

Albuquerque, N. M.
November 8, 1944.

Mr. Vernon F. Foy
Box 378
Albuquerque, N. M.

Dear Mr. Foy:

On Saturday, November 4, 1944 in your company, I made a further examination of your Buckeye Mine on Water Canyon creek some 20 miles West of Socorro, N. M. with gratifying results.

We, were able to creep over and through the debris 80 feet down the slope after only slight labor. There was about 20 feet more of debris, but we could crawl over to the second level with drifts both to the right and left. Approximately 100 feet from the mouth of the slope we were on the floor of the drift and not more than four feet above water level.

The drift on the right extended 100 feet in Northwest direction along the mineralized zone that had been followed downward by the slope. The drift shows plainly where little pockets of ore had been gouged out above our heads. Below on the hanging wall side in four places were openings, which had been worked up from below. We were evidently right at the top of the zone of secondary enrichment so we could not expect to find copper ore above us, but most certainly would find pay ore below, if it were not already worked out.

I have just completed a report on this property, and the following excerpts bring up to date all that I have learned about this property.

I have made my estimate of expenditures plenty high to allow for any unknown contingencies. It might be possible to buy the machinery on payments to cut down on the immediate cash requirements. It may not take as long to pump out the water as I have calculated and it may be possible to find some ore which may be mined and shipped before de-watering is completed.

In closing, this property looks more favorable than any other I have examined in New Mexico. While the size of the ore body is unknown, and so is the amount that has been extracted, yet it gives investors a good run for their money with a far better than ordinary chance of a profit.

Respectfully submitted

Thomas Edwin Smith, E. M.

300 ft shaft

Sketch Map of
Buckeye Mine
Vertical Section

60 ft. shaft

Drift

debris

car
debris

Drift right and left

Water level

stope

Horizontal projection
300 ft. shaft

Buckeye Mine
Horizontal Plan
Scale: 1 inch to 40 feet
Sketched by

J. E. Smith
Nov 4 1944

Steve vein

Phil vein

Foy vein

Opening from stope
below

Sample no. 1

Sample No 2

slope

Filled

EXISTING DEVELOPMENT

Buckeye Mine-Silver Mountain Mining District.

Socorro County, New Mexico.

The development consists of a slope or incline shaft driven along a mineralized fissure nearly Southwest at an angle of 45 degrees. A vertical shaft sunk through tilted Lake Valley Limestone to intersect the slope just above permanent water level. This shaft is not timbered, but it is in good shape.

A vertical shaft about 400 feet South of the slope mouth, said to be 300 feet deep.

A number of drifts, which three are above permanent water level and show some 300 feet of lateral work.

The slope is open for about 100 feet, although debris washed and fallen in, has partially filled it for about 400 feet above water level. It is not timbered, but has not caved anywhere. I suspect the debris in the lower part is mostly waste material used as ballast between and under the slope track.

About 30 feet from the surface, there is a drift about 45 feet long to the right which prospects the leached upper portion of the vein. Four samples have been taken in this drift all of which show values in gold and silver, but not enough to pay. The ore has been thoroughly leached, nothing but a few hard layers with abundant honey comb and soft iron stained filling was left.

Sample (1) Was a cross section of 30 inches taken about 15 feet West of the slope. It assayed as follows:
Au, trace, Ag, 1.5oz. Copper was not determined, as there was nothing in the appearance to indicate copper.

Sample (2)

Continued, 2

Was taken about 30 feet from the slope and 15 feet from the dead end of the drift. A channel was cut across a three foot thickness of vein material. The sample assayed as follows:

Au, 0.04oz, Ag, 3.6oz,. These two samples were too low to warrant further attention.

Two other samples had been taken in this drift in October 1943 by Mr. Foy, which assayed as follows:

Sample (60) First drift 15 feet to the right of slope.

Au, 0.03oz, Ag, 10.8oz, Cu, 2.2%.

Sample (61) First drift right near portal assayed as follows:

Au, 0.02oz, Ag, 2.20oz, copper not run.

These assays show a slight enrichment of gold and silver, a diminution of copper as would be expected from the geological position of the drift with respect to the leached upper portion of the vein.

One hundred feet down there is a drift on the mineralized vein to the right about 100 feet long, with one short prong into the hanging wall. This drift is about 4 feet above the water level and at four places there are openings coming up through the water on veins whose upward extensions can be seen." (The sketched map attached shows the approximate positions of the openings and three of the veins.)

75 feet from the slope a short drift to the left crosscuts the fissure along a sheer zone that may be due to faulting. There is ore along this drift, which was sampled as shown by the map where the upward extensions of ore bodies occur on this level. They were assayed at the School of Mines by Mr. A. D. Hahn. As follows:

Sample, (1) Steve vein

A sample of ore picked up by Mr. Foy in October 1943 in this same drift was assayed. %

Assayed as follows: (62) Au, trace, Ag, 3.6oz, Cu, 10.7

This is pay rock worth, at the present time without any premium but allowing for all deductions, freight, haulage, and smelting charges at about, \$16.00 per ton. It was mined probably below present water level long ago and was carried up by the miners, when the mine was working.

About 400 feet Southwest of the slope mouth is a vertical shaft said to be 300 feet deep. I dropped rocks down this shaft and estimated that 5 seconds before I heard a splash of water evidently the shaft is open for more than 200 feet.

In Laskey's report, Ore Deposits of Socorro County, New Mexico Page 52, is this statement. Some additional work was done in the vertical shaft in 1917, but no real progress was made. A letter from American Smelting & Refining Co., at El Paso, Texas, gives data on two cars of ore shipped in 1917 By William Kemp. As Follows:

Gold	Silver	Copper	Insol	Silica	IM	Lime	Zinc
0.0	1.10oz	3.8%	11.2%	7.6%	27.0%	13.4%	0.1%
0.03oz	4.0oz	10.6%	33.2%	31.0%	25.4%	1.1%	0.1%

*also 0.35,
which means
more!*

Putting these together it shows that Mr. Kemp shipped pay ore from the bottom of the vertical shaft for he held the property under lease and option in 1917, and is reported to have ^{worked} the vertical shaft. The large dump near the vertical shaft is wholly broken limestone, but a smaller dump is almost wholly iron-stained vein material. The shaft would be about 100 feet ^{Southwest?} Northwest of the projected downward extension of the slope. It seems probable that the ore extends farther away from the slope as it goes downward.

On the flat ground near the slope mouth is a pile of ore, which I was told, had been thrown aside while ore was being sorted for hauling to the Socorro smelter forty years ago. It is quartz-pyrite about one half, primary, and one half secondary. It shows abundant copper. Professor Hahn in my presence took a grab sample from this pile which assayed.

As follows: Au, 0.06oz, Ag, 6.32oz, Cu, 4.6%.

I picked a sample from the same pile trying to select from this pile shipping ore. Which assayed.

As follows: Au, 0.01oz, Ag, 5.73oz, Cu, 10.9%.

From all assays here given three are remarkably similar and probably are from the vein below water level.

They are: The second car shipped by Mr. Kemp, probably from the bottom of the 300 foot shaft.

The hand picked samples I collected from the pile of ore above the ground and the fragment picked up by Mr. Foy on the second drift to the right of the slope. It is impossible to secure samples of the secondary enrichment of copper ore below water level. These three are probably representative of what we would find after the mine is pumped out.

Milner Hotel Albuquerque

November 9 1949

Mr. W. D. McMillan
Supervisor Engineer
U. S. Bureau of Mines,
Silver City, New Mexico

Dear Sir:-

Mr. Foy has asked me to append a short statement to his letter.

I have visited the Buckeye mine three or four times. I have taken several samples for assay, made a sketch map of the workings and have given some attention to the geology of the area.

There is one deposit of shipping copper ore in the Pierce stope as shown on the enclosed sketch map. Six samples when assayed and averaged show ore worth \$25.35 net at the mine mouth when calculated according to schedule 'C' of the El Paso Smelter. Several tons are available as soon as the incline is cleaned out and a track laid to its bottom. Mining in that stope might produce more than a carload of ore.

Other paying copper ore was found at the intersection of three veins as shown by numbers 10, 11, 12, and 13 on the map. The ore goes down below water level so the quantity remaining is unknown.

In the 35 ft. level pay ore was found in two places and No. 7 was not assayed for copper. The drift shows promise. Directly down the pitch of the fault and on a small raise from the 85 ft. level, pay ore was found at the top where marked Y-120 also marked as NO. 17. I suspect these two occurrences are part of the same ore body.

There is a vein not less than two feet wide in both ends of the vertical shaft at the foot of the incline. It looks good but it can be sampled only when hanging on a rope so I can not make any estimate of its value.

When cleaning out a filled portion of the furthest S.E. drift, Mr. Foy knocked pieces off five heavy, red rocks with some fine Covellite crystals. They assayed 15.95 in copper. Some of the pieces were kept to aid in hand

sorting the ore when hoisted.

In that same drift a short portion of an 14 " vein of sulphide ore was exposed at the bottom left hand. Neither bottom or end of the body is uncovered. It has been up-faulted apparently by Berliners "B" Fault.

All these ore bodies are ^{above} ~~at~~ water level. All but the last one are ~~great~~ greatly altered. Sooty Chalcocite characterizes most of it. I believe the old time miners considered the black material to be manganese and so ignored it. Only fragments of sulphide ore are found on this level.

At present, water stands about three feet below the level. Workings can be seen going down into the water at five places marked 'W' on the map. All of them are along the two fault planes designated 'A' and 'C' by Berliner. No workings go downward along his fault ? 'B'

Sulphide ore carrying 10.9 % Copper has been found on the dump on the surface about 75 ft north of the slope entrance as marked on the map at "9". About ten tons of such sulphide ore showing only minor alteration, is in the two piles. I judge this ~~ore~~ ^{also} came from below the present water level.

I ~~also~~ ^{also} judge that bodies of interfingered sulphide and oxidised ore will be found below the workings as mapped.

Sulphide ore will probably be found on the south side of Fault 'B' in the Kelly limestone lying below the shaley rocks exposed. The ore horizon should not be deeper than 25 ft. below the present floor of the drift.

On the north side of Fault ~~BY/XY~~ "C" and perhaps 30' above the S.E. drift, ore bodies are are probable in the Kelly limestone in two horizons. The narrow sulphide vein marked "34" may lead upward to an ore body. This same vein followed 30 ft. south became an altered body of secondary copper and was followed downward below water level.

If Fault "C" has been offset to the south near the foot of the incline, the cross fault(?) is worthy of exploration.

The rock measures are all dipping south east with the Kelly lime resting

on Pre Cambrian Schist. Ore bodies along the contact are likely all the way down ~~the contact~~ to the source of mineralization. Where that will be I do not know. No exposures of granitic intrusions are close to the mine.

From the fault pattern I judge the igneous intrusion will be found to the northeast. Doming there has caused the brittle rocks about the mine to break in diamond shaped blocks. Under similar conditions a thick bed of limestone would have arched over instead of breaking. Of course a conclusion based upon observations of only three major faults and half a dozen minor ones may be erroneous.

Any way, in this mine there are deposits of ore of shipping grade in three separate places. There are favorable prospecting places all around the area now opened up. Development awaits expenditure of relatively small amounts of money, equipment and labor. Specifically as follows;—

Installation of a hoist, engine, cable and cars at the slope mouth.

Cleaning of the incline and laying of a track down to the 85' level.

Estimated cost of above \$600.

Laying track in level and cleaning out three gobbled areas \$200

Unwatering lower level. Extending slope, laying track. Cost (?)

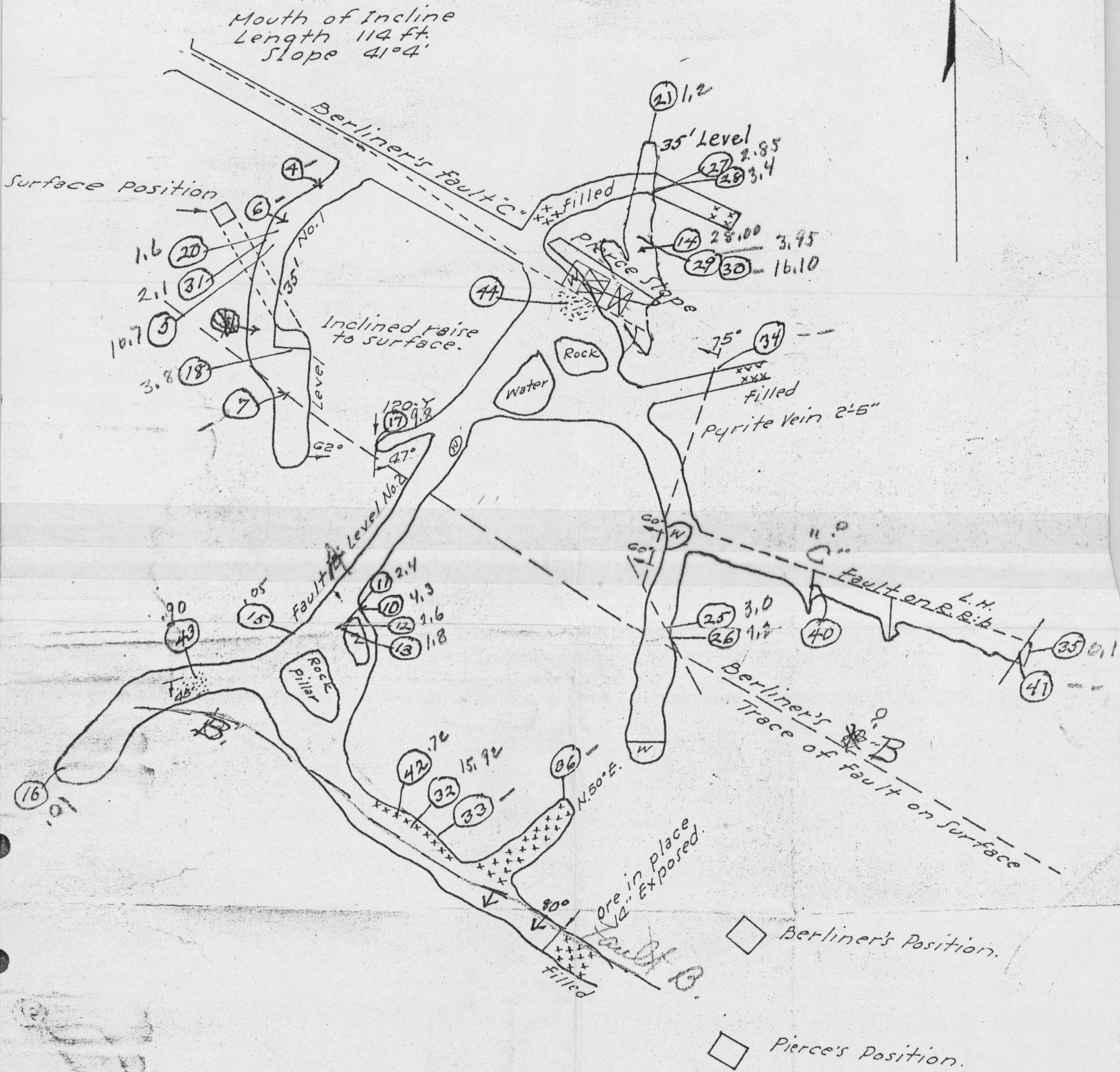
This is the most favorable mining project not now in operation of which I have definite knowledge. I recommend its development.

Respectfully, submitted.

Thomas Edwin Smith

Thomas Edwin Smith

Assay Sheet
Sketch map
Letter from Mr. Foy



Assay Map - Nov. 12, 1949. T.E.S.

SKETCH MAP
 OF
 BUCKEYE MINE WORKINGS
 NEAR
 SOCORRO, NEW MEXICO
 MAPPED, OCT. 22, 1949
 BY
 THOMAS Edwin Smith
 SCALE 1" = 20'