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ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: STEPPE MINE

ALTERNATE NAMES:
LITTLE MARY

PIMA COUNTY MILS NUMBER: 85

LOCATION: TOWNSHIP 16 S RANGE 4 E SECTION 23 QUARTER SW
LATITUDE: N 32DEG 00MIN 58SEC LONGITUDE: W 111DEG 54MIN 46SEC
TOPO MAP NAME: COMOBABI - 15 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:
GOLD LODE
SILVER
LEAD
COPPER
ZINC
BARIUM BARITE

BIBLIOGRAPHY:
S.B. KEITH, AZBM BULL. 189, P. 111, 1974
E.A. ELEVATORSKI, 1978, ARIZ INDUSTRIAL MINERALS, P. 49
ADMMR STEPPE MINE FILE

T16S, R4E

STEPP MINE

PIMA COUNTY

Economic Geology, Nov. 1963
Vol 58 No. 7 p. 1119

The Mineralogy of the Mildren and
Steppe Mining Districts - Pima County,
Arizona (1963) Thesis
by Sidney Arthur Williams

*

Walter Rogers of Wenden and Eugene Albright of Yarnell are preparing to drift on the 100-foot level north from the White Elephant shaft toward the intersection of the Stepp vein, perhaps 200 to 250 feet. The Stepp property is located in the Comobabi district of the Papago Indian Reservation in Pima County. Equipment includes a new 25cfm portable compressor, 5Kva diesel generator, 25hp single-drum gasoline hoist and an A.C. dozer. Three men are employed. Pay Dirt 4-26-71

Arthur J. Stepp, Sr., of Phoenix, died May 25th in Doctors Hospital. He was the founder of the Stepp mine, near Sells, and a long-time member of the Arizona Small Mine Operators Association. Mr. Stepp, 74, was born in Roswell, New Mexico, came to Winkelman in 1911 and moved to Phoenix in 1925 after having spent 10 years in Sells. He retired as a produce hauler in 1960.
PayDirt 6-28-71

Walter Rogers of Wenden and Carl Dotson of Socorro, New Mexico have leased three fluorspar deposits from Gene Kruger, Dan Williams and Andy Johannsen, all of Yuma. They are the Snowball, Princess Ann and Gunsight properties. The operators are planning to build a mill and at last report were investigating the water supply.

Pay Dirt
5/24/72

*

STEPP MINE PIMA CO.

GI WR 5/24/79 - Ray Wallace has visited the Stepp Mine near Sells on the Papago Reservation and there is no signs of activity. 6/20/79 a.p.

MG WR 8/12/83: Visited the Steppe Mine in Pima County. Although there is no current activity on the property, it appears that substantial repair was done in 1981 to the eastern shaft. The collar, headframe and two-compartment shaft are in excellent condition. Water stands in the vertical shaft at about 80 feet below the collar. The west shaft is in poor condition; it appears the latest attempt at production (5 to 10 years ago?) was to crush the ore and leach it. There is a hoist, ball mill, and compressor on this (west) property. BLM records indicate no valid claims on the Steppe property, suggesting that the property is now controlled by the Papago Indians.

STEPP MINE PIMA COUNTY

Mr. Joe Sestak at Standard Station in Sells said that two men were working at the Stepp mine, 6 miles NNW of Sells.
GWI WR 8-23-65

According to William Coplan, the sub-lessees at the Stepp were not working except when they could raise a little money for development. They previously had made a small lead-silver shipment. The sub-lessees are "Spike" & R. L. Hardy of Chandler and the lessee is Leland M. Wiscombe of Scottsdale.
LAS 12-7-65

Made several inquiries in Indian villages as to the whereabouts of the Stepp mine where Messrs. Walter Rogers of Wenden and Eugene Albright of Yarnell are preparing to drift on the 100 ft. level north from the White Elephant shaft toward the intersection of the Stepp vein, perhaps 200-250 ft. Presently three men are employed with a new 250 cfm portable compressor, 5 Kva diesel generator, 25-30 HP single-drum gasoline hoist and an A.C. dozer. GW WR 3-15-71

Went to the Stepp mine where Walter Rogers has 5 men doing mostly surface prospecting of the Chicago vein. The underground work on the 80 level of the Chicago shaft revealed the 6 ft. quartz vein has become a 2 ft. streak of hematitic gouge. Mr. Rogers says he will core a couple of holes into this vein some 300-500 ft. north of the shaft.
GW WR 4-30-71

The old Stepp mine 6 miles north of Sells is being opened by Walter Rogers and associates. Mr. Rogers said they are going to drive a drift northeast from the White Elephant vertical shaft on the 100 level to an intersection with the Stepp vein, a distance of perhaps 250'. A few truckloads have been shipped from a surface excavation on the 8 ft. White Elephant vein which indicated it contains about $35 per ton in copper and silver. GW QR 4-8-71

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* Romed, Inc., Walter Rogers, president, stopped work at the Stepp Mine from which they hauled several tons of silicious Cu-Au-Ag ore to the Inspiration smelter in Miami. They then moved to the Ventana copper property 23 miles southeast of Sells and began trenching several copper quartz outcrops. GW QR 9/71

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine	Stepp Mine	Date	September 5, 1961
District	Combabi District - Pima County	Engineer	Lewis A. Smith
Subject:	Interview with Withers		

Mr. Withers stated that his partner and he had dropped their lease on the Stepp mine after the development work proved unsatisfactory. Local iron stained areas were encountered. These contained veinlets and pods of bornite but were spotty and low grade.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine	Stepp Mine	Date	Oct. 5, 1965
District	Comobabi District - Pima County	Engineer	Lewis A. Smith
Subject:	Visit there and conference with Wm. Coplen, Quijotoa, Mrs. Leland Wiscombe Scottsdale		

Owner: Arthur Stepp, 716 E. Culver, Phoenix (Now having eye operation in California)

Lessee: Leland M. Wiscombe, 4925 E. Flower, Scottsdale

Sub-Lessee: "Spike" and R. L. Hardy, Chandler. (Williams Field Road 963-5726)

Work: So far little other than annual work has been done.

Plans: According to Mrs. Wiscombe, they plan to do some underground exploration.

According to Coplen a small shipment was made recently. Three men are working here.

*

Inter-Company Correspondence

SHATTUCK DENN MINING CORPORATION

and

SUBSIDIARIES

Engineering/Geology Office

Date March 1, 1963

TO: D. M. Kentro

SUBJECT: Little Mary Group near Sells, Arizona. Stepp brothers property

General

On February 20-21, 1963, I examined the Little Mary Group of claims in T 16 S, R 4 E, Pima County, Arizona. This property is in the Cababi (Comobabi) Mining District near the western edge of the South Comobabi Mountains on the Papago Indian Reservation near Sells, Arizona. On the Comobabi, Arizona, 15 minute quadrangle, 1937, this property is the Steppe (sic) Mine.

During the examination I was accompanied by Messrs. Cline and Arthur Stepp, brothers, who reside at 716 East Moreland, Phoenix 6, Arizona.

The Little Mary Group consists of 15 unpatented contiguous claims originally located in 1917 by William Stepp, a third brother, now deceased.

History & Production

In 1920, the Little Mary Group was examined by Phelps Dodge Corporation. In 1923, the property was sold to Carl Erickson for $125,000--ownership reverted to the Stepp family after $43,000 was paid. Erickson called the property the Como Pima Mining Company--he sank the Chicago Shaft to 315 feet and cross cut 450 feet at the bottom level. In 1942, Miami Copper looked at the property, but it was "too small." In 1945, the property was leased to a Mr. Mercer from whom Charlie Drumond bought the lease and "never did anything about it."

Available smelter redeipts (June through December 1917) indicates 43.7 tons of approximately 0.37 oz. Au, 22.78 oz. Ag, 32.88 % Pb, and 7.56 % Cu/ton was shipped by W. H. Stepp to Selby, California. Smelter receipts (April 1918 through January 1925) show 224 tons of approximately 0.44 oz. Au, 19.66 oz. Ag, 33.04 % Pb, and 8.27 % Cu/ton was shipped by W. H. Stepp to El Paso, Texas.

Geology & Development

The main rock type in the area is Cretaceous andesite. Locally quartz veins have been emplaced along fractures and faults in the andesite. A quartz vein, about 2-3 feet wide, on the Little Mary claim carries variable amounts of chalcopyrite, chalcocite, galena, sphalerite, gold, and silver. The vein strikes northwest and dips 68 degrees north. An inclined shaft (Chicago) has been sunk in the vein to 315 feet. At the 66 foot level there

is 260 feet of drifting along the vein and a 50 foot cross cut to the southwest (see attached sketch). The vein is pinching at both ends of this drift. Water stands in the shaft about 5 feet below the 66 foot level.

On the assumption the vein had decreased in dip and flattened a 450 foot cross cut to the northeast was driven on the 315 foot level--the vein was not encountered in this cross cut. The Stepp brothers reported all development below the 66 foot level to be in barren andesite. Apparently the vein pinches out a short distance below the 66 foot level.

Most of the vein from the 66 foot level to the surface has been stoped--what little mineralization is left in the mine, to observe, consists of small pods of galena-sphalerite-chalcopyrite. The Stepp brothers were cooperative during this examination and emphasized all shipments of ore from the property were carefully hand sorted--thus the high grade smelter receipts.

Sampling & Mapping

The 66 foot level in the Chicago Shaft was mapped during the examination and eight samples were cut from the vein.

Because the unstoped part of the vein was essentially barren most of the samples were cut at points where sulphides remained--therefore, some of the relatively high assay results can be misleading. Actually the remaining part of the vein is quite barren of sulphides.

The below listed assays are also posted on the attached sketch.

	Width	Au	Ag	Pb	Zn	Cu
# 5165	1.4'	0.12	1.7	2.8	0.8	1.35
# 5166	1.5'	0.05	0.8	4.4	1.1	0.49
# 5167	2.0'	0.08	3.1	11.9	0.1	0.68
# 5168	1.5'	0.04	1.1	11.6	1.3	0.96
# 5169	2.0'	0.20	1.2	2.7	1.2	0.39
# 5170	2.6'	0.06	3.1	10.1	2.6	1.38
# 5171	2.0'	tr	tr	0.1	nil	0.07
# 5172	2.0'	0.10	10.8	5.2	0.3	3.84

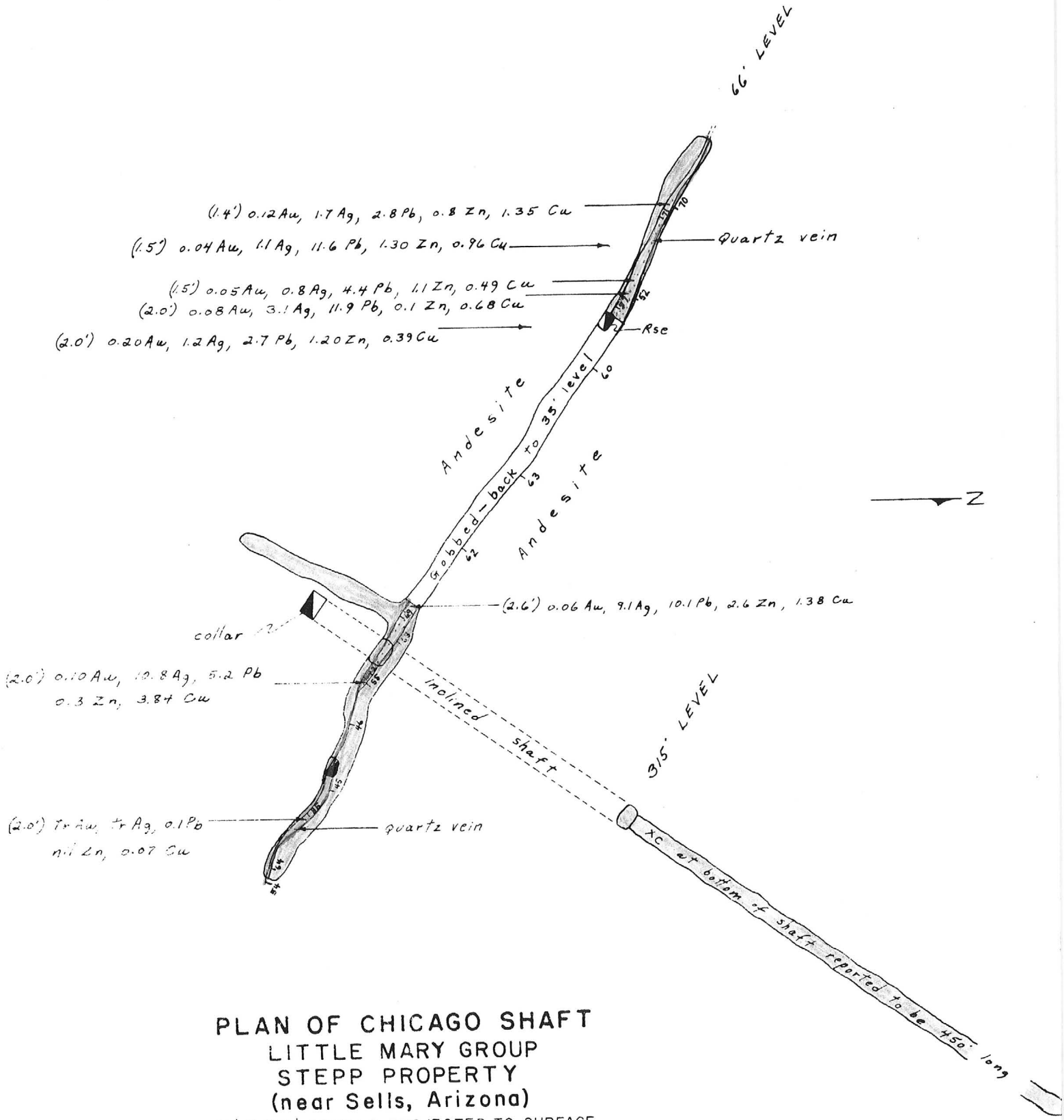
Conclusions & Recommendations

The ore body at the Chicago Shaft was relatively small (approximately 60' X 150' X 3') and has been mined out.

It is recommended our company show no further interest in this property.

Robert G. Raabe
Geologist

cc: Jack Pierce



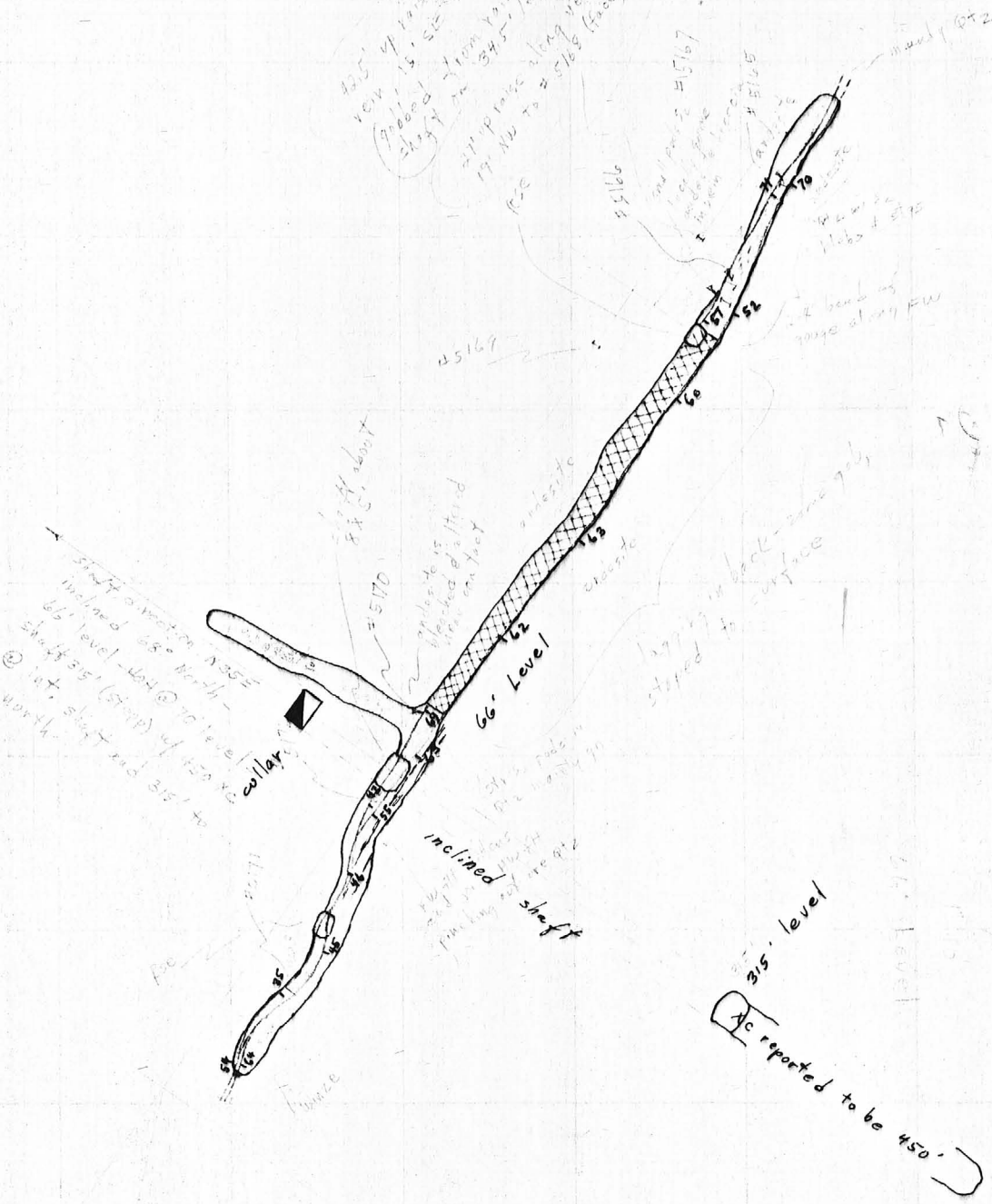
PLAN OF CHICAGO SHAFT
LITTLE MARY GROUP
STEPP PROPERTY
(near Sells, Arizona)

66' & 315' LEVELS PROJECTED TO SURFACE

BRUNTON & TAPE
1" = 40'

FEB. 1963

R. E. B.


collar
66' Level
inclined shaft
315' level
XC reported to be 450'

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Stepp Mine Date January 10, 1961

District Comobabi District, Pima County Engineer Lewis A. Smith

Subject: Interview with C. A. Withers in Ajo.

After a mine visit in July, 1960, it was suggested that Withers continue the drift to the west from where he was in the hope of finding a faulted projection of the west vein. This vein appeared to be faulted up as an offset on the under side of a 32° fault (Dip NE). The vein was mined down to the flat fault and lost. The drag on the flat fault plane contains some quartz-lead ore up slope from the bottom of the old stopes. Withers drove in a generally direction toward the possible depth extension for 35 feet and then penetrated ahead for 25 feet with a long hole. The hole hit 4 feet of quartz with strong iron stained hanging and footwalls. This was quite similar to the mined out vein section, particularly since the hanging wall red streak was much wider than the footwall streak. The quartz shows lead (galena) in the drillings with some silver and gold content. He will now continue the drift into the vein which from the present evidence would appear to have a good chance of being the hunted lost segment. Some pockety lead ore was encountered in the footwall of the segment. This is composed of galena, sphalerite, argentite and chalcopyrite. This ore ran 46% lead, 2% copper, 3% zinc and some gold and silver, but little volume was present in the pods encountered to date.

*

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Stepp Mine Date July 5, 1960

District Comobabi District, Pima County Engineer Lewis A. Smith

Subject: Mine visit and interviews with Clyne Stepp and C.A. Withers
716 E. Moreland, Phoenix 253-0875

Location: The mine is reached by traveling 65 miles east on the Ajo-Tucson highway and thence on a country road 5 miles to the northeast. The mine lies at the west base of the Comobabi Range.

Work: The two main veins (the Little Mary and the White Elephant) are developed by shafts and lateral work. The Little Mary shaft is inclined at about 75° southward and generally follows the vein to a flat fault and thence is sunk in country rock. The total depth is around 315 feet. (Water is at 120 feet.) The 75 foot level was driven 200 feet northward and over 100 feet southward from the shaft. Stoping in the vein occurred above the 22 degree fault. The bulk of the ore extracted from the property, was obtained from these workings. (See Withers' sketches.)

The White Elephant shaft was sunk to a depth of about 400 feet, and an unknown amount of lateral work done. The shaft is at least two-thirds under water at present.

Several shallow shafts or pits were sunk along both vein outcrops.

A third vein, 300 feet west and 400 feet south of the Little Mary shaft was worked by shallow workings and yielded small lots of good ore.

A quartz blowout at least 600 feet north of the Little Mary was shallow pitted and trenched. Some fair ore was encountered in pods and lenses.

Two shallow shafts on a shear east of the White Elephant disclosed some copper and gold values in the shear planes.

Geology: The area consists of a black, flat lying flow of amygdaloidal rock that appears to be andesite. The shafts failed to bottom the flow, or flows, so that the thickness is more than 400 feet. To the west about a mile a series of mesa-like hills of this rock show that it is almost flat and thick. The amygdaloidal cavities contain epidote and a little calcite. The mesas appear to be capped in a few spots by rhyolitic material. A thicker rhyolite mass appears a couple of miles north of the mine. Further west and north the Quijotoa hills have a considerable thickness of rhyolite. A mile east of the mine the black amygdaloidal flows butt against the granite which forms the main core of the Comobabi Range. This granite has veins similar to the Stepp which run more in gold.

The black rock is cut by 2 main veins (Little Mary and the White Elephant). These trend about N 30° W and they are nearly parallel. The Little Mary vein dips 65-70 degrees northeast, whereas the White Elephant vein dips within a few degrees of vertical. The veins are quartz-filled but contain some fragments of the black rock and also other fragments of a gray and black speckled andesitic rock which may be derived from a dike. There appears to be some evidence that the veins are associated with dikes of this type of rock. It is also suspected that the veins could have been formed by silicification of dikes or of the sheared country rock next to them. The intense epidotization near the veins could either have resulted from contact-metamorphic action, or from the hydrothermal solutions accompanying

The intense epidote zone between the veins is 60-75 feet wide and locally shows some fragments (rounded and embayed) of a dense gray and white speckled rock which is probably a normal porphyritic andesite. This suggests contact metamorphic action attendant to dike intrusion. In many places this zone has been converted to solid epidote over the entire width. Its borders of massive epidote are relatively abrupt, or sharp, and the black amygdaloidal rock on the sides has been altered for a few feet away from the epidote by less intense epidotization zones. The alternative would be intense epidotization along a shear zone. It was therefore suggested that the borders of this zone be prospected for possible mineralization. If this work should show that a dike caused the alteration, then similar zones along the vein walls could indicate that the veins were formed by the siliceous replacement of dike material which previously had been sheared or shattered. If the vein quartz replaced country rock (black amygdaloidal)then that would also be shown.

The principal ore minerals, according to Stepp, and from observation by me, are chalcopyrite, bornite, chalcocite, galena, argentite, cerargyrite and a little chrysocolla. No sphalerite was seen in the ore piles, but it was doubtless present. The galena is definitely argentiferious, but sooty argentite is present by itself. According to Withers, the University reported tetrahedrite in some specimens. The accessory minerals are limonite, hematite, and kaolin. Doubtless a close study would reveal limited amounts of lead and zinc oxidized minerals.

Thus three main areas of prospecting are open: -

(1) Along the intense epidote zones.
(2) Along the Little Mary vein to the north with crosscuts through the flat fault.
(3) Opening of a new level and crosscutting the flat fault.

This should determine whether the mineralization follows the bottom of the flat fault or not and whether the epidote is significant as an indicator.

Mr. Stepp will furnish the smelter returns on shipments for copying. These represent sorted lots.

*

the vein formation.

The veins are offset by a transverse fault of considerable magnitude. The south side of the fault moved southwestward for 60 to 100 feet. The vertical component, if any, was not determined. The fault zone is wide. This fault was not found in contact with the 22 degree fault so that this relationship was not immediately determinable.

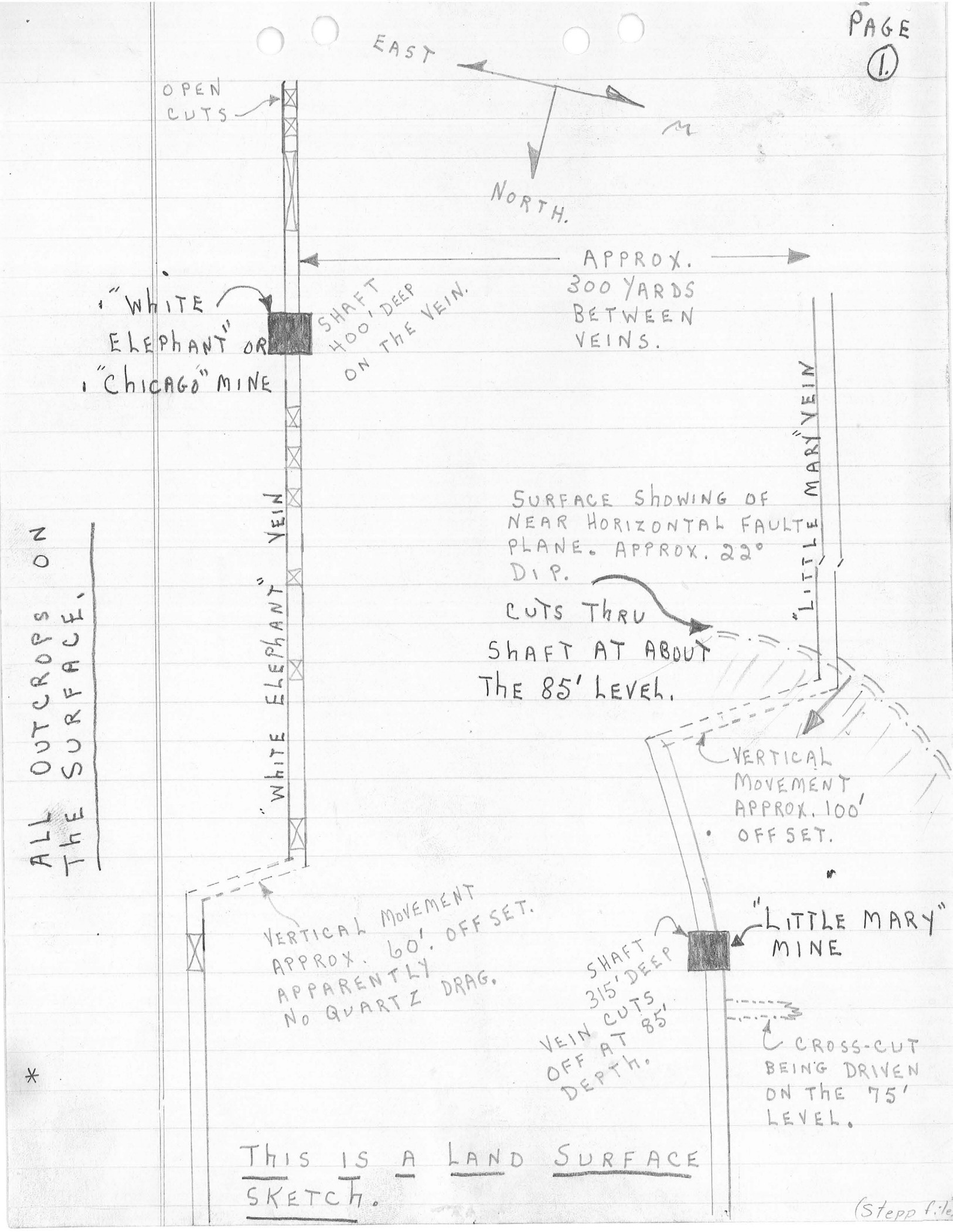
A flat fault, dipping 22-35 degrees northeastward offset the Little Mary vein downward and eastward. Mr. Stepp stated that a crosscut down the fault encountered a 4 foot quartz vein segment at around 60 feet. This segment is under the fault plane. The fault gouge contains considerable quartz between the two segments. Some question exists as to whether this quartz is depositional or is drag. Mr. Stepp stated that two engineers had stated to him that they believed the fault to be post-Mineral. However, several hundred feet north of the Little Mary shaft, a similar flat structure (dipping about 30-35 degrees northeast and trending to the flat fault outcrop at the Little Mary shaft) contains depositional quartz which has been shattered by post-quartz movement. This did not apparently outcrop in between but there appeared to be no intervening transverse structures. Most of the interval is covered by detritus.

Whether the quartz in the 22 degree fault near the Little Mary shaft is depositional or otherwise should definitely be determined prior to the doing of much more prospective work. The second view is that the flat fault could be post-quartz but pre-hypogene copper gold mineralization. The vein quartz in both veins was shattered prior to the hydrothermal ore bearing solution entry since the sulphides favor such openings in most cases. This fracturing or the subsequent may have been instituted by the flat fault movement. If the flat fault is pre-hydrothermal solution then prospectable ground should be found under the flat fault. The strong epidotization under the fault and on the footwall of the Little Mary vein may be due to the action of hydrothermal solutions. The more intense epidote zones according to Stepp and Withers, do not contain high values, but along side of or under them ore of better quality was found. The third view is that the flat fault is entirely post-mineral. This view is favored by some observers.

It is probable that this fault like the veins had at least two periods of post quartz movement. Some ore specimens clearly indicate that the copper-gold-zinc mineralization is followed at a considerable interval by lead silver mineralization. The latter occupies an apparently different set of openings and the galena veinlets cut across the limonite derived from copper sulphide oxidization. In some instances an intermittent "halo" of galena surrounds a limonitic "halo" which in turn surrounds rounded blebs of chalcocite. In other places the galena, by itself, fills minor fractures. Thus we have three probable periods of internal fracturing:

(1) Pre-quartz fracturing (or vein fracturing)
(2) Post-quartz fracturing (pre copper-gold-zinc solutions)
(3) Post copper-gold-zinc metallization fractures

The periods of fracturing indicated by the flat fault and the transverse fault are not definitely known. The predominence of evidence indicated that the transverse fault is post-mineral, but the position in the fracture pattern of the flat fault is more doubtful and may be intervening.

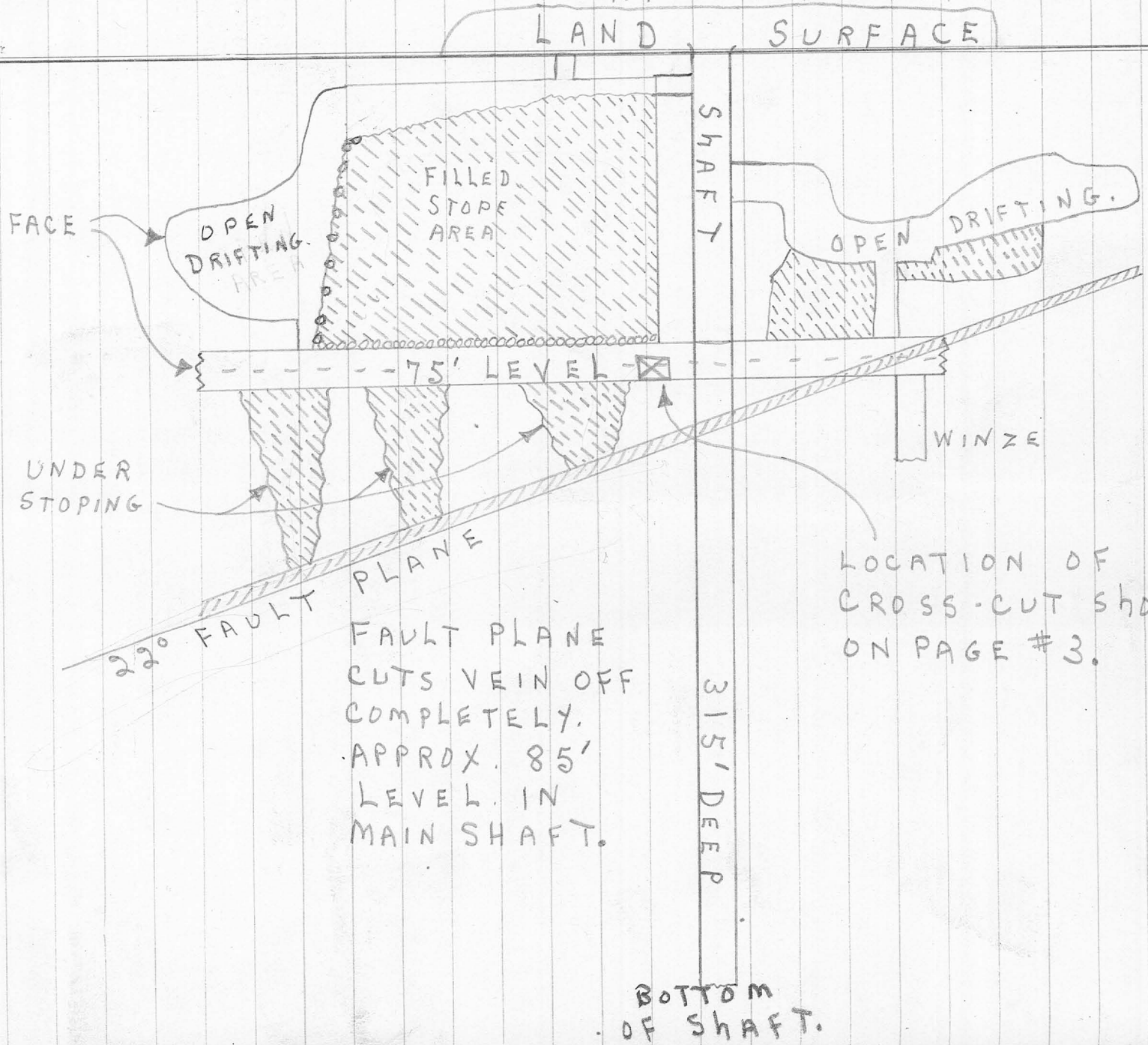

EAST
NORTH.
OPEN CUTS
"WHITE ELEPHANT" OR "CHICAGO" MINE
SHAFT 400' DEEP ON THE VEIN.
APPROX. 300 YARDS BETWEEN VEINS.
"WHITE ELEPHANT" VEIN
"LITTLE MARY" VEIN
SURFACE SHOWING OF NEAR HORIZONTAL FAULT PLANE. APPROX. 22° DIP.
CUTS THRU SHAFT AT ABOUT THE 85' LEVEL.
VERTICAL MOVEMENT APPROX. 100' OFF SET.
VERTICAL MOVEMENT APPROX. 60'. OFF SET. APPARENTLY NO QUARTZ DRAG.
"LITTLE MARY" MINE
SHAFT 315' DEEP VEIN CUTS OFF AT 85' DEPTH.
CROSS-CUT BEING DRIVEN ON THE 75' LEVEL.
ALL OUTCROPS ON THE SURFACE.
*
THIS IS A LAND SURFACE SKETCH.

(Stepp file)

*

APPROX. NORTH.

APPROX. WORKINGS IN THE "LITTLE MARY" MINE SHAFT.

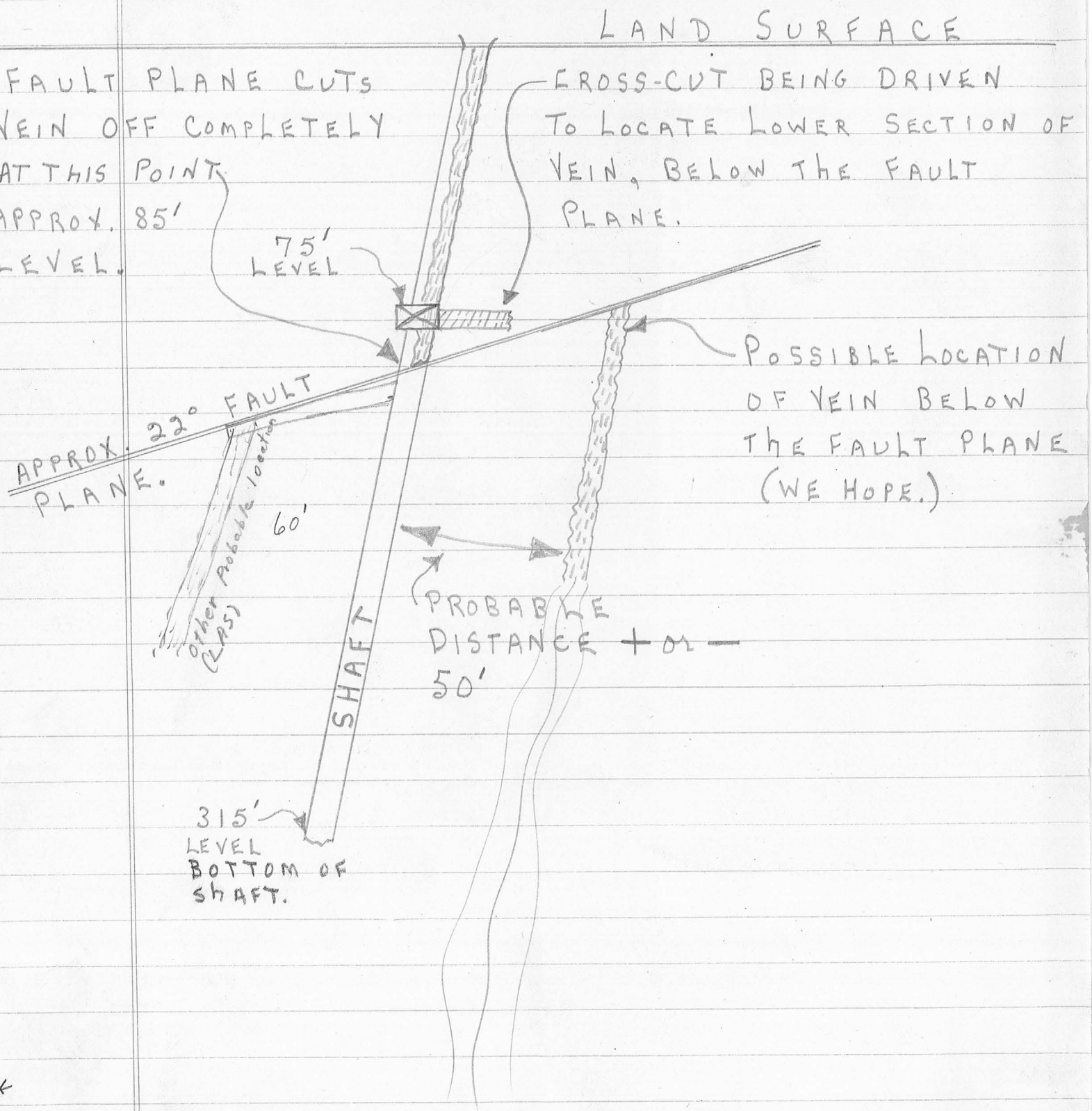


FAULT PLANE CUTS VEIN OFF COMPLETELY. APPROX. 85' LEVEL IN MAIN SHAFT.

LOCATION OF CROSS-CUT SHOWN ON PAGE #3.

(Stepp file)

CROSS-SECTION OF SHAFT AREA. "LITTLE MARY" MINE.



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(Stepp file)

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine: Stepp Mine — Date: May 3, 1960

District: Comobabi Dist., Pima Co. — Engineer: Lewis A. Smith

Subject: Interview with C.A. Withers, 201 W. Third Street, Ajo (P.O. Box 609)

Owner: Clyne Stepp, Stepp Produce Co., 300 4th St. Phoenix
" " 292 W. Coronado Rd., Phoenix

Lessee: C. A. Withers and Tracey Alton of Ajo.

Previous Report: March 3, 1959 by Lewis A. Smith.

Recently Withers has discovered that the two Stepp veins have been off-set to the south on the east side of a transverse fault. The fault dips 85° to the east. In depth the whole faulted vein complex has been cut off at the 80 ft. level of the 400 ft. shaft, by a flat fault (22° to the north). Mr. Withers wishes to have a visit to see whether the flat fault moved the complex up along the dip plane or down along it. The andesite country rock is overlain by rhyolite to the east. However, as now known, the rhyolite doesn't enter the problem. The ore shoots in the veins apparently are cut off both at the transverse fault horizontally and along the flat fault in depth. Topographically, if the complex was moved up by flat fault, erosion would have eroded that part of the complex which may have been placed above the present surface. If the complex was moved downward the faulted segment of it would of course be down dip. The problem, therefore, is to try and determine which way the 22° fault moved and how much displacement may have occurred. It is planned to meet Withers in July at Fred Rhodes' garage at Quijotoa prior to going to Ajo.

*

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
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DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Stepp Claims (south of Comababi Mtns.) Date March 3, 1959

District Comababi District, Pima County) (Papajo Reservation) Engineer Lewis A. Smith

Subject: Reported by A. C. Netherland and C. A. Withers

Owner: Clyne Stepp (Stepp Produce Co., 300 S 4th, Phoenix), Clyne Stepp, 292 W. Coronado Rd.

Lessee: C. A. Withers, Ajo, Arizona

Property: 16 claims (Little Mary and White Elephant Groups)

Access: Paved highway from Ajo for 65 miles to within 1 mile west of Sells, thence dirt road for 5 miles to the north. The mine lies on the south tip of the Comababi Range.

Work: 2 shafts - 400' (main) and 300' both of which are full of water to just below the 100' level. The main shaft is in dangerous condition, but is being retimbered down to the 100' level. The main shaft is on a 60° incline to the north and has two compartments. There are 2 drifts on the 100' level, one being 125' to the west and the other is 81' to the east.

The vein is largely stoped around the main shaft and above the 1st level with a few shaft pillars remaining. This shaft merges with the stoping in places and is unsafe.

The only equipment at present consists of a 40' headframe and an old hoist which would probably have to be replaced.

The dumps of waste material indicate that much more work was done than is indicated by the material removed on the first level and above. Mr. Netherland reported some lateral work has been done, some years ago, out from the main shaft below the first level, but that results were not too good.

There is one dump consisting of quartz which runs about $10.00 - $40.00 in copper, silver and lead, and will be shipped to the New Cornelia Smelter for flux. This dump probably contains 200 or 300 tons of very acceptable material and averages more than 80% in silica. However, the lead values will be lost.

Geology: Two quartz filled veins with some brecciated andesite fragments traverse a mass of andesite porphyry. The main vein strikes S 70° E and dips 60° north. The second vein lies some 300-350' north of the main vein and has not been developed, although it is quartz filled and will average 2-3' in width.

The andesite porphyry is propylytically altered for a variable distance out from the veins. The veins are strong and the main vein has a very well defined wall. According to Netherland the alteration of the wall rock was more extensive in the foot wall area, and narrow along the hanging wall.

The accompanying report by J. R. Macdonald gives further data.

Samples by Withers indicate that some areas will run $30.00 over a mineable width, while others are somewhat better. The pillars are all very much better.

Plans: The partners plan to timber the shaft through the stoped area to the 1st level and free the area around the shaft as the pillars are extracted. The pillars are said to assay $55.00 per ton in copper, silver, lead and silver, in addition to some zinc.

A REPORT ON

STEPPE MINE

PIMA COUNTY, ARIZONA

By: J. R. Macdonald, B. Sc., P. Eng.

November 1, 1957

A REPORT ON

S T E P P E M I N E

PIMA COUNTY, ARIZONA

By: J. R. Macdonald, B. Sc., P. Eng.

SUMMARY:

The property is a prospect for lead with a substantial silver, gold and copper content. Work is warranted after additional research into past production has been made. This would consist of diamond drilling and of de-watering the mine workings.

PROPERTY & TITLE:

The total extent of the property was not ascertained at the time of the examination, which was confined to inspection of the underground workings at the westernmost shaft.

It is reportedly owned by a well-to-do Phoenix grain and feed merchant who has a 5-year, $50,000, bond and lease agreement with one Mr. Copeland; the latter resides in the area of the property, but has other interests which have so far prevented him from making any move towards exercising his rights.

LOCATION:

The property lies about half way from Ajo, on the road to Tucson. The turn-off is located about 5 miles east of Covered Wells in the Papago Indian Reservation; a dirt road leads to the property via the old Sells road and the settlement of Packrat.

POWER, WATER, TIMBER:

None of these facilities exist on the property. It may be noted that the mine is flooded to the first level at a depth of 80 feet approximately.

BUILDINGS & EQUIPMENT:

A 40' headframe exists at each of the two shafts: one of these would require reconstruction.

A 3' diameter rod-mill is on foundations, but does not appear to have been in use at this property (i.e. no red-mill tailings observed). A crusher 6" x 10" lies at the west shaft collar. There is evidence of an old mill (tanks, etc.) which does not appear to have operated.

A gas-driven, 36" diameter, single-drum steam-hoist is in place and has been in use at the property.

All this machinery can be regarded as having junk-value only.

PRODUCTION & HISTORY:

The mine is reported to have closed down "during the depression", i. e., around 1932, or earlier, when lead prices fell to a few cents.

There is an extensive muck-pile at the west shaft collar, indicating the considerable work in waste rock and in development common to any mine.

In the vicinity of the mill-site, 200 tons of coarse sand may have been produced by the rod-mill, or by a fine crusher. Since underground examination indicated that ore had been removed quite extensively, it is apparent that this must have been shipped directly to a smelter, or mill. The 80 foot level at the west shaft was visited, and this showed substantial stoping from the level through to surface. The shaft is reported to go to a depth of 300 feet or more, but is flooded at the 90 foot horizon.

GEOLOGY:

The occurrence consists of vein quartz occupying a very well-developed fracture or fault in a porphyritic basic lava county rock. The width between thewalls of the fracture varies from over 3½ feet to a foot or less.

Incrustations of comb-quartz show growth towards the vein from the well rock. This material is barren. A younger quartz fills the vein centre, and this contains the mineralization: it consists of galena and chalcocite (or tetrahedrite): the latter is massive, shows no crystalline structures, is dark grey, but is blue-tinged: minor chalcopyrite occurs. The valuable minerals occur as irregular "gobs" from ¼" to 3" in diameter.

The strike of the vein is S 70 E and its dip is at 60° to the north. Two faults were seen to cut the vein at an oblique angle, showing a small displacement. These are probably post-ore in age and will have the effect of making the vein appear to pinch, when in fact this has not happened.

THE MINE:

The workings are entered via a 2-compartment shaft inclined at 70° to the North. This is in good condition, though for much of the distance from surface to the 80' level, the stopes cut into the shaft without any supporting pillar.

The first level has been drifted into for 126 feet to the west and 81 feet to the east. Of this distance, 124 feet is in vein material, which has been stoped, leaving small shaft pillars at the level. At truck level, the vein has been stoped out from below, and the track lies on backfill.

Mining has apparently been carried out by resuing methods.

* The faces of both east and west drifts were weak or blank: no attempt was made to explore into waste rock, though there is some indication of faulting: this is typical leasing practice.

A shaft can be seen "on strike" and distant 1,500 feet to the east.

The possibility exists that the vein structure may continue for this distance. The following questions may be entertained: what results did development show on the bottom level, now flooded? what was the grade mine during the term of operation.

What results were obtained at the eastern shaft? What efforts by mapping, surface trenching end diamond drilling were made to prove up the possibilities of continuity of structure between shafts.

VALUES:

In order to ascertain the value of the ore mined, a search will be required into the tonnage shipped and the smelter returns.

Samples were taken. No. 1 was cut from the west rib of the stope on the 1st level. No. 2 was sample taken on the drift back 10 feet west of the shaft and at a selected section of the shaft pillar. Assays were as follows:

No.	Au.	Ag.	Pb.	Cu.	Zn
1	.35 oz/ton	3.00 oz/ton	10.3%	1.05%	1.7%
2	.14 oz/ton	29.50 oz/ton	33.6%	5.6%	3.8%

The above cannot be considered representative, and are shown only to indicate the presence of valuable mineralization and the ratios of the metal content.

CONCLUSION

The vein at the first level appears to be strong and well-defined in a good structure. It shows promise of continuity in length and depth.

The writer suspects that the mine operated in a small way and, consequently, at high cost: this, with the high cost of shipping ore (as opposed to shipping concentrates) and the ultimate requirement of substantial capital expenditures once the mine had reached 300 feet in depth with an inadequate mine-hoist, may just as well have been the reason for its closing down as the exhaustion of its ore reserves.

RECOMMENDATION:

Every effort be made to acquire complete data concerning the operation, both with respect to production and exploration.

Respectfully submitted,

/s/ J. R. Macdonald, B.Sc., P. Eng.

Dated at Toronto, Ontario
November 1, 1957.

A REPORT ON

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/s/ J. R. Macdonald, B.Sc., P. Eng.

Dated at Toronto, Ontario
November 1, 1957.

FRED D. SCHEMMER
MINING
PRESCOTT, ARIZONA

Dec. I5, 1950.

Dear Chuck;

Well the enclosed letter or rather copy to Cline Stepp tells the story on that setup as far as the one vein is concerned which is called the White Elephant, very aptly.

Mr. Stepp went to the property with me on the 4th, and from what he told me while there, I sure thought it might be something as it is the best looking vein that I have looked at in years and certainly looked like ore, he stated that he believed that all of it would exceed $I5.00 in Au. Ag. &Cu. but was not even half that.

Another dream goes up in smoke, I looked over the fault setup a little while I was there, which is on the smaller but richer vein, you cannot see anything from the surface, but from what Mr. Stepp told me and showed me on the surface, I believe that they may have done the usaul thing and went the wrong way to pick it up.

It is all under water now of course, but could be unwatered at not to high a cost and some short drill holes would tell the story in a hurry I believe.

It is a good thing to keep in mind but am not going to tackle it now, a good deal can be had on it I am sure.

I may see you some time soon if you are in while I am down, nothing new here.

Regards;

Fred

Dec, I5, I950.

Mr. Cline Stepp
Phoenix
Arizona.

Dear Mr. Stepp;

Enclosed you will find the results of my sampling of the White Elephant vein on your property near Sells, I have made up a very rough sketch so that the positions of the samples would be clear to you.

As you can well see I certainly was very much dissapointed in the results of the samples, as they were well taken and we combined two cuts of the vein to each sample, and further we only sampled the half of the vein on the hanging wall side, which is of course the best.

I kept the rejects from all samples and to satisfy myself I made up a composite sample which I ran at local Assayer plant and it checked very well with the other results.

You can very well see the chance of getting shipping ore from the exposed area of this vein is very remote, I am sorry, for I am sure that a very attractive rate could have been obtained on this ore from at least two Smelters.

Some time when I am in Phoenix I would like to see you and see the "dope " you have on the other vein which faulted, and perhaps we can arrive at some line of attack to solve the Fault setup there, I am of the belief that it may not be two difficult, but of course can be very wrong.

I certainly thank you for taking the time to go to the property with me, and I enjoyed being with you and knowing you very much anf I hope I can see you again.

I was at the property on the 7th, and 8th, and Mrs. Holmes was very well at that time.

Very truly yours;

Fred H. Schumm

*

June 7, 1942

MEMORANDUM

STEPP MINE
SELLS, ARIZONA.

To: Director, Dept. of Mineral Resources.

From: George A. Ballam

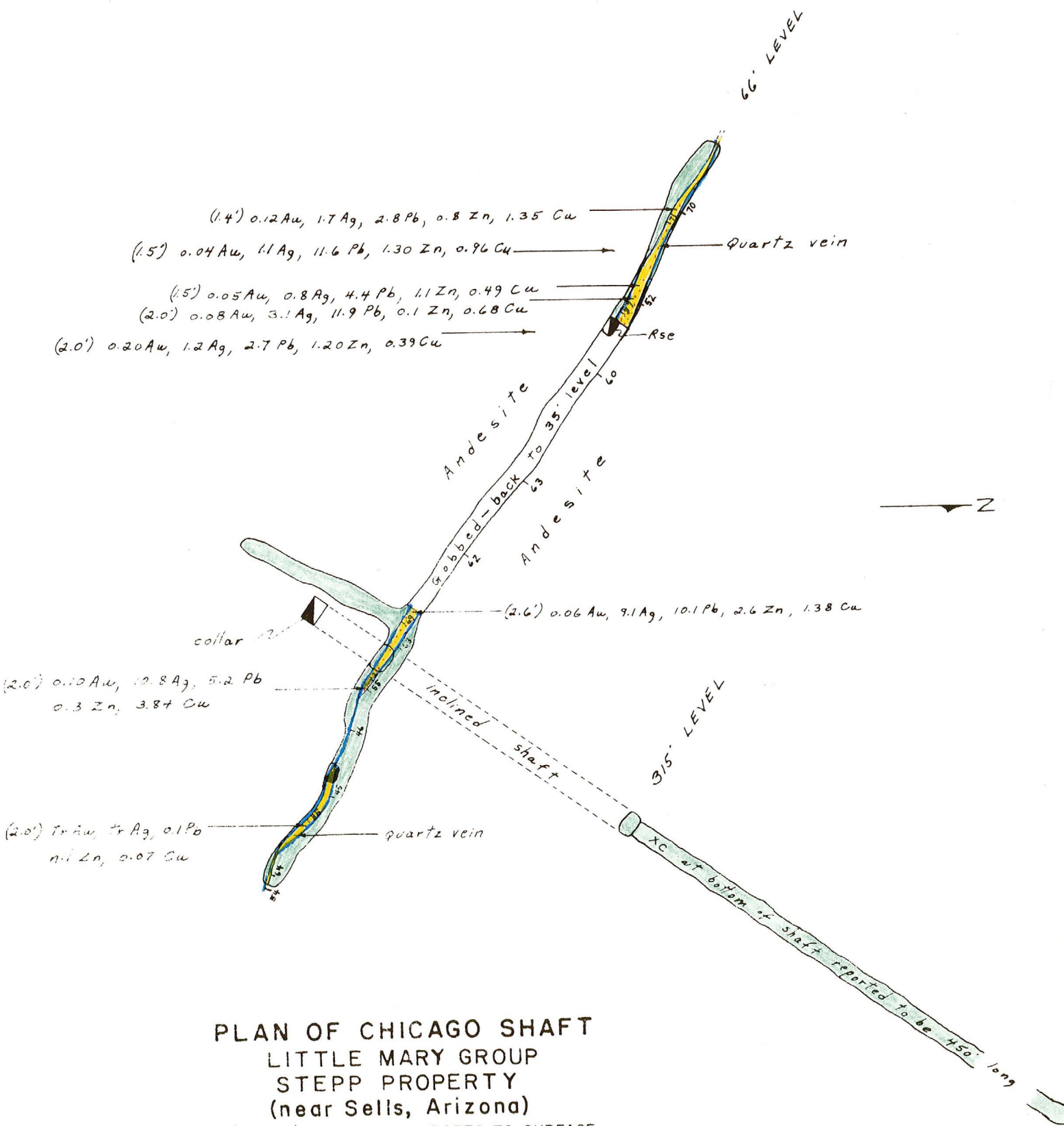
300 S 4TH

This property, located about 10 miles NW of Sells, is owned by Cline Stepp of the Stepp Produce Co., in Phoenix. There is no activity here, J. S. Holmes, a watchman, residing on the property.

As stated by BILL COPLEN there is considerable scrap iron in the old camp, including an old crusher, hoist, boiler for receiver, two tanks and other miscellaneous junk. However, Holmes wants to make arrangements with Stepp to purchase some of this equipment to use on an adjacent property of his, and requested that no action be taken for disposal of this junk, amounting to perhaps 50 tons, until he had selected what he wants of it.

George A Ballam

*



PLAN OF CHICAGO SHAFT
LITTLE MARY GROUP
STEPP PROPERTY
(near Sells, Arizona)

66' & 315' LEVELS PROJECTED TO SURFACE

BRUNTON & TAPE
1" = 40'

FEB. 1963

R. G. E.