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02/22/96

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: COPPEROPOLIS

ALTERNATE NAMES:

PAT. CLAIMS 1200 AND 1246
AMITH GROUP
MELINDA JANE DRIFT
MAMMOTH

YAVAPAI COUNTY MILS NUMBER: 939

LOCATION: TOWNSHIP 9 N RANGE 2 W SECTION 34 QUARTER NW
LATITUDE: N 34DEG 04MIN 46SEC LONGITUDE: W 112DEG 27MIN 47SEC
TOPO MAP NAME: COPPEROPOLIS - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:

COPPER OXIDE
COPPER SULFIDE
LEAD
SILVER
GOLD

BIBLIOGRAPHY:

USGS COPPEROPOLIS QUAD
BLM MINING DISTRICT SHEET 239
ADMMR COPPEROPOLIS MINE FILE
ADMMR MELINDA JANE DRIFT FILE
LINDGREN, W. ORE DEPTS OF JEROME & BRADSHAW
MTS QUADS USGS BULL 782 1926 P 186
CLAIMS EXTEND INTO E2E2NE SEC. 33

COPPEROPOLIS MINE

YAVAPAI COUNTY

USGS Bull. 782

ABM Bull. 137 p. 62

Further information and maps available at Shattuck-Denn office *(now in office folder)*

Copperopolis Area Report by Harrison Schmitt (15 pages) in this file

See: Report of the Governor of Arizona 1899 - Page 101 + 102

LONE STAR MINE FILE See report on History and Mineralogy - see page 2

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

INFORMATION FROM MINE CARDS IN MUSEUM

ARIZONA, YAVAPAI COUNTY
Copperopolis Mine
(Amity group same)

MML 004 Mine Car Label (iron)
L 005 " " "
L 006 Machine Label (brass)
L 007 Powder Box End (wood)
L 008 Blasting Cap box (iron)

M.L.S # 939
4-AKia
Copperopolis (file)

Information from MINE INSPECTOR'S OFFICE - August 15, 1957

✓ MELINDA JANE DRIFT (20 Claims) Castle Creek Dist., YAVAPAI CO. 7-22-57
Wickenburg, Ariz.

✓ Owner: Tom & Jack Dalton, Oakland, Calif.
✓ Oper : Brooks & O'Leary
✓ Sec - Ed Brooks, Box 547, Wickenburg, Ariz.
✓ Supt - Dorman O'Leary " " "

✓ LEAD - ZINC Development 3 men.

L.A.S.

October 11 1957.

Do you approve of the Emergency Lead-Zinc Committee's seeking relief for the lead-zinc industry and has it your authorization to speak for you? YES

What Arizona Mines and Mills in the lead-zinc class do you control?

(1) MELINDA JANE PROSPECT

(2) _____

Which ones are operating? (1) none (2) _____

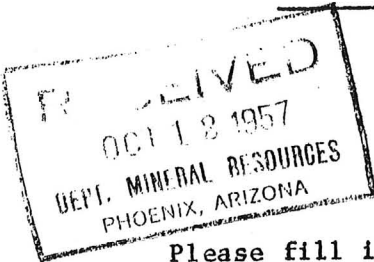
If not operating, when shut down? (1) 8 Oct (2) _____

Number employed, prior to shut-down, in mine, mill or sections thereof producing lead or zinc ores? (1) 2 (2) _____

Number so employed on January 1, 1957? (1) 2 (2) _____

Number so employed on October 1, 1957? (1) 2 (2) _____

Remarks _____



Brooks + O'Leary
Company

By: Roman S. O'Leary
Signature

Please fill in NOW, tear off, and mail to:

Arizona Department of Mineral Resources
Mineral Building, Fairgrounds
Phoenix, Arizona

DEPT. MINERAL RESOURCES
 RECEIVED
 FEB 5 1945
 ARIZONA
 Date: Feb 2 1945

DEPARTMENT OF MINERAL RESOURCES
REPORT TO OPA ON
ACTIVE MINING PROJECT

Filing Information

File System.....
 File No.....
 This chart to be used for gallons of gasoline required per month.

Name of Mine: Amnity Group
 Owner or Operator: Thomas Seymour Dalton
 Address: Prescott - Ariz
 Mine Location: Castle Creek District

PRESENT OPERATIONS: (check X)

Production ; Development ; Financing.....; Sale of mine.....;
 Experimental (sampling).....; Owner's occasional trip.....;
 Other (specify).....

PRODUCTION: Past and Future.

Tons

Approx. tons last 3 months
 Approx. present rate per 3 months
 Anticipated rate next 3 months
 If in distant future check (X) here

EQUIPMENT OPERATED:

Type	Quantity or Horse Power	Miles or Hours Per Month	Gallons Required Per Month
Personal Cars
Light or Service Trucks	<u>400</u>	<u>40</u>
Ore Hauling Trucks
Compressors
Other Mine or Mill Eqpt.

PRODUCT PRODUCED OR CONTEMPLATED: Name metals or minerals.

Copper - Lead - Silver

REMARKS:

Application approved

By W. H. Baker

COPPEROPOLIS MINE

YAVAPAI COUNTY

Dorman S. O'Leary says the Copperopolis Mine and the Amity Group are one and the same property. The property is idle at the present time. 9-9-59 LAS ?

John Tyler called to tell of activity on and around the Copperopolis property. He said there were new claim monuments all over the place and considerable dozer work was being done. He had no names of people or claims. KP WR 9-21-73

NJN WR 6/10/83: It was reported that the old drifts at the Copperopolis Mine, Yavapai County, typically contain bat guano more than 1 foot deep.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Copperopolis Mine Pg. 3

*See page 3
for Copperopolis*

Mine Area: Whipsaw Mine (K & K Claims)

Date March 25, 1974

District Castle Creek

Engineer R. E. Lehner

Subject: Field examination 3/15/74

LOCATION: T6N, R2W, Sec. 8-9 about 6 miles NW of Castle Hot Springs, Yavapai County

LAND OWNERSHIP: The area of the Whipsaw Mine and old smelter site consists of 13 patented lode claims and one patented placer claim. The patent number for the claims is # 4908. The present owner(s) is not known. Surrounding the patented claims on the west, north and east sides are the K-K claims. The K-K claims located in Sec. 8 are placer size and those located in Sec. 9 qualify for lode size, (see attached claim map). The owners of the K-K claims are not known by me, but they are leased by Mr. Ben Mathes, an employee or agent of the GTS Corporation (Gerald T. Sullivan) of Long Beach California, also located at Elliot Road and Rural Road, Phoenix, Arizona - phone 968-3428. The terms of the lease is a 7 $\frac{1}{2}$ % net smelter return less transportation charges, renewable for 50 years after 50 years. GTS Corp. intends to enter into agreement with the owner(s) of the patented claims, according to Mathes. While at the property with Mr. Mathes, he kept referring to the inclined shaft located on the patented Atlanta Lode claim as being the Golden Aster mine. He is misinformed because the Golden Aster mine is located in T9N, R2W, Sec. 27 just above the Golden Aster Creek, about 3 $\frac{1}{2}$ miles northeast of the Whipsaw mine.

GENERAL GEOLOGY: The Whipsaw mine is located in the Castle Creek mining district so called because this general area of mining activity is intensely dissected by Castle Creek which flows southeast from its water shed in the southwest portion of the Bradshaw Mountains. Accessibility to the area can be obtained by traveling the graded Castle Hot Springs road from Morrystown to point of turn-off or by traveling the graded Castle Hot Springs road from Lake Pleasant to point of turn-off. Four wheel drive vehicle is necessary to gain access to the property after turn-off from Castle Hot Springs road (see enclosed location map).

The district consists of a northeast trending septum or belt of precambrian (Yavapai) schist which is bounded on either side by a younger precambrian (Bradshaw) granite which was intruded. After a long period of erosion, volcanic andesitic flows, agglomerates, and tuff were deposited directly on both the schist and the granitic. Active erosion since then has dissected the country and remnants of the volcanic rocks exist in the southeastern part of the area. (See accompanying geologic map.)

The mineralization comprises chiefly of gold and/or copper deposits which have been introduced along fault or shear zones in both the granite and the schist, but predominantly in the schist. The mineralization is older than the volcanic rocks which are considered to be Tertiary by Jogger and Polacke (USGS Bull. 782) and Cretaceous by the Arizona Bureau of Mines on their Yavapai County geologic map.

Whipsaw mine area investigation - On the morning of March 15, 1974 Mr. Ben Mathes (GTS Corp.) and his driller-equipment operator Mr. Gail Dingman of Mayer transported me from Phoenix to the property in their 4-wheel drive Wagoneer. The Whipsaw mine and old smelter site is located on the north slope of Whipsaw Creek which is a western tributary to Castle Creek. On the survey plot made in 1903, it is stated that the mining property is developed by 6 shafts 16 cuts, 15 tunnels, stopes, cross cuts, a 10 stamp mill, and a smelter (erected in 1890). At the end road is a portal to a tunnel, a modest sized dump, the collapsed mill which was a corrugated metal clad wooden structure and a slag pile from the smelter. Around the landscape can be seen the other workings.

The most extensive workings is the tunnel with its portal near the mill site. The tunnel follows in a northerly direction a brecciated fault zone in schist which has been mineralized with copper and gold. The zone pinches and swells from a few inches to about 4 feet wide and dips 35° to 65° west. Several inclined winzes have followed and stoped the ore to depth. By dropping a boulder down a winze it is estimated that they may be several hundred feet deep. This tunnel extends for a distance of about 300-400 feet. Near the end, a cross cut follows another mineralized structure to the east which strikes $N40^{\circ}W$ and dips $65^{\circ}S$. This structure likewise pinches and swells from a few inches to about 3 feet for a distance of 100 to 200 feet where it intersects with another north trending mineralized structure about parallel with the main tunnel. At this point a raise extends to the surface and the tunnel is caved to the south.

The other extensive workings (inaccessible) is the inclined shaft about 1200 feet NNE of the Whipsaw tunnel. From the size of the dump, undoubtedly several levels of drifting followed along the mineralized structure.

From walking over the surface, it became readily apparent that it would be necessary to map the underground workings and the surface outcrops in order to determine the relationship of the various structures to one another, their continuity, and their density. There appeared to be at least a half dozen or so of these structures with varying strikes and varying dips.

MINERALIZATION All mineralized out crops as well as underground structures look characteristically alike. The copper mineralization consists chiefly of chrysocolla, some malachite and little azurite. Some clay material was adsorbed by copper oxide. Several very small kernels of chalcocite were seen in the core of an oxidized copper zone. The oxide copper filled in and around the brecciated rock fragments in the structured zones. At places even though the brecciation was strong, there was no copper. Except for the rare pieces of chalcocite, all mineralization was oxidized. No sulfides were observed on any of the dump material or at any outcrops. Evidence of the pre-existence of sulfides was in the form of casts and vugs and some limonite stain.

Intimately associated with the mineralized structures is the conspicuous presence of specularite (micaceous iron-oxide). Lindgren (Bull. 782, p. 184) believes that its occurrence is supergene because it is intimately intergrown with chrysocolla and the tiny plates of the specularite follow the directions of cracks in chrysocolla.

Although copper constitutes the obvious mineralization, the area was primarily mined for its gold occurrences. Besides the Whipsaw mill, there was also the Lehman mill in the area about $3\frac{3}{4}$ miles to the north northeast. According to Lindgren (p. 184) some rich ore has been shipped and some ore has been milled at both mills, but the total production is probably well below \$500,000 gross value.

CONCLUSION The area is mineralized primarily with two significant minerals - gold and copper. If one were to pursue the gold interest, the prospector would likely stay in the oxidized zone, do a lot of sampling underground and perhaps do some shallow drilling before he undertook any large operation.

If the interest is in copper, then one wonders about how deep the oxidized zone might be whether there might be significant enrichment at depth, and perhaps a good grade of primary ore along with gold values. But it is necessary to emphasize here before the exploration of either mineral or their combination is undertaken, the area should be mapped and the structural picture fully understood first, supported by a good sampling program. Only then will one be able to decide whether to proceed further or not, and if so where to optimize his work for the most successful results.

GENERAL - Presented here are pertinent data on other mines in the area which might be relative to the Whipsaw mine (abstracted from Lindgren USGS Bull. 782).

Swallow Mine (south shaft) - The country rock is precambrian granite and the shaft is 225 feet deep. The vein strikes N10°W, dips 70°E. The best ore, which is a copper-stained rusty mass with chrysocolla and brown copper pitch ore, contains 1-2 ozs. of gold/ton. Ore average 3'-15' in width and much of this has been milled. The ore on the dump carries about 8% copper and several dollars in gold/ton (1926).

North of the house and 300' above it is a shaft 300 feet deep and on a different vein. Much ore has been stoped to points 150' north and 50' south of shaft. Vein strikes N33° and dips 60°E. Another vein is found 100 feet north of this deposit. Still farther north and above the shaft is a tunnel driven on the same or a parallel vein. The vein is several feet wide, and the oxidized filling shows mainly platy specularite with oxidized copper ores, quartz, calcite and fluorite. It has been mined as a gold ore with free gold in the well-oxidized material.

Champie (Lehman) Copper Mine - Located about ½ mile west of Copperopolis, this mine occurs in schist. It is developed by 4 tunnels within a vertical interval of 200 feet. The vein strikes N20°W and dips 45°SW. Ore consists of brown limonite, chrysocolla and specularite. Reported that 4 carloads of 20% copper ore was shipped by Champie in 1917.

Copperopolis - Two prominent out crops are developed. The upper one is 1,000 feet north of town and developed by irregular workings and a 200 foot shaft sunk in 1880. The ledge is 100 feet wide with many seams, striking N60°W, dipping SW. Ore consists of limonite and chrysocolla. Production was small. The other outcrop consists of the great lead vein, which strikes N70°W and may extend from here west to Crown Point. The ore is said to assay 4 oz. silver/ton.

Golden Aster (Lehman mine) - This mine is a gold-quartz mine developed by 2 tunnels, 50' and 100' below the outcrop. Some ore was extracted and taken to 5 stamp mill on Spring Creek prior to 1926. About 40 tons of ore was shipped in 1932-1933. Country rock is granite. Strike of the veins is N10°W, and dip 25°W. Upper workings show 3 parallel veins close together. Ore is a gold bearing massive glassy quartz stained by limonite.

November 12, 1958

Examination of the Copperopolis Area, Mammoth, and Melinda Jane Claims, etc., Castle Creek District, Arizona.

I visited these claims in the company of Mr. Dorman S. O'Leary, a partner of this mining group, on October 29, 1958. The claims are in Sections 32, 33 and 34 of T9N and R2W. This area is 16 miles N 60° E from Wickenburg, Arizona, and 10 miles N 45° W of Castle Hot Springs. From Wickenburg we traveled 32 miles to reach this area; the first 27 miles over fairly good roads, the last 5 miles over roads needing a four-wheel drive vehicle. There are other roads into this area which could be improved and would shorten the distance to railroad or truck haulage facilities. The area is rough and mountainous and some water is available from a few shallow wells.

The country rock is Yavapai Schist intruded by Bradshaw granite. The mineralization is associated with a fairly wide fault zone striking east-west and dipping south 45-70 degrees. This mineralized area can be traced over an area of approximately 3 miles and samples of out-croppings have been taken and reported by Mr. O'Leary as shown on enclosure No. 1.

The underground workings of the Melinda Jane claim show mineralization at the hanging wall contact of the major fault zone and consists mainly of silver, lead, zinc, copper and some tungsten. Assays of samples cut and assays of the muck taken out of these underground workings are shown on the assay plan maps enclosed (No. 2 & 3). For a check I took samples at 30 feet and at the bottom of the 150 foot winze. These samples assayed as follows:

	<u>Au.</u>	<u>Ag.</u>	<u>Pb.</u>	<u>Zn.</u>	<u>Cu.</u>
At 30'	.01 oz.	0.6 oz.	Tr.	0.8%	0.22%
150'	.02	1.8	4.8	4.7	2.48

Samples shown on the Winze map (No. 3) assayed as follows:

	<u>Au.</u>	<u>Ag.</u>	<u>Pb.</u>	<u>Zn.</u>	<u>Cu.</u>
At 30'	Tr.	1.2 oz.	2.1%	2.8%	0.17%
150'	.02	0.59	0.35	0.75	2.26

The increase in the copper values in depth is very interesting and could mean enrichment with the possibility of high-grade sulfides.

Enclosed is also a report by Harrison Schmitt, Consulting Geologist, which gives more information regarding the geology, etc. which I

could only try to verify and check in the limited time available. This report covers this area very well and seems to be quite accurate.

At present three men are holding lease-options on this area. Mr. H. L. Hawkins, Houston, Texas has 65%, Ed Brooks, Dallas, Texas has 20%, and D. S. O'Leary, Wickenburg, Arizona has 15%. The Melinda Jane patented claims are owned by the Dalton family with a lease-option of \$500 or 5% up to \$35,000. The 15 unpatented OK claims are owned by the Kanoha Development Co. with a lease-option of 5% up to \$100,000. A Mrs. Kennington owns the 10 other patented claims with a lease-option of \$300 or 5% up to \$100,000. A plan map of the claims is enclosed (No. 4).

Mr. O'Leary states that the lease-option figures could probably be changed and that he and his partners are interested mainly in getting help to explore the property, although they would be receptive to almost any other business transaction.

This area shows good mineralization and I believe is worthy of further examination if suitable arrangements can be made with all parties concerned.


LOUIS F. BOMBARDIERI

HARRISON SCHMITT
Mining Geologist
Cottage Sanatorium Road
Silver City, N.M.

June 8, 1958

Mr. Edward B. Brooks
3869 Potomac Street
Dallas, Texas

Subject: Melinda Jane Mine, Castle Creek District, Yavapai County, Arizona

I have just received Mr. O'Leary's report for the week ending May 31 and have before me the most recent assays including those of the cross-cut in the winze at 55 ft. and the muck samples from 55 to 65 ft.

Mr. O'Leary's averages of the winze interval 34-59 ft. are muck: Pb 9.6%, Zn 6.2%; channel cuts Pb 8.9%, Zn 7.6%. The last assays of the muck at 60 and 65 ft. show a falling off of the lead content. The average width of the part of the vein which was sampled is 3.5 ft. The agreement between the muck and channel cuts is as close as could be expected. The average Pb is then 9.2% and Zn 3.2%. The combined total is 17.4%. As sulphide this grade with the width of 3.5 ft would normally be called commercial ore. The "ore" is thoroughly oxidized except for relict masses of galena. Where the top of the sulphide ore may be appears to be uncertain.

A large part of the lead, the oxidized part as well as the sulphide part could be recovered by flotation. The oxidized zinc would be lost by most current methods of milling. In any case, there is, of course, a geological chance for high enough lead in the oxidized zone to support a milling enterprise and/or a still higher lead content, 20% or better, that would be shippable.

A P P E N D I X

AMERICAN SMELTING AND REFINING COMPANY
810 Valley Bank Bldg.
Tucson, Arizona

August 1, 1956

Mr. H. L. Carter
270 Meadows Building
Dallas, Texas

Dear Sir:

Inasmuch as you are exploring a lead property north of Morrystown, Arizona, to give you an idea of the outcome on lead ore I show below return on 15% lead with 3 ounces silver per ton shipped to El Paso plant from Wickenburg or Morrystown (Castle Hot Springs).

Payments:	Silver		1.77
	Lead 243 lbs. @ .139		<u>33.78</u>
	Total Payments		35.55
Deduct:	Base charge on 30% dry	6.50	
	Lead deficiency chg.	1.65	
	Bullion frt. tax	<u>.09</u>	<u>8.24</u>
	Value after smelting		27.31
	Less freight-40 ton min. car	6.72	
	3% transportation tax	.20	
	Reset charge	<u>.15</u>	<u>7.07</u>
	Net per ton at Wickenburg or Castle Hot Springs		\$20.24

If you obtain samples I suggest that you advise me the assays and I can then give you the outcome on the results of your sampling.

Yours very truly,

Reed F. Welch

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine COPPEROPOLIS MINE

Date July 18, 1957

District CASTLE CREEK DISTRICT, YAVAPAI COUNTY

Engineer B. J. Squire

Subject: REPORT OF VISIT

The Copperopolis Mine is 8 miles NW of Castle Hot Springs - 1 mile north of Castle Creek in S33-34, T9N, R2W. It consists of 2 (3 O'Leary says) patented claims and a number of unpatented claims.

The vein strikes E-W, dips 55°S and has a very long outcrop on the surface. The ore shows oxidized lead and zinc minerals with occasional galena. Silver content is low. Mine run muck samples show (according to operators) over 4% Pb and an equal amount of zinc, in an ore shoot over 100 feet long. A small amount of wolframite is also present in a narrow high grade stringer associated with the vein.

The vein pinches in and out along the strike but in the ore shoot is over 8 feet wide. Some shipping grade ore is present in the ore shoot as lenses of high grade galena.

A drift east on the vein has been driven 525 feet and a raise to the surface on the vein 100 feet.

Present operator is Dorman S. O'Leary of Wickenburg, Arizona. Development work is continuing.

March 22, 1957

✓ COPPEROPOLIS MINE
CASTLE CREEK MINING DIST.
YAVAPAI COUNTY

This property being drilled by Edwin Brooks, the owner,
of Dallas, Texas.

H. Schmitt, Consultant.

✓ Dorman S. O'Leary, Consulting Engineer, in charge.

5% lead across nine feet.

Pockets up to 20%.

500' Drift on vein,

100' Back of solid rock over drift

Shot down April 20, 1957

BJS.

September 24, 1956

Kanoha Development Company
Bank of Southwest Building
Houston, Texas

Subject: Copperopolis area, Mammoth and Melinda Jane claims, etc.,
Castle Creek District, Arizona. Metals: Ag, Cu, Pb, Zn,

Geography, ownership and accessibility

The Melinda Jane and adjoining claims with which this report is largely concerned are in Sections 32, 33 and 34 of T9N and R2W. This area is 16 miles N60E from Wickenburg, Arizona, and 10 miles N45W from Castle Hot Springs. Many of the claims held by you, including the Melinda Jane and Mammoth, are patented.

From Morrystown, Arizona, a station on the Santa Fe Railroad and on highway 60, 70 it is 33 miles by road to the Mammoth and Melinda Jane prospects. The first 22 miles of this road is fair gravel but largely over hills. The last 11 miles is largely in the bottom of Castle Creek, and negotiable with difficulty by any vehicle other than four-wheel drive. It is said that the best access to the area is from the northwest from Kirkland Junction on the same branch of the Santa Fe Railroad as are Morrystown and Wickenburg. From there the first four miles is paved highway and the next 24 is a fair truck road to the Duco Boy claim. The next five miles would need to be repaired and the final two miles to the Melinda Jane would need to be a new road. The total distance is said to be 35 miles with only two bad grades of 10-15 percent for several hundred yards each. The final two miles, it is said, can be cut by bulldozer with little or no blasting.

The area is moderately rough and hilly to mountainous with a local relief of around 700 ft. The average elevation is about 3200 ft. Vegetation is sparse and some water is obtained from a few shallow wells, shafts and mine adits.

History

The immediate area of interest has produced only moderate to small tonnages of ore some of which was shipped and some smelted locally. The Lehman Copper group is said to have shipped five railroad cars of 20% oxidized copper ore. Fairly large stopes may be seen above the Mammoth mine adit.

Geology, Mineralogy, Sampling

The country rock is the so called Yavapai schist intruded by the Bradshaw granite. The following is quoted from Wilson, K. D., et al, "Arizona Lode Gold Mine and Gold Mining," Univ. of Ariz. Bull. vol. V, No. 6, or A.B.M. No. 37, No. 137, p. 61, 62, 1934.

"The Castle Creek district is in southern Yavapai County, in vicinity of upper Castle Creek. It is accessible by unimproved roads that lead from Wickenburg, Wagoner and the Castle Hot Springs highway.

This region is made up mainly of Yavapai schist and Bradshaw granite, locally intruded by dikes of diorite and rhyolite-porphry and largely mantled on the south by volcanic rocks. It has been deeply and intricately dissected by the southeastward flowing drainage system of Castle Creek. As the elevation ranges from about 2,500 to generally less than 4,000 feet, the streams carry water only occasionally and desert vegetation prevails.

The ore deposits, which occur only in the pre-Cambrian rocks have been grouped by Lindgren⁸³ as follows: Pre-Cambrian gold-quartz Tertiary gold-copper veins, exemplified by the Swallow, Whipsaw, Jones and Copperopolis properties and lead veins. Lindgren states that the total production of the district including rich ore shipped and ore treated in the Lehman and Whipsaw mills, probably amounts to less than

For further reference see U.S. Geol. Survey Bull. 782, p. 186, 1926.
This is not available to me.

The mineralization observed on the OK-6, OK-5, Melinda Jane and Mammoth claims is associated with faults and fault zones. It is usually in the form of veins. A major east-west fault zone up to 150 ft. wide and dipping south 50 to 75 degrees strikes through and is apexed by the above claims. It extends west an additional 7500 ft. according to Mr. D. S. O'Leary which makes the total strike extension at least 13,000 ft. The walls are schist and igneous rocks of intermediate to acid character.

The Mammoth mine is comprised of workings on the east end of the major fault zone. Here the zone is about 100 ft. wide, strikes and dips around 75 degrees south. The walls are composed of several rocks mostly acid in character and including probably trachite or andesite in the south wall. The zone has been intruded or replaced by pegmatitic material then rebroken and mineralized with specularite and sulphides. At the surface there is a fair abundance of chrysocolla and malachite with limonite, specularite and minor quartz. There is prominent brecciation and slickensides. The copper mineralization appears to occur largely in the late openings. The strongest brecciation with associated specularite and copper is about 40 ft. wide. In the adit that bears east from the arroyo bottom there are a number of small stopes from which oxidized copper ore has been mined.

It is reported that the Magma Copper Company drilled one surface diamond drill hole that cut the lode at a depth of about 400 feet a few hundred feet east of these stopes. The collar of this hole is still preserved. The hole is said to have had a north bearing, an angle of -45 degrees, was 600 feet deep and cut pegmatitic material as well as pyrite and chalcopyrite, a certain intercept of the core is said to have assayed around .5% Cu.

The surface and underground exposures appear good enough to justify one or more diamond drill holes only if other activity in the area is undertaken such as on the Melinda Jane and only if no records are found that indicate that the underground work in depth was negative or discouraging.

The Melinda Jane claim is just west of the Mammoth, but is separated from it by a fraction which is around 120 feet wide. This should be located if not already covered. The Melinda Jane covers western extension and apex of the Mammoth fault zone or lode. The western extension beyond the Melinda Jane is covered by the OK-5.

The special aspect of the Melinda Jane is an important appearing vein-like, lead-zinc-silver-tungsten mineralization at the hanging wall contact of the major fault zone. Some assays along the contact indicate copper and tungsten as well as the above metals. There are outcrops of vein for 1200 feet on the Melinda Jane and OK-5 claims some of which when sampled gave significant assays. There are four prospect holes. From east to west these are here numbered 1 to 4. They were sampled by Mr. D. S. O'Leary a mining engineer. The most interesting and highest grade

exposure was resampled by me and assayed by Dickinson Laboratories in El Paso, Texas. The results are given in the tabulation below:

Sample No.	Prospect	Dist. west Ft.	Length of cut across vein	Au Oz.	Ag Oz.	Cu %	Pb %	Zn %	WO ₃ %
*1	#1, shaft	0	5' (on)		2.8		23.0		
2	"	0	5' (on)		4.4		15.3		
3	#2, adit	400	3' (face)		1.0		3.0		
4	#3, cut	700	8'			1.05	0.9		
5	#4, cut	1200	7'			0.90	0.6		
11 (1)	*Sample repeated by H. Schmitt		5'	.005	3.5	0.00	21.7	14.4	0.56

Two samples cut by Mr. O'Leary in the No. 1 prospect, which is a shallow shaft, were taken 10 feet below the surface. Their assay average is Ag 3.6 Oz and Pb 1-.1%. The foot-wall (or waste wall) in the foot-wall side is not exposed, that is, the high-grade ore of sample No. 1 appears to extend into the foot-wall for an unknown distance but apparently at least three feet. this could not be property sampled. Altogether there appears to be a minimum width normal to the vein of 13 feet of 19% Pb at this place. Eight feet plus of this is ore in place.

At prospect No. 2 a mass of galena about one foot in diameter was said to have been broken out from the face. Galena also occurs at the No. 1 prospect.

Nos. 1 and 2 prospects are 400 feet apart with No. 1 about 150 ft. higher than No. 2. Both are at the hanging wall contact of the main lode. At prospect No. 1 a fault that appears to be post-ore cuts the vein at about the junction of the two sample cuts. Thus the hanging wall five foot cut is in brecciated ore. Soft ground partly or wholly breccia appears to comprise the hanging wall as far at least as Pros-

pect No. 2 and may have cut off the best ore at No. 2. At places the outcrop is marked by what appears to be ribs of low-grade quartz. The high-grade lead ore because of its softness would not normally be exposed. The chance for more or less continuous mineralization between prospects No. 1 and No. 2 appears to be good.

The exposure at No. 1 is a rich looking oxidized lead ore. The minerals present are largely oxidized lead minerals, barite, iron and manganese oxides, minor galena and minor quartz and presumably include oxidized zinc minerals. This mass of material is very soft. Such an ore should represent what was formerly massive lead and zinc primary sulphides with some barite and quartz and probably with some copper sulphide. About 150 feet east on the same vein is an outcrop of quartz vein. Presumably there will be ribs of quartz in and on the walls of the massive sulphide.

The conditions are such as to suggest that there may be some enrichment of copper in depth. The prospect of silver enrichment in depth seems very uncertain.

Development

This is one of the best lead-zinc prospects I have seen for a long time and deserves exploration. There appears to be a chance for direct smelting silver-lead ore as well as an ore that can be milled for the recovery of silver, lead, zinc, copper and tungsten. The best approach would seem to be to drive east from prospect No. 2 to No. 1 in the footwall of the vein or ore if ore is encountered.

A minimum of 400 feet of drift would be needed with a \pm 150 ft. raise at the end up to the outcrop at prospect No. 1. The road from Kirkland Junction would need to be repaired and extended to No. 2 prospect before any appreciable work could be undertaken on an efficient basis.

Cost of preliminary development (6 months)

5 miles of road repair, 2 miles of road building	
Bull-dozer for 10 days at \$100 a day	\$ 1,000.00
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This work should indicate the next step for development or if there was likely to be enough ore for a concentrating operation. Some direct smelting ore should be produced from the development spoil. Possibly the ultimate aspect of the project will be the mining of only direct smelting ore, but the assay at No. 1 prospect suggest the possibility of a rich complex ore in depth that if concentrated would be very profitable. In order to justify a mill, of course, a large tonnage, say, at least 100,000 tons would be needed. An ore shoot 100 ft. long and 10 ft. wide would give around 100 tons of ore per foot of depth or 10,000 tons for each 100 feet of depth. The chance of developing 100,000 tons would seem to be good considering the geological conditions. length and width of favorable vein, etc. The chance is better, of course, of developing, say, around 5,000 tons of shipping ore considering the limited facts available though it is not impossible that both types of ore will be developed.

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The development work without preliminary diamond drilling is recommended because (1) the prospect is an especially good one, (2) the information to be gained would be many times more definite than from drilling, (3) some shipping ore will be produced, (4) after a successful drilling campaign the work would need to be done anyhow, and (5) the underground workings can be used as a base for deeper drilling that would be done under more favorable conditions than surface drilling.

When, after having finished the road building, the bulldozer reaches the area it would be advantageous to employ it for several days at exposing sections of the outcrop. Especially valuable would be a better exposure of the vein at No. 1 prospect.

Mining

The hanging wall appears to be weak and presumably most of the mining will require timber support. This could be by use of stulls if the walls are not too heavy or too far apart or for much of the mining possibly square setting will be needed. A preliminary estimate

of overall mining costs at 100 tons a day is as follows:

Mining Costs

Ore breaking by square setting	
Labor	\$ 4.00
Timber	1.00
Supplies and power	2.00
Tramming, etc.	1.50
Development	2.00
Overhead	1.50
	<u>\$12.00</u>

To this, if the ore is shipped, must be added trucking to the railroad which is estimated at \$4.00 (\$.12 per ton mile) or a total of \$16.00. The smelter return F.O.B. Morristown (it would not be much more for F.O.B. Kirkland) for 15% Pb ore with three ounces of silver is estimated at 20.24 (see letter signed by R. F. Welch in appendix). If the ore is smelted most of the copper and all of the zinc and tungsten would be lost. There may be a penalty for any zinc content over 10%.

It is futile without many more data to be obtained by development to estimate the possible return from the ore should sulphide ore be found and milled, but the value of 15% lead ore with salable lead, copper, zinc and tungsten would be much higher than shipping ore. You could expect to recover 85% of the lead and zinc, possibly 60% of the copper and 60% of the tungsten. The presence of partially oxidized copper minerals, however, even chalcocite can hurt the recovery of lead and zinc. The tungsten (as sheelite) because of its sliming character usually presents a difficult recovery problem. Flotation tungsten concentrates are usually difficult to sell. A gravity concentration arrangement in the mill circuit would probably recover some of the tungsten as a salable concentrate.

Of course, much of the above is speculation, and will continue to be at least until the preliminary development work is done. A more definite idea of the grade and size of the possible ore body or bodies, is, of course, essential. The property is only a prospect, but is an excellent one or so it appears to me. The ore might be too spotty and small to return development expense.

The water requirements for a 100 ton complex sulphide mill may be at least 200 tons per day or 48,000 gallons which is 33 gallons per minute. A search for at least 50 GPM should start at about the time the development work starts. This would allow for an excess for camp and mine use and for variations in the drouth cycle, etc.

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Summary and Conclusions

1. The patented claims and locations held by you in the Copperopolis area of the Castle Creek District are marked by numerous exposures of mineralized veins and lodes from which there has been a minor production mostly of copper ore. The prospects presently of the most interest are the Melinda Jane and the Mammoth. These were the ones visited on my

trip, September 17, 1956. The Melinda Jane is the best lead-zinc prospect I have seen in the Southwest for a long time. The Mammoth copper "mine" is of fair interest and deserves an additional diamond drill hole or two should the Melinda Jane be made accessible and successfully developed.

2. The mineralization at both these prospects is along fault-veins, and is vein-like in character. The walls are intermediate to acid types of schist and igneous rocks. The outcrops are largely oxidized but sulphides are known to occur at shallow depths.

3. The Melinda Jane seems well worth exploration with an excellent chance for a moderate tonnage of lead-silver ore of shipping grade. The possibilities seem good also for the development of a large enough tonnage of complex sulphide ore to justify the building of a concentrating mill. The products to be expected would be a silver-copper bearing lead concentrate, a zinc concentrate and a gravity tungsten concentrate. Some of the oxidized lead ore would doubtless be flotable. The product would be a silver-bearing lead concentrate. This estimated outcome is, of course, speculation based on limited facts. Only development work can establish the basis for a final estimate of the possibilities.

4. It is recommended that a 400 ft. adit be driven east from prospect No. 2 toward No. 1 and that a raise ± 150 ft. high be put up to connect with the surface at No. 1. The total cost including road building general expense and property payments is estimated at \$25,000. Preliminary diamond drilling is not recommended.

5. Square setting an/or stulls are likely to be required for mining because at least part of the hanging wall has been broken by faulting. The costs for producing shipping ore are estimated to be \$16.00 F.O.B. Kirkland, Arizona. The sale of 15% Pb ore should return around \$20.00 (see appendix). The sale of 18% Pb grade ore should return around \$27.00 a ton. Some high grade galena ore may be sorted out and shipped for smelting during the development work.

A five foot development round per day in ore of 15% Pb would produce 15 tons of ore that would net \$60 . This would pay for 40% of the cost of the round.

original signed
HARRISON SCHMITT

HAS:
CC: 2 extra

A P P E N D I X

AMERICAN SMELTING AND REFINING COMPANY
810 Valley Bank Bldg.
Tucson, Arizona

August 1, 1956

Mr. H. L. Carter
270 Meadows Building
Dallas, Texas

Dear Sir:

Inasmuch as you are exploring a lead property north of Morristown, Arizona, to give you an idea of the outcome on lead ore I show below return on 15% lead with 3 ounces silver per ton shipped to El Paso plant from Wickenburg or Morristown (Castle Hot Springs).

Payments: Silver		1.77	
Lead 243 lbs. @ .139		<u>33.78</u>	
Total Payments		35.55	
Deduct: Base charge on 30% dry	6.50		
Lead deficiency chg.	1.65		
Bullion frt. tax	<u>.09</u>	<u>8.24</u>	
Value after smelting		27.31	
Less freight-40 ton min. car	6.72		
3% transportation tax	.20		
Reset charge	<u>.15</u>	<u>7.07</u>	
Net per ton at Wickenburg or Castle Hot Springs			\$20.24

If you obtain samples I suggest that you advise me the assays and I can then give you the outcome on the results of your sampling.

Yours very truly,

Reed F. Welch

HARRISON SCHMITT
Mining Geologist
Cottage Sanatorium Road
Silver City, N.M.

June 8, 1958

Mr. Edward B. Brooks
3869 Potomac Street
Dallas, Texas

Subject: Melinda Jane Mine, Castle Creek District, Yavapai County, Arizona

I have just received Mr. O'Leary's report for the week ending May 31 and have before me the most recent assays including those of the cross-cut in the winze at 55 ft. and the muck samples from 55 to 65 ft.

Mr. O'Leary's averages of the winze interval 34-59 ft. are muck: Pb 9.6%, Zn 6.2%; channel cuts Pb 8.9%, Zn 7.6%. The last assays of the muck at 60 and 65 ft. show a falling off of the lead content. The average width of the part of the vein which was sampled is 3.5 ft. The agreement between the muck and channel cuts is as close as could be expected. The average Pb is then 9.2% and Zn 3.2%. The combined total is 17.4%. As sulphide this grade with the width of 3.5 ft would normally be called commercial ore. The "ore" is thoroughly oxidized except for relict masses of galena. Where the top of the sulphide ore may be appears to be uncertain.

A large part of the lead, the oxidized part as well as the sulphide part could be recovered by flotation. The oxidized zinc would be lost by most current methods of milling. In any case, there is, of course, a geological chance for high enough lead in the oxidized zone to support a milling enterprise and/or a still higher lead content, 20% or better, that would be shippable.

This is still a better than average lead-zinc prospect and should, if possible, be further prospected even if the "pay-off" has been pretty elusive. The main chance appears to be for an adequate volume of lead-zinc sulphide ore in depth with a grade exceeding 12% combined and a minable width. This type of ore, then, is the main objective and would seem to be best attained at first at least by further sinking of the winze. Diamond drilling on this vein is likely to give unsatisfactory results particularly in the oxidized zone.

The expense of sinking the winze is lower than the average. This is because the ground is easily drilled and blasted and yet stands well without timber. That is not to say that timber sets will not be needed in some places. At the present depth the calculated basic expense is around \$40.00 per foot. The normal contractor's profit and risk could be about 50%. At the present depth the total cost could hardly be less than \$60.00 a foot but should not exceed \$75.00.

original signed
HARRISON SCHMITT

HAS:

CC: H.L. Haskins
1 extra

COPPEROPOLIS AREA
MELINDA JANE AND MAMMOTH CLAIMS
Yavapai County, Arizona

By
Harrison Schmitt

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original signed
HARRISON SCHMITT

HAS:

CC: H.L. Haskins

1 extra

September 24, 1956

Kanoha Development Company
Bank of Southwest Building
Houston, Texas

Subject: Copperopolis area, Mammoth and Melinda Jane claims, etc.,
Castle Creek District, Arizona. Metals: Ag, Cu, Pb, Zn,

Geography, ownership and accessibility

The Melinda Jane and adjoining claims with which this report is largely concerned are in Sections 32, 33 and 34 of T9N and R2W. This area is 16 miles N60E from Wickenburg, Arizona, and 10 miles N45W from Castle Hot Springs. Many of the claims held by you, including the Melinda Jane and Mammoth, are patented.

From Morrystown, Arizona, a station on the Santa Fe Railroad and on highway 60, 70 it is 33 miles by road to the Mammoth and Melinda Jane prospects. The first 22 miles of this road is fair gravel but largely over hills. The last 11 miles is largely in the bottom of Castle Creek, and negotiable with difficulty by any vehicle other than four-wheel drive. It is said that the best access to the area is from the northwest from Kirkland Junction on the same branch of the Santa Fe Railroad as are Morrystown and Wickenburg. From there the first four miles is paved highway and the next 24 is a fair truck road to the Duco Boy claim. The next five miles would need to be repaired and the final two miles to the Melinda Jane would need to be a new road. The total distance is said to be 35 miles with only two bad grades of 10-15 percent for several hundred yards each. The final two miles, it is said, can be cut by bulldozer with little or no blasting.

The area is moderately rough and hilly to mountainous with a local relief of around 700 ft. The average elevation is about 3200 ft. Vegetation is sparse and some water is obtained from a few shallow wells, shafts and mine adits.

History

The immediate area of interest has produced only moderate to small tonnages of ore some of which was shipped and some smelted locally. The Lehman Copper group is said to have shipped five railroad cars of 20% oxidized copper ore. Fairly large stopes may be seen above the Mammoth mine adit.

Geology, Mineralogy, Sampling

The country rock is the so called Yavapai schist intruded by the Bradshaw granite. The following is quoted from Wilson, K. D., et al, "Arizona Lode Gold Mine and Gold Mining," Univ. of Ariz. Bull. vol. V, No. 6, or A.B.M. No. 37, No. 137, p. 61, 62, 1934.

"The Castle Creek district is in southern Yavapai County, in vicinity of upper Castle Creek. It is accessible by unimproved roads that lead from Wickenburg, Wagoner and the Castle Hot Springs highway.

This region is made up mainly of Yavapai schist and Bradshaw granite, locally intruded by dikes of diorite and rhyolite-porphýry and largely mantled on the south by volcanic rocks. It has been deeply and intricately dissected by the southeastward flowing drainage system of Castle Creek. As the elevation ranges from about 2,500 to generally less than 4,000 feet, the streams carry water only occasionally and desert vegetation prevails.

The ore deposits, which occur only in the pre-Cambrian rocks have been grouped by Lindgren⁸³ as follows: Pre-Cambrian gold-quartz Tertiary gold-copper veins, exemplified by the Swallow, Whipsaw, Jones and Copperopolis properties and lead veins. Lindgren states that the total production of the district including rich ore shipped and ore treated in the Lehman and Whipsaw mills, probably amounts to less than

For further reference see U.S. Geol. Survey Bull. 782, p. 186, 1926. This is not available to me.

The mineralization observed on the OK-6, OK-5, Melinda Jane and Mammoth claims is associated with faults and fault zones. It is usually in the form of veins. A major east-west fault zone up to 150 ft. wide and dipping south 50 to 75 degrees strikes through and is apexed by the above claims. It extends west an additional 7500 ft. according to Mr. D. S. O'Leary which makes the total strike extension at least 13,000 ft. The walls are schist and igneous rocks of intermediate to acid character.

The Mammoth mine is comprised of workings on the east end of the major fault zone. Here the zone is about 100 ft. wide, strikes and dips around 75 degrees south. The walls are composed of several rocks mostly acid in character and including probably trachite or andesite in the south wall. The zone has been intruded or replaced by pegmatitic material then rebroken and mineralized with specularite and sulphides. At the surface there is a fair abundance of chrysocolla and malachite with limonite, specularite and minor quartz. There is prominent brecciation and slickensides. The copper mineralization appears to occur largely in the late openings. The strongest brecciation with associated specularite and copper is about 40 ft. wide. In the adit that bears east from the arroyo bottom there are a number of small stopes from which oxidized copper ore has been mined.

It is reported that the Magma Copper Company drilled one surface diamond drill hole that cut the lode at a depth of about 400 feet a few hundred feet east of these stopes. The collar of this hole is still preserved. The hole is said to have had a north bearing, an angle of -45 degrees, was 600 feet deep and cut pegmatitic material as well as pyrite and chalcopyrite, a certain intercept of the core is said to have assayed around .5% Cu.

The surface and underground exposures appear good enough to justify one or more diamond drill holes only if other activity in the area is undertaken such as on the Melinda Jane and only if no records are found that indicate that the underground work in depth was negative or discouraging.

The Melinda Jane claim is just west of the Mammoth, but is separated from it by a fraction which is around 120 feet wide. This should be located if not already covered. The Melinda Jane covers western extension and apex of the Mammoth fault zone or lode. The western extension beyond the Melinda Jane is covered by the OK-5.

The special aspect of the Melinda Jane is an important appearing vein-like, lead-zinc-silver-tungsten mineralization at the hanging wall contact of the major fault zone. Some assays along the contact indicate copper and tungsten as well as the above metals. There are outcrops of vein for 1200 feet on the Melinda Jane and OK-5 claims some of which when sampled gave significant assays. There are four prospect holes. From east to west these are here numbered 1 to 4. They were sampled by Mr. D. S. O'Leary a mining engineer. The most interesting and highest grade

exposure was resampled by me and assayed by Dickinson Laboratories in El Paso, Texas. The results are given in the tabulation below:

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trip, September 17, 1956. The Melinda Jane is the best lead-zinc prospect I have seen in the Southwest for a long time. The Mammoth copper "mine" is of fair interest and deserves an additional diamond drill hole or two should the Melinda Jane be made accessible and successfully developed.

2. The mineralization at both these prospects is along fault-veins, and is vein-like in character. The walls are intermediate to acid types of schist and igneous rocks. The outcrops are largely oxidized but sulphides are known to occur at shallow depths.

3. The Melinda Jane seems well worth exploration with an excellent chance for a moderate tonnage of lead-silver ore of shipping grade. The possibilities seem good also for the development of a large enough tonnage of complex sulphide ore to justify the building of a concentrating mill. The products to be expected would be a silver-copper bearing lead concentrate, a zinc concentrate and a gravity tungsten concentrate. Some of the oxidized lead ore would doubtless be flotable. The product would be a silver-bearing lead concentrate. This estimated outcome is, of course, speculation based on limited facts. Only development work can establish the basis for a final estimate of the possibilities.

4. It is recommended that a 400 ft. adit be driven east from prospect No. 2 toward No. 1 and that a raise ~~±~~150 ft. high be put up to connect with the surface at No. 1. The total cost including road building general expense and property payments is estimated at \$25,000. Preliminary diamond drilling is not recommended.

5. Square setting an/or stulls are likely to be required for mining because at least part of the hanging wall has been broken by faulting. The costs for producing shipping ore are estimated to be \$16.00 F.O.B. Kirkland, Arizona. The sale of 15% Pb ore should return around \$20.00 (see appendix). The sale of 18% Pb grade ore should return around \$27.00 a ton. Some high grade galena ore may be sorted out and shipped for smelting during the development work.

A five foot development round per day in ore of 15% Pb would produce 15 tons of ore that would net \$60 . This would pay for 40% of the cost of the round.

original signed
HARRISON SCHMITT

HAS:
CC: 2 extra

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Amity Group

Date May 1, 1952

District Castle Creek

Engineer Mark Gemmill

Subject: Present status

No information is obtainable regarding the property or ownership. It is reported that Mr. Dalton did some prospecting on the property some 6 or 8 years ago, but has since left the country. The ore is reported to contain gold and copper.

★ Following extensive surface sampling, Magma Copper Co., of Superior, has moved a drilling outfit to the Amity property in the Castle Creek district and is preparing to test the ore deposit at depth. The Amity is owned by Thomas S. Dalton, of Morrystown, who has been developing the claims in a small way for some time. Ore values are in copper, gold and lead. ENGIN. & MINING JNL-9-47
VOL. 148 - No. 9

Pierre Perry, Box 275, Wickenburg, Arizona, has leased the Copperopolis mine two miles northeast of Briggs in the Castle Hot Springs district and is moving in equipment for a 10-man crew. The property carries a 9 to 10-foot lead vein and shaft sinking will get under way soon. It is also planned to drive a tunnel to open up the property. The mine is owned by J. W. Ketron of Morrystown, Arizona.
MINING JOURNAL - 4-15-47

see Wickenburg (file)correspondence "Mines of Wickenburg" p 26

REPORT ON THE AMITY GROUP OF CLAIMS
COPPEROPOLIS
(COPPER-GOLD-LEAD VEINS)
CASTLE CREEK MINING DISTRICT, YAVAPAI
COUNTY, ARIZONA, by WILSON D. MICHELL
Superior, Arizona, July 1, 1946.

INTRODUCTION

Location and Accessibility

The Amity Group of sixteen mining claims, three of which are patented, is located around the common intersection of Secs. 27, 28, 33, and 34, in T. 9N., R. 2 W., Gila and Salt River E. 1. & M., in the Castle Creek Mining District of Yavapai County, Arizona. The claims include the old camp of Copperopolis, and are about 1-1/2 miles northeast of the site of Briggs, former location of a small smelter operated in the early 1890's. The area is within the U.S.G.S. topographic map of the Bradshaw Mountains quadrangle.

The property at present is accessible by road from Morrystown, located on U. S. Highway 70. The total distance from Morrystown is 31-1/2 miles, which includes 22 miles on the Castle Hot Springs graded highway, 7 miles of difficult road in the bed of Castle Creek, and 2-1/2 miles of steep dirt road crossing a ridge from Castle Creek at Briggs to the property in the canyon of Copperopolis Creek. In dry weather most passenger cars and ordinary trucks cannot approach closer than about 7 miles from the property, altho a four-wheel drive army reconnaissance car such as that used by the present owners is able to negotiate the road without undue difficulty. The entire trip to the main highway at Morrystown consumes, at best, 2-1/2 hours.

The property at Copperopolis has always been difficult of access since the time of discovery in the early 1880's. Very little work, consisting only of the production by leasers of small amounts of oxidized copper-gold ore mined at the surface has been done in the vicinity of Copperopolis for the past 50 years.

The question of a usable all-weather road to the Amity group will be considered later in this report.

TOPOGRAPHY AND CLIMATE

The country in the vicinity of the Amity group is not of extreme relief,

but is rugged and highly dissected by steep-walled washes. The camp is located in the canyon of Copperopolis Creek, a tributary of Castle Creek which it joins at Briggs. The elevation at Copperopolis camp is 3200 feet. The hills rise steeply northward about one mile to the peak of Lehman Hill, a prominent landmark at an elevation of approximately 4450 feet.

The climate is typical of southern Arizona at moderate elevations, being very much the same as at Superior, so that surface drilling or other operations could be carried on thruout the year. Access is easier under existing road conditions during the winter and summer rainy seasons than it is in the dry periods, but flash floods are a menace during the summer rains.

Most of the hill slopes are covered with mesquite, catsclaw, various kinds of cactus, and greasewood. Rattlesnakes are numerous.

EXAMINATION

The writer examined the property from June 11 to 14, 1946. The examination was facilitated by the guidance and courtesy of two of the owners, Thomas S. Dalton, Sr., and Jack M. Dalton.

A report made for Amity Exploration, Inc., by J. S. Coupal, mining Engineer of Phoenix, in December, 1945, was of assistance in the present work.

Ownership

The thirteen unpatented claims of the Amity Group, which are properly monumented and recorded and to which title is clear, were located by the present owners in 1945. The three patented claims were bought from the former owners, who acquired tax title by purchase from the State of Arizona. The entire group is now owned by Amity Exploration, Inc., an Arizona corporation, Thomas S. Dalton, Sr., President, Box 85, Morristown, Arizona. A one-fourth interest in the corporation is held by each of Thomas S. Dalton, Sr., his sons Jack M. Dalton and Thomas S. Dalton, Jr., and Edward C. White.

Mr. Dalton, Sr., is a practical mining man who has been engaged in mining work in the Western States for 45 years, and his sons have been associated with him in these activities for a considerable period.

Amity Group and Duco Boy Group.

Amity Exploration, Inc., has obtained a 90-day option from June 12, 1946, on the ten patented claims of the Duco Boy Group, the center of which is one mile west of the central portion of the Amity Group. Since, in my opinion, the Duco Boy claims contain part of the extension of the main shear zone of the Amity Group, I believe that consideration should be given to the Duco Boy in conjunction with the Amity. However, because different ownership and option conditions are involved in the two properties, the Duco Boy is reported upon separately.

Attention is called to the fact that the maps accompanying these two reports have been made at the same scale and caused to overlap, so that they can be studied together.

CONCLUSIONS AND RECOMMENDATIONS

1. Wide shear zones cross-cutting the regional rock structure are occupied at the surface by prominent leached iron gossans which contain narrow oxidized copper-gold bodies of good value. The strongest shear zone can be followed for perhaps as much as 11,500 feet, of which 5,400 feet is Amity ground. The shear zones are in a complex of Pre-Cambrian intrusives with schist inclusions.

2. Development is insignificant because of inaccessibility of the deposit, and the property is purely a prospect.

3. There is a good possibility that the leached gossan represents the top of sizable bodies of copper-gold ore, with some erratically distributed lead values, and the oxidized copper showing may be residual from the leaching of the larger bodies.

4. Diamond drilling is recommended to explore first the parts of the major shear zone beneath the most extensive area of iron gossan (on the Mammoth claim) in order to get information eventually on the grade, size, and distribution of possible sulphide ore bodies. Conditions should be good for diamond drilling.

5. An all-weather road will have to be constructed by means of about 2 miles of bulldozer work, making the distance to Wickenburg some 18 miles.

6. Consideration should be given to exploration of the Duco Boy Group

one mile west and containing the probable extension of the major Amity shear zone. Additional ground may be located to cover this shear zone between the two properties.

7. Water supply can readily be developed on the property for drilling and mining purposes.

MINE WORKINGS AND EQUIPMENT

As shown on the map accompanying this report, shallow pits, cuts, shafts, and short tunnels constitute the only mining development on the Amity Group. The Mammoth shaft, reportedly 200 feet deep, is the most extensive working on the property. The purpose of the mine openings was solely for the removal of small amounts of oxidized shipping ore found at the surface in narrow bands within the major leached gossan zones. The samples recorded on the accompanying map represent such stringers of oxidized ore.

A cabin capable of accommodating six men is located at the old camp of Copperopolis. This cabin is now in use by the owners, and is in fair condition. Recently the owners have build a substantial and well-equipped small assay office some 250 yards north of the cabin. The assay office, where running water is available pumped in from the nearby well, serves also as sleeping quarters for two men and as a general office. It is equipped with a shower bath. Lighting, cooking, and assay equipment in the camp use Coleman type gasoline burners.

The owners have a saddle horse at the property, and the reconnaissance car which is used to travel to Morristown.

GENERAL GEOLOGY

Rock Types and Distribution

The Amity property lies within a northeast-trending belt of complexly related intrusives of various types containing inclusions of pre-Cambrian Yavapai schist. This belt, about five miles wide at Copperopolis, is a screen between two great masses of Bradshaw granite. ⁽¹⁾ The mixture of schist and intrusive rocks, all ⁽²⁾ considered pre-Cambrian, has been lumped together by Lindgren under the term "Crooks

(1) N.H.Darton et al, "Geologic Map of State of Arizona", (1924).

(2) Lindgren, W.-"Ore Deposits of the Jerome and Bradshaw Mountains Quadrangles, Arizona" (U.S.G.S.Bull. 782, pp 183-4, (1922)).

complex". On the Amity and Duco Boy properties the igneous intrusives predominate greatly in areal extent over the schist, which is present only as inclusions of relatively small size.

The eroded pre-Cambrian complex has been overlapped south of Copperopolis by Tertiary volcanic flows, including agglomerates, andesite, and rhyolite tuff. These volcanics, which are post-ore in age, touch the extreme southern part of the Amity property (see accompanying map).

No attempt has been made to prepare an areal geologic map of the rock types in the Amity Group, because the distribution is extremely complex and extensive metamorphism has made identification difficult. Notes have been placed on the accompanying map, however, to indicate the larger areas of different rocks where they were encountered in the present examination.

The igneous rocks, which are believed to represent phases or differentiates of the Bradshaw granite magma, include normal granite, diorite, andesite, and dikes of coarse tourmaline-bearing granite pegmatite. In addition to these rocks are dikes of rhyolite, porphyry, and basalt, which are probably younger than the Bradshaw intrusives.

The Yavapai schist is represented by inclusions of dark-colored quartz-mica schist and bodies of black gneiss. There appear to be two principal belts of schist: A westerly one crossing the American and Amity No. 10 claims, and an easterly one in parts of Amity No. 2 and Amity No. 3 claims.

The Tertiary volcanics in the southern parts of Amity and Amity No. 11 claims consist of gray andesite flows and tuff, and rhyolite agglomerate.

Geologic Structure

The prevailing rock structure of the "Crooks complex" on Amity ground is NNE. The structure is indicated by the strike of schistosity, the elongation of schist inclusions within the intrusive bodies, and the trend of bands of different igneous rock types. Insufficient data were secured to permit a generality as to the dip of schistosity or intrusive contacts. The interpretation by Jaggar and Palache⁽¹⁾ that vertical close folding of the schist in the NNE regional trend guided the igneous intrusive

(1) Jaggar and Palache, "Bradshaw Mountains, Arizona", (U.S.G.S. Folio 126, p.9, 1905).

bodies, seems to provide a good explanation for the structure and rock distribution as we see them today.

Crossing the prevailing northeast structure at nearby right-angles (average strike N 60 W) are numerous, wide, and in places prominent, steeply dipping iron gossan zones carrying copper, gold, lead, and silver mineralization. Some of the mineralized zones are associated with rhyolite porphyry dikes.

MINERAL DEPOSITS

Vein Structure

The strongest gossan zones, as has been stated, cut at right angles across the prevailing regional structure. The most important of these zones is prominently developed on the Mammoth claim. As the accompanying map shows, it can be followed on Amity property continuously from Amity No. 1 claim thru Amity No. 10, a distance of 5,400 feet. I believe, also, that the same leached gossan continues westward into the Duco Boy property; and, in fact, on our return from the Duco Boy to Copperopolis we encountered showings between the two properties which are presumably on this same structure. If this is the case, the total length of this leached gossan is about 11,500 feet. The iron gossan seems to terminate eastward rather abruptly in massive granite on Amity No. 1 claim.

The Mammoth gossan zone dips steeply south. It reaches a maximum width of 200 feet at the Mammoth shaft. Along the footwall of the leached gossan is a vein of oxidized copper minerals 5 feet to 6 feet wide on which some tunnelling has been done from creek level (see map). The wall rock is granite and granite pegmatite.

Data concerning other gossan zones are recorded on the accompanying map, and no further description is necessary here. The gossans lie in well-defined shear zones which show evidence of movement, and mineralization has been confined to the channelways which the shear zones provided.

As shown on the map, another set of leached mineralized gossans follow the NNE regional structure. These are less numerous and less strong than the WNW shear zones. The most prominent of the NNE zones is an "open fissure" on Amity No. 6 and Amity No. 5, so called because erosion has removed most of the central part of the

fissure to a depth of 50 feet where the zone crosses a low ridge on Amity No. 6 (see map). There is little evidence of copper mineralization on this fissure.

Vein Mineralogy

No workings have penetrated thru the oxidized and leached zone of the deposits. Exposures of the shear zones contain quartz, silicified and altered country rock, and much porous cellular brown and red limonite and hematite. Within the wide leached zones in places are narrow bands of oxidized copper minerals, which I believe are residual and have escaped the general leaching. This oxidized copper ore, some of which has been shipped, consists of chrysocolla and malachite with hematite and limonite in quartz gangue, and carried gold values with some silver.

In some cases on the same shear zones with the copper mineralization are lead deposits which contain oxidized lead minerals (probably cerussite and anglesite), residual galena, and vanadinite in a gangue of quartz associated with limonite and hematite.

In the opinion of the writer the lead mineralization represents a minor, and probably somewhat later, phase of the copper ore deposition, and the same channelways were utilized. If such is the case, lead values are probably erratic in distribution on the shear zones, except possibly in certain veins (such as the one just south of Copperopolis camp - see map) which happen to have been occupied solely by the lead-bearing mineral assemblage.

Leached Gossan and its Significance

A careful search was made for limonite "boxwork" which might indicate what, if any, copper minerals had been removed from the leached gossan. Some box work derived probably from chalcopyrite was found at widely distributed places on the property, and a little chalcocite box-work was seen. The great abundance of iron suggests the presence originally of much pyrite, and many examples of pyrite boxwork were found. The floods of pyrite-derived limonite (and hematite) would be expected to obscure much evidence of copper sulphide leaching.

My interpretation of the gossan is that sulphide ores containing copper minerals and also a great deal of pyrite were subjected to strong oxidizing conditions, with leaching and transportation of copper values favored by acid and ferric sulphate derived from the decomposition of pyrite. The oxidized copper ores remaining in the leached zone are not continuous or extensive. They seem to me to be possibly residual portions of larger copper bodies, and have survived the strong leaching perhaps because of chemical reaction with inclusions of altered granite or with local occurrences of calcareous gangue minerals. Under such strong leaching conditions, if these small bodies were the only concentrations of copper sulphide in the shear zones, I would not expect them to have survived.

It is not possible to say whether the ores of which samples are recorded on the map represent oxidation of a secondary enriched zone or of primary sulphides, but the values are sufficient to arouse interest under either possibility. The latter case would be more favorable for good sulphide ore at depth. Some chalcocite boxwork is present in the leached gossan, but I would expect evidence of much more chalcocite if the surface exposures represent oxidation of a secondary chalcocite zone.

ORE POSSIBILITIES

The Amity deposit is an essentially undeveloped prospect. The previous discussion has attempted to give reasons for believing that possibilities are good for large copper-gold orebodies beneath the spectacular iron gossan in the shear zones, but no statement more definite than that seems warranted at present.

There is no assurance that the narrow bands of oxidized copper ore now showing are remnants of originally larger bodies which have been mostly leached out, but for reasons previously discussed, I believe that this may be so.

The surface samples, altho covering only narrow widths, are fairly attractive in themselves. It cannot be determined for certain what they indicate as to the grade of primary and secondary sulphide orebodies at depth. A straight unweighted average of the samples on the main, or Mammoth, shear zone for 5,400 feet on Amity property is as follows:

7.12% Cu
0.55 oz. Ag
0.20 oz. Au

As indicated on the map, there are also some erratically distributed but fairly high lead values, with the best lead-bearing vein showing on Amity and Amity No. 11 claims near the old camp.

No workings in the district have gone deep enough to give us an indication of the possible depth of oxidation on the Amity deposits. Lindgren⁽¹⁾ suggests an oxidized zone in that general area of 100 to 400 feet deep, but this is based on work at other types of deposits at some distance from Copperopolis.

RECOMMENDED EXPLORATION

Road Building

If any work is done on the Amity Group, a road will have to be built to the property to avoid the long and difficult present trip in Castle Creek wash. One suggested route north from the property was made by Mr. Coupal. By this route the distance to U. S. Highway 89 at Kirkland Junction would be some 30 miles, and about 3 miles of road would have to be built from Copperopolis to the end of the old road to Lehman's Mill.

A better road connection has been suggested by Mr. Dalton southwest to Wickenburg, a distance of some 18 miles. About 2 miles of road would have to be built from the Melinda Jane claim to the Abe Lincoln Mine, from which fairly good roads lead to Wickenburg. Grades on the road to be built would not be excessive, and a bulldozer could do the work.

DIAMOND DRILLING

It is recommended that exploratory diamond drilling be done on the Amity ground, giving attention first to the strongest part of the Mammoth shear zone near the Mammoth shaft. No attempt is made in this preliminary report to lay out specific proposed holes. The essential thing will be to determine the character and grade of sulphide material if found.

The topography is suitable for diamond drill exploration of the shear zones. The first holes would probably not have to exceed 700 feet in length. Wall rock on the eastern part of the Mammoth shear zone, where the first drilling would be done is coarse granite, and should drill fairly well.

(1) Lindgren, W., op. cit. p. 49.

Location or Purchase of Other Ground

The American and Britton claims do not have any immediate interest, and the showings on the American, particularly, are not very good. If the Britton claim can be cheaply secured, it might be worth purchasing, but it does not cover any of the main shear zone.

Consideration should be given to exploration on the Duco Boy property, on what is presumably the extension of the major shear zone on the Amity Group. If so, and perhaps in any case, intervening ground on the main shear zone between the properties might well be secured. Some or all of it is probably open to location.

WATER SUPPLY

A 7-foot well has been sunk in the bed of Copperopolis Creek on Amity No. 8 claim. Water from this is pumped to a 750-gallon tank and used for the assay office and domestic purposes. Water was standing in this well even after the long period of drought this year. There are also two springs along the creek near the old camp.

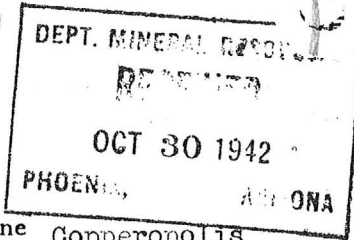
Ample water for drilling and mining should be available if deeper wells are sunk in Copperopolis Creek, which has a fairly large drainage area to the north.

- - - - -

NAME OF MINE: AMITY
OWNER:

COUNTY: Yavapai
DISTRICT: Castle Creek
METALS:

OPERATOR AND ADDRESS		MINE STATUS	
Date: 2/46	Thos. S. Dalton, Sr., Amity Exploration, Inc., Box 384, Prescott	Date: 2/46	Developing



DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA

OWNERS MINE REPORT assisted by Engineer

Date Oct 22 1942

1. Mine Copperopolis
2. Mining District & County Castle Sreek, Yavapai
3. Former name Copperopolis ✓
5. Owner J. W. Ketron ✓
7. Operator not now operated
9. President
11. Mine Supt.
13. Principal Metals copper, lead and silver ✓
15. Production Rate none, due to bad roads.
17. Power: Amt. & Type Would be Gasoline, when operating.
18. Operations: Present Waiting for better roads before operations can continue.
4. Location 30 miles out north east morristown, Ariz
6. Address (Owner) Superior Arizona Box 389
8. Address (Operator)
10. Gen. Mgr.
12. Mill Supt.
14. Men Employed
16. Mill: Type & Cap.
19. Operations Planned If roads can be had so hauling distance can be reduced, development work can be resumed and shipments of copper and leads ore can be made.
20. Number Claims, Title, etc. 3 patented claims. Title acquired by buying property from State and owner has deed from the State.
21. Description: Topography & Geography The property being in the upper Castle Creek country, the topography in places is ruff and steep, with ~~mining~~ sloping ridges pointing down toward the main Creek, making it possible to have roads with moderate grade. The property is about 2 miles above the old Briggs camp.
22. Mine Workings: Amt. & Condition There is a shaft reported to be 200 feet deep and a tunnel driven in from the Creek side. The shaft is reported caved from which there is a stope which extends to the surface.

23. **Geology & Mineralization** are two outcrops on the Copperopolis, one in the granite and pegmatite and this is greatly oxidized. The ledge has several seams and reported to be about 100 feet wide, has a strike N. 60 degrees W and a southwest dip. Some ore was shipped to the smelter at Briggs. The ore is a copper (Chrysocolla) The copper vein is 6 to 10 feet wide and goes as high as \$50.00 per ton.

24. **Ore Position & Probable Ore Dumps, Tailings** The second vein is a lead vein said to be 6 and 8 feet thick and carries values up to \$100.00 per ton. The wall rock here seems to be andesite. The ore is mostly lead carbonate with some galena and anglesite carrying 4 Ozs silver, with some manganese.

24-A Vein Width, Length, Value, etc.

25. **Mine, Mill Equipment & Flow Sheet** No equipment

26. **Road Conditions, Route** The road from Morristown rough and steep and over 30 miles long. Road to Wickenburg also rough and steep in places and a distance of 18 miles. The new proposed road will shorten by way of Wickenburg at least 16 miles and make it possible to develop and ship from this mine.

27. **Water Supply** Water from well on Copperopolis creek.

28. **Brief History** In early days this property produced copper ore which was treated in the smelter at Briggs, but due to high cost of ore hauling over the present roads very little has been done in recent years.

29. **Special Problems, Reports Filed** The most important problem now is roads.

30. **Remarks** The thickness of the veins with their thousand of feet on the strike indicates that a large tonnage of both lead and copper can be produced.

31. **If property for sale: Price, terms and address to negotiate.** Owner will consider a sale and will make reasonable terms to anyone who will develop.

32. **Signed**..... J. W. Ketron
..... assisted by A. C. Nebeker

33. Use additional sheets if necessary.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
OWNERS MINE REPORT

Date 10-22-1942

1. Mine, *Copperopolis*
2. Mining District & County, *Castle Creek District*
3. Former name *Yavapai County*
American Group Mining Co
4. Location, *Thirty miles North*
of Maricopa Arizona.
5. Owner *J. W. Keton*
6. Address (Owner) *Box 389*
7. Operator
8. Address (Operator) *Superior Ariz*
9. President
10. Gen. Mgr.
11. Mine Supt.
12. Mill Supt.
13. Principal Metals *Copper, Lead, Silver*
14. Men Employed
15. Production Rate
16. Mill: Type & Cap.
17. Power: Amt. & Type
18. Operations: Present *None on account of road. and finances*
19. Operations Planned *on a deal to sell Property. Engineer to be*
here before Nov 1st. to examine property. and make report
20. Number Claims, Title, etc. *Three patented Claims, Purchased from*
State. have been sold to Property from State of Arizona
21. Description: Topography & Geography
22. Mine Workings: Amt. & Condition

23. Geology & Mineralization

24. Ore: Positive & Probable, Ore Dumps, Tailings

24-A Vein Width, Length, Value, etc.

Lead vein six to eight feet wide, values up to \$100.00 per ton
Copper vein six to ten feet wide, values up to \$50.00 per ton

25. Mine, Mill Equipment & Flow Sheet

26. Road Conditions, Route

Very poor from Monistown or Wickensburg to mill

27. Water Supply

Well on Copperopolis Creek

28. Brief History

Patented 1896 by American Group mining Co. Tunnel drove from creek east on Copper and stopped out to surface. Shaft sunk depth unknown

29. Special Problems, Reports Filed

30. Remarks

31. If property for sale: Price, terms and address to negotiate.

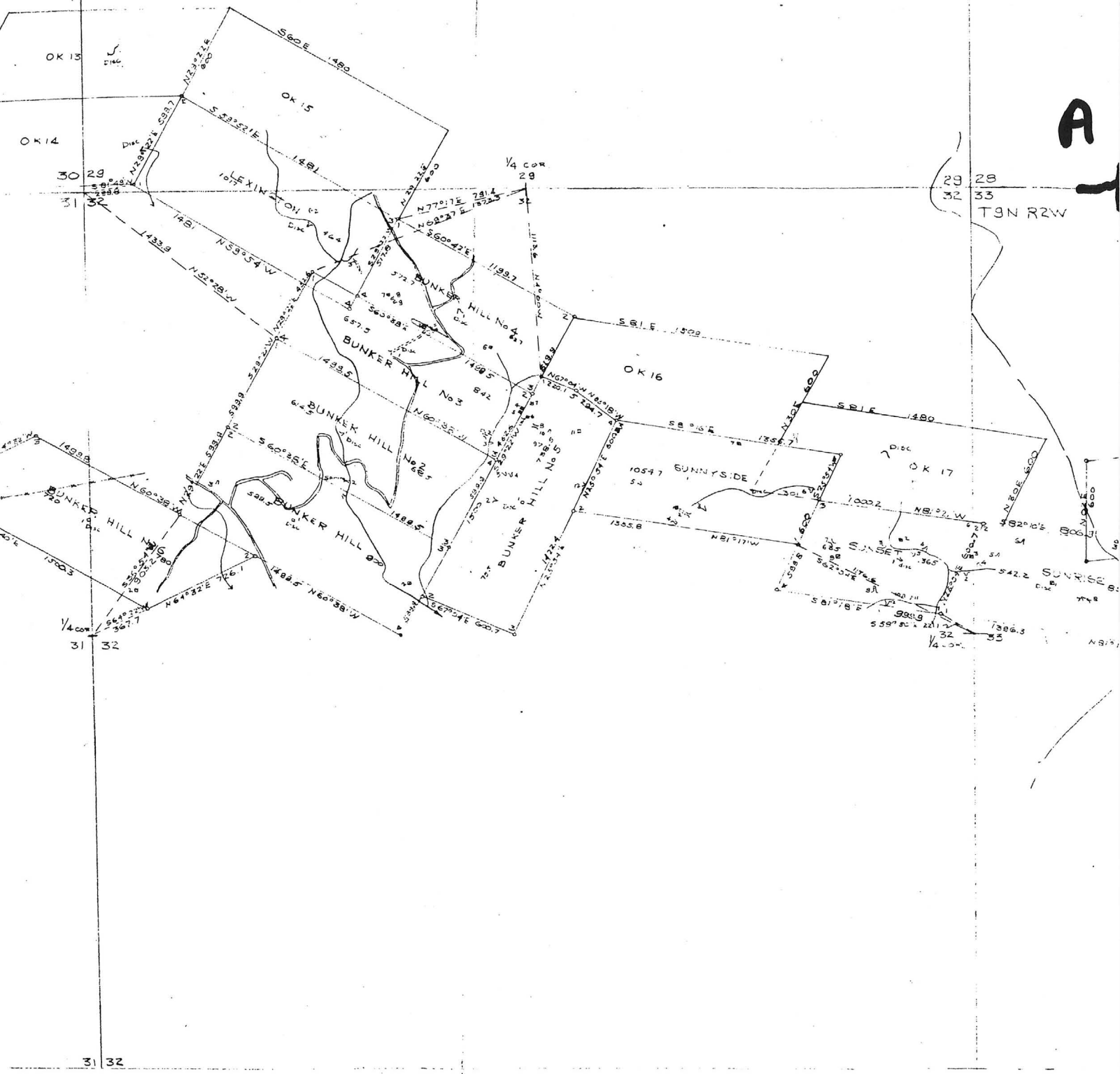
Yes Property is for sale. Will give price and terms to any interested party

32. Signed J. W. Ketchum

33. Use additional sheets if necessary.

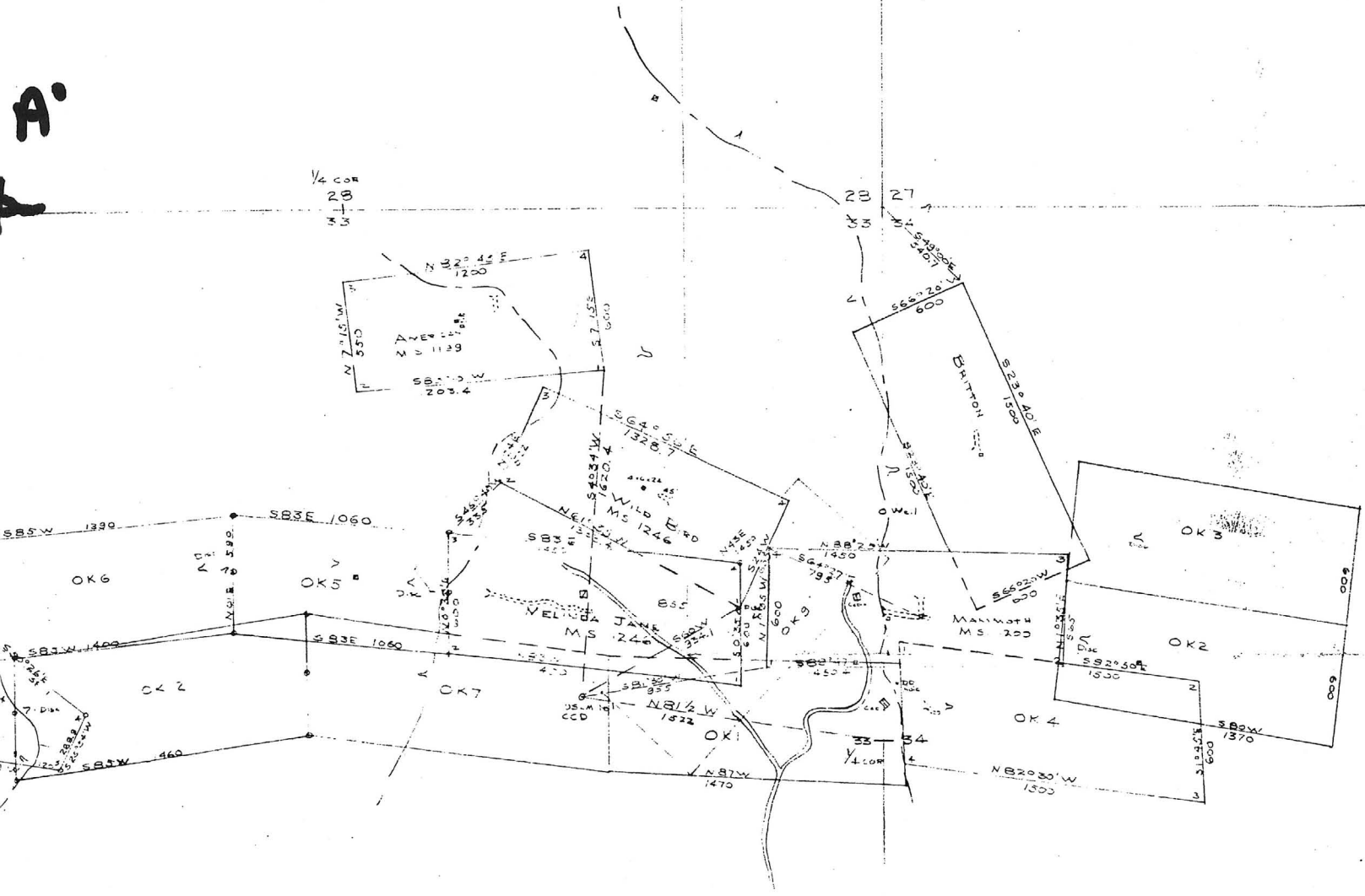
Box 389 Superior Arizona

A



A'

1/2 COR
28
33



SCALE 1" = 400'

33 34

T8N R2W

CORNER OF DUO B... AND OK CL...

CASTLE CREEK MINING DISTRICT

YAVAPAI COUNTY ARIZONA

FROM: PATENT PLATS AND STADIA S...

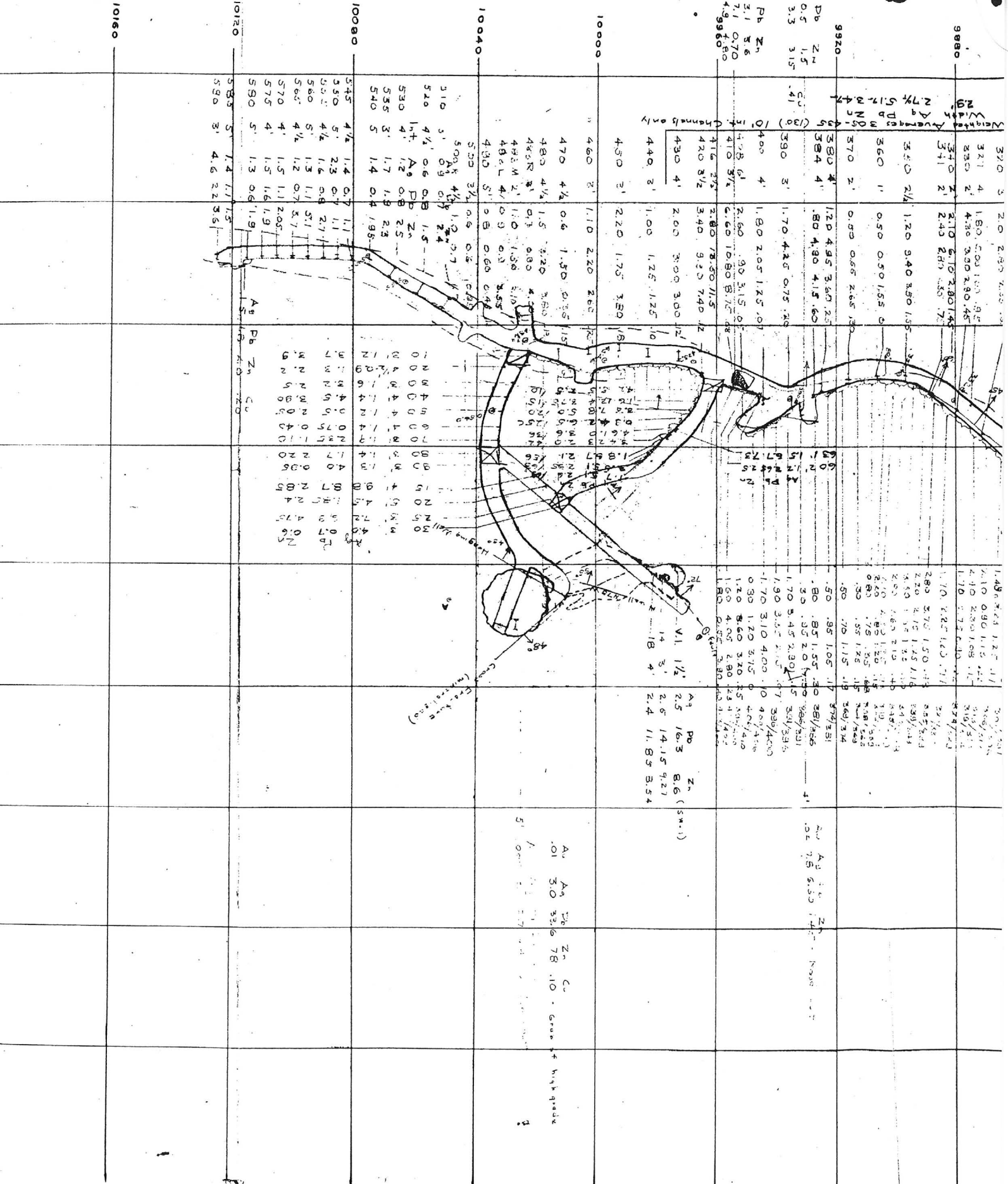
DS O'LEARY #4 5/16/57

T B

A9 3' 1.5
 D6 0.5 0.5 1.5
 B5 X 1/2 - max 0.7 3.3 3.15
 A9 Pb Zn
 21 2.1 5.6
 28 7.8 0.70
 4.99 6.00
 4/8

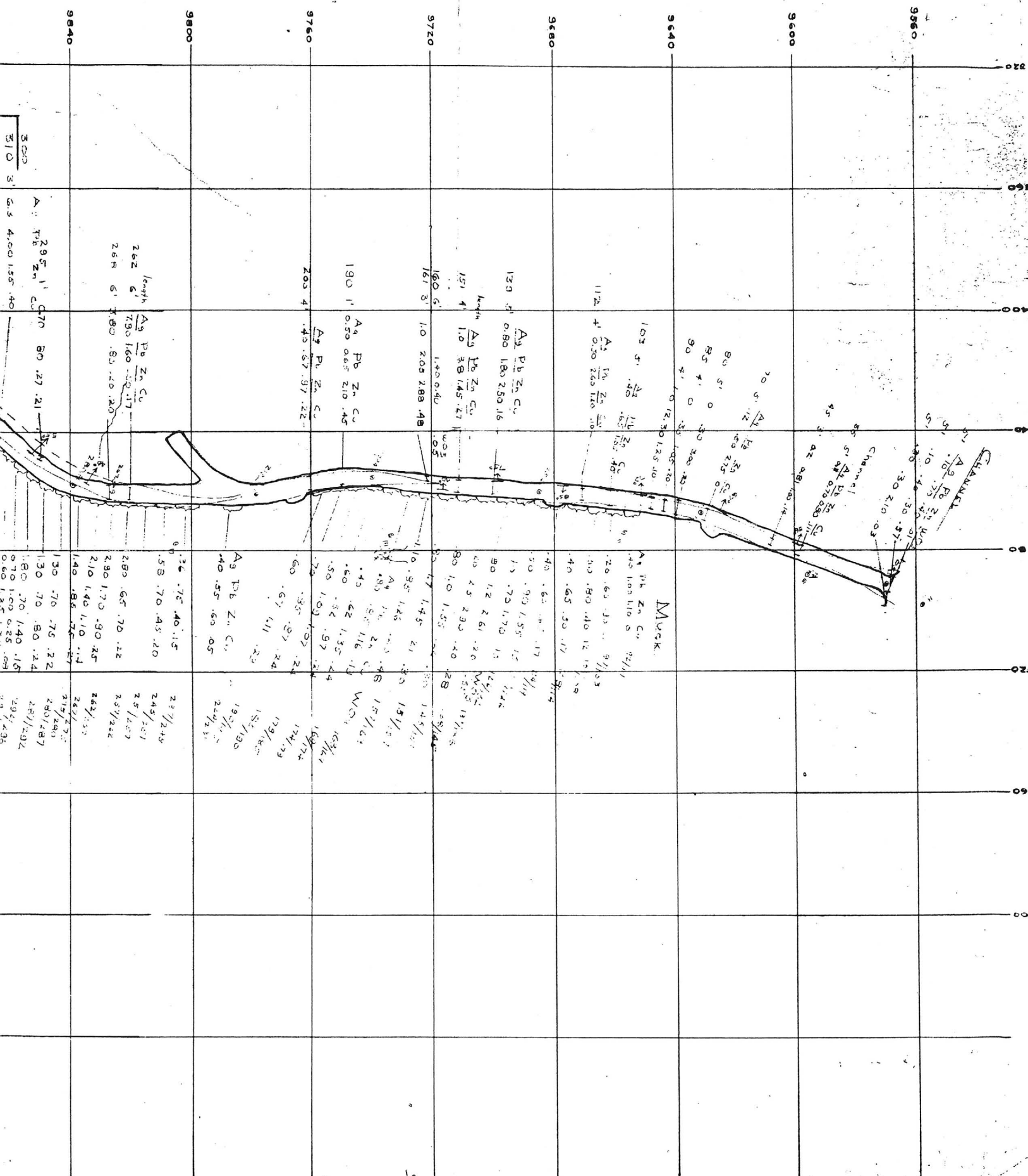


MELINDA JA
 C NDERA FOUR



A9 30
 A9 30
 D6 33.6
 Zn 78
 Cu 10
 Green Hill
 Korsekoran

T B

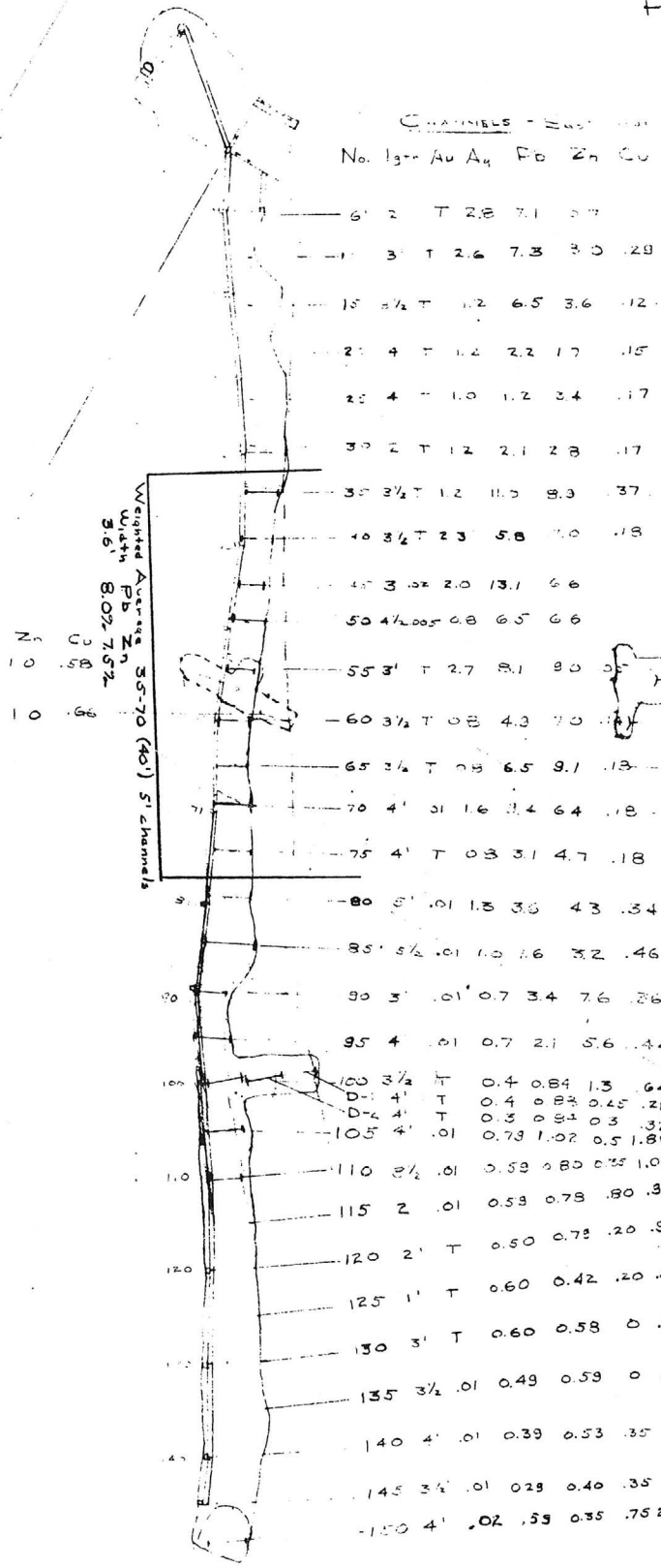


X-SECTION
Looking S70E

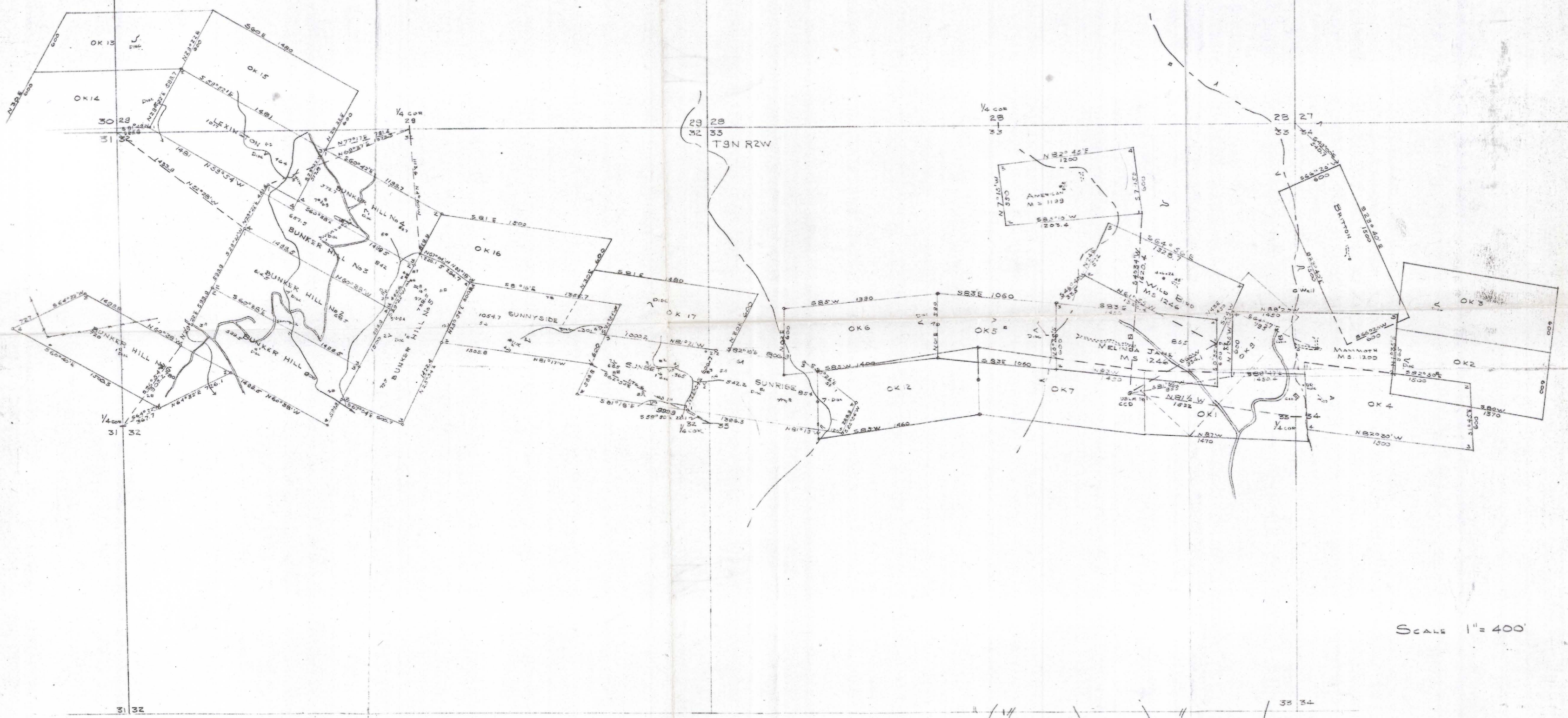
PLANE OF VEIN

CHANNELS - East side
No. Lgth Au Ag Pb Zn Cu

Muck
Au Ag Pb Zn Cu



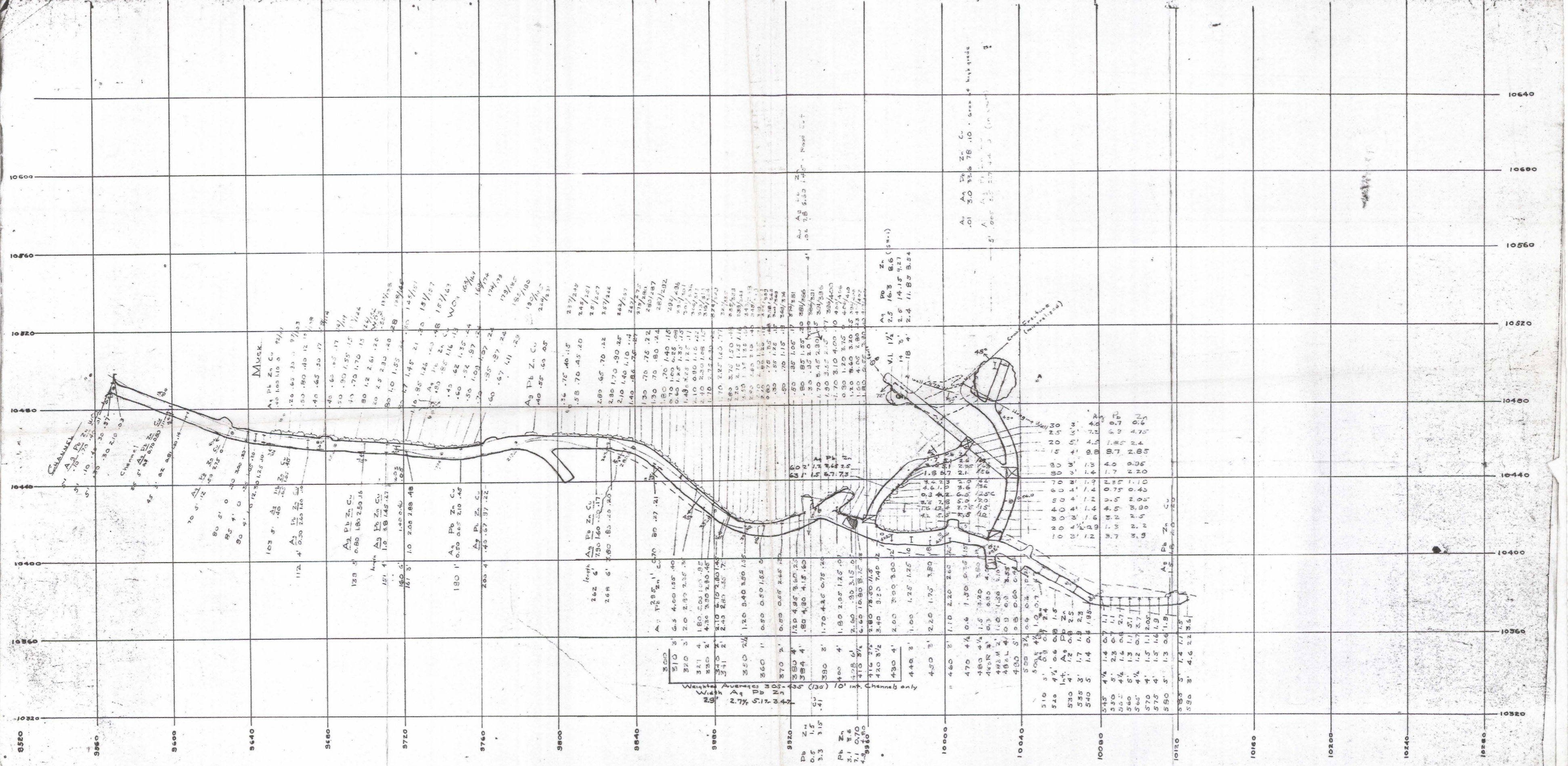
Channel No.	Lgth	Au	Ag	Pb	Zn	Cu
1	6' 2'	T	2.8	7.1	5.7	
2	15' 3 1/2'	T	2.6	7.3	3.0	.28
3	21' 4'	T	1.2	2.2	1.7	.15
4	25' 4'	T	1.0	1.2	2.4	.17
5	33' 2'	T	1.2	2.1	2.8	.17
6	35' 3 1/2'	T	1.2	11.5	8.3	.37
7	40' 3 1/2'	T	2.3	5.8	7.0	.18
8	45' 3'	T	2.0	13.1	6.6	
9	50' 4 1/2'	.005	0.8	6.5	6.6	
10	55' 3'	T	2.7	8.1	8.0	.05
11	60' 3 1/2'	T	0.8	4.3	7.0	.14
12	65' 3 1/2'	T	0.8	6.5	9.1	.13
13	70' 4'	T	0.1	1.6	3.4	.64
14	75' 4'	T	0.3	3.1	4.7	.18
15	80' 5'	.01	1.3	3.6	4.3	.34
16	85' 5 1/2'	.01	1.5	1.6	3.2	.46
17	90' 5'	.01	0.7	3.4	7.6	.26
18	95' 4'	.01	0.7	2.1	5.6	.44
19	100' 3 1/2'	T	0.4	0.84	1.3	.64
20	100' 4'	T	0.4	0.83	0.45	.28
21	105' 4'	.01	0.3	0.81	0.3	.32
22	110' 2 1/2'	.01	0.58	0.80	0.35	1.08
23	115' 2'	.01	0.58	0.78	.80	.35
24	120' 2'	T	0.50	0.78	.20	.93
25	125' 1'	T	0.60	0.42	.20	.50
26	130' 3'	T	0.60	0.58	0	.70
27	135' 3 1/2'	.01	0.49	0.59	0	.58
28	140' 4'	.01	0.39	0.53	.35	.54
29	145' 3 1/2'	.01	0.29	0.40	.35	.59
30	150' 4'	.02	.59	0.35	.75	2.26
31	0' 4'	T	2.2	2.8	4.6	
32	13' 8'	T	1.7	2.4	4.2	.21
33	19' 22'	T	1.8	3.7	8.1	.22
34	22' 25'	T	1.3	2.7	3.9	.21
35	25' 20'	.005	0.9	1.4	3.6	.28
36	27' 34'	.005	1.2	2.2	4.25	.22
37	34' 33'	T	1.7	5.7	5.6	.26
38	39' 45'	.01	1.4	3.5	6.2	.17
39	45' 50'	.01	1.3	10.4	4.9	.13
40	53' 55'	T	2.6	11.8	15.6	
41	60' 7'	T	1.2	3.5	7.2	.10
42	55' 59'	T	1.8	3.0	7.4	.58
43	X 50'	T	1.1	3.2	4.1	.28
44	59' 65'	T	1.0	3.4	7	.24
45	65' 69'	T	0.9	9.3	5.8	.32
46	69' 74'	T	1.9	4.3	6.7	.30
47	74' 75'	T	0.5	2.3	4.5	.26
48	79' 82'	T	0.5	1.5	2.3	.32
49	82' 87'	T	0.6	3.6	6.6	.32
50	87' 91'	.01	0.5	2.1	8.1	.48
51	91' 97'	T	0.5	3.0	3.9	.46
52	97' 102'	T	0.6	1.18	2.6	.54
53	D 0' 8'	T	0.4	0.82	0.5	.36
54	102' 104'	T	0.4	0.98	1.0	1.00
55	104' 102'	.01	0.33	0.84	1.3	.72
56	109' 113'	T	0.70	0.74	0.6	.64
57	113' 117'	.01	0.63	0.68	0.8	.53
58	117' 122'	.01	0.43	0.68	0.2	.70
59	122' 127'	.01	0.48	0.76	T	.62
60	127' 132'	.01	0.43	0.65	0	.51
61	132' 137'	T	0.40	0.52	0	.35
62	137' 142'	.005	0.40	0.57	.40	.43
63	142' 147'	T	0.40	0.41	.40	.53
64	147' 150'	.01	0.43	0.32	.30	.45
65	150' 4' 8'	T	T	0.42	.50	1.38



SCALE 1" = 400'

T3N R2W

COPPERHOLE, DUGO B., AND OK CLAIMS
 CASTLE CREEK MINING DISTRICT
 YAVAPAI COUNTY, ARIZONA
 FROM: PATENT PLATS AND STADIA SURVEYS
 D. S. O'LEARY #4 5/16/57



Weights Averages 300-450 (30) 10' int. Channels only

Ar Pb Zn
 2.1 2.1 3.6
 VINES - 6 2'
 3.55 x 1/8 - max
 0.7 3.3 3.15
 41

Ar Pb Zn
 2.1 2.1 3.6
 VINES - 6 2'
 3.55 x 1/8 - max
 0.7 3.3 3.15
 41



UNDERGROUND WORKINGS
 MELINDA JANE CLAIM - M.S. 1246
 3/25/58 #2
 Coppelolis
 D. S. O'LEARY

Scale 1" = 20'

X-SECTION
Looking S70E

PLANE OF VEIN

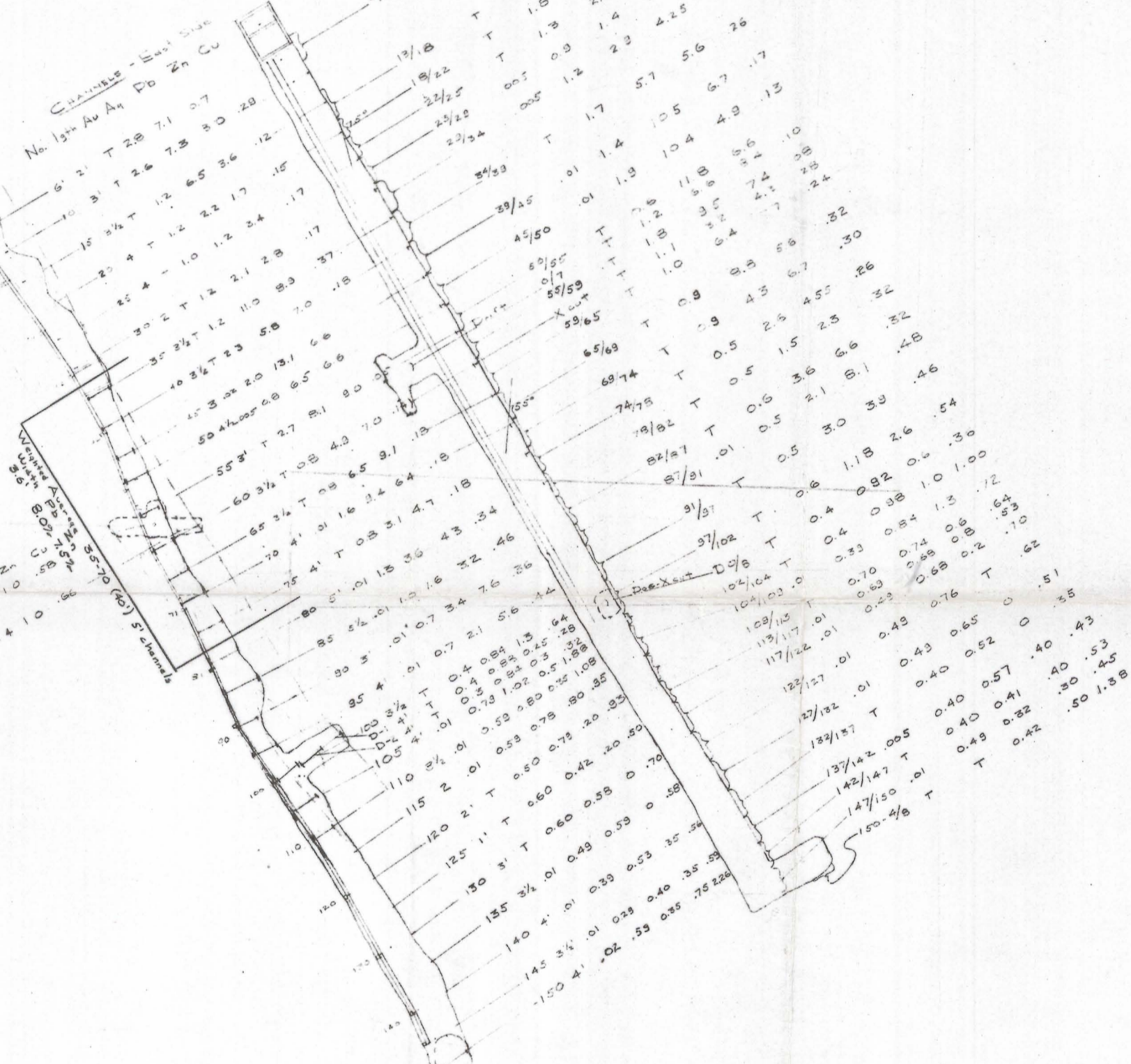
CHAMBERS - East Side
No. 1st Au Ag Pb Zn Cu

Musk Au Ag Pb Zn Cu
T 22 28 46 .14
T 30 43 48

Length 2' T Au Ag Pb Zn Cu
6' 1.5 1.0 .58
Highwall XL 5' T 0.2 1.4 1.0 .56

Vertical distance
80' 20' 50' 70' 90' 110' 130' 150'

35-70 (60') channels



--- VEIN WALLS
--- HIGH GRADE STREAM
(Clayey)
SCALE 1"=10'



MELINDA JANE 410 WINCE
CASTLE CREEK M. D
YAVAPAI COUNTY, ARIZONA

#3
Copperopolis
D. S. O'Leary