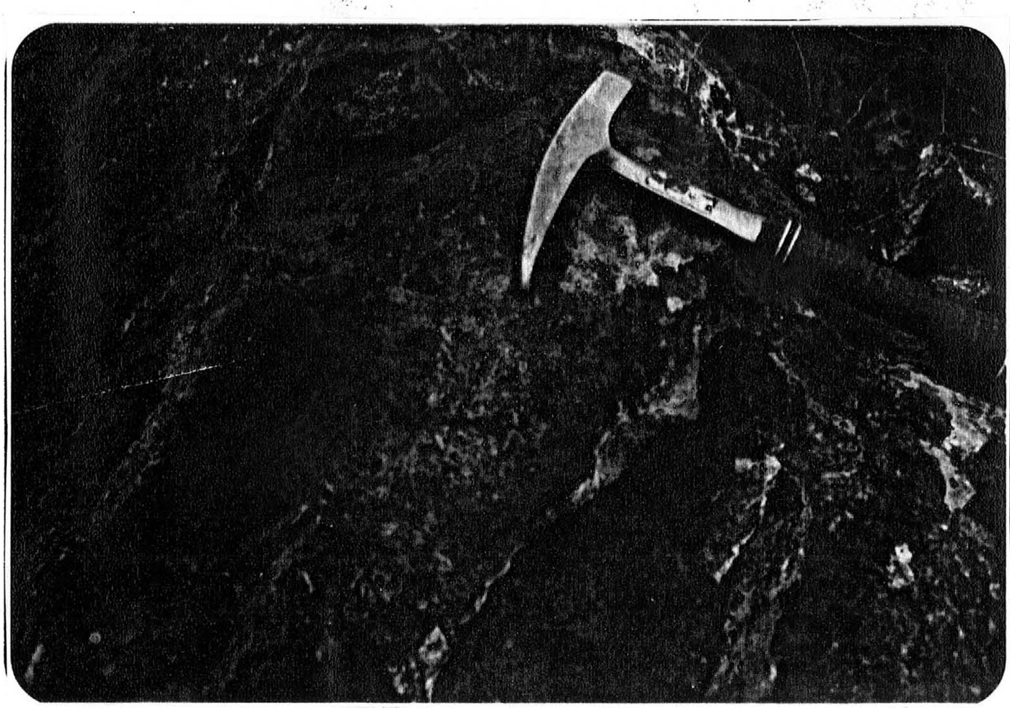


Plate 27. Close-up of samples in Plate 26.

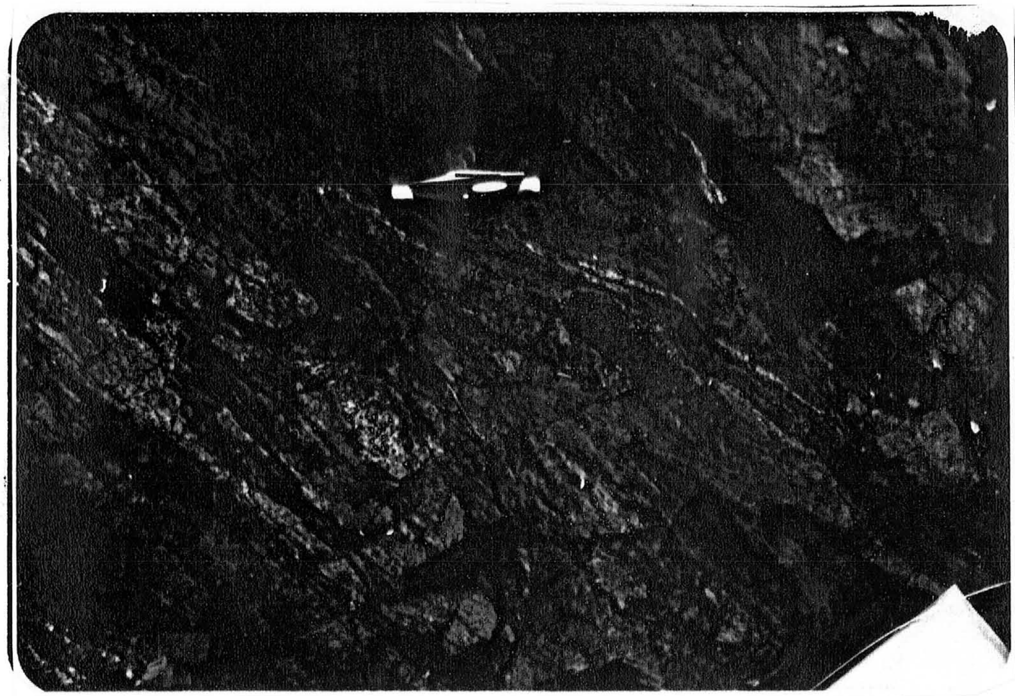


Plate 28. Small scale faulting in vein structure, measured probably in a few feet or inches at Location W101 (Copper Ash Vein).

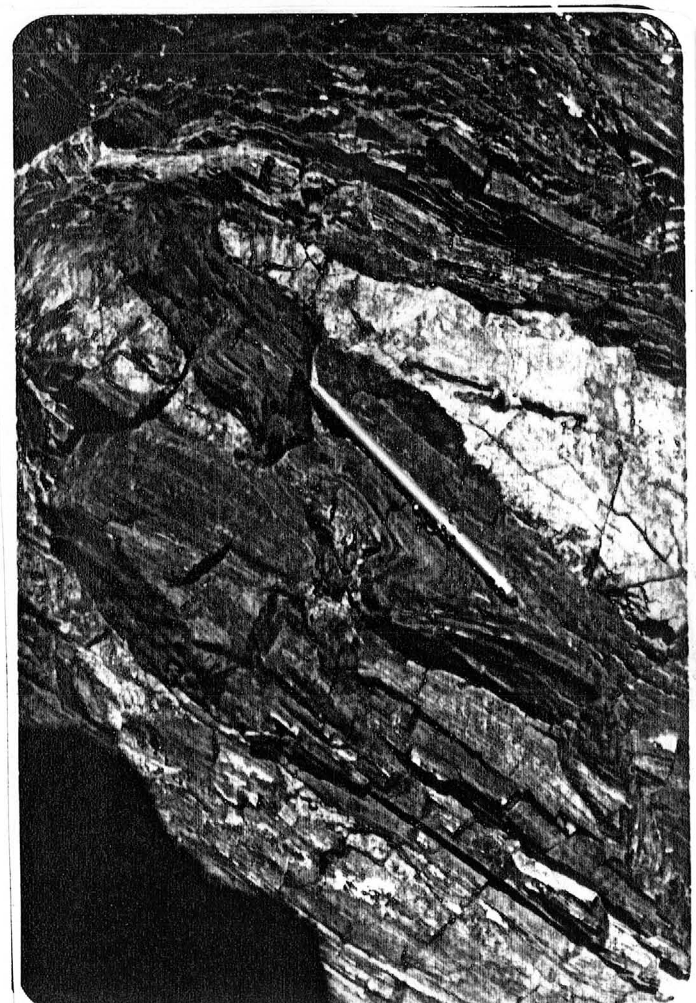


Plate 29

A couple produced by shearing between the quartz blobs. Note resulting drag fold just below pencil (Location W91 in quartzitic phyllite).

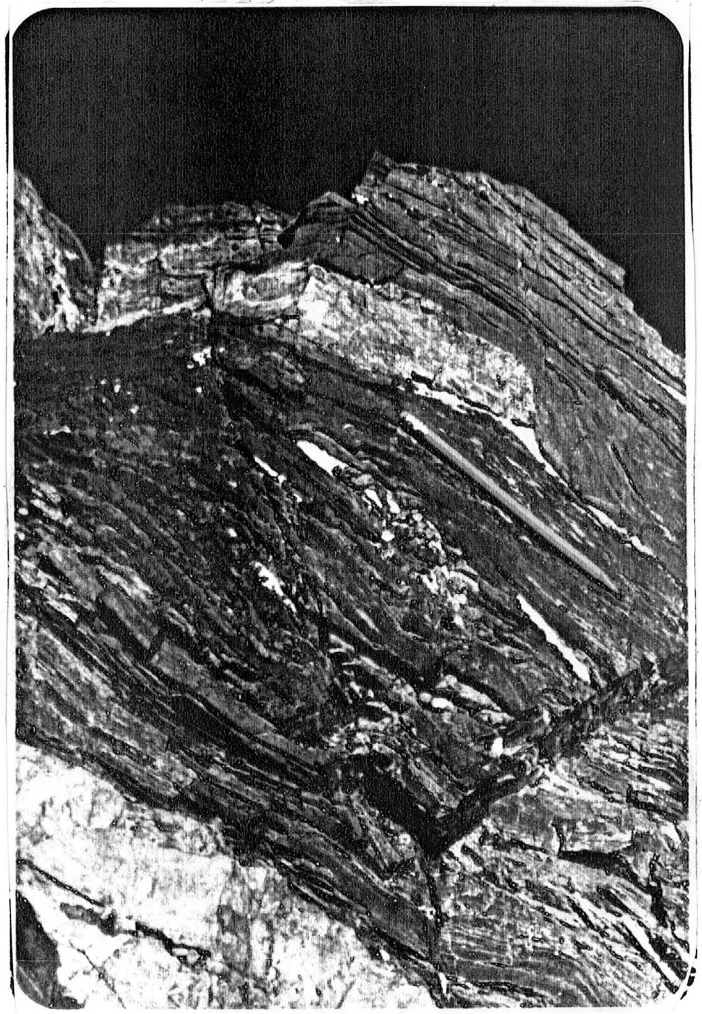


Plate 30

Precipitation of quartz in fissures and fold axis (Location W91)

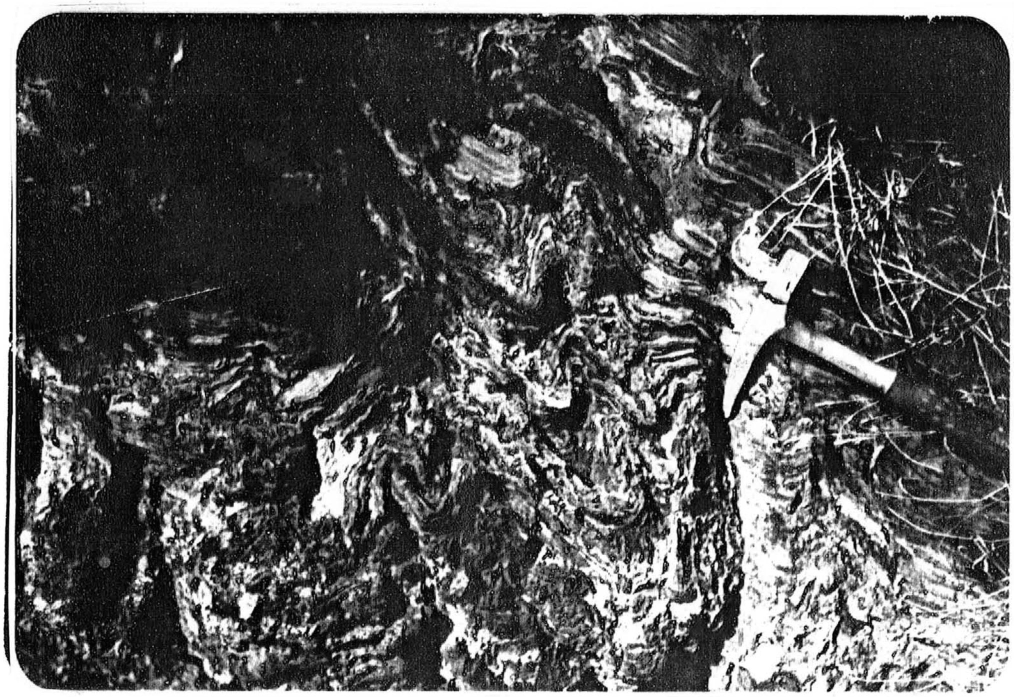


Plate 31. Contorted gneissic rock at Location C73. The deformation causing these folds may have remobilized the ore and moved it slightly.

Bibliography

Blandy, J. F., 1897, The Mines of Yavapai County, Arizona: Engr. Mining Jour., v. 63.

Creasey, S. C., 1951, Geology of the Iron King Mine, Yavapai County, Arizona: U.S.G.S. Bull.

De Witt, E., 1976, Precambrian Geology and Ore Deposits of the Mayer-Crown King Area, Yavapai County, Arizona: Unpublished Master's thesis, University of Arizona.

Heinrichs Geoexploration Company, 1968, Geophysical Survey using Dual Frequency Induced Polarization, Resistivity, Self Potential and Magnetic Methods at the Pacific Mine Area, Tiger Mining District, Yavapai County, Arizona: Unpublished report.

Higbie, H. A., 1969, A Preliminary Report on Silver Mountain, Arizona: Unpublished report.

Jones, N. O., 1970, Report on the Pacific Mine Area: Unpublished report.

Keith, S. B., 1969a, Map of Known Nonferrous Base and Precious Metal Mineral Occurrences in Arizona: Arizona Bureau of Mines.

____________, 1969b, Map of Known Metallic Mineral Occurrences (Excluding Base and Precious Metals) in Arizona: Arizona Bureau of Mines.

Lindgren, W., 1926, Ore Deposits of the Jerome and Bradshaw Mountains Quadrangles, Arizona: U.S.G.S. Bull. 782.

Russell, G. A., (no date), Tiger Mining District, Yavapai County, Arizona: Unpublished report.

Joe Wilkins
EXPLORATION CONSULTANT
GEOPHYSICS — GEOLOGY

5450 N. KENNEBEC LANE
TUCSON, ARIZONA 85704

(602) 887-5376

Feb. 28, 1977

Mike Price
P.O Box 295
Johannesburg, Calif. 93528

Dear Mike:

Attached is a copy of my report on the Pacific-KOOZ property for your perusal. I agree with your conclusions; this is an excellent exploration target. I think that the Pacific ore zone is of syngenetic massive sulfide origin, simillar to Jerome or Noranda rather than a replacement deposit of the pyrometasomatic type related to the rhyolite porphyry. If this is true, then the deposit has great potential and should generate considerable enthusiasm amoung the major companies that are invited to inspect the property. I have submitted my report and portions of your report to several companies known to be interested in this type of deposit and hope to have something going within the next couple of weeks.

I am again working in the Planet area and require your help. I am making a regional property survey of the district,outlining what properties are available, owners' terms, and the potential of the property. One of the major properties in the district is of course, Mineral Hill. Since you have worked extensively on this property, I shall attempt to pick your brain. Would it be possible to obtain a set of the Mineral Hill data--claim maps, geologic maps and reports, and any other pertinent data? Also who is the property owner at the present time and if he is willing to lease the property, what sort of terms is he looking for?

All data would be held confidential and would be returned to you immediately. If you get a moment, could you give me a call?

Hope to see you soon and good luck with your current venture.

Sincerely,

Joe

Joe Wilkins

GEOLOGY OF THE PACIFIC MINE AND VICINITY,
YAVAPAI COUNTY, ARIZONA

by

Joe Wilkins

Exploration Consultant

Joe Wilkins

February 15, 1977

Tucson, Arizona

Summary

The Pacific Mine is situated along a massive sulfide gossan in mica schists of the Yavapai Series. The gossan is oxidized massive sulfides and has the following minimum dimensions; strike: 18,000 feet, average width: 30 feet, and vertical extent: 1000 feet. Using a tonnage factor of 12.5, the potential sulfide tonnage is 43,200,000 tons of massive sulfide material.

The sulfides consist of pyrite and chalcopyrite with minor tetrahedrite, sphalerite, and chalcocite in a brecciated quartz-carbonate gangue. The tenor of the ore is not known but previous assays indicate material on the order of 16 % Cu, 24 oz/ton Ag, and 0.139 oz/ton Au were mined, hand-sorted, and shipped in 1912.

The geology of the Pacific Mine compares favorably with the geology of the Iron King Mine and the Copper Queen-Old Dick-Bruce Mines. A similiar volcanogenic origin is proposed for the Pacific Mine.

Recommendations

The Pacific Mine should be geologically mapped at a detailed scale and the accessible workings sampled.

An EM survey using the VLF-EM technique should be made over the gossan in order to locate the largest concentration of sulfides. The survey lines should be at least 500 feet apart with intermediate lines whenever an anomaly is encountered

Correlative geologic and geophysical anomalies will provide excellent drill targets.

Introduction

The Pacific Mine is situated on Silver Mountain in the Bradshaw Mountain range in the Tiger Mining District, Yavapai County, Arizona. The mine is located in sections 4,8,[redacted]16,17,18,19,20, and 30, T.9N., R.1 W. and in section 25, T.9 N., R.1 W. about 9 miles southwest of Crown King and 60 miles north of Phoenix.

The Pacific Mine consists of 10 patented mining claims, [redacted]. There has been relatively little development on the property, most of which was done in 1912. Lindgren (1926) reported that a 450-foot deep shaft and at least 1500 feet of drifts had been completed at the Pacific Mine.

Lindgren states that the Pacific shaft was sunk on a large gossan that was completly leached to about 50 feet depth. He describes the deposit as a pyritic impregnation of hornblendic schist adjacent to a 50 to 150-foot wide porphyry dike.

Regional Setting

The Pacific Mine occurs along a northeast-trending block of Yavapai Schist in what Anderson and Silver(1976) describe as a Precambrian Greenstone Belt. The greenstones consist of volcanics and volcanic sediments which have been subdivided by Anderson and Blacet (1972) in the Mayer Quadrangle to the north, into the Iron King Volcanics and The Spud Mountain Volcanics which comprise the Big Bug Group. As illustrated on figure 1, the schist belt is bound east and west by batholithic intrusions of Precambrian granitic rocks.

Regional metamorphisn has converted the volcanics to greenstone-facies schists Higher-grade metamorphism occurs locally at batholithic contacts with development of amphibolite, staurolite, and garnet in the schists.

N ↑ Jerome

Iron King

Pacific

The Yavapai Schist is host to a number of volcanogenic massive sulfide deposits. The most notable deposits are at Jerome and at the Iron King Mine near Humbolt, Arizona. Other significant producers and potential producers are the Bluebell Mine, the Kay Mine, and the Orizaba Mine. All are Precambrian syngenetic massive sulfide deposits occuring in volcanoclastic rocks (ususlly silicic) of the Yavapai Series Schist.

Geology

Rocks

The rocks in the vicinity of the Pacific Mine consist of meta-andesite flows and tuffs, chloritic and sericitic mica schists, quartzite and rhyolite porphyry. These rocks are tentatively assigned to the Iron King Volcanics. The mica schists probably represent metamorphosed silicic tuffs and the quartzite; metamorphosed cherts. The rhyolite porphyry is conformable with the schists but does not display any discernible lineation and is apparently unmetamorphosed.

Suggests post-metamorphic intrusion.

The schists strike N70E to N30E and dip 40-50 degrees to the northwest with one major exception. As shown on the geologic sketch map in figure 2, a large fold occurs just south of the Pacific shaft. Here the schists trend east-west and dip at about 30 to 70 degrees to the north. The schist is apparently faulted and displaced in a left-lateral sense at the west-end of the fold.

Mineralization

Mineralization occurs in the chloritic mica schists usually, but not always, adjacent to the rhyolite porphyry. Pyrite and chalcopyrite are the principle sulfides with minor tetrahedrite, sphalerite, and chalcocite present. Gangue is typically quartz, carbonates (siderite, calcite, and ankerite), and silicified mica schists. The gangue is commonly brecciated, often with quartz fragments in a carbonate matrix but sometimes with carbonate fragments in in a quartz matrix.

The sulfides are fine to medium grained and occur as anhedral grains interstitial to the brecciated gangue fragments and as massive sulfides.. Very fine-grained pyrite is disseminated throughout the rhyolite porphyry.

Alteration

Alteration is not widespread but where it does occur it is intense. Massive black chlorite was found in several dump samples but not observed in outcrop. The chlorite appears to replace the mica schist and is intimately related to sulfide mineralization.

Potential Ore Reserves

Price(1976) subdivided the mineralized zone into 4 separate lodes which he named the Pacific, the Cross, the Consolidated, and the O'Brien. Each lode is shown on the geologic map on figure 2 and a copy of Price's report is appended. Price estimated the mineralization potential of all 4 lodes at at least 50,000,000 tons.

The mineralization, although displaced by faulting, is traceable for at least 18,000 feet on the surface and its width varies from 200 feet to about 10 feet, true thickness of the flatly-dipping unit. If an average width of 30 feet is assumed, then using a tonnage factor of 12.5, the potential tonnage is 43,200 tons per vertical foot. As pointed out by Price (1976), there is at least

1000 feet of vertical extent in the topographic position of the gossan. therefore, a mineralization tonnage of at least 43,200,000 tons is indicated for all 4 lodes at the Pacific Mine.

Dump assays by Price yield the following results:

Cu	Au	Ag
3.16 %	0.158 oz/ton	14.98 oz/ton
5.35	0.120	3.74

Other assays obtained by Mitchell (1905) from the then accessible workings are as follows:

Cu	Au	Ag
13.2 %	Tr.	12.60 Oz/ton
30.0	Tr.	89.00
12.4	Tr.	1.50
36.8		
19.4		
8.8		

The first assay--13.2 % Cu--was a 60-foot rock chip sample along one of the drifts.

An average value of all of the aforementioned assays is as follows:

Cu: 16.1 %   Ag: 24.4 oz/ton   Au: 0.139 oz/ton

These values probably represent the tenor of ore shipped during the 1912 operation. It is obvious that there is a substantial amount of copper, silver, and some gold in the unoxidized portion of the massive sulfide zone.

Comparison With Other Deposits

The Pacific Mine has several geological features in common with the Iron King Mine and the Copper Queen-Old Dick-Bruce Mines near Bagdad, Arizona. The critical geological features are as follows:

1. All occur in a mica schist host
2. All occur at or near a contact with andesite tuffs.
3. All are massive sulfide deposits with a high copper content.
4. All contain massive chlorite alteration.
5. The Dick Rhyolite at the Bagdad Mines is similiar to the rhyolite porphyry.

At the Pacific Mine, the rhyolite porphyry is not always present adjacent to the sulfide zone but the sulfides are always present at the rhyolite tuff(mica schist) and andesite tuff contact.

The Pacific Mine appears to be of a syngenetic massive sulfide origin directly related to the enclosing volcanoclastic schist. The great strike-length and the width and persistence of the sulfide zone suggest that a very large tonnage of sulfides are present.

Joe Wilkins
February 15, 1977

Bibliography

Blandy, J. F., 1897, The Mines of Yavapai County, Arizona: Engr. Mining Jour., v. 63.

Creasey, S. C., 1951, Geology of the Iron King Mine, Yavapai County, Arizona: U.S.G.S. Bull.

De Witt, E., 1976, Precambrian Geology and Ore Deposits of the Mayer-Crown King Area, Yavapai County, Arizona: Unpublished Master's thesis, University of Arizona.

Heinrichs Geoexploration Company, 1968, Geophysical Survey using Dual Frequency Induced Polarization, Resistivity, Self Potential and Magnetic Methods at the Pacific Mine Area, Tiger Mining District, Yavapai County, Arizona: Unpublished report.

Higbie, H. A., 1969, A Preliminary Report on Silver Mountain, Arizona: Unpublished report.

Jones, N. O., 1970, Report on the Pacific Mine Area: Unpublished report.

Keith, S. B., 1969a, Map of Known Nonferrous Base and Precious Metal Mineral Occurrences in Arizona: Arizona Bureau of Mines.

______________, 1969b, Map of Known Metallic Mineral Occurrences (Excluding Base and Precious Metals) in Arizona: Arizona Bureau of Mines.

Lindgren, W., 1926, Ore Deposits of the Jerome and Bradshaw Mountains Quadrangles, Arizona: U.S.G.S. Bull. 782.

Russell, G. A., (no date), Tiger Mining District, Yavapai County, Arizona: Unpublished report.

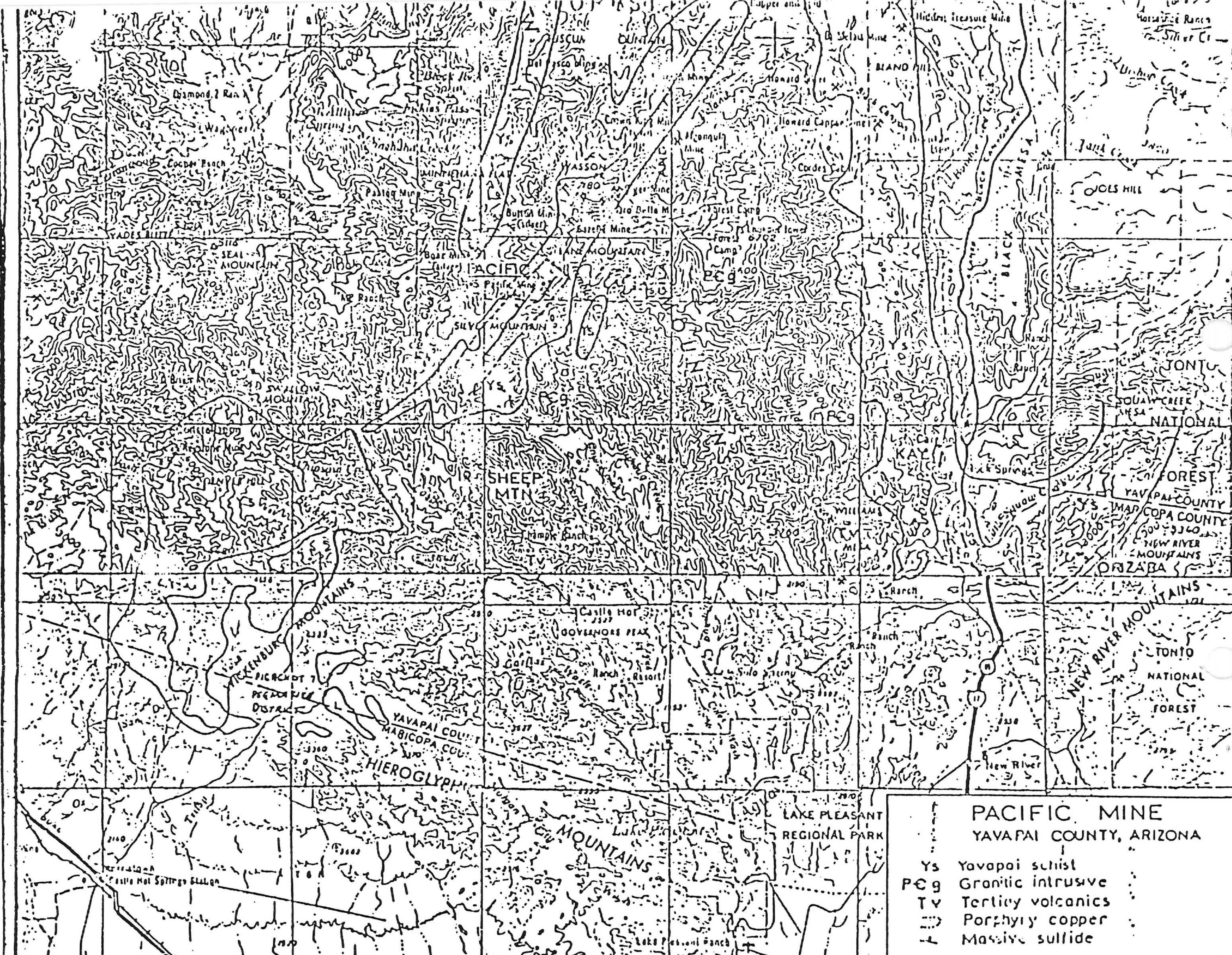

PACIFIC MINE
YAVAPAI COUNTY, ARIZONA
Ys Yavapai schist
PЄg Granitic intrusive
Tv Tertiary volcanics
Porphyry copper
Massive sulfide
PACIFIC
SILVER MOUNTAIN
SHEEP MTN
WASSON
BLACK MESA
TONTO NATIONAL FOREST
YAVAPAI COUNTY
MARICOPA COUNTY
NEW RIVER MOUNTAINS
HIEROGLYPHIC MOUNTAINS
WICKENBURG MOUNTAINS
LAKE PLEASANT REGIONAL PARK
GOVERNORS PEAK
SEAL MOUNTAIN
New River
Circle City

FIGURE 1