CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
416 W. Congress St., Suite 100
Tucson, Arizona 85701
602-771-1601
http://www.azgs.az.gov
inquiries@azgs.az.gov

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Silver Pick Mines
L. & L.

PODESTA and MEYERS, INC.
Consultant Geologists
3102 NORTH 32ND STREET
PHOENIX, ARIZONA
—
TEL. 955-0500

To: Tom Weiler
From: Jack Walton

33-34
111-112

PLATES

TO ACCOMPANY

GEOLOGIC REPORT

OF

SILVER PICK MINES, INC.

Pinal County

Arizona

BY

DONALD J. PODESTA

August, 1967

PODESTA and MEYERS, INC.
Consultant Geologists
3102 NORTH 32ND STREET
PHOENIX, ARIZONA
TEL. 955-0500

INTRODUCTION

This report describes in detail the geology of the holdings of Silver Pick Mines, Onc., located about eight miles Southwest of Superior, Arizona, in the Mineral Hill Mining District, Pinal County. It includes a description of the holdings, a general history of operations, access, climate, topography, reserves and economics, and the results of an intensive geological exploration and drilling program carried out from February to July, 1967. Pertinent maps of the area and of the individual mines and cross-sections of the exploratory holes along with sample locations and assay results are attached.

CONCLUSIONS

To a depth of 500 feet the property is not an economically attractive venture. This conclusion is based upon the absence of disseminated ore mineralization, low grade of veins, complexity of structure, marginal ore reserves developed and relatively high mining and milling costs. The possibility of a large tonnage sulphide ore body at depth remains to be tested.

RECOMMENDATIONS

It is recommended that an effort be made to interest one of the larger mining companies in a drilling program to determine if a deep seated ore body exists.

PODESTA and MEYERS, INC.
Consultant Geologists
3102 NORTH 32ND STREET
PHOENIX, ARIZONA
TEL. 955-0500

HISTORY AND PAST PRODUCTION

The area has been worked on a modest scale and on an off-and-on basis since the early 1800's. The Silver Pick claim was staked in 1885 but never patented. The Woodpecker Claim (Grandfather Mine) was patented on September 24, 1896, and most of the underground work was done on these and adjacent claims between 1893 and 1896. The work on the Orphan Boy was also done prior to 1893 but the early claims were allowed to lapse. The property was restaked in July, 1946 and held by various owners until February, 1966 during which period only work necessary to hold the claims was performed. Arizona Silver, Inc. held the Silver Pick and Orphan Boy groups from 1960 through 1965 under lease and option and in 1963 opened up a vein (Grandfather) on the Golden State Extension Claim for a distance of 175 feet with a bulldozer and built the road connecting the Silver Pick with the Orphan Boy. There has been no other activity until the two groups were taken under lease and option by Silver Pick Mines, Inc., on April 16, 1966. Since then the claim locations have been surveyed and posted, the property has been flown and a topographic map constructed and the geological exploration and drilling program which is the subject of this report has been completed.

In general, the reason the early mining ventures were unsuccessful are twofold:

1) The overall ore grade is marginal and high grade pockets are spotty and sparse. Also, most of the ore was shipped as silver ore and no payment was received for lead and zinc, or else the shipping cost when shipped to the nearest lead smelter was prohibitive from an economic standpoint.

2) The mining was done on a hit-or-miss basis without proper technical supervision and efficient mining methods and without benefit of systematic, planned development.

Production records are scanty. Travis Lane reports (Appendix 2) that recorded production in recent years amounted to approximately 450 tons of 16 oz. Ag. and 3.5% Pb. with three other lots of unknown tonnage averaging 7.7 oz. Ag. and 11.9% Pb. An additional several hundred tons were shipped and said to be of about the same grade but no records are available. Actual settlement records in hand show that five shipments were made to the Magma smelter at Miami, Arizona between December, 1939 and March, 1951 totalling 186.4 tons of .05 oz. Au., 16.80 oz. Ag., and .25% Cu. In addition, two shipments were made to the AS & R smelter at El Paso in June, 1946 and June, 1948 totalling 64.77 tons averaging 7.58 oz. Ag., .08% Cu. and 10.55% Pb. The first of these shipments (19.19 tons) also assayed .276 oz. Au. Obviously there is a considerable discrepancy in these values and those obtained from the samples taken during this investigation which averaged .04 oz. Au., 1.70 oz. Ag., .73% Cu., 2.80% Pb., and 2.08% Zn. This discrepancy can undoubtedly be attributed to the fact that the ore shipments were carefully hand sorted

and selected and only the very highest grade ore was shipped. The relatively small tonnage shipped over a period of almost 14 years bears out this assumption. It is my considered opinion that the recent samples are more clearly indicative of the true grade as this grade is the result of 329 samples and 900 assays; 327 for Ag., 289 for Cu., 117 for Pb., 106 for Zn., and 59 for Au. All samples were carefully cut by several individual workers under competent technical supervision.

LOCATION AND CLAIMS

The Silver Pick Mines are located in the Mineral Hill Mining District, Pinal County, Arizona, about eight miles southwest of Superior and sixty-five miles east of Phoenix. (PLATE I) The holdings consist of the patented Woodpecker claim and 46 unpatented claims assigned to the company by Norman M. Locatis and 13 unpatented claims staked by the company during 1966. (PLATE II) All legal requirements have been fulfilled and the claims are in valid status.

ACCESS

The claims are readily accessible from Phoenix and Superior by interstate highway 60-70 to a point about five miles east of Florence Junction. From here a 9 mile good gravel road maintained by the county provides year round accessibility to within one half mile of the Grandfather and Silver Pick Mines. Several secondary roads furnish access to most of the old mines on the property, although after heavy rains and resulting minor rock slides and wash run-off, some bulldozer work is needed to keep these roads passable. In general, road building can be accomplished by a D-9 cat with hydraulic ripper at reasonable time and cost.

TOPOGRAPHY

The property lies in the semi-mountainous country between Superior and the Gila River and is characterized by fairly steep hills and sharply incised, relatively deep ravines and canyons. Elevations range from about 2800 feet to as much as 3900 feet on the highest peaks. (PLATE III)

CLIMATE

The climate is typically southwest arid desert with relatively cool nights and hot sunny days. Temperatures range from highs of 60° - 70° during the winter months to as much as 115° in the summer. Vegetation is normal for

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an arid country and consists of all types of cactus (cholla, ocotillo, saguaro, cat-claw, staghorn) and other desert growth. Rainfall is usually sporadic and light but occasional heavier rains cause a two to three day flow of several inches of water in the major drainage washes. Water supply is no problem for mining operations as most of the exploratory holes encountered a fairly substantial flow of water at depths from 90 to 200 feet.

GEOLOGY

With the exception of the Orphan Boy Mine area, the entire property lies within the pre-Cambrian Pinal schists. These are hard, light gray, serecite and moscovite schists with a pearly lustre and probably represent pre-Cambrian sediments and eruptive rocks. (PLATE IV) Numerous faults, veins and mineralized zones cut the schist in NW-SE and E-W directions, with variable dips, mostly to the South, varying from 30° to almost vertical. The veins vary in width from one foot to almost 30 feet with well defined foot and hanging walls. They are of the ribbon type, parallel bands of coarsely crystalline calcite, quartz, manganese, iron, and drusy arnethystine quartz with the main ore minerals being cerargyrite, galena and sphalerite. Minor amounts of chrysocolla, malachite, azurite, chalcopyrite and bornite are present. In the Orphan Boy area the Pinal schist is intruded by peridotite plugs with associated diorite dikes with these in turn capped by rhyolite and dacite flows with local interfingering dikelets probably of Tertiary age. Mineralization is certainly post-Pinal and possibly post-rhyolite. However there is no reason to assume that mineralization was confined to only one period; several separate periods possibly occurred but all must be post-Pinal.

Structurally, the area is exceedingly complex with three distinct systems of faults, fault veins, or mineralized zones in the following sequence: (PLATE V)

First - N-S system, ranging from N 25° W to 10° E. Included in this system are the Badger, Silver Pick, Grandfather, Golden State, Silver Fox, and Blue Crystal veins. (The Ajax veins, about 2500 feet SE of the Blue Crystal and not on Silver Pick's property also belong here.) This system shows the strongest mineralization and widest and best defined veins. Gangue minerals are quartz, calcite, manganese oxides, limonite, hematite and siderite. The ore minerals occur as cerargyrite (ag), galena (Pb), chrysocolla, malachite, azurite, chalcopyrite and bornite (Cu) and sphalerite and cerrussite (Zn). The veins range from one foot to 30 feet in width and form distinct, readily traceable outcrops. The dips are uniformly west and range from 30° to 85°. This system is on trend with the Raymert Mine to the north and the

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Silver Bell to the south. Most of the mining in the area is confined to the N-S system.

Second - NW-SE system which includes the Jumbo, and numerous other un-named faults and veins. (The Silver Fox and Blue Crystal might possibly belong in this system). These veins are less mineralized and, especially in the case of the Jumbo vein, show significant movement. Throw varies considerably, both in direction and distance, indicating hinge or rotational movements. In general, this system dips SW except for the Jumbo which dips 85° NE.

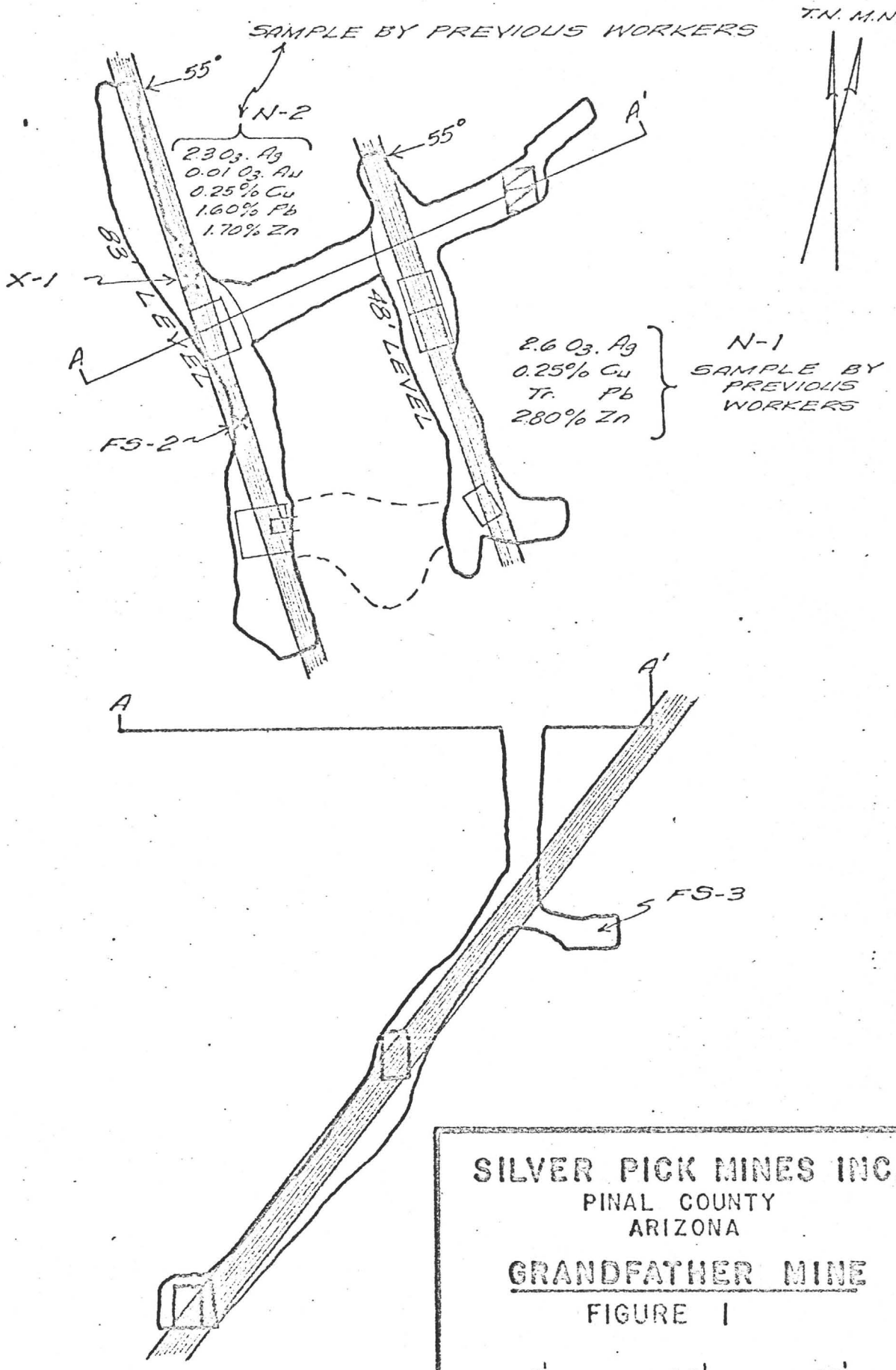
Third - E-W system includes the Gold Coin, East Blue Bell and Orphan Boy in addition to other unnamed faults and veins. This system is the latest period of faulting and cuts both the N-S and NW-SE systems. The faults dip to the south and show little or no ore mineralization except in the Orphan Boy Mine. Here, it may be that the mineralization is of a later period than the N-S and NW-SE trends and may be associated in time either with the peridotite intrusions or the rhyolite-dacite flows.

Further development of the area would undoubtedly uncover even more complex faulting than shown on PLATE V.

Grandfather Mine (Figure 1)

Much of the earlier work was confined to this mine. The vein was developed by a 25 foot vertical and 70 foot inclined shaft to a total depth below surface of 83 feet, and two drifts of 60 feet on the 48 foot level and 85 feet on the 83 foot level. The ore between these levels was stoped on the southernmost end and stoping was also done from the 48 foot level to the surface in the vicinity of the collar of the shaft. The vein ranges in thickness from 10 feet to 30 feet on the surface and narrows to 3 to 4 feet at the 83 foot level although still well defined, with definite foot and hanging walls. Mineralization consists of quartz, calcite, manganese and iron oxides, cerargyrite, galena and sphalerite with traces of copper oxides. A total of 33 samples were taken of the Grandfather Vein from surface outcrops, underground workings and drill holes SP-3, SP-6 and SP-7 as listed.

Sample No.	Oz Au	Oz Ag	%Cu	% Pb	% Zn	Remarks
N-1	Tr.	2.6	.025	Tr.	2.80	48' level
N-2	.01	2.3	.025	1.6	1.70	83' level
FS-2	---	.16	.01	---	.35	83' level
X-1	Tr.	.06	.01	14.78	.47	83' level
85-87½'	---	.38	---	1.04	.60	SP-7
87½-89'	---	.28	---	.28	.42	SP-7
89-92'	---	.32	---	Tr.	2.98	SP-7
92'-95'	---	.22	---	1.88	9.32	SP-7
95-100'	---	.16	---	1.08	10.64	SP-7



(UNDERGROUND WORKINGS TAKEN FROM SCHAEFER 1958)

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GRANDFATHER MINE

FIGURE 1

0' 20' 40'

SCALE 1" = 20'

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Sample No.	Oz Au	Oz Ag	%Cu	%Pb	%Zn	Remarks
60-65'	.01	.29	.05	---	---	SP-3
65-70'	---	Tr.	.06	---	---	SP-3
70-75'	.02	.42	.09	---	---	SP-3
75-80'	---	.44	.14	---	---	SP-3
80-83'	---	Tr.	.07	---	---	SP-3
83-85'	---	Tr.	.07	---	---	SP-3
100-105'	---	.06	.04	---	---	SP-6
105-110'	---	Tr.	.05	---	---	SP-6
NL-3	.08	10.10	.80	1.1	.90	Outcrop
Fs-4	---	14.14	---	---	---	dump
G-1	---	2.64	---	.21	.17	Outcrop
G-5	---	2.46	---	.06	.07	Outcrop
G-6	---	.38	---	---	---	Outcrop
G-7	---	.36	---	---	---	Outcrop
G-8	---	1.24	---	4.82	2.64	Outcrop
G-9	---	1.94	---	.94	.05	Outcrop
BB-13	.02	.24	---	.04	.08	Outcrop
BB-14	.04	.86	---	.07	.05	Outcrop
BB-15	.02	.28	---	.04	.04	Outcrop
J-1	---	.26	.041	.98	.97	Outcrop
J-3	---	.42	.02	2.89	2.22	Outcrop
J-7	---	.38	.03	---	---	Outcrop
J-8	---	.18	1.75	---	---	Outcrop
J-9	---	.14	.035	.38	.96	Outcrop
Avge	.02 oz	1.33 oz	.19%	1.70%	1.87%	
Value	0.70	$2.00	$1.52	$5.10	$5.61-----$14.93	
	$35.00 oz	$1.50 oz	$0.38 lb	$0.15 lb	$0.15 lb---(used in all cases)	

The mine workings and shaft are in good condition and with a little re-timbering and clean-up the mine could be put into operation at relatively minor expense.

Silver Pick Mine (Figure 2)

A large proportion of the early work in the area was also in this mine. The workings consist of an inclined shaft in the footwall of the Silver Pick Vein to a vertical depth below the surface of 62 feet. Drifting was extended for about 50 feet on the 62 foot level and some stoping was carried out. For an unaccountable reason over 150 feet of wandering workings were driven southeast and east on this level and an inclined raise connected to a 30 foot vertical shaft to extract the ore. The vein itself is about 4 to 6 feet thick and contains the usual quartz, calcite, iron oxides, and cerargyrite, with less galena and sphalerite than the Grandfather Vein. More fault gouge is evident along both the hanging and footwall of the Silver Pick Vein than any other vein on the property. A total of 17 samples were

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PINAL COUNTY, ARIZONA

SILVER PICK MINE

FIGURE 2

0' 20' 40'

SCALE 1" = 20'

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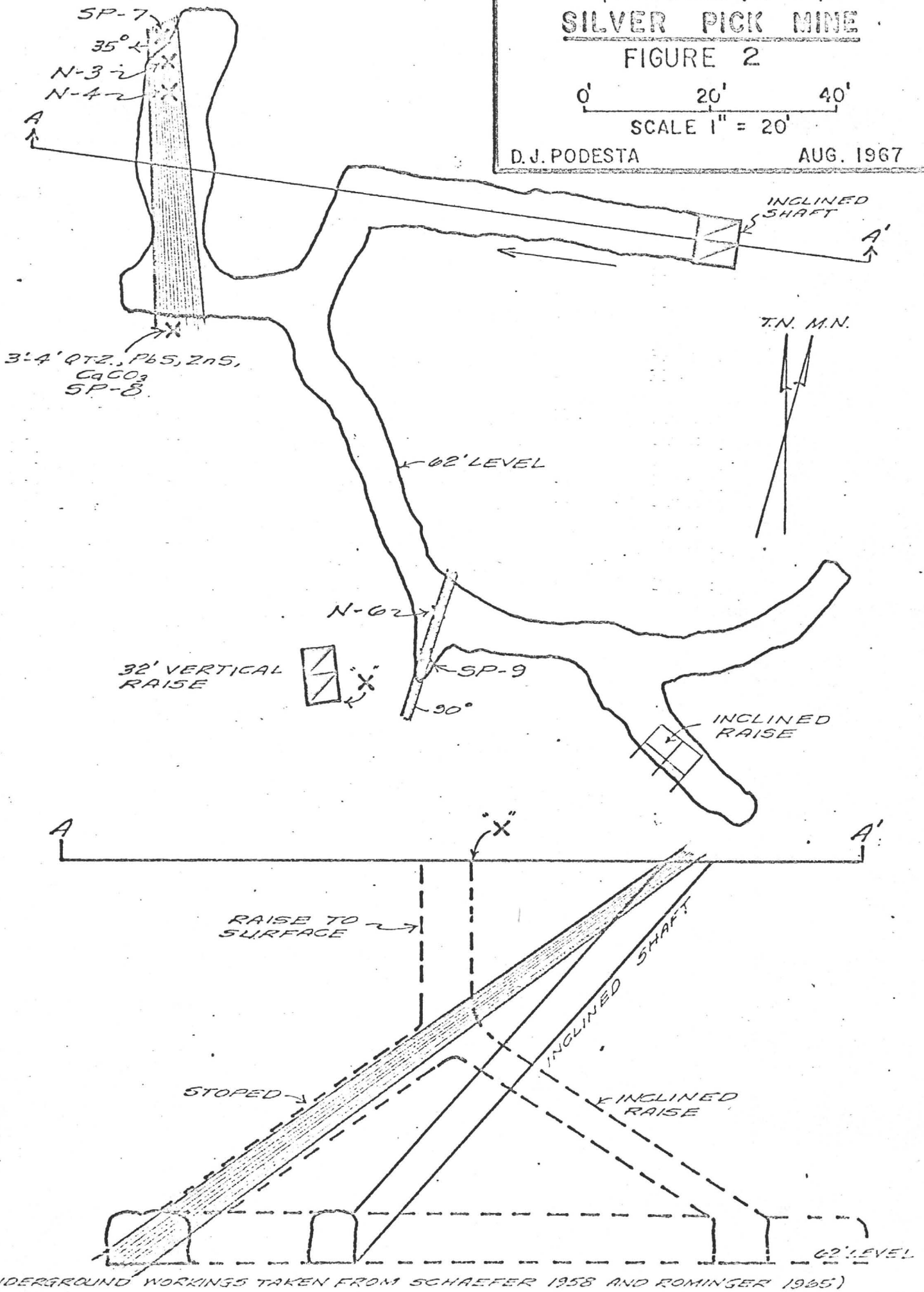

(UNDERGROUND WORKINGS TAKEN FROM SCHAEFER 1958 AND ROMINGER 1965)

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taken of the Silver Pick Vein as listed.

Sample No.	Oz Au	Oz Ag	% Cu	% Pb	% Zn	Remarks
SP-1	Tr.	.12	---	.88	.13	Outcrop
SP-2	----	8.66	---	2.58	.10	Outcrop
SP-3	----	9.90	---	.04	Tr.	Outcrop
SP-4	----	.72	----	2.84	1.15	Outcrop
SP-7	----	.44	.01	.79	.32	62' level
SP-8	----	.16	---	.31	Tr.	62' level
SP-9	----	.74	Tr.	2.20	.08	62' level
BB-16	.08	5.82	.047	.58	.88	Outcrop
BB-17	.02	.58	.067	.26	.08	Outcrop
BB-18	.03	.36	.02	.04	.05	Outcrop
FS-1	----	.15	.02	---	---	Outcrop
N-3	.01	.70	.015	.20	1.20	62' level
N-4	Tr.	1.20	.02	1.60	1.40	62' level
N-6	Tr.	2.0	.055	.40	1.70	62' level
N-7	Tr.	7.1	.03	.20	1.90	Outcrop
N-8	Tr.	1.7	.02	.20	.90	Outcrop
NL-2	.12	12.80	---	2.80	1.10	Outcrop
Avge	.03 oz	3.13 oz	.03%	1.0%	.68%	
Value	$1.05	$4.70	$.23	$3.00	$2.04----$11.02	

As is the case with the Grandfather Mine, the Silver Pick inclined shaft and the drift on the vein need only minor re-timbering and clean-up to put the mine in operation at relatively little expense.

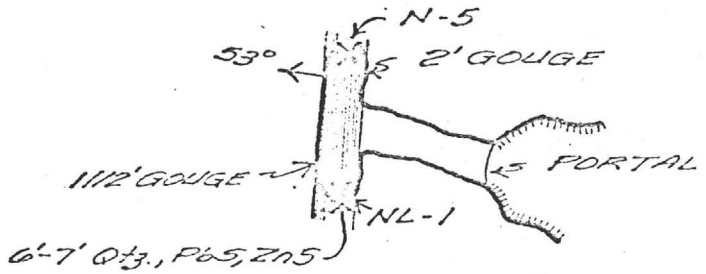
Badger Mine (Figure 3)

Workings here consist of a 25 foot cross cut to the vein and 30 feet of drifting. The vein is about 6 feet thick and strongly defined with the usual quartz, calcite, iron oxides and cerargyrite, but more visible copper oxides are present. The two samples of this vein (N5 and NL-1) average .12 oz. Au, 4.2 oz Ag, 1.7% Cu, 1.4% Pb, and 2.4% Zn for a total value of $34.82 per ton. The workings are in good condition and operations can be started at any time.

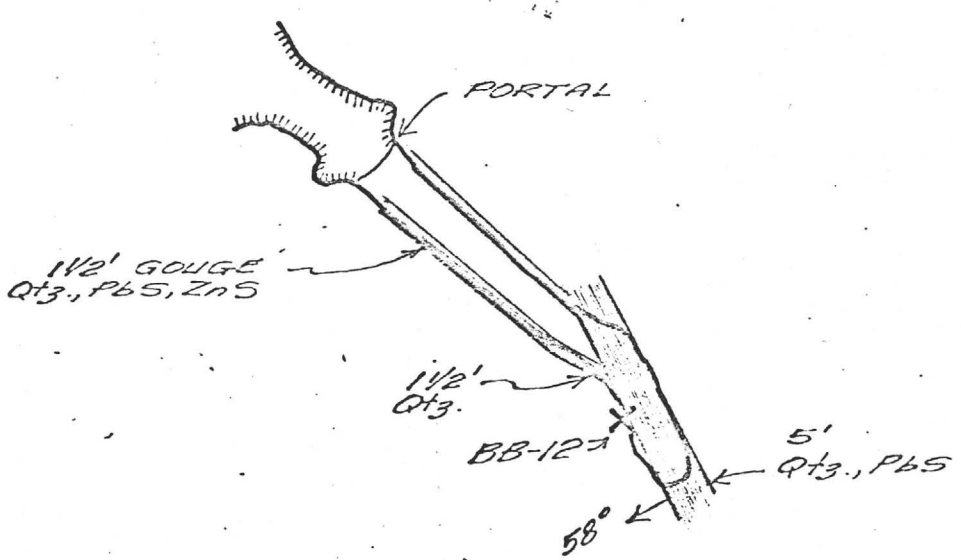
East Blue Bell Mine (Figure 3)

The mine workings consit of a 75 foot crosscut and a 50 foot drift on the vein. The vein is well defined with quartz, calcite and iron oxides and some cerargyrite, galena and traces of copper. The workings are in good condition and could go into operation immediately. A sample of the vein (BB-12) shows .30 oz. Ag, .02% Cu, .04 Pb, and .06% Zn.

Blue Crystal Mine (Figure 4)



BADGER MINE



EAST BLUE BELL MINE

SILVER PICK MINES INC.
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BADGER AND EAST BLUE BELL MINES
FIGURE 3

0' 50' 100'
SCALE 1" = 50'

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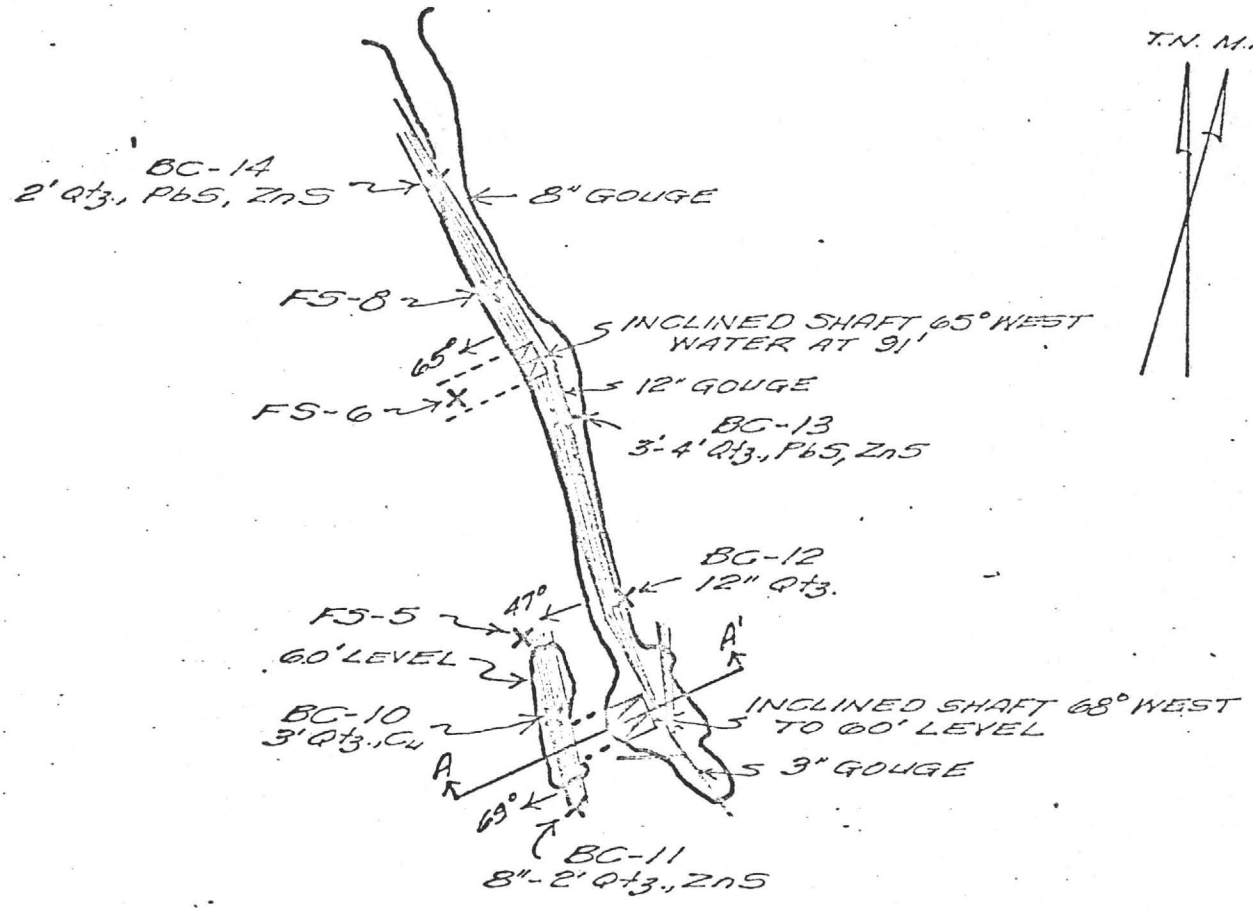

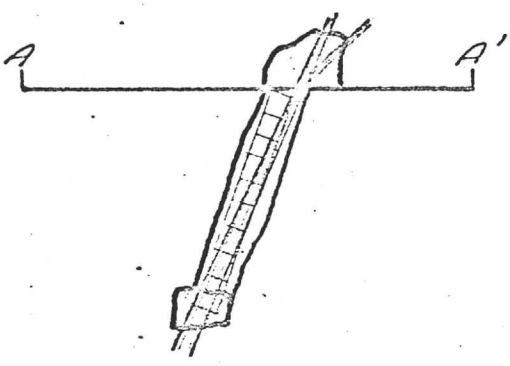

SILVER PICK MINES INC.

PINAL COUNTY

ARIZONA

BLUE CRYSTAL MINE

FIGURE 4

0' 50' 100'

SCALE 1"= 50'

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The mine workings consist of 220 feet of drifting on the vein with an inclined shaft at 200 feet to a depth of 62 feet where 70 feet of the drifting and a little stoping was done. Another inclined shaft was sunk on the vein about 85 feet from the mine entrance, and reported to have bottomed at 292 feet. Water now stands at 91 feet in this shaft. The shafts and workings are in good condition and it is only necessary to pump out the water to initiate operations. A total of 15 samples were taken of the vein from outcrops, underground workings and the dump as listed below:

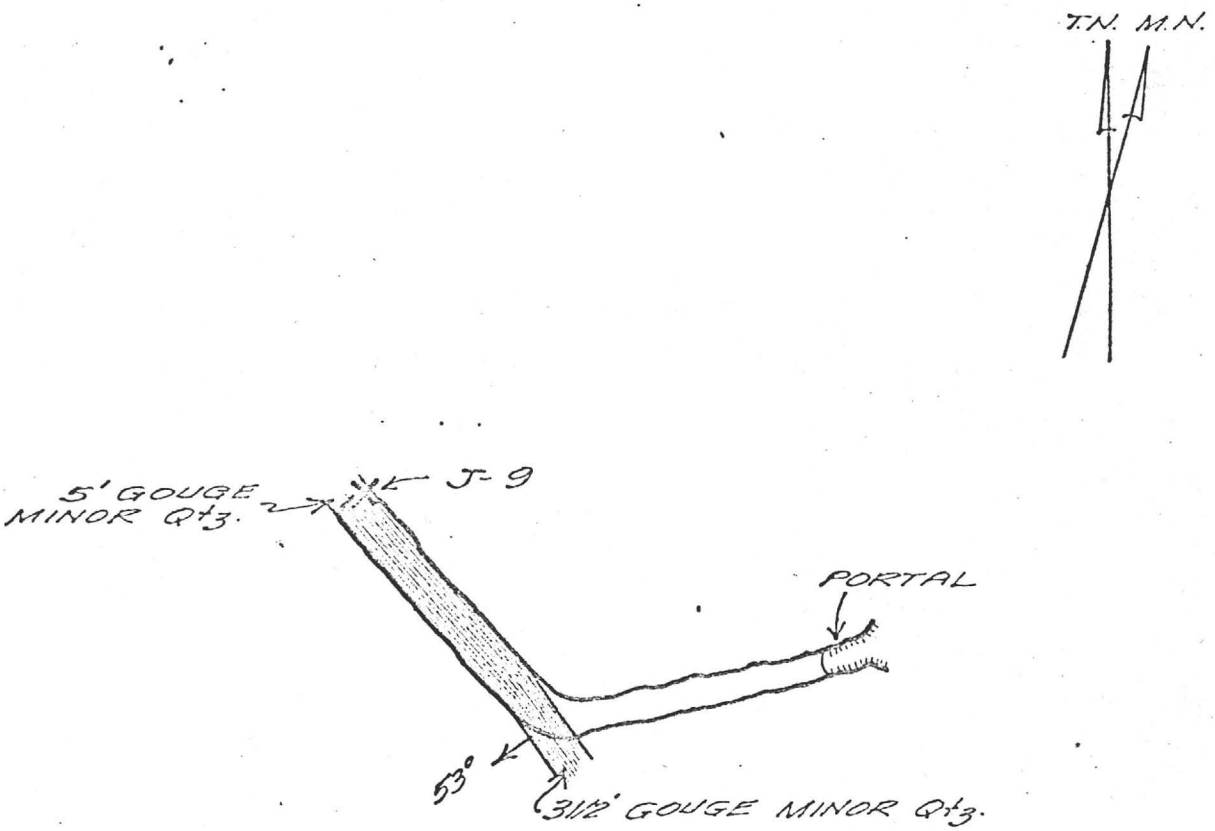
Sample No.	Oz Au	Oz Ag	% Cu	% Pb	% Zn	Remarks
FS-5	.01	1.21	6.48	---	---	60' level
FS-6	---	.22	.92	---	---	72' Inclined shaft
FS-8	.03	.98	.08	14.75	2.00	Drift
FS-9	.09	.35	.72	.65	10.37	Dump
BC-1	---	.50	.08	.90	2.84	Outcrop
BC-2	---	Tr.	.07	.30	.16	Outcrop
BC-3	---	2.00	.02	1.12	.41	Outcrop
BC-8	---	.20	.02	.99	Tr.	Outcrop
BC-9	---	.36	.03	Tr.	.38	Outcrop
BC-10	---	.16	4.65	Tr.	1.84	60' level
BC-11	---	.14	.29	Tr.	.38	60' level
BC-12	---	.12	.08	Tr.	1.18	Drift
BC-13	---	.22	.03	1.88	1.30	Drift
BC-14	---	1.08	.02	1.01	.92	Drift
NL-5	.03	1.40	4.10	.90	.40	Dump
Avge	.04 oz	.58 oz	1.17%	1.73%	1.68%	
Value	$1.40	$0.87	$8.89	$5.19	$5.04---$21.39	

Silver Fox Mine (Figure 5)

The mine workings consist of a 75 foot crosscut and a 75 foot drift along the vein plus some stoping to surface. The vein is well defined, 5 feet wide with much fault gorge in evidence. Mineralization is quartz and calcite with some copper, lead and zinc. Two samples were taken from the vein (J-5 and J-9) and one from the dump (FS-13) for an average of .57 oz. Ag, 1.08% Cu, The workings are in fair condition and operations could be started with relatively low expense.

Gold Coin Mine (PLATE V)

The mine workings consist of two shafts with water standing at 30 feet. The vein is a thin quartz stringer showing much limonite with traces of copper oxides. Two samples of the vein and two of the dump were taken as follows:



SILVER PICK MINES INC.
PINAL COUNTY
ARIZONA

SILVER FOX MINE.

FIGURE 5

0' 50' 100'

SCALE 1"=50'

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Consultant Geologists
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Sample No.	Oz Au	Oz Ag	Cu %	Pb%	Zn %	Remarks
GC-1	.03	.09	.06	---	---	Outcrop
GC-2	.03	.06	.13	---	---	Outcrop
FS-10	.04	.66	.97	---	---	Dump
FS-11	.38	2.52	.88	---	---	Dump
Avge	.12 oz	.88 oz.	.51 %			
Value	$4.20	$1.32	$3.80			$9.32 Ton

Jumbo Mine (Figure 6)

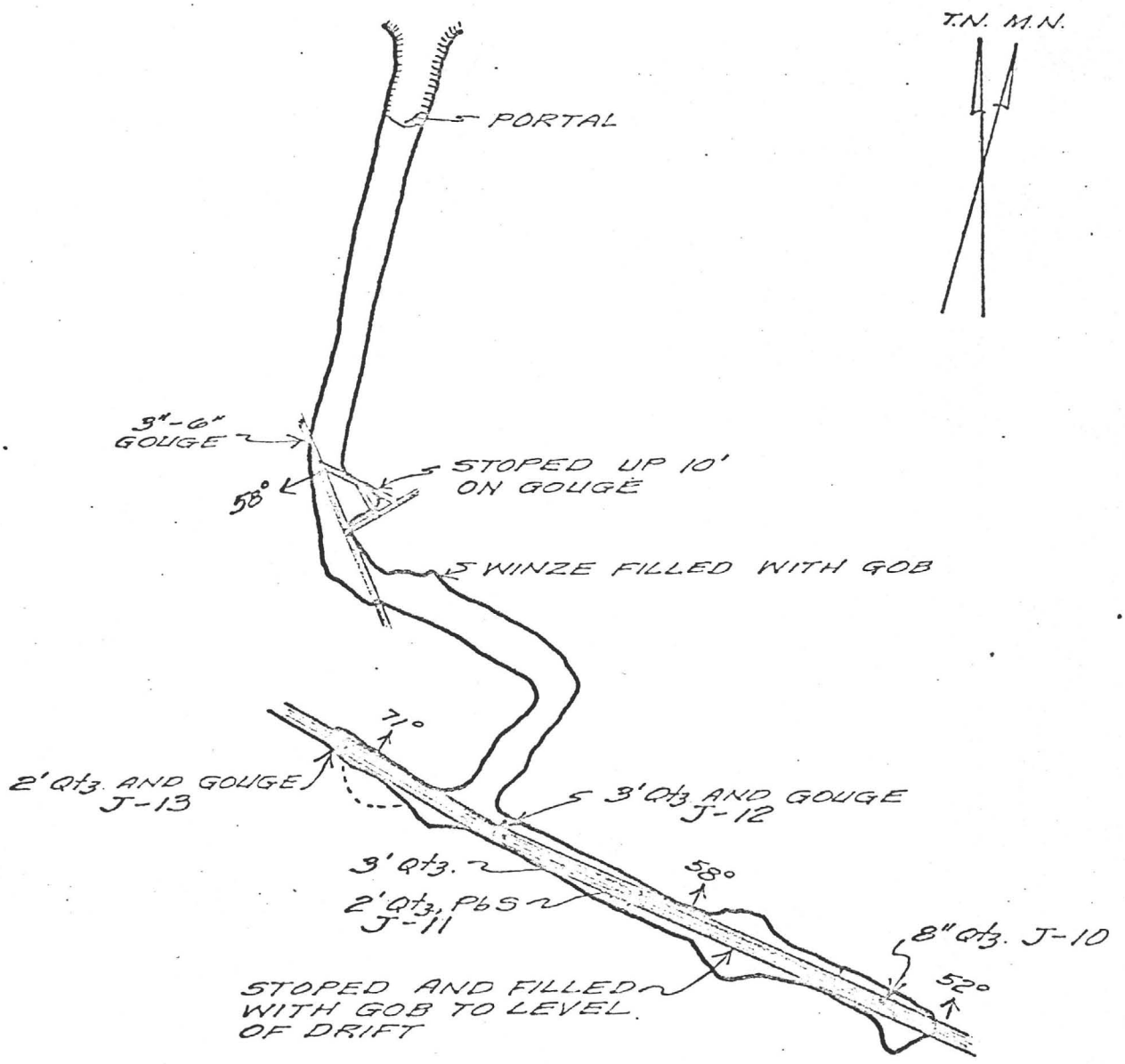
The workings consist of 250 feet of crosscut to the vein and 200 feet of drifting along the vein with several stopes to the surface. The vein is considerably brecciated showing movement and appears only very slightly mineralized. (The stoping was probably on the more highly mineralized pockets of ore). The workings are in good condition and operation could start immediately. Six samples of the vein were taken as listed below.

Sample No.	Oz Au	Oz Ag	% Cu	% Pb	% Zn	Remarks
J-2	----	.78	---	---	Tr.	Outcrop
J-4	----	1.22	Tr.	.78	.15	Outcrop
J-10	----	.12	.12	1.35	.96	Drift
J-11	----	.24	.08	3.06	.68	Drift
J-12	----	.16	.11	1.29	1.08	Drift
J-13	----	.12	.13	Tr.	1.73	Drift
Avge	----	.44 oz	.09 %	1.30%	.92%	
Value		$.66	$.68	$3.90	$2.76	$8.00 Ton

Orphan Boy Mine (Figure 7)

The main workings on the Orphan Boy Veins consist of two drifts each about 25 feet long and a vertical shaft to an unknown depth with water at approximately 60 feet. Two other adits exist on stringers of gouge and limonite with no value. The Orphan Boy Veins are well defined, about 4 feet wide, and contain sphalerite and galena. They are associated with peridotite plugs and ryolite dikes and may be controlled and of the same age as these intrusions. The drifts are in good condition and could be worked immediately but the shaft needs extensive retimbering and pumping out before it could be utilized. Nine samples of the veins were taken as listed below.

Sample No.	Oz Au	Oz Ag	% Cu	% Pb	%Zn	Remarks
M-13	.01	Tr.	Tr.	.28	1.62	Drift
M-14	Tr.	.72	.04	5.96	1.88	Drift
NL-8	.01	.80	----	11.30	1.40	Drift
195-197'	----	.16	.04	.16	2.14	SP-8



SILVER PICK MINES INC.

PINAL COUNTY
ARIZONA

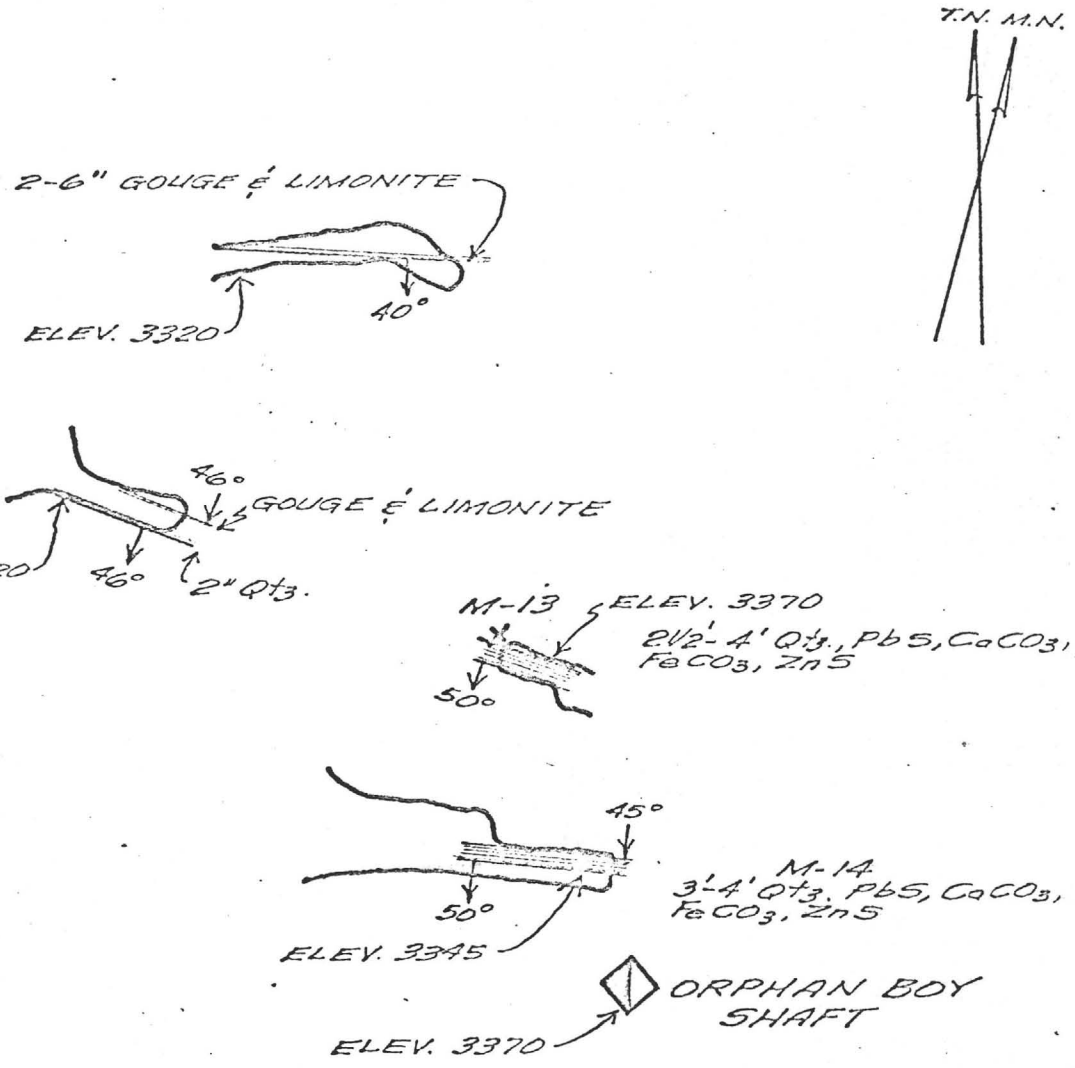
JUMBO MINE

FIGURE 6

0' 50' 100'

SCALE 1" = 50'

D.J. PODESTA AUG. 1967



SILVER PICK MINES INC.
PINAL COUNTY
ARIZONA

ORPHAN BOY MINE
FIGURE 7

0' 50' 100'
SCALE 1" = 50'

D.J. PODESTA AUG. 1967

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Consultant Geologists
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PHOENIX, ARIZONA
TEL. 955-0500

Sample No.	Oz Au	Oz Ag	%Cu.	%Pb	%Zn	Remarks
197-200'	----	.24	.04	.24	2.09	SP-8
200-205'	----	.24	.04	.80	9.30	SP-8
205-210'	----	.10	.03	.20	2.96	SP-8
210-215'	----	.16	.02	.56	5.65	SP-8
215-220'	----	.22	.03	.64	3.91	SP-8
Avge.	.01 oz	.30 oz	.03%	2.24%	4.42%	
Value	$.35	$.45	$.23	$6.72	$13.26	$21.01 Ton

DRILLING RESULTS

The drilling program was designed with two main objectives;
1) to determine if the country rock between the known veins carried enough disseminated mineralization to warrant open pit mining and
2) to determine the continuity, grade, and mineral content of the known veins at depth.

Eight holes were drilled and ranged in depth from 115' to 500', (Figure 8), and it can be categorically stated that at least to these depths there is no disseminated mineralization of ore grade. Open pit mining is out of the expected. However, except in SP-7 on the Grandfather Vein and SP-8 on the Orphan Boy Vein where zinc values increased with depth, grades were exceedingly low. This could be attributed to the fact that the higher grade ore along the veins occurs sporadically in pods and the holes drilled only through low grade sections. In any case, from the results of the drilling it cannot be concluded that grade increases with depth in all cases. It should be carefully noted, however, that drilling only reached a depth of 500 feet and the results to this depth in no manner preclude the possibility of a large tonnage, sulphide ore body at greater depths.

SP-1 (PLATE III) and Figure 8)

This hole was designed to test the Silver Pick Vein at about 250 feet. At this depth a sudden color change from gray to reddish brown was noted, drilling was faster, and much iron staining was evident in the cuttings. No quartz or other diagnostic vein minerals were noted nor did assays show any values. It is questionable that the Silver Pick vein was cut as it may have been faulted out at this location. The hole was drilled in hard, gray, Pinal schist to total depth with occasional quartz and limonite streaks. As this was the first hole to be drilled, all 5 foot intervals were sampled and assayed to obtain a background for future holes and a positive check on disseminated mineralization. No commercial values were obtained. The hole encountered some water at 90 feet and a much more substantial flow at 150 feet. Due to cavings, high volume water flow, and a faulty compressor, the cuttings from the hole are not reliable. Pipe was stuck at 410 feet and after fishing for a full day the hole was abandoned, leaving the bit, sub, drill collar and 300 feet of pipe in the hole.

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SP-2 (PLATE III and Figure 8)

This hole was located as a test of the Gold Coin vein which was encountered from 130 to 133 feet as evident from a sudden color change from gray to brick red, but the assays show no ore values. The hole was drilled to a total depth of 500 feet in very hard, gray, Pinal schist with occasional quartz stringers and no disseminated mineralization.

SP-3 (PLATE III and Figure 8)

The hole was drilled to a total depth of 500 feet in hard, gray, Pinal schist with occasional quartz stringers and no disseminated mineralization. The Grandfather Vein was cut from 60 feet to 85 feet. A core was cut from 82 feet to 83 feet and recovered 8" of white, gray, and amethystine quartz with no value. The vein material in the cuttings also showed amethystine quartz fragments but assay results were negative. Another vein was encountered from 450-455 feet with much white to gray quartz and limonite but no ore mineralization. This vein could be either a faulted segment of the Silver Pick vein or one of the NW or EW fault veins. Water was encountered in the hole at 450 feet.

SP-4 (PLATE III and Figure 8)

The hole was drilled to a total depth of 365 feet in hard, gray, Pinal schist with a few quartz stringers and no disseminated mineralization. Veins were cut at 35-40 feet, 96-100 feet, 135-140 feet, and 295-300 feet. All showed vein quartz fragments but assay results proved negative. The first vein encountered is probably the downthrown segment of the Badger vein, the second vein being an E-W fault vein which shows traces of copper oxides in surface outcrop and the deeper veins being either other faulted segments of the Badger vein or veins not appearing at the surface. Two cores were cut from 50-51 feet and from 100-101 feet. Both missed the veins and recovered very hard, highly silicified schist. Water was encountered about 120 feet.

SP-5 (PLATE III and Figure 8)

Drilled to a total depth of 445 feet in very hard, siliceous, gray, Pinal schist. The Blue Crystal vein was cut from 360-370 feet with vein quartz predominate but of no commercial value. Another vein, or possibly a split of the Blue Crystal vein, was encountered from 437-440 feet, also of no value. Four cores were cut. Core #1 at 297 feet took two hours to cut 8" and Core #2 at 370 feet cut 2" in one and three-quarter hours. No recovery was obtained from either core. A new diamond bit was run and cut Core #3, (10" in 20 minutes) recovering hard gray quartzite. The bit was worn almost smooth after this core. Core #4 from 437-440 feet recovered 6" of vein quartz, with no commercial value, and 2" of silicified schist.

SP-6 (PLATE III and Figure 8)

A test of the southern extension of the Grandfather vein, the hole was drilled to a total depth of 115 feet in gray, Pinal schist. The vein was encount-

ered from 99-108 feet and consisted of amethystine and gray quartz with no ore values. Core #1 was taken from 95-97 feet and recovered altered gray schist. Core #2 from 97 to 100 feet recovered $2\frac{1}{2}$ feet of altered gray schist and 6" of vein quartz. Water was encountered at 83 feet.

SP-7 (PLATE III and Figure 8)

The hole was drilled to a total depth of 150 feet in altered, gray, Pinal schist with quartz stringers and no disseminated mineralization. The Grandfather Vein was encountered from 85-100 feet with much amethystine quartz, sphalerite and traces of galena. The vein assayed 0.27 oz. Ag, 1.0% Pb and 6.1% Zn. Core #1 from $87\frac{1}{2}$-89 feet showed vein material of amethyst quartz, lead and zinc.

SP-8 (Figures 7 and 8)

Drilled to a total depth of 280 feet. The top 20 feet found rhyolite wash and the remainder of the hole drilled in dark green, hard, peridotite with no disseminated mineralization. The Orphan Boy Vein was encountered from 195-220 feet and consisted of amethystine and white quartz, sphalerite, pyrite, marcasite, siderite, calcite, and traces of galena, assaying 4.98% Zn., .43% Pb., .04% Cu., and .19 oz. Ag. A considerable amount of water was encountered at 195 feet.

RESERVES

No tonnage can be designated as proved in the accepted sense of being developed on three sides. However, from the sampling and mapping, certain localities on several of the veins can be assigned ore on a probable basis.

Grandfather Mine

From the shaft for a distance of 500 feet south, a depth of 100 feet and an average width of 3 feet amounts to 18,750 tons. (Assuming a specific gravity of 4.0 in all cases for vein material)

Silver Pick

From the shaft 100 feet south and 400 feet north, depth of 100 feet and average width of 3 feet--18,750 tons.

Badger

Arbitrarily 100 feet length of vein, 100 feet deep, and 3 feet average width--3,750 tons.

Silver Fox

Arbitrarily 100 feet length of vein, 100 feet deep, and 3 feet average width--3,750 tons.

Blue Crystal

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Consultant Geologists
3102 NORTH 32ND STREET
PHOENIX, ARIZONA
TEL. 955-0500

Blue Crystal

Arbitrarily 100 feet length of vein, 100 feet deep and 3 feet average width--3,750 tons.

Orphan Boy

Arbitrarily 100 feet length of vein, 100 feet deep and 3 feet average width--3,750 tons.

RESERVE TABULATION

MINE	TONS PROBABLE	TONS POSSIBLE**	TONS TOTAL	VALUE/TON	TOTAL VALUE
Grandfather	18,750	37,500	56,250	$14.93	$840,000
Silver Pick	18,750	37,500	56,250	11.02	619,875
Badger	3,750	7,500	11,250	34.82	391,725
Silver Fox	3,750	7,500	11,250	21.39	240,637
Blue Crystal	3,750	7,500	11,250	25.97	292,162
Orphan Boy	3,750	7,500	11,250	21.01	236,632
	52,500	105,000	157,500	$16.64	$2,620,761

**Possible ore is a distinctly arbitrary estimate obtained by doubling probable tonnage.

ECONOMICS

Direct operating costs amount to $15.00 ton for mining and $4.00 ton for crushing and milling or a total of $19.00 ton. (Appendix 8) On this basis the only tonnage that can be considered commercial ore is the 45,000 tons from the Badger, Silver Fox, Blue Crystal and Orphan Boy Mines. Then:

VALUE TON	COST TON	PROFIT TON	TONS	TOTAL NET OPERATING PROFIT
$25.80	$19.00	$6.80	45,000	$306,000

Obviously, when overhead and amortization and depreciation of capital plant costs are considered the Silver Pick Mines, at least to a depth of 500 feet, cannot be considered a commercial venture at this time.

Respectfully submitted,

Donald J. Podesta

Donald J. Podesta

PODESTA and MEYERS, INC.
Consultant Geologists
3102 NORTH 32ND STREET
PHOENIX, ARIZONA

TEL. 955-0500

SUMMARY

The holdings of Silver Pick Mines, Inc., comprise 59 claims, about sixty-five miles East of Phoenix. The mineralization is confined to three vein systems and is entirely within the Pre-Cambrian Pinal schist with the exception of the Orphan Boy Mine which is associated with peridotite plugs and rhyolite flows and dikelets of probable tertiary age. The veins are from 1 to 30 feet wide and strike from N-S to E-W and dip mostly South and West from 30° to vertical. The vein structure is of the ribbon type with quartz, calcite, manganese and iron oxides as gangue and cerargyrite, galena and sphalerite the principal ore minerals. Accessor minerals are siderite, cerrussite, chrysocolla, malachite, azurite and occasional chalcopyrite and bornite. The area has been worked from time to time on a modest basis since the early 1800's and several small mines are readily accessible today. The structure is highly faulted and complex. Photogeological studies, surface geological mapping and sampling and exploratory drilling indicate the property has no possibility for open pit mining operations within a depth of 500 feet, nor do economics warrant an underground operation. However, it must be kept in mind that the results of this investigation in no way precludes the possibility of a large tonnage sulphide ore body at greater depths, especially considering the proximity of the property and the similarity of surface mineralization to the extremely large deep seated ore deposits developed at the Old Dominion, Inspiration, Magma Copper and Miama Copper Mines in the Superior-Globe area.

PODESTA and MEYERS, INC.
Consultant Geologists
3102 NORTH 32ND STREET
PHOENIX, ARIZONA
—
TEL. 955-0500

APPENDIX

1. PROSPECTUS - SILVER PICK MINES, INC.
2. REPORT ON MINERAL MOUNTAIN MINING AND MILLING COMPANY, Travis P. Lane, March, 1951
3. NOTES ON GEOLOGY OF MINERAL CREEK DISTRICT, F. A. Gowing, 1904
4. GEOLOGICAL REPORT OF THE MINERAL MOUNTAIN MINING CLAIMS, Hale C. Tognoni, 1965
5. REPORT ON HOLDINGS OF THE MINERAL MOUNTAIN MINING AND MILLING CORPORATION, J. S. Coupal, October, 1948
6. WOODPECKER (GRANDFATHER) MINE REPORT, Newton Wolcott, February, 1940
7. REPORT ON GORHAM AND HALL GROUP OF CLAIMS, Newton Wolcott, July, 1940
8. CAPITAL PLANT, MINING AND MILLING COST ESTIMATES, P. E. Coe, 1967
9. ASSAY RESULTS

PODESTA and MEYERS, INC.
Consultant Geologists
3102 NORTH 32ND STREET
PHOENIX, ARIZONA

TEL. 955-0500

LIST OF ILLUSTRATIONS

PLATES

No.	Title	Scale
I	Mesa Topographic Map	1:250, 000
II	Claim Map	1:6000
III	Mineral Mountain Quadrangle	1:24000
IV	Geologic Map of Pinal County	1:375, 000
V	Geology of the Grandfather and Silver Pick Area	1:2400
VI	Map of Known Metallic Mineral Occurrences of Arizona	1:1, 000, 000
VII	Map and Index of Arizona Mining Districts	1:1, 000, 000

FIGURES

No.	Title	Scale
1	Grandfather Mine	1"= 20 feet
2	Silver Pick Mine	1"=20 feet
3	Badger and East Blue Bell Mines	1"=50 feet
4	Blue Crystal Mine	1"=50 feet
5	Silver Fox Mine	1"=50 feet
6	Jumbo Mine	1"=50 feet
7	Orphan Boy Mine	1"=50 feet
8	Exploratory Drill Holes	1"=50 feet

2114 CURTIS STREET TELEPHONE 623-1852

CHARLES O. PARKER & CO.

CHEMISTS ○ ASSAYERS ○ ENGINEERS

DENVER, COLORADO 80205

Folio 8785

Date March 28, 1967.

Silver Pick Mines, Inc.,
c/o Mr. Norman M. LOGATIS, Pres.,
2509 No. 38th St.,
Phoenix, Arizona.

We hereby Certify, that the samples assayed for you gave the following results:

DESCRIPTION	GOLD OUNCES PER TON	SILVER OUNCES PER TON	COPPER PER CENT (WET)	LEAD PER CENT (WET)	ZINC PER CENT	IRON PER CENT	INSOLUBLE PER CENT	VALUE PER TON
SP-2 - 15'-20'		0.12	0.03					
35'-40'	0.005	0.07	0.015					
55'-60'		TRACE	0.02					
75'-80'		0.54	0.005					
95'-100'	0.005	0.19	0.010					
115'-120'		TRACE	0.015					
125'-130'		0.08	0.03					
130'-132½	sample not received.							
132½-135'		TRACE	0.015					
135'-140'		0.12	0.02					
155'-160'		0.06	0.01					
175'-180'		0.08	0.01					
195'-200'		TRACE	0.005					
205'-210'	0.005	TRACE	0.015					
215'-220'		TRACE	0.005					
225'-230'		TRACE	TRACE					
235'-240'	0.01	TRACE	0.015					
245'-250'		TRACE	0.005					
255'-260'		0.10	0.005					
265'-270'	0.003	TRACE	TRACE					
285'-290'		0.20	0.015					
305'-310'	0.003	TRACE	0.01					
325'-330'		0.10	0.01					
355'-360'		0.06	0.005					
360'-365'	sample not received.							
380'-385'		TRACE	0.10					
400'-405'		TRACE	0.01					
410'-415'	0.003	TRACE	0.005					
455'-440'		0.06	0.01					
460'-465'		TRACE	0.01	Not listed but received.				
455'-460'		TRACE	0.015					
480'-485'	0.005	TRACE	0.005					
495'-500'		TRACE	0.005					

Gold at _____ per ounce Copper at _____ per unit

Silver at _____ per ounce Zinc at _____ per unit

Lead at _____ per unit

Charge $ 101.00

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TELEPHONE 623-1852

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DENVER, COLORADO 80205

Folio 8786-7

Date March 29, 1967.

Silver Pick Mines, Inc.,
c/o Mr. Norman M. Locatis, Pres.,
2509 No. 38th St.,
Phoenix, Arizona.

We hereby Certify, that the samples assayed for you gave the following results:

DESCRIPTION	GOLD OUNCES PER TON	SILVER OUNCES PER TON	COPPER PER CENT (WET)	LEAD PER CENT (WET)	ZINC PER CENT	IRON PER CENT	INSOLUBLE PER CENT	VALUE PER TON
SP-3 - 45'-50'		TRACE	0.04					
50'-55'		TRACE	0.05					
55'-60'		0.10	0.04					
60'-65'	0.01	0.29	0.05					
65'-70'		TRACE	0.06					
70'-75'	0.02	0.42	0.09					
75'-80'		0.44	0.14	VEIN				
80'-83'		TRACE	0.07					
83'-85'		TRACE	0.04					
85'-90'		0.08	0.03					
120'-125'		0.08	TRACE					
125'-130'		0.06	0.05					
130'-135'		TRACE	0.05					
135'-140'		0.66	0.03					
140'-145'		0.10	0.03					
145'-150'		0.06	0.03					
150'-155'		0.08	TRACE					
165'-170'	0.008	0.09	0.13					
175'-180'		TRACE	0.04					
190'-195'		0.10	TRACE					
225'-230'		TRACE	TRACE					
255'-260'	0.005	TRACE	0.04					
360'-365'		TRACE	TRACE					
375'-380'		TRACE	TRACE					
450'-455'	0.005	TRACE	0.04					
455'-460'	0.01	0.15	TRACE					
460'-465'	0.01	TRACE	TRACE					
465'-470'		0.06	0.03					
470'-475'		0.08	0.03					
475'-480'		0.06	0.03					

d at _____ per ounce Copper at _____ per unit

Silver at _____ per ounce Zinc at _____ per unit

Lead at _____ per unit _____

Charge $ 97.00

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DENVER, COLORADO 80205

Folio 8787

Date March 29, 1967.

Silver Pick Mines, Inc.;
c/o Mr. Norman H. Locatis, Pres.;
2509 No. 38th St.;
Phoenix, Arizona.

We hereby Certify, that the samples assayed for you gave the following results:

DESCRIPTION	GOLD OUNCES PER TON	SILVER OUNCES PER TON	COPPER PER CENT (WET)	LEAD PER CENT (WET)	ZINC PER CENT	IRON PER CENT	INSOLUBLE PER CENT	VALUE PER TON
GC - 1	0.03	0.09	0.06					
GC - 2	0.03	0.06	0.13					
GC - 3	0.015	0.03	0.06					
RESAM								
F-S-7	0.06	1.62	0.166	2.52	10.25			
F-S-8	0.025	0.98	0.182	14.75	2.00			
F-S-9	0.09	0.35	0.715	0.65	10.37			
F-S-10	0.04	0.66	0.971					
F-S-11	0.38	2.52	0.679					
F-S-12	0.03	0.87	1.136	0.50	2.31			
F-S-13		0.66	0.082	4.65	8.01			
SP-4 100-101 Core 2:	0.10	0.133		Sample not listed.				

Gold at _____ per ounce Copper at _____ per unit

Silver at _____ per ounce Zinc at _____ per unit

Lead at _____ per unit

Charge $ 57.00

CHARLES O. PARKER & CO.
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TELEPHONE 623-1852

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DENVER, COLORADO 80205

Folio 8797

Date April 8, 1967.

Silver Pick Mines, Inc.,
Mr. N. M. Locatis, Pres.,
2509 North 38th St.,
Phoenix, Arizona. 85008

We hereby Certify, that the samples assayed for you gave the following results:

DESCRIPTION	GOLD OUNCES PER TON	SILVER OUNCES PER TON	COPPER PER CENT (WET)	LEAD PER CENT (WET)	ZINC PER CENT	IRON PER CENT	INSOLUBLE PER CENT	VALUE PER TON
SP - 4 45-50		0.06	0.05					
50-55		0.10	0.07					
95-100		0.06	0.06					
135-140		0.06	0.05					
145-150		TRACE	0.05					
170-175		0.18	0.05					
185-190		0.04	0.04					
195-200		0.06	0.03					
210-215		0.04	0.04					
290-295		TRACE	0.06					
295-300		0.04	0.10					
330-335		TRACE	0.06		TRACE			
340-345		TRACE	0.05					
350-355		TRACE	0.06					
SP - 5 155-160		TRACE	0.10	TRACE				
160-165		0.12	0.14	TRACE				
165-170		0.14	0.20	0.10				
280-285		TRACE	0.07	0.10				
290-295		0.06	0.12	0.16				
305-310		TRACE	0.10					
335-340		TRACE	0.15					
345-350		0.08	0.05					
365-370		TRACE	0.10	TRACE				
370-375		0.10	0.04	0.12				
370-370½ (8 pcs rk)		TRACE					(not listed)	
375-380		0.08	0.05	TRACE				
430-435		TRACE	0.06					
Core 3 370'-371'		TRACE	0.05	TRACE	0.05*		*zinc requested onsample.	
Core 4 435'-437½'		TRACE	0.04	TRACE	TRACE*			
435-440		TRACE	0.08	TRACE				

Gold at _____ per ounce Copper at _____ per unit

Silver at _____ per ounce Zinc at _____ per unit

Lead at _____ per unit

Charge $_____

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DENVER, COLORADO 80205

Folio 8797

Silver Pick Mines, Inc. -2- Date April 8, 1967

We hereby Certify, that the samples assayed for you gave the following results:

DESCRIPTION	GOLD OUNCES PER TON	SILVER OUNCES PER TON	COPPER PER CENT (WET)	LEAD PER CENT (WET)	ZINC PER CENT	IRON PER CENT	INSOLUBLE PER CENT	VALUE PER TON
SP-6 - 30-35		0.03	0.06					
65-70		3.40	0.08	TRACE	(silver rocked)			
80-85		TRACE	0.08					
90-95		0.06	0.06					
95-100		0.06	0.05					
105-110		TRACE	0.05					
100-105		0.06	0.04					
85-90		0.10	0.05					
Core 1 (95-97)		TRACE	0.05	TRACE				
Core 2 (97-99)		TRACE	0.08	TRACE				
Core 2 (99-100)		TRACE	0.08	TRACE				

Gold at _____ per ounce Copper at _____ per unit

Silver at _____ per ounce Zinc at _____ per unit

Lead at _____ per unit _____

Charge $ 145.00

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CHEMISTS, ASSAYERS and ENGINEERS

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CHARLES O. PARKER & CO.

CHEMISTS • ASSAYERS • ENGINEERS

DENVER, COLORADO 80205

Folio 8802

Date April 17, 1957.

Silver Pick Mines, Inc.,
Attention: Mr. M. M. Locatis, Pres.,
2509 North 30th Street,
Phoenix, Arizona.

We hereby Certify, that the samples assayed for you gave the following results:

DESCRIPTION	GOLD OUNCES PER TON	SILVER OUNCES PER TON	COPPER PER CENT (WET)	LEAD PER CENT (WET)	ZINC PER CENT	IRON PER CENT	INSOLUBLE PER CENT	VALUE PER TON
FS-16			4.95					
FS-17			0.56					
FS-18			0.245					
FS-19			4.54					
FS-20			1.122		0.35			

NOT SILVER PICK MINES

FS-14 shows by Fluorescent X-ray Spectrograph as follows: Copper, 0.013%; Zinc, 0.03%; Lead, 0.020%; Iron, 5.7%; Cobalt, 0.007%; Nickel, 0.031%; Barium, 0.03%; Strontium, 0.008%; Titanium, 0.21%; Zirconium, 0.007%; Thorium, 0.013%; Chromium, 0.20%; Molybdenum, 0.002%; Uranium, 0.011%; Manganese, 0.26%; Yttrium, 0.004%. Shows no precious metals, gold, silver, or platinum group.

FS-15 shows by Fluorescent X-ray Spectrograph as follows: Copper, 0.041%; Zinc, 0.12%; Lead, 0.045%; Arsenic, 0.006%; Iron, 4.8%; Nickel, 0.005%; Rubidium, 0.011%; Barium, 0.098%; Strontium, 0.3c%; Titanium, 0.60%; Zirconium, 0.019%; Columbium, 0.005%; Chromium, 0.033%; Molybdenum, 0.0[illegible]; Manganese, 0.15%; Yttrium, 0.003%; all figures on X-ray indicate an estimate of the percentage content of the respective metals.

Not SILVER PICK MINES

FS-14 is peridotite, and FS-15 classified as quartz stringers with pyrite.

SP-7 - 50-55	Silver: 0.08	TRACE*	0.03**	
55-60	0.42	TRACE	0.38	
65-70	0.06	TRACE	0.42	
70-75	TRACE	0.16	0.90	
75-80	0.10	0.15	0.66	
80-85	0.18	0.72	0.48	
85-87½	0.38	1.04	0.60	
89-92	0.32	TRACE	2.98	
92-95	0.22	1.88	9.32	
98-[illegible] 100-105	0.14	TRACE	0.48	
[illegible]-[illegible] 95-100	0.16	1.08	10.64	
105-110	0.14	TRACE	0.50	
Core #1 (87½-89)	0.28	0.28	0.42	

*Lead% **Zinc%

Gold at _____ per ounce Copper at _____ per unit

Silver at _____ per ounce Zinc at _____ per unit

Lead at _____ per unit

Charge $_____

CHARLES O. PARKER & CO.
CHEMISTS, ASSAYERS and ENGINEERS

2114 CURTIS STREET

TELEPHONE 623-1652

CHARLES O. PARKER & CO.

CHEMISTS ○ ASSAYERS ○ ENGINEERS

DENVER, COLORADO 80205

Folio 8802

Silver Fox Mines, Inc., -2-

Date April 17, 1967.

We hereby Certify, that the samples assayed for you gave the following results:

DESCRIPTION	GOLD OUNCES PER TON	SILVER OUNCES PER TON	COPPER PER CENT (WET)	LEAD PER CENT (WET)	ZINC PER CENT	IRON PER CENT	INSOLUBLE PER CENT	VALUE PER TON
SF-8 - 55-60		0.22	0.025	TRACE				
190-195		0.28	0.04	TRACE	0.30			
195-197		0.16	0.035	0.16	2.14			
197-200		0.24	0.04	0.24	2.09			
200-205		0.24	0.04	0.80	9.30			
205-210		0.10	0.03	0.20	2.96			
210-215		0.16	0.025	0.56	5.65			
215-220		0.22	0.025	0.64	3.91			
220-225		0.18	0.035	TRACE	0.80			
225-230		TRACE	0.06	TRACE	0.50			

Gold at _____ per ounce Copper at _____ per unit

Silver at _____ per ounce Zinc at _____ per unit

Lead at _____ per unit

Charge $ 146.00

CHARLES O. PARKER & CO.

CHEMISTS, ASSAYERS and ENGINEERS

2114 CURTIS STREET TELEPHONE 623-1852

CHARLES O. PARKER & CO.

CHEMISTS • ASSAYERS • ENGINEERS

DENVER, COLORADO 80205

Folio 8874

Date July 15, 1967.

Silver Pick Mines, Inc.,
3102 No. 32nd St., Apt. 8,
Phoenix, Arizona.

We hereby Certify, that the samples assayed for you gave the following results:

DESCRIPTION	GOLD OUNCES PER TON	SILVER OUNCES PER TON	COPPER PER CENT (WET)	LEAD PER CENT (WET)	ZINC PER CENT	IRON PER CENT	INSOLUBLE PER CENT	VALUE PER TON
A-1	0.02	1.08	0.02	2.37	0.06			
B-1		0.60	0.015	1.06	0.03			
B-2	MISSING							
B-3		0.90	1.515	0.06	0.06			
B-4		0.14	0.02	0.04	0.08			
B-5		0.20	TRACE					
B-6		0.16	0.02					
B-7		8.10	0.08					
BB-1		0.36	0.01	TRACE	0.08			
BB-2		0.28	TRACE	0.04	0.05			
BB-3		TRACE	0.046	TRACE	0.03			
BB-4		0.36	0.01	1.06	0.05			
BB-5		0.16	0.025	TRACE	0.08			
BB-6		TRACE	TRACE	0.03	TRACE			
BB-7		18.10	0.051	0.66	0.10			
BB-8		0.08	0.01	0.04	0.05			
BB-9		TRACE	TRACE	2.24	0.08			
BB-10		0.34	0.067	0.04	0.14			
BB-11	0.04	0.94	0.035	2.69	0.48			
BB-12		0.30*	0.025	0.04	0.06		*silver is 0.30 oz/ per ton	
BB-13	0.02	0.24		0.04	0.08			
BB-14	0.04	0.86		0.07	0.05			
BB-15	0.02	0.28		0.04	0.04			
BB-16	0.08	5.82	0.046	0.58	0.88			
BB-17	0.02	0.58	0.067	0.26	0.08			
BB-18	0.03	0.36	0.02	0.04	0.05			
BB-19	0.06	0.34	0.025	0.04	0.06			
BB-20	0.02	0.06	0.035	0.04	0.08			
BC-1		0.50	0.083	0.92	2.84			
BC-2		TRACE	0.072	0.30	0.16			
BC-3		2.00	0.025	1.12	0.41			
BC-4	MISSING							
BC-5		0.32	TRACE	15.32	0.27			

Gold at _____ per ounce Copper at _____ per unit

Silver at _____ per ounce Zinc at _____ per unit **Charge $** _____

Lead at _____ per unit _____

CHARLES O. PARKER & CO.
CHEMISTS, ASSAYERS and ENGINEERS

2114 CURTIS STREET

TELEPHONE 623-1652

CHARLES O. PARKER & CO.

CHEMISTS ○ ASSAYERS ○ ENGINEERS

DENVER, COLORADO 80205

Folio 8874-5-6-7

Date July 15, 1967.

Silver Pick Mines, Inc.,
3102 No. 32nd St., Apt. 8,
Phoenix, Arizona. Attention: Don Podesta.

We hereby Certify, that the samples assayed for you gave the following results:

DESCRIPTION	GOLD OUNCES PER TON	SILVER OUNCES PER TON	COPPER PER CENT (WET)	LEAD PER CENT (WET)	ZINC PER CENT	IRON PER CENT	INSOLUBLE PER CENT	VALUE PER TON
BC-6		0.20	0.02	1.40	0.92			
BC-7		0.62	0.015	0.46	0.08			
BC-8		0.20	0.025	0.99	TRACE			
BC-9		0.36	0.03	TRACE	0.38			
BC-10		0.16	4.65*	TRACE	1.84		*copper rechedked, O.K.	
BC-11		0.14	0.288	TRACE	0.38			
BC-12		0.12	0.083	TRACE	1.18			
BC-13		0.22	0.03	1.88	1.30			
BC-14		1.08	0.02	1.01	0.92			
G-1		2.64		0.21	0.17			
G-2		2.52		0.04	0.05			
G-3		0.18		0.36	0.42			
G-4	TRACE	0.40		0.30	0.05			
G-5		2.46		0.06	0.07			
G-6		0.38						
G-7		0.36						
G-8		1.24		4.82	2.64			
G-9		1.94		0.94	0.05			
G-10		0.16						
G-11		0.60	0.015	0.04	0.08			
G-12		0.06	0.01	2.49	0.12			
GC-1	0.02	0.14	0.03					
GC-2	0.02	0.08	0.025					
J-1		0.26	0.041	0.98	0.97			
J-2		0.78			TRACE			
J-3	0.005	0.42	0.02	2.89	2.22			
J-4		1.22	TRACE	0.78	0.15			
J-5		0.90	4.21	7.92	0.87			
J-6		0.14	0.052					
J-7		0.38	0.03					
J-8		0.18	1.75					
J-9		0.14	0.035	0.38	0.71			
J-10		0.12	0.12	1.35	0.96			

Gold at _____ per ounce Copper at _____ per unit

Silver at _____ per ounce Zinc at _____ per unit Charge $_____

Lead at _____ per unit _____

CHARLES O. PARKER & CO.
CHEMISTS, ASSAYERS and ENGINEERS

2114 CURTIS STREET

TELEPHONE 623-1852

CHARLES O. PARKER & CO.

CHEMISTS • ASSAYERS • ENGINEERS

DENVER, COLORADO 80205

Folio 8874-3-6-7

Date July 15, 1967.

Silver Pick Mines, Inc., -3-
3102 No. 32nd St., Apt. 8,
Phoenix, Arizona.

We hereby Certify, that the samples assayed for you gave the following results:

DESCRIPTION	GOLD OUNCES PER TON	SILVER OUNCES PER TON	COPPER PER CENT (WET)	LEAD PER CENT (WET)	ZINC PER CENT	IRON PER CENT	INSOLUBLE PER CENT	VALUE PER TON
J-11		0.24	0.082	3.06	0.68			
J-12		0.16	0.11	1.29	1.08			
J-13		0.12	0.133	TRACE	1.73			
M-1	TRACE	TRACE	0.01	TRACE	TRACE			
M-2	0.01	0.13	0.015	2.80	1.28			
M-3	0.01	0.75	0.015	2.93	0.87			
M-4	TRACE	0.16	0.01	0.91	1.31			
M-5	0.01	0.37	TRACE	0.49	1.80			
M-6	0.01	0.21	0.02	3.74	2.55			
M-7	0.01	TRACE						
M-8	0.005	0.09	TRACE	0.41	6.93			
M-9	0.01	TRACE						
M-10	TRACE	TRACE						
M-11	0.01	TRACE						
M-12	0.005	TRACE						
M-13	0.01	TRACE	TRACE	0.28	1.62			
M-14	TRACE	0.72	0.041	5.96	1.88			
M-15	TRACE	1.34	0.03	0.63	0.26			
SP-1	TRACE	0.12	XXXX	0.88	0.13			
SP-2		8.66		2.58	0.10			
SP-3		9.90		0.04	TRACE			
SP-4		0.72		2.84	1.15			
SP-5		5.40						
SP-6		0.20	0.015	1.08	TRACE			
SP-7		0.44	0.01	0.79	0.32			
SP-8		0.16	TRACE	0.31	TRACE			
SP-9		0.74	TRACE	2.20	0.08			
X-1	TRACE	0.06	0.01	14.78	0.47			

Gold at _____ per ounce Copper at _____ per unit

Silver at _____ per ounce Zinc at _____ per unit

Lead at _____ per unit

Charge $ 494.50

CHARLES O. PARKER & CO.
CHEMISTS, ASSAYERS and ENGINEERS

R E P O R T

on

Mineral Mountain Mining & Milling Co.

Mineral Mountain Mining District

Pinal County, Arizona

Prepared and submitted

by

Travis P. Lane
Consulting Mining Engineer
Phoenix, Arizona

MINERAL MOUNTAIN MINING
and
MILLING CO.

Property and Location

The property of the Mineral Mountain Mining and Milling Co., an Arizona Corporation (Sept. 28, 1951), is located in the Mineral Hill Mining district in Pinal County, Arizona. The holdings consist of the "Woodpecker" patented claim and the "Hall-Gorham" (also known as the "Silver Pick" group of six unpatented claims surrounding the Woodpecker claim, and the "Orphan Boy" (also known as the Silver Queen) group of four unpatented claims. The latter group is located some 4 miles distant northerly from the Woodpecker claim. The patented claim is owned in fee and the unpatented claims are held by the company by the performance of annual work.

The camp and the presently active workings are reached by 10 miles of rough dirt road from a point on Highway 60 and 70 20 miles southerly by paved road from the smelter of the Magma Copper Co. at Superior, Arizona, and 29 miles easterly from Mesa, Arizona, the nearest supply point. The roads are passable at all seasons of the year.

The region is typically southwest arid desert with light rainfall and scant vegetation and no timber. The topography is moderately rugged with sharp gulleys and ridges and few flat areas. Elevation at the property ranges from 2500 to 3000 feet above sea level.

History and Production

The first work in the district dates back to the early eighties and the first production was made from the Silver Bell mine followed shortly afterward by production from the Woodpecker mine. Each of these properties is credited with a large early day production of high grade silver ore.

Another substantial producer in early days, and again in recent years, is the nearby Raymert mine credited with over 2 million ounces of silver. A modest production, old and recent, has been made by a considerable number of other properties in the immediate vicinity of the Mineral Hill Mining and Milling

Company holdings.

The ore of the district because of its highly silicious character is desirable as a smelter flux and for this reason it has generally been accorded favorable treatment rates at the smelters at Superior and Miami. The ores all carry an appreciable amount of lead, and often zinc also, and except for a few lots sent to a lead smelter, the ore has all been sent to Copper Smelters as "dry" silver ore and no payment was received for the base metal content. No serious attempt has been made to concentrate the ore and thus realize something for the base metals because until quite recently the market for these metals was not sufficiently favorable to warrant the treatment procedure. The ore does not respond readily to cyanide treatment for the recovery of the silver because of its manganiferous character and for this reason and also because of the proximity of the smelters and the favorable treatment rates offered no cyanide plants have been built.

Recorded production in recent years from the properties now held by the Mineral Hills Mining and Milling Co. has amounted to approximately 450 tons most of which was sent to copper smelters as silver ore and assayed 16 oz Ag and about 3.5% Pb per ton; and three lots sent to a lead smelter averaged 7.7 oz Ag and 11.9% Pb. Also several hundred tons of silver ore were shipped from the property by another operator just prior to the acquisition of the property by the present company. No settlement records are available regarding these shipments but the ore is said to have been of about the same grade as the silver ore shipments noted above. All of the ore shipped by the present owners was derived from exploration of the veins at different places on the claims and no systemetic mining operations have been undertaken. Because of unfavorable transportation and treatment costs for crude lead ore most of this class of material, which constitutes the greater part of the developed ore, was stock piled or left in the dumps. The present operators propose to build a mill on the property and concentrate the ore and ship a lead concentrate to El Paso. Occasional high grade bunches of silver ore will be shipped as direct smelting ore.

Geology and Mineralization

The country rock of the region in which is located the Woodpecker claim and the surrounding Hall-Gorham group of claims is a micaceous schist. The schist is intersected by numerous silicified mineralized shear zones the general trend of which is NW-SE with southwesterly dips varying from 40 deg to nearly vertical.

The shear zones or "veins" range from several feet to thirty feet in width and are readily traceable on the surface because of their reef-like croppings which often rise many feet above the surface. The walls are well defined and the structure of the vein is of the "ribbon rock type" i. e. parallel longitudinal banding of alternating types of vein material. Quartz and coarsely crystalline calcite are the most common constituents of the veins with however much manfanese and limonite occuring as coatings and as powderey fillings in cavities in the veins. Amethystine quartz in drusy cavities is a common occurence in the veins.

The veins all carry an appreciable amount of silver in the form of cerargerite and probably some argentite, and lead in the form of cerrusite, anglesite and galena. Some zinc as sphalerite is present also. Portions of the veins which carry a substantial amount of silver are more silicious than those parts which are higher in lead content and where calcite, generally manganese stained, is the principal gangue mineral. Leaching and oxidized mineralization is evident on the surface in all the veins. At shallow depth, however, and often on the surface, ga lena is the predominant lead mineral. A sprinkling of galena is often present with low silver values across the full width of the vein but the better mineralization is generally found in a band several feet wide against the hanging wall with a clay gouge seam on the wall. Some oxidized copper mineralization is seen in the veins but the occurences of copper are sporadic and unimportant in amount.

A small amount of development on the Orphan Boy group discloses at one place two closely parallel shear zones in Rhyolite. The veins are separated by a small intursive mass of monzonite, and the mineralization is similar to that of the Hall-Gorham group except that there is less manganese and an appreciable amount of zinc is present in the form of sphalerite of the "rosin jack" type. The surface here is covered by a heavy mantle of gravel wash and detrital material from high bluffs and vein croppings are rare.

Development and Sampling

There are many veins throughout the claims and practically all have been developed to some extent. The principal development however has been done on the Woodpecker vein and on four prominent veins in the Hall-Gorham group of claims, and shipments of ore have been made from each of these veins. Also, some work has been done on two veins on a claim of the Orphan Boy group and a small production made from them.

The more interesting working places in the property were sampled by the writer and the developments (excepting the Orphan Boy) were compass surveyed. Most of this development and the sampling is shown on the maps which accompany this report and all of it is described in the following paragraphs:

Woodpecker vein The workings here are very old and are completely caved and inaccessible at the present time. The size of the shaft dump is evidence of fairly extensive underground development. There are no other important surface openings on the vein. The production from this vein appears to have been made from a large lens or pocket of high grade silver ore. No maps o r production records are available.

Grandfather Vein This ledge which has an average width of about 12 ft courses through a large portion of the Woodpecker claim with a NW-SE strike and a dip of approximately 45 deg. southwesterly. It is developed by cuts and pits and trenches, and a shaft 52 feet deep (vertical plus incline) in about the center of the Woodpecker claim. A drift extends southerly from the bottom of the shaft for a distance of 50 feet. The drift is driven in the hanging wall portion of the vein and in its most southerly part it passes out of the vein into the barren hanging wall. A carload assaying approximately 22 oz of silver per ton was shipped from this dump. No lead assay is available.

At a distance of some 350 feet south from the shaft a cut has been opened on the vein for a length of 40 feet and width of 4 feet and average depth of 6 feet. A small lot (3 tons) asssying 5.3 oz Ag and 39.0% Pb and a carload (46) tons assaying 1.7 oz Ag and 9125% Pb were shipped from here. The work was done on the hanging wall side of the vein. The condition of the working place did not permit taking a sample which would be re-sentative but mineralization with continuity was clearly evident.

Sampling in the shaft area gave the following results:

Sample No	Width	OzAg.	% Pb	Remarks
11	37"	38.4	14.20	3 cuts combined on level
12	38"	5.4	4.6	across vein in shaft
13	dump	30.2	5.7	dump - approx. 75 tons

Silver Pick Vein The croppings of this vein show prominently along the border between the Woodpecker and the Silver Pick claims with strike about the same as that line. An incline shaft has been sunk to a slope depth of 100 ft on the vein with

a level at 85 feet where drifting and stoping south of the shaft connect with an old vertical shaft. Several carloads of ore were shipped from the stoping here but no settlement records are available. The workings in the stoped area are partially caved. The incline of the shaft (50 deg.) is somewhat steeper than the vein and passes through the vein a short distance below the collar. A cross-cut in the west wall of the 85 ft level drift encounters the vein at 15 feet. A sample here assayed 2.60 oz Ag., 3.5% Pb across 45".

The vein is opened on the surface by a cut extending 150 feet southerly from the shaft, and the old stoping from below holes through into the cut in its central position.

At a distance of approximately 200 feet northwesterly from the shaft and some 50 feet lower a tunnel has been driven 50 feet northwesterly on the vein. A carload from here assayed 22 Oz Ag (no load assay available). It is reported that the good ore here is present in the lower part of the tunnel. The upper part is dirt and leached vein material. The floor of the level was covered with debris and it was not possible therefore to sample there. The dump has been segregated into two piles, one being discard material from the hanging wall portion of the vein in which the values are predominently lead, and the other from the foot wall of the vein with values predominantly silver.

The sampling results from the workings on the Silver Pick vein are tabulated as follows:

Sample No	Width	Oz.Ag	% Pb	Remarks
1	dump	6.4	1.80	Incline shaft dump
2	"	6.8	2.60	Vertical shaft dump
3	"	1.6	6.30	Tunnel dump - 75 tons
4	"	8.2	2.80	" " 100 tons
18	42"	22.8	14.90	End cut south of shaft
23	45"	2.6	3.5	Vein in 85' Level cross-cut

Badger Vein This vein is characterized by bold croppings on the north end of the Silver Pick claim and the south portion of the Badger claim. A crosscut tunnel has been driven northwesterly in the bank of a gulley near the south end of the Badger claim and short drifts extended on the vein in both directions. Also a shallow pit has been excavated on the hanging wall side of the vein north and above the tunnel workings. A carload of 17 oz silver was shipped from here. Sampling here gave the following results:

Sample No	Width	Oz.Ag	% Pb	Remarks
14	72"	81.6	11.90	Face S drift
15	44"	.40	4.90	" N "
16	dump	.60	10.50	Tunnel dump
17	26"	2.40	10.80	Pit above tunnel

Jumbo Vein A crosscut into a steep hill in the southwest corner of the Jumbo claim intersects the Jumbo vein which is drifted upon for a distance of 50 feet northwest, and 175 feet southeast with a raise and narrow stope to the surface (135' above) in the southeast end. The vein strikes N 65 W and dips approximately 70 deg. SW. The mineralization of the vein is irregular and the vein material shows considerable movement. Sampling here indicates the presence of two short ore shoots, one at the raise being partly mined. The sampling in this working place is tabulated below:

Sample No	Width	Oz.Ag	% Pb	Remarks
5	54"	49.6	4.7	Wall of raise 12' up
6	16"	.8	5.7	Split vein
7	33"	10.8	3.2	Vein in Drift below #5
8	41"	2.4	3.9	Vein 20' NW from #7
9	29"	4.2	4.9	2 cuts vein, 62' NW from #8
10	dump	3.8	9.5	Vein material on dump

Blue Bell Vein An incline shaft has been sunk to a depth of approximately 60' at 65 deg. dip SW in croppings of the Blue Bell vein which courses through a large part of the Blue Bell claim with occasional prominent croppings. The shaft was inaccessible. A sample of a small pile of vein material on the shaft dump assayed 17.6 Oz Ag. 7.70 % Pb. Several shallow cuts have been made along the vein croppings but there are no workings of importance other than the shaft.

Orphan Boy Veins. There is only one working place of note in the Orphan Boy Group of claims. Here a crosscut tunnel enters a low hill of rhyolite and at 150 feet opens into the bottom of a small pit. A small amount of high grade lead-silver ore was selectively mined in this pit which measures 30 feet long by 30 feet average depth and 10 feet average width. A contact vein striking E.W. and dipping 60 deg southwest is exposed here with rhyolite hanging wall and a monzonite foot wall. The monzonite is a thin dike-like intrusion in the rhyolite with width of approximately 30 feet. A foot wall contact vein parallel to the hanging wall is opened in a cut on the foot wallside of the monzonite. The veins have the same mineral characteristics i.e. each contain a sprinkling of coarse galena and some canary yellow sphalerite

with some oxidized mineralization of lead and zinc. The gangue minerals are quartz, brown calcite, and limonite in gouge seams. The veins are covered by detrital material on each side of this working place and no determination of its continuity is possible. The discard vein material from the workings on both veins is combined in two dumps containing a total of some 100 tons. The vein in the large cut was sampled in two sections. The cuts were somewhat caved and the floors filled with debris. Sampling results here are tabulated as follows:

Sample No	Width	Oz.Ag	% Pb	% Zn	Remarks
20	7.5	131.80	5.25	1.75	Hanging wall of vein.
21	7.5	16.80	2.45	3.15	Foot wall " "
22	dump	25.20	7.00	2.30	Combination 2 dumps

Mining

"The ground is firm and will not require timber for support. The veins show good continuity of values and good stoping widths with dips steep enough for gravity flow of ore. The logical mining method will be shrink stoping. These factors will favor a low mining cost which here ought not to exceed $6.00 per ton including an adequate scale of development ahead of ore extraction."

Milling

"Mill tests on the ore here show a recovery of 83.7% of the silver and 93.4% of the lead by gravity concentration on coarsely ground material. (50% on 35M).

The company owns some milling equipment including a crusher, a set of rolls, etc. They propose to install a gravity concentration plant of 100 tons per day capacity. During the early development and production stages of the enterprise anticipated tonnage milled is expected to be 1/3 or 1/2 of this capacity. It is believed that with a coarse grind and a simple gravity circuit the milling cost will not exceed $2.00 per ton.

The tests show that a concentrate containing 38.4% lead (or 768 lbs) will be made. At the prevailing price for lead (17¢ per lb) the smelter will pay for (768 - 30) x .90 or 664.2 lbs @ 15¢ per lb or $99.63 for the lead in the concentrates. Smelter charges plus transportation costs will be approximately $12.50 per ton and net value to the mine therefore will be $87.13 per ton or 11.3¢ per lb of lead contained in the concentrates. This is not a figure which is exactly applicable for estimating ore values.

but it is reasonable correct for purposes of estimation. The smelter will pay for 95% of the silver at 88.5% per ounce and a figure therefore of 84% per ounce can be used for purposes of estimation.

Finer grinding and flotation treatment would result in better recoveries and a higher grade of concentrate and eventually, if upon further development the present promise of the property is realized, the more costly flotation installation would be justified.

Ore Reserves and Values

It will be seen from the above that the cost of mining and milling is estimated at $8.00 per ton. If to this is added $1.00 per ton for overhead and general expenses the total estimated cost is $9.00 per ton. With recoveries as shown in the tests the exonomic cut-off grade would be about $10.00 per ton, and in the following estimates of reserves only material of this grade or better is considered to be ore.

Sampling at various places on the veins has indicated the presence of several ore shoots and the probable presence of others. At no place however has sufficient systematic work been done to permit the designation of any tonnage as "Blocked" or "Proven" ore in the accepted sense of being bounded by openings on three sides. The sampling nevertheless shows enough continuity of values at places to justify a classification of "Reasonable Assured" ore for blocks of ground at a number of places. Values are seen to extend to slope depths of approximately 100 feet in the inclide shaft on the Silver Pick vein and 50 feet on the Grandfather vein, and 135 feet on the Jumbo vein. It is assumed therefore that the values shown by the sampling will extend to a depth on the vein of at least 100 feet. It is assumed also (where there is no evidence to the contrary) that the length of the ore shoots will be 25% greater than that now exposed, and these assumptions are used in estimating tonnages of Reasonably Assured Ore.

In estimating "Probable Ore" it is assumed that the ore shoots will continue 200 feet further (or 300 feet from the outcrop). This depth would correspond to the approximate depth at which the permanent water table was reached in some neighboring properties. This limit is arbitrary however since ore is known to extend into the water zone in other properties in the district without diminution in values. In fact there is a good possibility for finding some secondary enrichment at this horizon.

"Possible Ore" would depend upon greater extensions laterally and in depth than those assumed in the above estimates and since such extensions would be entirely conjectural in the present state of development of the property no attempt is made to estimate tonnage for this classification.

The Grandfather vein has been opened at a number of places with continuous ore showings for a length of over 350 feet. Samples taken in the shaft and from the shaft dump show an average of 24.5 OzAg and 8.16% Pb. Shipments from this place contained moderately high silver values with low lead content and shipments from the south end of the shoot assayed low silver with moderately high lead. If the average of the shaft assays is averaged with the shipment assays from the south end the genral average is 13.3 OzAg and 9.7% Pb. Assuming a length of 435 feet and depth of 100 feet and width of 3.5 feet the tonnage in the block (at 12.5 cu ft per ton) would be 13,180 tons.

The Silver Pick is opened by a long cut, a vertical shaft and a tunnel, and smaller openings throughout a distance of 400 feet. Assuming a shoot length of 500 feet, depth 100 feet and width 3.5 feet, the block would contain 14,000 tons. Samples across the vein (samples Nos. 18 and 23) show an average of 12.7 OzAg and 8120 % Pb. Samples Nos. 1,2,3 and 4 represent discard material from shipments amounting to several hundred tons. A car from the tunnel on the north end of the shoot assayed 22 OzAg with estimated 3% Pb and shipments amount to several hundred tons from the shaft workings and said to have assayed 15 to 20 OzAg with estimated 3% Pb. The average of all the samples is 8.1 OzAg and 5.3 Pb. Since this average includes much discard dump material after sorting the figure may be considered to be con servative.

The Badger vein is opened by a tunnel and a small pit above and beyond the tunnel face. These openings hsow an ore shoot length of 100 ft. It will be noted that one sample (No 14) shows a quite high silver assay. Silver content of these veins is quite erratic and since this assay is far out of line with the other assays here it would seem to be safer to assign a silver assay to the sample no higher than that of the carload shipped from here i.e. 17 oz per ton. The average then of the 4 assays, including the dump, would be 51 OzAg and 9.5% Pb. A block here having the dimensions: 125' x 190' x 4' would contain 4500 tons.

The Jumbo vein is opened by a drift from a crossbut 135 feet below its croppings. Samples (5 and 7) and 8 represent an ore shoot length of 30 feet with average assay of 16.3 OzAg and 11.9% Pb. Samples No 9 represent an ore shoot length of 20 feet

with assay of 4.2 Oz Ag and 4.9% Pb. The ore blocks from here to the surface would contain in the first shoot approximately 1100 tons and for the second 540 tons. The total for the two shoots is 1636 tons with wrighted average assays : 12.4 Oz Ag and 4.2% Pb.

Summarizing the above, ore estimates and calculating net values on the basis outlined under "milling" (pages 8 and 9) :

Vein	Tons Reas.Assur.	Probable Tons	Total	Oz Ag	% Pb	Net Value p.t.
Grandfather	12,180	24,360	36,540	13.3	9.7	31.92
Silver Pick	14,000	28,000	42,000	8.1	5.3	18.78
Badger	4,000	8,000	12,000	5.1	9.5	25.75
Jumbo	1,640	2,440	4,080	12.4	4.2	19.91
Totals & Av (wtd)	32,320	61,800	94,620	9.8	7.5	25.18

In addition to the above blocks of Reasonable Assured Volume of ore in the Orphan Boy workings where sampling shows substantial values and good widths of ore. Also, the values in the dump sample (no 19) from the shaft on the Blue Bell claim suggest that something worth while might be developed here. There are many vein showings on the surface other than those discussed in this report and with producing operations in progress some of these will deserve prospect exploration. It is worth noting that values are generally present, but not developed, in broader vein widths than those sampled and undoubtedly there will be places where mining will be profitable over these greater widths.

Indicated Profit

If 15% is allowed for dilution the ore estimated above will have a net value at the mine of approximately $21.50 per ton, and with a mill recovery of 85 to 90% the recovered value will be approximately $19.00 per ton. With working costs estimated at $9.00 per ton the indicated profit therefore is $19 - 9 or $10.00 per ton.

Equipment

The principal items of equipment are listed as follows:

1 Le Roy Rix Compressor with a 15-30 D International eng.
1 Ingersoll-Rand Compressor - 210 cu ft/min

1 30 HP Hoist
1 Small Deming 2-stage water pump with gasoline engine
1 Mine car
1 Ingersoll-Rand Jack Hammer
1 " " stoper
1 10 K.W. Light plant
1 Wheeling jaw crusher - 15" x 17"
1 3-deck Denver vibrating screen
1 set rolls

Also rail, pipe, water hose, bits, etc. for a modest scale development job.

Water

The region is quite arid and infrequent rainfalls generally occurs as flash floods with quick run-off and little storing of water in the gravels of the washes. Water for the camp is pumped from a well in a nearby narrow wash. The well makes water at the rate of approximately 3 gals per minute. The company has arranged to pump water from a shaft on an adjoining' claim, the Blue Crystal, with output from the shaft reported at about 10 gallons per minute. Additional small sources of water can be developed by shallow wells in gulleys near the mine. It seems probable that enough can be gathered from these sources to supply a mill of 30 to 40 tons per day capacity, assuming careful conservation and efficient reclamation from tailings ponds.

Camp

The camp is located on the Woodpecker claim with accomodations for a crew of 6 or eight men. Camp buildings consist of a cook house, bunk house, shop building and housing for the electric light plant, and a change house, also a tent.

Recommendations

The writer recommends that the necessary work be done to block out and prepare for mining the estimated reserve of Reasonably Assured ore. This would require -

1) Sinking the Silver Pick incline shaft another 50 feet and drifting some 500 feet on a new lower level.

2) Sinking the Grandfather shaft 50 feet deeper and drifting some 400 feet on the vein at the bottom.

3) Sinking 100 feet on the Badger vein and drifting 100 feet on the vein at that depth.

Cost for the above development is estimated as follows:

Sinking 200 feet (2 compartment)	@ $ 80/ft	$ 16,000
Drifting 1000 "	@ $ 16/ft	16,000
Equipment and camp and contengencies		8,000
	Total	$ 40,000

With favorable results in the early part of the above development the construction of a gravity concentrating plant as contemplated by the company would be justified, and the balance of the development would become an operating account paid for out of operating income.

Conclusions

It is estimated that approximately 32,000 tons of Reasonably Assured ore and 62,000 tons of Probable ore, or 94,000 tons of both classifications, are indicated in the workings in four veins on the property. Sampling shows an average net value at the mine for this estimated tonnage of $25.18 per ton. After making allowances for dilution and mill metallurgical losses, and after deducting estimated costs the indicated profit margin is approximately $10.00 per ton. On this basis therefore the property offers an excellent promise of becoming a profitable moderate size producer.

The above tonnage estimates are made on conservative assumptions of extensions of ore both laterally and in depth beyond present exposures and do not consider the probability that the veins will in places be mined for greater widths than those shown in the sampling. Also, no allowance is made for the good ore showings in the Orphan Boy workings, and for possibilities in several other untestes veins in the property. Altogether then the property might be considered to hold attractive long range possibilities for developing into quite substantial producer.

Travis P. Lane

SEAL
Registered Mining Engineer
Arizona, U.S.A.
Travis P. Lane

Prescott

AMERICAN SMELTING AND REFINING COMPANY

EL PASO SMELTING WORKS

BOUGHT OF Mineral Mtn. Mg. & Mill. Co. — EL PASO, TEXAS, 1-20 — 1953

ADDRESS P. O. Box 1026 Florence Jct., Arizona — SMELTER LOT 55

SHIPPING POINT Price, Arizona — SHIPPERS LOT

NAME OF MINE Woodpecker — CLASSIFICATION Ore

RATES, EXCEPT ON CONTRACTS, SUBJECT TO CHANGE WITHOUT NOTICE

MIX	ARRIVAL DATE	CAR NUMBER	CAR RR	GROSS WEIGHT	CONTAINERS NO.	CONTAINERS WEIGHT	WET WEIGHT	% H2O	DRY WEIGHT
	1/6	151137	SP				92180	2.0	90336

QUOTATIONS

COINAGE SILVER	90.0	¢ PER OZ.
FOREIGN "	83.25	¢ PER OZ.
LEAD $	14.583	PER CWT.
COPPER		¢ PER LB.

B/L DATE: 1/2

ASSAYS	OZ. PER TON GOLD	OZ. PER TON SILVER	WET LEAD %	COPPER %	INSOL %	SiO2 %	IRON %	MN %	LIME %	ZINC %	S %	AL2O3 %	AS %	SB %	BI %	%
SMELTER	0.005	5.2	18.5	0.10						3.7					0	
SHIPPER	.02	5.6	19.0	.16						3.8						
UMPIRE																
METALLICS																
SETTLE		5.4	18.75													

VALUES PER TON

	PAY CONTENT	PRICE	AMOUNT	FREIGHT (FIXED)
GOLD				
SILVER, LESS % MIN. 1 oz.	4.4	.885	3.89	3.89
LEAD, LESS 30#@ 90%	310.5	.12583	39.07	15.53
COPPER, LESS @ %				
GROSS VALUE			42.96	19.42
LESS DEDUCTIONS (NET CHARGE)			6.89	6.89
FREIGHT VALUE			x x x	12.53
NET VALUE			36.07	@ 45.168

DEDUCTIONS

	CHARGE	CREDIT
BASE, INCL. LABOR ADJ.	5.50	
EXCESS VALUE OVER $ 10 ¢ PER UNIT PB +− 30 %	1.28	
LEAD—COPPER PRICE ESCALATOR		
BULLION FREIGHT TAX @.00035	.11	
INSOL—SILICA		
IRON—LIME		
ZINC		
AS: SB: BI:		
NET CHARGE	6.89	—

= 12.28 WET TON — DRY TONS

Less Freight: 46.09 WET TONS @ 4.60 + 15% P.T. 243.81 TAX 7.31

Less Switching 4.62 + .14

Less Hauling

Less Representation $ 7.50 Umpire $ Sampling $

Amount Withheld Pending Receipt of Silver Affidavit H 5131

Less Royalty

	DEBITS	CREDITS
		1629.21
Less Freight: 46.09 WET TONS @ 4.60 + 15% P.T. 243.81 TAX 7.31	251.12	
Less Switching 4.62 + .14	4.76	
Less Representation $ 7.50 Umpire $ Sampling $	7.50	
Amount Withheld Pending Receipt of Silver Affidavit H 5131	13.10	
BALANCE DUE SHIPPER	1352.73	
	1629.21	1629.21

CHECKED CORRECT APPROVED

MG-64

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Date July 23, 1940

Mine Gorham and Hall Group

Engineer Newton Wolcott

District - Mineral Mountain Mining Dist.

Location - Approximately 7 miles SW from Superior. (Pinal Co.) Secs. 34 and 35, T2S, R 11 E; G & SR B&M

Former Name

Owner - Pat Gorham

Address - Superior, Arizona

Operator - E. N. Perkins

Address - Superior, Arizona

President

Gen. Mgr.

Mine Supt.

Mill Supt.

Principal Metals - Silver, Lead, Gold, Copper.

Men Employed - Three

Production Rate - Approximately 50 tons per week.

Mill: Type & Cap....

Power: Amt. & Type -

Operations: Present - Cleaning out old stopes and shaft. Also mining some ore and shipping it along with gob and dump material.

Operations Planned - Trying to get to bottom of old workings and put property into shape for steady production.

Number Claims, Title, etc. - Five unpatented lode claims.

Description: Topography & Geography - This property is situated in the region of semi-mountainous country which lies between Superior and the Gila River. The hills are steep and fairly high, and the canyons narrow and deep. Vegetation consists almost entirely of a heavy growth of cholla cactus and other desert growth. Elevation at the property varies from 2500 to 3000 feet above sea level.

Mine Workings: Amt. & Condition - 1 vertical shaft approximately 75 feet in depth. Open and accessible.
2 inclined shafts 100 ft. plus in depth. Inaccessible without repairs.
1 inclined shaft approximately 70 ft. deep. Open but untimbered.
1 inclined shaft approximately 50 ft. deep. Upper portion accessible. Several hundred feet of tunnels and drifts, and two large open cuts. Various shallow pits and

Geology & Mineralizatio. The entire property lies with the large area of sericite mica schist which covers most of this mining district. The schist is cut in numerous places by a series of large and highly mineralized shear zones which traverse the country in a NW-SE direction. The majority of the shear zones are a variable dip to the SW, the dip varying from 35 deg. to almost vertical. The structure here is identical with that found at the Reymert mine, and this is undoubtedly a continuation of the same general vein system. The veins sss formed along these shear zones vary in width from three to more than 30 ft., and the walls are strong and well defined. The vein structure is of the ribbon or 'fahlband' type, consisting of alternate ribbons or bands of coarsely crystalline calcite and quartz lying parallel with the vein walls. These layers are usually separated by a narrow space which in some cases is partially filled with a light and powderly manganiferous dust. Considerable amethyst quartz is visible in certain of the layers. The main ore minerals are cerargyrite, cerussite and galena. Minor amounts of the copper carbonates are present in a few of the veins, and gold values are present, although in the large veins they are too low to merit consideration. All of the veins show evidence of extensive leaching, due in large part to their banded structural character. The horn silver, upon which the present operator relies entirely for his returns, occurs both in the quartz and the calcite, and it is possible to mine either a high-lime or a high-silica ore, depending upon which is in the greater demand at the smelters. Lead values are not recoverable without milling. Mr. Perkins, the present operator states that his shipments of gob and dump material have run from 12 to 16 ounces in silver, while mined ore has run better than 50 ounces. He has smelter settlement sheets on all the ore which he has shipped. These can be seen by anyone who is interested.

Ore: Positive & Probable, Ore Dumps, Tailings - Ore of shipping grade is in sight in various places on the property; but no estimate of tonnage is possible without additional systematic development work. There is also a considerable tonnage of material on several dumps; but it is doubtful that this is sufficiently high in grade to permit shipping without careful sorting.

Mine, Mill Equipment & Flow Sheet - There is no equipment of any sort other than makeship hoisting apparatus on the property.

Road Conditions, Route - Take U. S. Highway 70 west from Superior for a distance of 11 miles to old Jumbo Lead Co. camp. Road goes over hill from there approximately 1 mile to property. Fairly good bladed road to Jumbo camp. Road from there to property is steep and rough in places, but passable. Ore is being trucked out at present. Best to inquire of Pat Gorham in Superior as to route to property.

Water Supply - Domestic water is available all the year at the Jumbo camp, and working on several adjacent properties indicate that water in comparatively large quantity will be encountered on this property at a depth of between 200 and 300 ft.

Brief History - The property has not been worked in a sizeable way since the nineties; at which time some of the richer ores were mined and smelted on the ground. There has been no road of any sort nearer than 7 miles from the property prior to about 1933, and any ore mined had to be packed out on burros for that distance. The present operator, without any working capital whatever, has been making a living here simply by shipping the old dumps and stope gob to the smelters at Superior and Hayden.

Special Problems, Reports Filed - Working capital sufficient to install hoist and compressor, establish a camp for workmen, and to retimber and put in shape the old workings is what this property needs most of all.

Remarks - In view of the size, strength and continuity of the veins in this area, and the chance of encountering valuable enrichments at or near the water level, the property appears to be well worth serious consideration and thorough investigation by anyone with sufficient capital to carry out the work mentioned above, and to do a reasonable amount of development work in addition.

If property for sale: Price, terms and address to negotiate - Mr. E. N. Perkins, Superior, Arizona, who has the property under lease and option, and also Mr. Pat Gorham of Superior, one of the owners, state that the property is open for a deal on reasonable price and terms to any responsible parties.

SIGNED - Newton Wolcott

MW-25

DEPARMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Date February 24, 1940.

Mine Woodpecker Mine

Engineer Newton Wolcott

District - Mineral Mountain Mining Dist.

Location - Approximately 7 miles SW from Superior. (Pinal County) Sec. 35, T2S, R 11 E; G & SR B & M

Former Name

Owner - S. W. Fordyce
Address - Not known

Owner's representative - W. J. Graham
Address - Capitol Building, Phoenix, Arizona

Operator - E. N. Perkins
Address - Superior, Arizona

President

Gen. Mgr.

Mine Supt.

Mill Supt.

Principal Metals - Silver, Lead, Gold, Copper

Men Employed

Production Rate - Not established

Mill: Type & Cap.

Power: Amt. & Type

Operations: Present - Not active at present.

Operations Planned - Plan to operate in conjunction with Gorham & Hall property which surrounds this claim on all sides.

Number Claims, Title, etc. - One patented lode claim. (Area slightly less than 20 acres)

Description: Topography & Geography - This property is situated in the region of semi-mountainous country which lies between Superior and the Gila river. The hills are steep and fairly high, and the canyons narrow and deep. Vegetation consists almost entirely of a heavy growth of cholla cactus and other desert growth. Elevation at the property varies from 2500 to 3000 ft. above sea level.

Mine Workings: Amt. & Condition - 1 vertical shaft approximately 75 ft. in depth; open and accessible. 2 inclined shafts 100 ft. plus in depth; inaccessible without repairs. 1 inclined shaft approximately 70 ft. deep; open but untimbered. 1 inclined shaft approximately 50 ft. deep; upper portion accessible. Several hundred feet of tunnels and drifts, and two large open-cuts. Various shallow pits and surface cuts.

Geology & Mineralization - The entire property lies within the large area of sericite mica schist which covers most of this mining district. The schist is cut in numerous places by a series of large and highly mineralized shear zones which traverse the country in a NW-SE direction. The majority of the shear zones have a variable dip to the SW, the dip varying from 35 deg. to almost vertical. The structure here is identical with that found at the Reymert mine, and this is undoubtedly a continuation of the same general vein system. The veins formed along these shear zones vary in width from three to more than 30 ft. and the walls are strong and well defined. The vein structure is of the ribbon or "fahlband" type, consisting of alternate ribbons or bands of coarsely crystalline calcite and quartz lying parallel with the vein walls. These layers are usually separated by a narrow space which in some cases is partially filled with a light and powderly manganiferous dust. Considerable amethyst quartz is visible in certain of the layers. The main ore minerals are cerargyrite, cerussite and galena. Minor amounts of the copper carbonates are present in a few of the veins, and gold values are present, although in the large veins they are too low to merit consideration. All of the veins show evidence of extensive leaching, due in large part to their banded structural character. The horn silver, upon which the present operator relies entirely for his returns, occurs both in the quartz and the calcite, and it is possible to mine either a high-lime or a high-silica ore, depending upon which is in the greater demand at the smelters. Lead values are not recoverable without milling, Mr. Perkins, the present operator states that his shipments of gob and dump material have run from 12 to 16 ounces in silver, while mined ore has run better than 50 ounces. He has smelter settlement sheets on all the ore which he has shipped. These can be seen by anyone who is interested.

Ore: Positive & Probable, Ore Dumps, Tailings

Mine, Mill Equipment & Flow Sheet - No equipment of any sort.

Road Conditions, Route - Take U. S. Highway 70 west from Superior for a distance of 11 miles to old Jumbo Lead Co. camp. Road goes over hill from there approximately 1 mile to property. Fairly good bladed road to Jumbo camp. Road from there to property is steep and rough in places, but passable. Ore is being trucked out at present. Best to inquire of Pat Gorham in Superior as to route to property.

Water Supply

Brief History

Special Problems, Reports Filed -

Remarks - This claim is entirely surrounded by the five unpatented claims of the Gorham & Hall Group, and should naturally be considered and included in any operation of the latter. The Woodpecker covers several good veins which extend into the adjoining claims. All descriptions of the surrounding property apply equally well to this claim. The same operator, Mr. E. N. Perkins of Superior has both properties under lease and option.

If property for sale; Price, terms and address to negotiate - The property is open for sale on reasonable terms to responsible parties.

SIGNED - Newton Wolcott

development work, as follows:

46 tons	9.25% Lead	1.8 oz. Silver
3½ "	39.00% "	5.3 oz. "
19 "	13.64% "	21.55oz. "

A test made by taking a 13-ton test-sample from the workings adjoining the 74-foot inclined shaft gave the following results: 20.76 oz. Silver and an estimated 5% to 7% Lead. The lead was not determined by assay, as the ore was sold to a copper smelter. Other general samples of the various exposes are reported as showing an average of 4.9% Lead and 3.9 ounces in Silver.

I have recommended the property for careful study, and have by observation been able to check in a general way the ore showings as reported to me by the leasers in the workings and on the various outcrops.

It is impractical to estimate any tonnage of ore in sight, but the indications are favorable for developing a property capable of producing 50 tons per day within a comparatively short time.

The Hog crosscut and drift at the southern end of the property show 80 feet of lead-silver ore in the drift of from 2 to 4 feet in width, with about 160 feet of backs.

The workings from the 74-foot incline shaft show from 4 to 6 feet in width of ore which can be shipped, or preferably milled, at a profit, carrying good values in lead and silver.

There are numerous other showings which justify intensive development, and exploration. The prominent, silicified dyke has erratic showings of high-grade silver and lead on the surface and warrants exploration in depth.

The property has an excellent showing for the limited amount of development; it is located in a known mineralized area with favorable geology, and, as stated, I have recommended it highly for study, exploration, and development, to a valued client.

Respectfully submitted.

J. S. Coupal,
Registered Mining Engineer,
Phoenix, Arizona.

October 6, 1948.

Mine Management
Consulting
Engineering

Telephone
3-3034

J. S. COUPAL
Mining Engineer
Phoenix, Arizona

Oct. 6, 1948

Reply to
Arizona Club, Luhrs Bldg.
Phoenix, Arizona.

Mr. L. Lee Boyer,
926 East 13th St.,
Tempe, Arizona.

Dear Mr. Boyer:

Regarding the holdings of the Mineral Mountain Mining & Milling Corporation, I can make the following statements:

I have been advised that it is an Arizona corporation, and either owns or has lease on eight lode mining claims in the Mineral Mountain Mining District, about seven miles southwest of Superior, Pinal County, Arizona. The key claim is the patented Woodpecker claim. There are five unpatented claims in the Gorham Group, and two other unpatented claims, the Badger and the Gold Vein, all of which adjoin and constitute the holdings of the corporation.

The Woodpecker claim has been known for many years as a producer of high grade silver ore, and the major workings of the eight claims are on it.

I have made several trips in the area, to the Ajax Mine, which is about one mile south of the Woodpecker, and in May, 1948, made a cursory examination of the Woodpecker workings and recommended it for intensive study to a client.

The property lies at an elevation of from 2500 to 3000 feet above sea-level, in a semi-mountainous area with scant vegetation, and has a fine year-around operating climate. It is accessible by mine road, about 12 miles off U. S. Highway 80. The road to the property is rather steep in short stretches, but passable by cars and trucks.

The most prominent surfical feature is a highly silicified dyke or shear zone, striking in a N.W. - S.E. direction, from 10 to 30 feet in width. The country rock is a micaceous schist cut by numerous silicified shear zones in which mineralization has occurred. The ore zones are fahlband structure.

The major workings consist of a glory-hole, from which high grade silver ore, cerargerite (horn silver) was shipped in the early days; a 74-foot incline shaft with drifts on ore; and at the south end of the property, a 280-foot crosscut with 80 feet of drifting on what is presumably an extension of the old Jumbo lead vein. There are numerous other shallow minor workings, which have shown good ore.

In 1948, leasers made three minor shipments from exploratory and

A SOM 11-47 CAIRNS

AMERICAN SMELTING AND REFINING COMPANY
EL PASO SMELTING WORKS

ORE SETTLEMENT

EL PASO, TEXAS. 6/24/48
SMELTER LOT 1247
SHIPPER'S LOT
CLASSIFICATION ore
NAME OF MINE Woodpecker

BOUGHT OF J. B. Crowley
ADDRESS P.O. Box 1085, Florance Junction, Arizona
SHIPPING POINT Superior, Arizona

CAR NO.	CAR INITIAL	WEIGHT IN AVOIRDUPOIS POUNDS GROSS	SACKS NO.	SACKS WEIGHT	NET WEIGHT	MOISTURE %	DRY WEIGHT
Truck					6360	0.5	6328

N. Y. METAL QUOTATIONS

Settlement Date 6/4/48
B/L Date Truck Shipment

Silver	90.0	Cts. per oz
F'gn Silver	74.625	
Lead	$ 17.50	Per 100 lbs.
E. & M. J. Copper		Cts. per lb.

PREMIUM METAL CONTENT

Lead _____ lbs.
Copper _____ lbs.

PAYMENTS FOR METALS

ELEMENTS	ASSAY PER TON 2000 LBS.		DEDUCTED	NET ASSAY	EQUIVALENT IN LBS.	PERCENT PAID FOR	NET PAID FOR		RATE	VALUE AMOUNT PER TON	VALUE AMOUNT TOTAL
Gold	.005	oz.	No Pay					oz.			
Silver	5.3	oz.	1.0	4.3			4.3	oz.	.885	3.81	
Lead	39.0	%	1.5	37.5	750	90	675.0	lbs.	.1565	105.64	
Copper	.05	%	No Pay					lbs.			
TOTAL PAYMENTS FOR METALS											109.45

DEDUCTIONS

	DEBITS	CREDITS
BASE CHARGE: F. O. B. El Paso, for Metal Payments, not exceeding $ 25.00 per ton	7.00	
10 % of $ 84.45 excess over $ 25.00 per ton	1.50 max	
Handling Sacks		
Pb credit 37.5 - 30.0 = 7.5 @ .10		.75
Bullion Freight Tax 675 @ .00028	.19	

ANALYSIS			DEDUCTION		RATE	
Insoluble	34.2	%		%	@	Cts.
Silica	34.1	%		%	@	Cts.
Iron	5.4	%		%	@	Cts.
Mn		%		%	@	Cts.
Lime		%		%	@	Cts.
Zinc	2.2	%		%	@	Cts.
Sulphur	2.5	%		%	@	Cts.
Alumina	.1	%		%	@	Cts.
As	.22	%		%	@	Cts.
Sb	.42	%		%	@	Cts.
Bi	.05	%		%	@	Cts.

	DEBITS	CREDITS
TOTAL DEDUCTIONS	8.69	.75
		7.94
NET VALUE PER TON		101.51

	DEBITS	CREDITS
		321.18
Total Value on 3.164		
Less Freight on 3.18		
Dry Tons @ 101.51 Per Ton		
Wet Tons @ Per Ton		
Hauling Charge		
Switching		
Umpires		
	4.00	
Sampling	7.00	
	2.12	
El Paso Testing Lab.	7.50	
BALANCE DUE SHIPPER	300.56	
	321.18	321.18

Amount withheld pending receipt of Silver Affidavit
Royalty

Valuation for freight per wet ton $ 98.80

Made by _____ Checked _____ Correct _____ Approved _____

UNIVERSITY OF ARIZONA
Arizona Bureau of Mines
Ore Testing Service

The oxide concentrate amounted to 7.1 tons per 100 tons heads, assayed 15.1 oz. silver per ton and 43.95 per cent lead and contained 9.2 and 47.2 percents of the total silver and lead, respectively.

The combined sulphide and oxide concentrates amounted to 13.1 tons per 100 tons heads, assayed 83.7 oz. silver per ton and 42.6 per cent lead. The combined concentrates contained 94.6 per cent of the total silver and 85.2 per cent of the total lead.

The oxide cleaner tailing assayed 4.4 oz. silver per ton and 16.8 per cent lead and the tailing assayed 0.5 oz. silver per ton and 0.15 per cent lead.

Conclusion

The recovery of silver and lead was 94.6 and 85.2 per cents, respectively, when the pulp was treated to concentrate the sulphide and oxide lead minerals after fine grinding.

The recovery of silver and lead would be low if sent to the Eagle Picher mill as their flowsheet does not provide for the recovery of oxidized lead.

Yours very truly,

/S/ G. H. ROSEVEARE
G. H. Roseveare
Metallurgist

(Seal)

UNIVERSITY OF ARIZONA
Arizona Bureau of Mines
Ore Testing Service

(1949)

Mr. Lee Boyer
Valley Assay Office
926 E. 13th Street
Tempe, Arizona

Dear Mr. Boyer: Ore No. 1137

Two tests were made on the silver-lead ore which you delivered to the Arizona Bureau of Mines. This first test at your request was conducted to duplicate the Eagle Picher mill flowsheet with their reagents and the second test was made to recover the sulphide and oxide lead minerals.

Test 1

A sample was ground to 4.7 percent on 100-mesh and the pulp treated by flotation. The reagents used are given in Table 1 and the results in Table 2.

The concentrate amounted to 2.8 tons per 100 tons heads, assayed 312.4 oz. silver per ton and 72.55 per cent lead and contained 76.2 and 37.0 per cent of the total silver and lead, respectively.

The middling amounted to 1.9 tons per 100 tons heads, assayed 46.1 oz. silver per ton and 21.75 per cent lead and contained 7.6 and 7.5 per cents of the total silver and lead.

The tailing assayed 1.95 oz. silver per ton and 3.20 per cent lead.

The Eagle Picher Mining and Smelting Company does not attempt to recover the oxide lead.

Test 2

A sample was ground to 6.0 per cent on 150-mesh and the pulp treated by flotation; first to float the silver and sulphide lead and then the oxide lead. The reagents used are given in Table 3 and the results in Table 4.

The sulphide concentrate amounted to 6.1 tons for 100 tons leads, assayed 163.8 oz. silver and 41.00 per cent lead and contained 85.4 and 38.0 per cents of the total silver and lead, respectively.

UNIVERSITY OF ARIZONA

Arizona Bureau of Mines
Ore Testing Service

Ore No. 1137 Test No. 1

Conditions and Reagents

Table 1

Point of Addition	Conditions			Reagents Pounds Per Ton							
	Time Mins.	% Solids	pH	Soda Ash	130	2NSO4	N_2CN	301	Na_2SO_3	M.I.	B.C.
Ball mill	18	60		0.5	0.3	0.75	0.1		0.25		
Conditioner	3	25	6.9					0.015			
Rougher	8		7.2								
Cleaner	5										

Remarks: 130 - Reagent 130
301 - Xanthate 301
MIBC - Amyl Alcohol

Metallurgical Products

Table 2

Product	Tons in 100 Tons Feed	Assays				% of Total	
		Silver		Percent Lead		Silver	Lead
Heads	100.0	11.48*		5.50*		100.0	100.0
Concentrate	2.8	312.40		72.55		76.2	37.0
Middling	1.9	46.10		21.75		7.6	7.5
Tailing	95.3	1.95		3.20		16.2	55.5

Remarks: "Calculated

Metallurgical results obtained above should be considered as only applicable to material conforming to the character of the sample upon which the tests were made.

UNIVERSITY OF ARIZONA

Arizona Bureau of Mines
Ore Testing Service

Ore No. 1137 Test No. 2

Conditions and Reagents

Table 3

Point of Addition	Conditions			Reagents Pounds Per Ton							
	Time Mins.	% Solids	pH	Na_2SO_3	130	$ZnSO_4$	NaCN	MIBC	301	425	Na_2S
Ball Mill	24	60		0.25	0.2	0.8	0.1				
Conditioner	3	25	7.2					0.1	0.015		
Sulphide Rougher	8	25									
Conditioner	2								0.5		
Oxide Rougher	10		7.9							0.9	1.0
Cleaner	5								0.05	0.1	

Remarks: Na_2SO_3 - Sodium sulphite
130 - Reagent 130
$ZnSO_4$ - Zinc sulphate
NaCN - Sodium cyanide
MIBC - Amyl alcohol
301 - Xanthate 301
425 - Reagent 425
Oxide froth - voluminous

Table 4

Metallurgical Products

Product	Tons in 100 Tons Feed	oz. per ton Assays Silver		Percent Lead		% of Total Silver	% of Total Lead
Heads	100.0	11.70*		6.60*		100.0	100.0
Sulphide Concentrate	6.1	163.80		41.10		85.4	38.0
Oxide Concentrate	7.1	15.10		43.95		9.2	47.2
Oxide Cleaner Tailing	5.1	4.40		16.80		1.9	13.0
Tailing	81.7	0.50		0.15		3.5	1.8
Combined Concentrate	13.2	83.7		42.6		94.6	85.2

Remarks: *Calculated

Metallurgical results obtained above should be considered as only applicable to material conforming to the character of the sample upon which the tests were made.

SHOULD YOU PATENT YOUR MINING CLAIMS?

By Joseph L. Sweeney
Denver, Colorado

Outline of subject presented at the Rocky Mountain Mineral Law Conference. Attended by JLW July 9-11, 1970

I. INTRODUCTION

II. FACTORS TO CONSIDER

- A. Activity in the Area
- B. Stage of Exploration and/or Development
- C. Mineral Survey
- D. Weighing Patent Proceedings -vs- Maintaining Claims During Production
  1. Maintaining Claims During Production
     - a. Advantages
     - b. Possible Advantages
     - c. Disadvantages
  2. Applying for Patent
     - a. Advantages
     - b. Disadvantages
  3. Conclusions

III. PROCEDURES ON OBTAINING A PATENT

- A. The Mineral Survey
- B. Notice of Application and Posting
- C. Contents of Application
- D. Supplemental Proofs

IV. FUTURE OF MINING CLAIMS

- A. Changes Recommended Over the Years
- B. Anticipated Recommendations of Land Law Review Commission
- C. Possible Moritorium on Patent Applications

V. CONCLUSIONS

Frank Cannaday

JFW

REPLY
Phoenix

JOE F. WALTON
PRESIDENT

July 21, 1970

dictated but not read J

Mr. O. L. Dawson
P. O. Box 6
Hesperia, California 92345

Dear Les:

Uncle Billy is in the office as I write this letter and has brought a copy of your letter to me of May 2nd. Your letter was not received. I note that it is directed to our street address and just about the time of your letter we changed from the street address so that everything comes to a post office box (P. O. Box 20766, Phoenix, Arizona, 85036).

After talking with Bill yesterday, he came down this morning at 5:00 o'clock and went out to the properties with Frank Cannaday. My company now employs ten geologists, a geochemist and an air borne geophysicist and Frank Cannaday, who is a research geologist and geophysicist. In that capacity, he has been a group manager for Inspiration Consolidated Copper Co. for the past three years, mining and methods engineer for the Bureau of Mines five years before that and a senior geologist for Colorado Fuel and Iron Corporation for eleven years prior to service with the U.S. Bureau. His examination of the properties this date has resulted in his report to Nuclear Dynamics that although the time of the examination was so limited as to not be able to ascertain that there are no disseminated ore bodies, it was sufficient to determine that the principal value of the properties lie in small enriched veins and the property as a whole is not big enough or of a type that would be of interest to our company.

As we are in exploration as the Managing Partner with Bethlehem Steel and have exploration partnerships with three other major companies, it means that our interests are generally directed towards either very substantial veins or open pit operations. I had hoped that Mr. Cannaday's reconnaissance of the property would elicit an opinion from him that would allow us to perform the annual assessment work for the 4M by way of exploration, but his report negatives any exploration of the property on our part at this time.

Mr. O. L. Dawson
July 21, 1970

You have made inquiry as to patenting all or some of the claims surrounding the Woodpecker. A thorough discussion of patenting mining claims would really require the writing of a book, but in brief: The U.S. government through the Department of the Interior and because of our population explosion, has taken the attitude that Federal lands should be preserved intact where possible in the Federal government and that properties will now go to patent not only upon strict adherance to the laws of the U.S. (the basic patent law of 1872), but also under the body of rules, regulations and interpretations of the laws as promulgated by the various Secretaries of the Interior. Stuart Udall was one of the worst. Under the present interpretation of the law, a patent can only be obtained if at the time of patent a reasonably prudent man exercising sound judgment would have reason to believe and substantial facts supporting his belief that the expenditure of time and money on the property would not only return a reasonable wage for his efforts, but would assure a reasonable profit with each individual claim standing or falling on its own merits. In other words, upon a strict enforcement of the Department's present position the production of valuable minerals would not meet the test if the minerals were of insufficient value to ship to an available smelter and if the applicant has not already constructed a recovery plant so that the ores can be concentrated or smelted at a profit on or near the premises. A strict construction also would not allow the patenting of six claims which together would produce wages and a profit if shipped or locally treated unless each of the claims would demonstratably produce a profit.

Aside from current interpretations, which I believe would make the patenting of our adjoining claims impossible, it is necessary to employ a U.S. approved mineral surveyor who must make the mineral survey which accompanies the patent application and where properties have been held under claim for any period of time the application is quite lengthy in that the applicant must set forth in narrative form from the first Location Notice to the present date all of the instruments of record affecting the title to the property with the parties, date of instrument, date of recording, book and page and the chain of title must clearly vest title in the applicant.

I do not believe that we could patent any of the adjoining claims under present interpretations of the Act and if we could, it would be a long tedious and fairly expensive proposition. This matter certainly might be discussed at a shareholders' meeting and as I have told you in the past, I am certainly willing to attend a shareholders' meeting called for any given date, but the commitments on my time in Nuclear Dynamics have first priority. It is impossible for me to say in one week that I will be in the county, state or country on any given day the following week. My presence is not necessary at a shareholders' meeting as I can give you or several of you a proxy to vote the shares standing in my name as Trustee.

NUCLEAR DYNAMICS, INC. PHOENIX, ARIZONA 85036 • P. O. BOX 20766 • 2871 SKY HARBOR BLVD. • 602 : 267-0581
PRESCOTT, ARIZONA 86301 • P. O. BOX 2337 • 100 UNION STREET • 602 : 445-0834

Mr. O. L. Dawson
July 21, 1970

It is a shame that the 4M properties have never been thoroughly or properly explored. It may well be that there is a valuable pocket or more than one valuable pocket of high grade silver or other ore and it, of course may be that the property sits on top of a magma, but to face realities, it was an excellent two to six man operation in the 1880's for the purpose of removing a high grade silver pocket and as of now, we have no conclusive evidence, and in fact, a posit of evidence that there is nothing more than some uneconomically narrow veins of silver and lead ores. Because of the surface appearance, a reconnaissance examination made by a major company silimar to the reconnaisance made this date by Mr. Cannaday does not reveal evidence of a large disseminated ore body and in the absence of such evidence a large company with its drilling money will not undertake the extensive drilling program which would be necessary to either prove or disprove the property. It may well be that changes in economic conditions will make the extensive exploration of this kind of property worthwhile at some later date. It is certainly worthwhile for us to pay the taxes to retain the Woodpecker and it is probably worthwhile to perform annual assessment work to retain a minimum of the unpatented surrounding claims, but as of now, I know of no means by which we can obtain the funds to forever prove or disprove the properties.

Very truly yours,

NUCLEAR DYNAMICS, INC.

By: Joe F. Walton, President

JFW/cs

NUCLEAR DYNAMICS, INC. PHOENIX, ARIZONA 85036 • P. O. BOX 20766 • 2871 SKY HARBOR BLVD. • 602 : 267-0581
PRESCOTT, ARIZONA 86301 • P. O. BOX 2337 • 100 UNION STREET • 602 : 445-0834

July 29, 1971

Following sent to Hecla Mining Co., Casa Grande, Arizona, Attn: Al Disbrow: (by NEE)

- Map - Geology of the Grandfather and Silver Pick Area, Pinal County, Arizona Plate V, July, 1967.

- Report by O.L.Dawson, President, Mineral Mountain Mining and Milling Co. 7 pages.

- Report by Poesta and Meyers, Inc., Consultant Geologists "Plates to Accompany Geologic Report of Silver Pick Mines, Inc., Pinal County, Arizona by Donald J. Pedesta, August, 1967", 14 pages, 1 page summary sheet, 10 pages Assay report from Charles O Parker & Co., Chemists, Assayers, Engineers, Denver, Colorado.

/dmh

Returned 8-4-71
dmh

I U.S.B.S. 200' cont West U.S. Series – Mesa
1/250,000 # NI 12-8

X II Claim map –
Podestra

III U.S.D.A. B.S. – Mineral Mt. Quad 1/24,000

IV Geologic Map – Pinal Co. Area – 1959
Ariz. B of M, U of A, Tuc 1/375,000
500' contours

X V Geol of Granitefalls + Silver Peak Area
(Prepared by Podestra.

VI Known Mel. Min Occ of Ariz 1961
Ariz B of M – U of A – Tucs.

VII Map + Index of Arizona Mining Dists.

MINERAL MOUNTAIN MINING
AND
MILLING CO.

****

Property and Location

The property of the Mineral Mountain Mining and Milling Co., an Arizona Corporation, is located in the Mineral Hill Mining District in Pinal County, Arizona. The holdings consist of the "Woodpecker" patented claim and the "Hall-Gorham" group of seven unpatented claims surrounding the Woodpecker claim. The patented claim is owned in fee and the unpatented claims are held by the Company by the performance of annual work.

The property is reached by 10 miles of dirt road from a point on Highway 60 and 70, twenty-nine miles easterly from Mesa, Arizona, the nearest supply point. The roads are passable at all seasons of the year.

The region is typically southwest arid desert with light rainfall and scant vegetation and no timber. The topography is moderately rugged with sharp gulleys and ridges and few flat areas. Elevation ranges from 2500 to 3000 feet above sea level.

History and Production

The first work in the Mineral Hill District dates back in the early eighties. The nearby Raymert mine is credited with over two million ounces of silver. Modest production, old and recent, has been made by a considerable number of other properties in the vicinity of the Mineral Mountain Mining and Milling Company holdings.

Geology and Mineralization

The country rock of the region in which the Woodpecker and Hall-Gorham group are located is a micaceous schist. The schist is intersected by numerous sillicified mineralized shear zones the general trend of which is NW*SE with southwesterly dips varying from 40 degrees to nearly vertical. The veins range from a few feet to thirty feet in width and are readily traceable on the surface because of their reef-like croppings which often rise several feet above the surface. The walls are well defined and the structure of the vein is of the "ribbon rock type" i. e. parallel longitudinal banding of alternating types of vein material. Quartz and coarsely crystalline calcite are the most common constituents of the veins with manganese and limonite occuring as coatings and with powdery fillings in the vein cavities. Amethystine quartz in druse cavities is a common occurence in the veins.

The veins all carry an appreciable amount of silver in the form of cerargerite, some argentite, and lead in the

form of cerrusite, anglesite and galena. Some zinc as sphalerite is present also. Portions of the veins which carry a substantial amount of silver are more silicious than those parts higher in lead content and where calcite,, generally manganese stained,, is the principle gangue material. Leaching and oxidized mineralization is evident on the surface in all the veins. Often on the surface galena is the predominate lead mineral. A sprinkling of galena is often present with low silver values across the full width of the vein, but the better mineralization is generally found in a band several feet wide against the hanging wall with a clay gouge seam on the wall. Sporadic occurence of oxidized copper mineralization is seen in the veins.

Mining

The ground is firm and will not require timber for support. The veins show good continuity of values and good stoping widths with dips sufficient enough for gravity flow of ore. The logical mining method will be shrink stoping.

Water

Rainfalls generally occure as flash floods and with quick runoff. Dams could be erected. Water may be pumped from a nearby well at the rate of about 3 gallons per minute. Water may be obtained from the nearby Blue Crystal claim shaft at the rate of approximately 10 gallons per minute. Additional sources of water may be developed by shallow wells in gulleys on the property and near the mine.

RECOMMENDATIONS

In view of the history, geology, mineralization,, and our location in this known mining district we regard our properties as a worthwhile consideration of a reputable mining company with sufficient capital to properly develop the potential into a substantial and prosperous mine. We have proceeded in a cautious manner and with a sense of reality toward prospecting the property and we can heartily recommend it as a worthwhile project to those interested.

We recommend, that the property be developed and mined on a progressive basis, or, that it be properly core-drilled to a depth whereby valuable copper deposits may be encountered. This latter assumption is based on the fact that stringers and showings of oxidized copper have been evident in our shafts and tunnels, the nearby Ajax copper mine, and the well known Magma properties to the north.

We invite your serious consideration subject to approval. Deals may be made through direct sale or by Bond and Lease withresponsible companys or individuals. We invite your inquiries.

Respectfully Submitted

O. L. Dawson, President.
Mineral Mountain M & M Co.

NUMBER	MARK	PER TON OF 2000 LBS.				COPPER	LEAD	ZINC
		GOLD		SILVER				
		OUNCES	VALUE	OUNCES	VALUE	PER CENT	PER CENT	PER CENT
	CONTROL ASSAY							
364022	"Lot 55--SP. 151137"	-	-	5.45	$4.93		18.90%	3.65%

For Mineral Mountain Mining and Milling Co.
% O.L.Dawson
P. O. Box 6. Hesperia, Calif. 92345.

Respectfully submitted,

ASSAYERS AND METALLURGISTS

NUMBER	MARK	PER TON OF 2000 LBS.				COPPER	LEAD	ZINC
		GOLD		SILVER				
		OUNCES	VALUE	OUNCES	VALUE	PER CENT	PER CENT	PER CENT
362652	"Higrade from Winze"	-	-	3.10	$2.81		23.70%	4.10

For Mineral Mountain Mining and Milling Company.
P. O. Box 6, Hesperia, California. 92345.

Respectfully submitted,

ASSAYERS AND METALLURGISTS

608

AMERICAN SMELTING AND REFINING COMPANY

EL PASO SMELTING WORKS

Car sold on final shipment 1-14-58

BOUGHT OF Mineral Mtn. Mg. & Mill. Co.
ADDRESS P. O. Box 1026 Florence Jct., Arizona
SHIPPING POINT Price, Arizona
NAME OF MINE Woodpecker Group

EL PASO, TEXAS 1-20 1958
SMELTER LOT 55
SHIPPERS LOT
CLASSIFICATION Ore

RATES, EXCEPT ON CONTRACTS, SUBJECT TO CHANGE WITHOUT NOTICE

Mix	Arrival Date	Car Number	Car RR	Gross Weight	Containers No.	Containers Weight	Wet Weight	% H2O	Dry Weight
	1/6	151137	SP				92180	2.0	90336

QUOTATIONS

Coinage Silver	90.0	¢ per oz.
Foreign "	83.25	¢ per oz.
Lead $	14.583	per cwt.
Copper		¢ per lb.

B/L Date: 1/8

Assays	Oz. per Ton Gold	Oz. per Ton Silver	Wet Lead %	Copper %	Insol %	SiO2 %	Iron %	Mn %	Lime %	Zinc %	S %	Al2O3 %	As %	Sb %	Bi %	%
Smelter	0.005	5.2	18.5	0.10						3.7					0	
Shipper	.02	5.6	19.0	.16						3.8						
Umpire																
Metallics																
Settle		5.4	18.75													

Values Per Ton

	Pay Content	Price	Amount	Freight (Fixed)
Gold				
Silver, Less % Min. 1 oz.	4.4	.885	3.89	3.89
Lead Less 30% 90%	310.5	.12583	39.07	15.53
Copper, Less @ %				
Gross Value			42.96	19.42
Less Deductions (Net Charge)			6.89	6.89
Freight Value		x x x	12.53	= 12.53 Wet Ton
Net Value			35.07	@ 45.168 Dry Tons 7.31

Deductions	Charge	Credit
Base, Incl. Labor Adj.	5.50	
Excess Value Over $ 10 ¢ per unit Pb + — 30 %	1.28	
Lead—Copper Price Escalator		
Bullion Freight Tax .00035	.11	
Insol—Silica		
Iron—Lime		
Zinc		
As: Sb: Bi:		
Net Charge	6.89	—

		Debits	Credits
Less Freight: 46.09	Wet Tons @ 4.60 + 15% P.T. 243.81		1629.21
Less Switching	4.62 + .14	251.12	
Less Hauling		4.76	
Less Representation $ 7.50	Umpire $ Sampling	7.50	
Amount Withheld Pending Receipt of Silver Affidavit		13.10	
Less Royalty			
Balance Due Shipper		1352.73	
		1629.21	1629.21

45.168 TONS DRY WEIGHT approx 29.95 per ton

Checked Correct Approved

THE COLORADO ASSAYING COMPANY

ASSAYERS AND CHEMISTS

[illegible] WELTON STREET

DENVER, COLO. Sept. 22, 19[illegible]

Report of Complete Analysis [illegible] L. Benson, Los Angeles, California

OXIDES BASIS	PERCENTAGES
Carbon Dioxide & Combined Water	1.45
Silica	46.76
Aluminum Oxide	1.52
Iron Oxide	6.50
Calcium Oxide	7.75
Magnesium Oxide	10.63
Lead	13.40
Zinc	3.70
Oxygen (with [illegible] of lead & zinc)	1.20
Sulphur	0.13
Copper	.05
Manganese Oxide	.85
Sodium & Potassium Oxides	.60
Barium Sulphate	.05
	99.86

Gold Trace.
Silver 1.20 ounces per ton @ [illegible] per ounce = $[illegible] per ton.
Lead 13.4% at [illegible] per unit = $[illegible] per ton.
Zinc 3.7% at [illegible] per unit = $[illegible] per ton.
Uranium, Fluorine, Vanadium, Phosphorus, Antimony = None.
Platinum and Platinum Group Metals = None.

REMARKS: The heavy [illegible] in this sample is [illegible] (lead [illegible])
[illegible]
The metallic [illegible] (lead and sulphur)
The [illegible]
(silica). [illegible]
[illegible]
[illegible]
[illegible]

[illegible]

THE COLORADO ASSAYING COMPANY

By [signature]

THE COLORADO ASSAYING COMPANY.

(Complete Analysis)

Original On File

ELEMENTS PRESENT	PERCENTAGES.
Carbon Dioxide & Combined Water	8.45
Silica	46.76
Aluminum Oxide	1.59
Iron Oxide	6.50
Calcium Oxide	7.75
Magnesium Oxide	00.68
Lead	19.40
Zinc	3.70
Oxygen (with part of Lead & Zinc)	1.99
Sulphur	1.19
Copper	.05
Manganese Oxide	.95
Sodium & Potassium Oxides	.80
Barium Sulphate	.05
	99.86

Gold --trace.
Silver- 12.20 ounces per ton at 90¢ per ounce
- $10.98 per ton.
Lead--19.4 % at $2.60 per unit--$50.44 per ton.
Zinc-- 3.7 % at $1.60 per unit--$ 5.92 per ton.
Titanium, Fluoride, Cadium, Phosphorus, Antimony - traces.
Platium and Platium Group Metals - none.

****

REMARKS: The heavy white to gray mineral in this sample is Cerussite (lead Carbonate) containing some zinc carbonate. The metallic steel gray crystals are galena (lead and sulphur.) The rock material, or gangue, is chiefly hard white to lavender quartz(silica). The lavender is called Amethyst. The brown to re mineral is Hematite (iron oxide). Some soft white Limestone (calcium Carbonate) is present. This ore is valuable for its Silver and Lead contents.

Respectfully submitted,

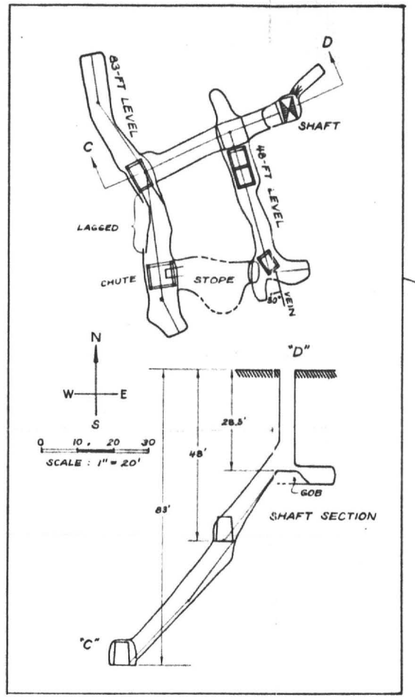
The Colorado Assaying Company.

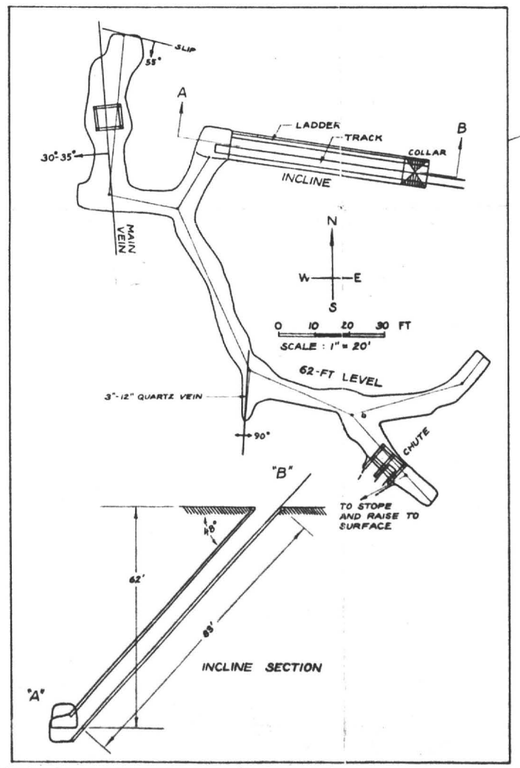
By Edmund Phillips.

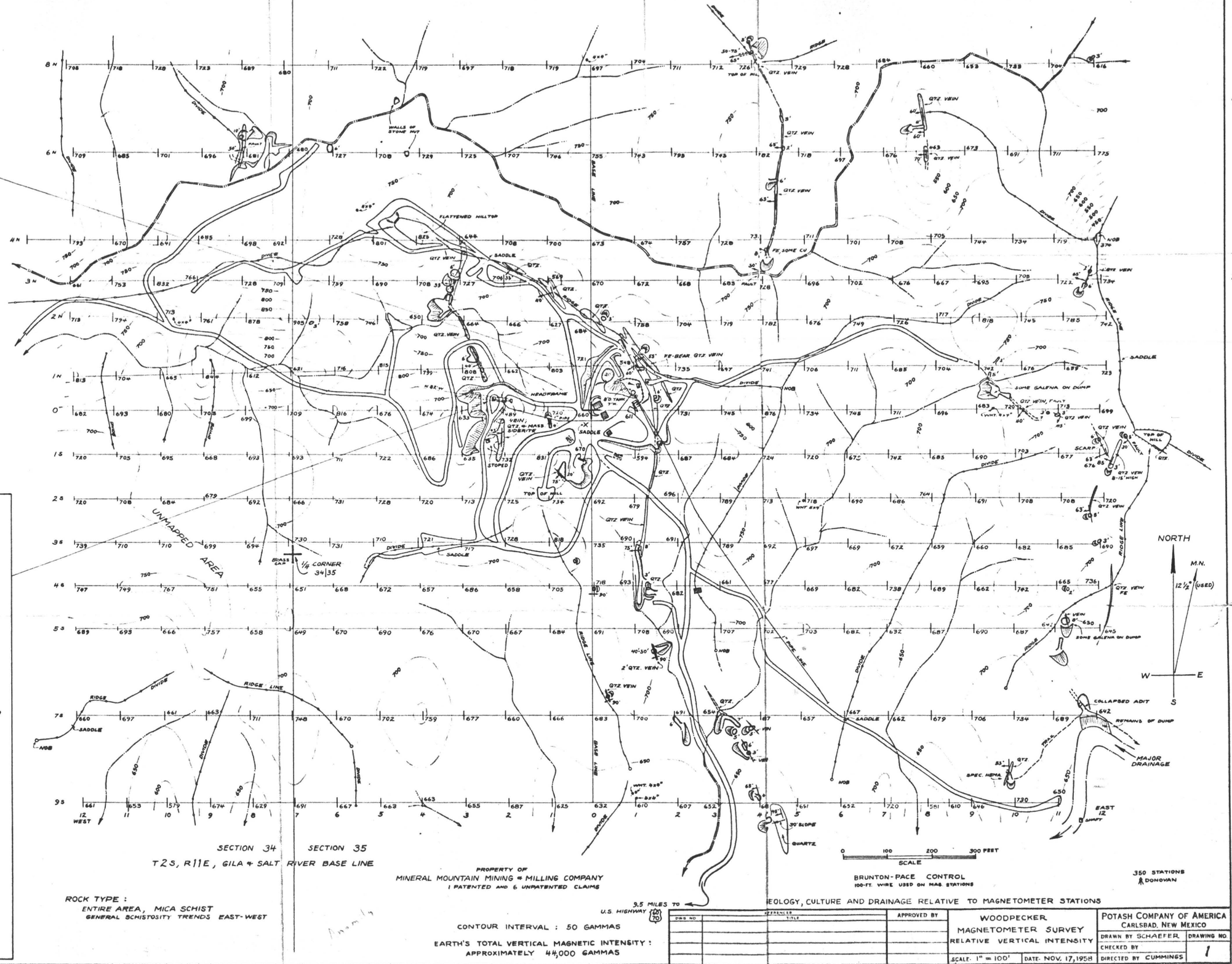
P.S. The attached sheet did not produce as it was taken from the original which is black paper with white ink (apparently). Therefore I have copied the Elements and percentages with the other pertinent data so you can read it.

O F Dawson

#2







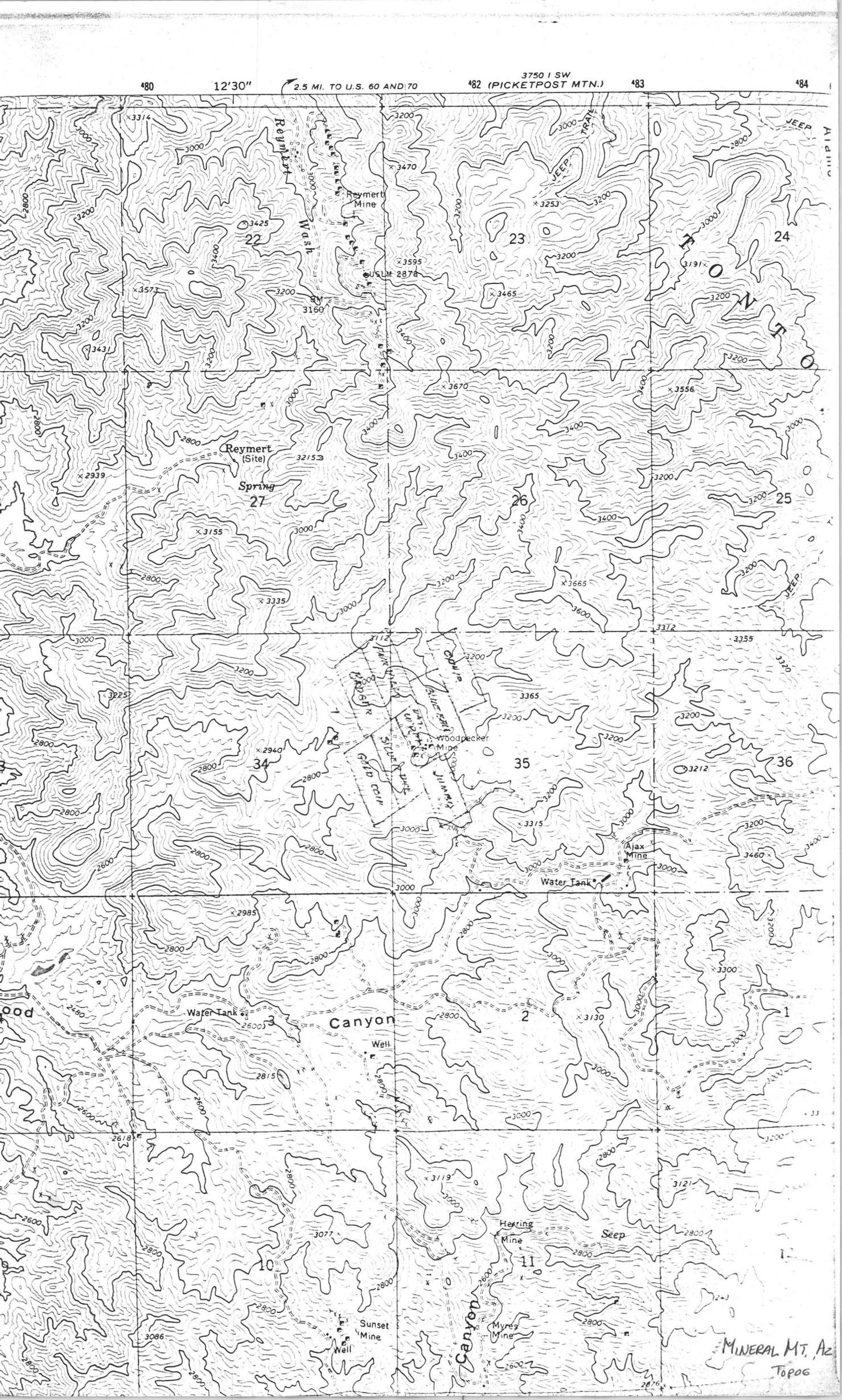
DWG NO.	REFERENCE / TITLE	APPROVED BY

WOODPECKER
MAGNETOMETER SURVEY
RELATIVE VERTICAL INTENSITY

SCALE: 1" = 100' | DATE: NOV. 17, 1958

POTASH COMPANY OF AMERICA
CARLSBAD, NEW MEXICO

DRAWN BY SCHAEFER | DRAWING NO. 1
CHECKED BY
DIRECTED BY CUMMINGS



MINERAL MT, AZ
TOPOG

Advance sheet
Subject to correction

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

MINERAL MTN. QUADRANGLE
ARIZONA–PINAL CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

3750 I SE (SUPERIOR)

111°15′ — 111°07′30″ — 33°15′ — 33°07′30″

477000m E. — 478 — 479 — 480 — 12′30″ — 481 — 482 — 483 — 484 — 485 — 486 — 487 — 488

2.5 MI. TO U.S. 60 AND 70 — 3750 I SW (PICKETPOST MTN.) — R. 11 E. 10′ — R. 12 E. — SUPERIOR 5.1 MI. — 740 000 FEET

3678000m N. — 3677 — 3676 — 3675 — 12′30″ — T. 2 S. — T. 3 S. — 3674 — 3673 — 3672 — 3671 — 3670 — 10′ — 3669 — 3668 — 3667 — 780 000 FEET — 3666000m N.

810 000 FEET

FLORENCE 17 MI.

FLORENCE 15 MI.

(NORTH BUTTE) 3750 II SW

(TEAPOT MTN.) 3750 I NE

(GRAYBACK) 3750 II SE

Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography by photogrammetric methods from aerial photographs taken 1962. Field checked 1964

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

GN MN 0°06′ 2 MILS 14° 249 MILS

UTM GRID AND 1964 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

CONTOUR INTERVAL 40 FEET
DATUM IS MEAN SEA LEVEL

SCALE 1:24 000

ARIZONA
QUADRANGLE LOCATION

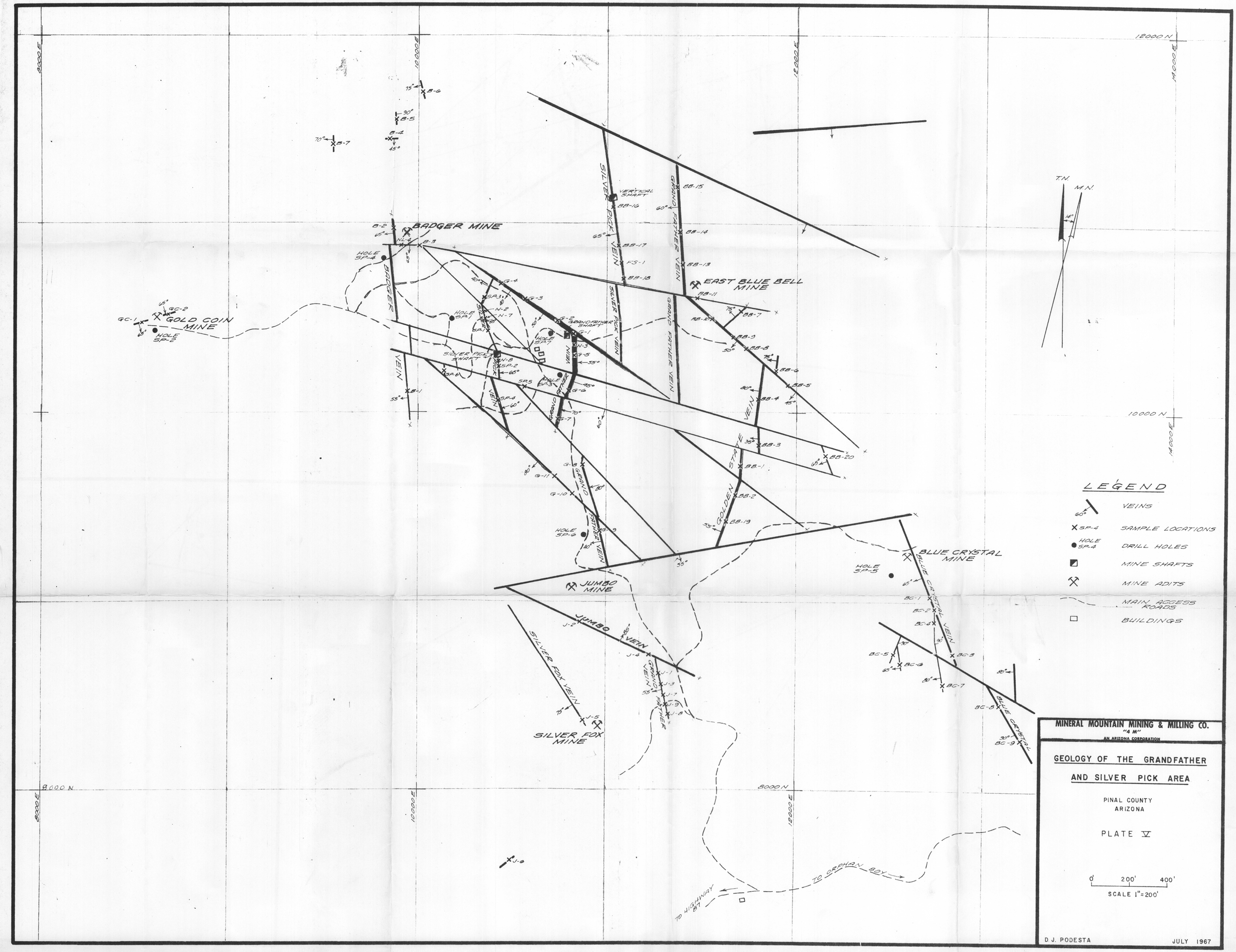
ROAD CLASSIFICATION
Unimproved dirt

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER 25, COLORADO OR WASHINGTON 25, D. C.
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.—1965

MINERAL MTN., ARIZ.
N3307.5—W11107.5/7.5
1964
AMS 3750 II NW—SERIES V898

Mineral Mtn., Arizona
Ray Project



MINERAL MOUNTAIN MINING & MILLING CO.
"4 M"
AN ARIZONA CORPORATION

GEOLOGY OF THE GRANDFATHER AND SILVER PICK AREA

PINAL COUNTY
ARIZONA

PLATE V

0' 200' 400'
SCALE 1"=200'

D. J. PODESTA — JULY 1967