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03/20/90

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: COPPER WORLD

ALTERNATE NAMES:
PACIFIC COPPER

MOHAVE COUNTY MILS NUMBER: 515A

LOCATION: TOWNSHIP 18 N RANGE 16 W SECTION 25 QUARTER SE
LATITUDE: N 34DEG 54MIN 34SEC LONGITUDE: W 113DEG 55MIN 20SEC
TOPO MAP NAME: WABAYUMA PEAK - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:
ZINC SULFIDE
COPPER SULFIDE
SILVER
GOLD LODE

BIBLIOGRAPHY:

ADMMR COPPER WORLD MINE FILE
ADMMR MOHAVE CUSTOM MILL PROJECT
ADMMR FILES - COPPER RESERVES OF ARIZONA
MORE, S W. "GEOL. OF ANTLER MINE & VICINITY" (ADMMR GEOLOGY FILE)
EVAL. OF MIN. RES. OF HUALAPAI INDIANS, 1964, VOL. I, P. 88-89
AZ. STATE MINE INSP. ANL. RPT., 1970
BLM UNIT RES. ANA STEP 3 & 4 HUALAPAI UNIT
ADMMR COPPER WORLD COLVO FILE
MALACH, R. "HUALAPAI MOUNTAINS", 1975
MOORE, R.T. "MIN. & WTR. RES. OF AZ" AZBM BUL 180, P 193; 1969
AZ. MINING ASSOC. "COMM. ON BLM UPPER SONORAN DRAFT WILDERNESS IMPACT STATEMENT" (ADMMR GEOLOGY FILE)

Name of Mine or Prospe	Township	Range	Section	Priority
Copper World	18N	16W	25dbd	C
Principal Minerals: Chalcopyrite, Sphalerite, Galena	1:250,000 Quad: Prescott		7.5' - 15' Quad: Wabayuma Peak	
Associated Minerals: Gold, Silver	District: Cedar Valley		Principal Product: Copper-Zinc	
Type of Operation: Underground	County: Mohave	State: AZ	Type of Deposit: Vein-Massive Sulfide	

Ownership or Controlling Interest:
Phelps Dodge Corporation (No date)[2]

Access: From Yucca, Arizona, proceed northeast on Mackenzie Wash Road for 14.5 miles, turn right on jeep trail for 1 mile to mine. Mine is located on topographic quadrangle map.

Structural Control or Geological Association:

"Sphalerite, chalcopyrite, and galena in massive sulfide replacement bodies and as open space vein filling material in a northeast trending zone. These zones are parallel to schistocity of enclosing Precambrian schist. Ore shoots are closely related spatially to pegmatite dikes and lenses."[1]

The Copper World mine is in a roof pendant composed of Precambrian metavolcanic and metasedimentary rocks. Ore and host rock types and structural setting are similar to the Antler mine which occurs in the same metavolcanic suite. The ore at the Copper World mine is closely associated with fibrous silicate rock containing sillimanite and anthophyllite.

Age of Mineralization:

Production History

Production 35,000 tons
Cedar Valley District[1]
1935-56 500 tons lead
1945-54 5000 tons zinc

Patented claim Bk #208
MS #903

Geochemical Analyses

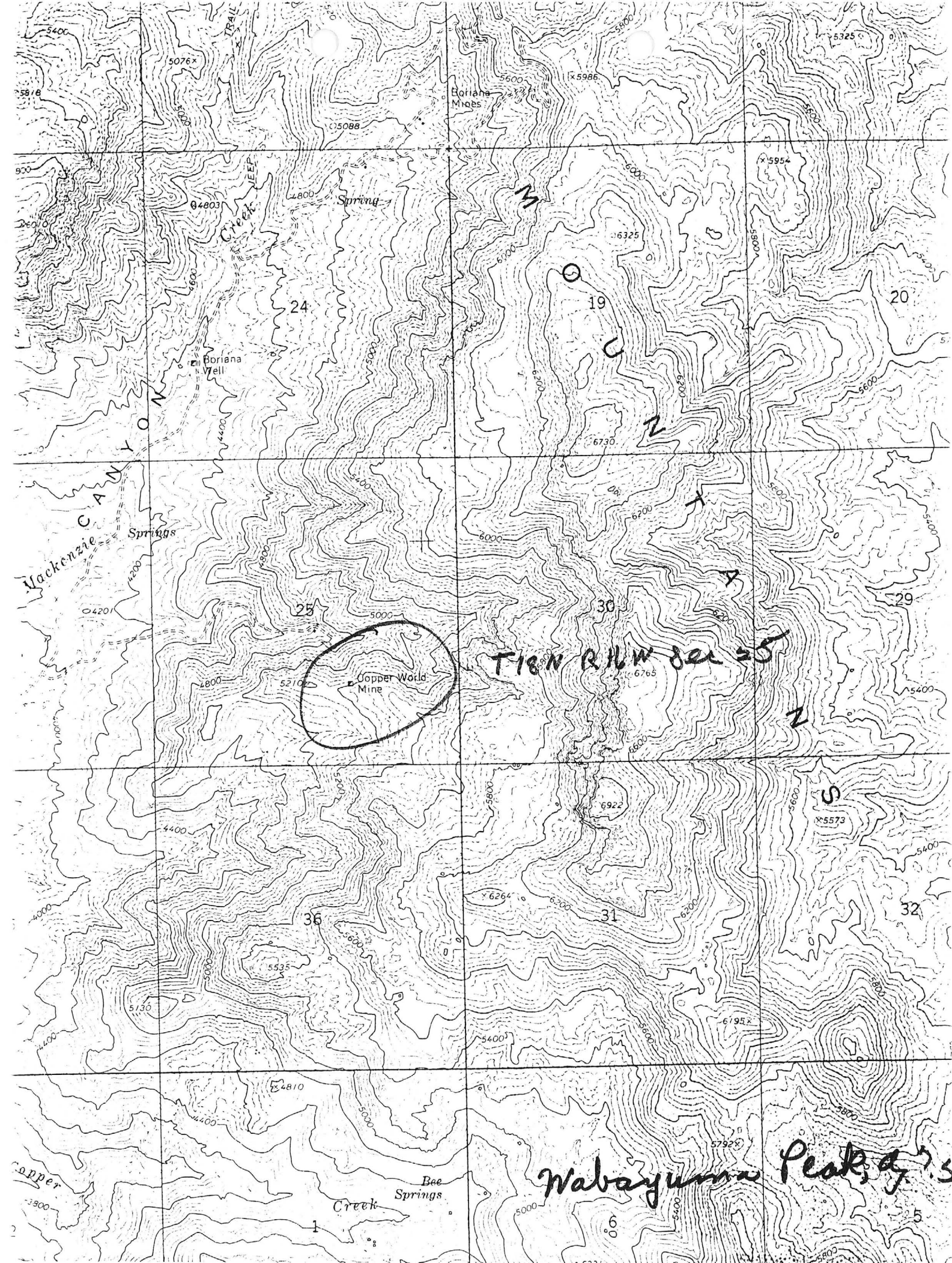
Ore Average[2]--2% copper, 8% zinc, traces of gold and silver

Sample I.D.[3]	Tin (ppm)	Tungsten
81cj270	37	<1
271	21	<1
273	<5	<1
281	<5	<1

Sample ID.[4]	Au(oz/ton)	Ag(oz/ton)	Cu(%)	Pb(%)	Zn(%)
80cj270	<0.001	1.056	2.49	0.408	10.85
271	<0.001	0.811	9.5	0.388	0.969
273	<0.001	<0.009	0.425	0.0035	0.018
281	<0.001	<0.009	0.0075	0.002	0.10

References

1) ABM (1969) Bull. 180, p. 183-205.
2) Mallach (1977) p. 17 & 19.
3) Exploration Research Associates Incorporate, 1982 Memorandum to William H. Crutchfield, Jr., 8 June 1982.
4) Analytical report by Chemical and Mineralogical Services, Salt Lake City, Invoice No. 13857, 27 September 1981.


Boriana Mines
Spring
Creek
JEEP TRAIL
Boriana Well
CANYON
Mackenzie Springs
Copper World Mine
T16N R14W Sec 25
MOCCASIN MTNS
Bee Springs
Creek
Wabayuma Peak 7.5
24
19
20
25
30
29
36
31
32
1
6
5

COPPER WORLD (F) MOHAVE Phx

Dear Friend,

Thank you for your recent inquiry regarding a Tima Oil or Mining property.

The Tima Oil and Mining Company founded by my father Steve E. Tima has been involved with successful oil and mining operations in Arizona for almost half a century. Such world class assets as the Copper World Mine (1 mil. tons + ore), was acquired over a century ago from one of the founders of the Phelps Dodge Corporation. This is only one example of the caliber of property which TOMCO has become synonymous with over the years.

Here in the 90's as financial markets merge the globe and mineral resources become scarcer by the day, we realize that there is a growing need for such reserves as Gold, Platinum, Silver, Copper, Rhodium, Tungsten and Zinc. Thus, we have responded with properties which are not only very efficient to operate but also environmentally sound.

Whether you are looking for a solid long-term investment, asset diversification, or a successful high-yielding production property I invite you to familiarize yourself with TOMCO oil and mining properties.

Best Regards,

Caesar S. Tima
Vice President

TIMA OIL AND MINING COMPANY
Founded 1953
2242 East Lincoln Drive
Phoenix, AZ, USA 85016-1143
Telephone:
Office: (602) 541-9009
Facsimile: (602) 954-0999

11/1992

OWNS COPPER WORLD AND BORANA THINGS

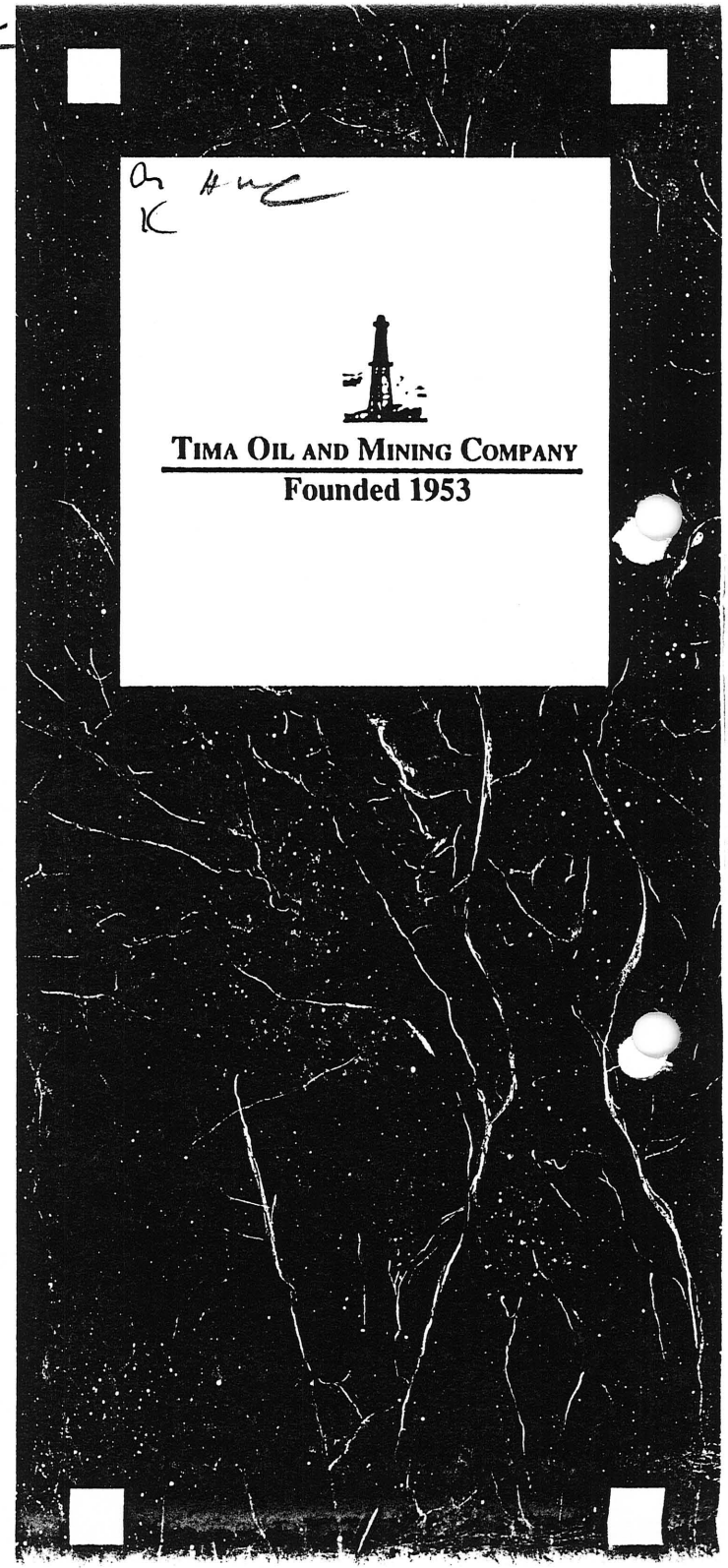
Office 602/955-3535 Mobile 602/377-1052

Founded 1953

TIMA OIL AND MINING, CO.

Steve E. Tima
President

2242 East Lincoln Drive
Phoenix, Arizona USA 85016-1143



I. COPPER WORLD PATENTED MINE

The "Copper World" Mine, is a famous, massive sulfide ore deposit containing mainly copper (4.5%) ad zinc (10%-8%) with additional components such as platinum, silver and gold. Located in Mohave County, Arizona the property lies just 10 miles east of the Santa Fe railhead.

Full documentation is available by the US Government, Newmont Exploration, and Standard Metals. These reports indicate up to 1,489,924 tons of inferred ore.

II. BORIANA TAILING PROJECT

The Boriana Tailing Project is a major deposit containing the tungsten and platinum groups. This project is located only 15 miles east of the Santa Fe railhead, and encompasses up to 600 acres of land.

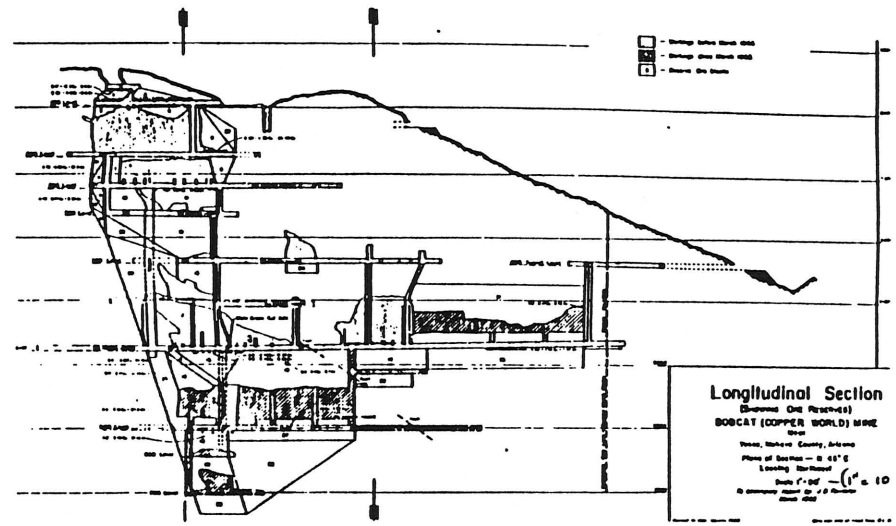
Full documentation is available by the US Bureau of Mines, and indicates up to 1,700,000 tons, above ground. This material is currently ready for processing and shipping.

This property also includes 75% of the required processing equipment. This equipment was purchased and installed for the direct production requirements of the Boriana property and is in operative condition. Currently, over $300,000.00 has been invested in mining equipment, and related expenditure. The Boriana Project has had a long history of successful assays, and is ready to produce. It's data clearly illustrates the magnitude of this venture and its potential as a multi-million dollar production project.

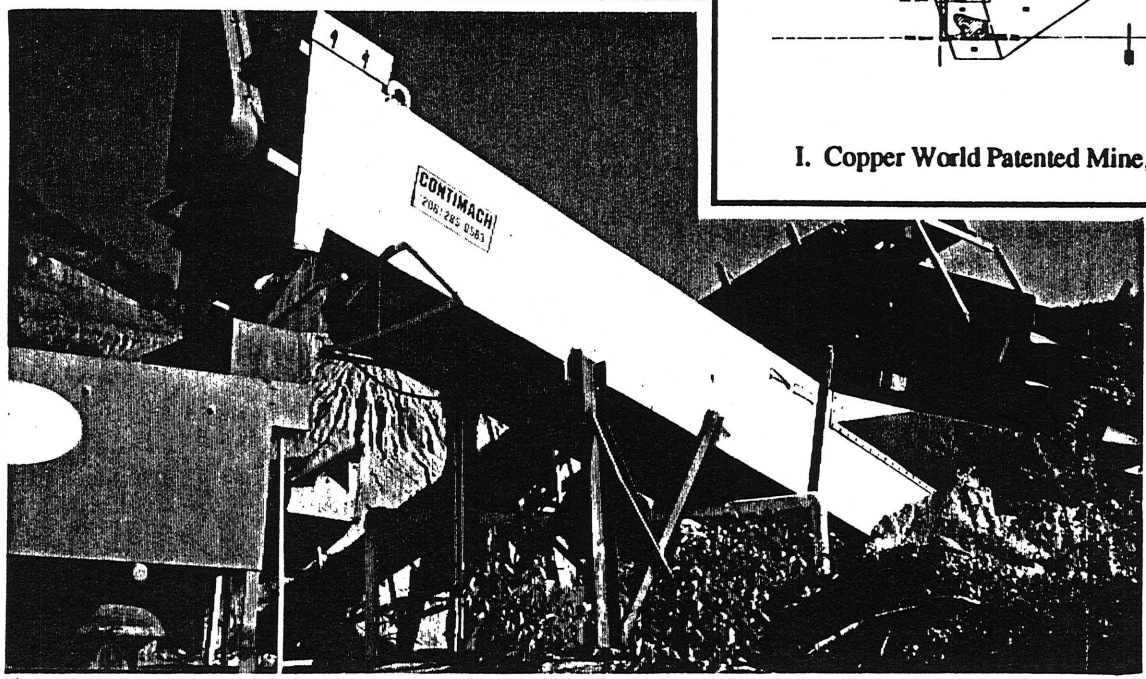
III. THE BLACK SAND PROJECT

The Black Sand Project is a colossal conglomerate of gold, platinum, andsilver. This project is located in a highly accessible location in Mohave County, Arizona and encompasses 2,500 acres of state land as well as 11,000 acres of BLM land.

The Black Sand Project is ideal for on-site separation and shipment via the Santa Fe RR. Full documentation is available on this project and details over one billion tons. This conglomerate is considered a world-class project.



I. Copper World Patented Mine, encompasses 1,489,924 tons of inferred ore.



II. Boriana Tailing Project is composed of 1,700,000 tons, above ground and ready for shipment.

IV. ADDITIONAL PROPERTY INFORMATION

The Tima Oil and Mining Co. also possesses interests or partnerships in many other related operations and fields in Arizona. Additional information is available upon request.

Finally, we would like to thank you for your interest in our assets, and invite you to view them first hand. All of our properties offer flexible purchasing terms, and are available for immediate sale, lease, or trade for stock or real estate.

Once again, thank you and we look forward to hearing from you soon.

8/10/66

TIMA, STEVE E.
2409 W. Orangewood Apt. E
Phoenix, Arizona 85021
PH 944-4900)

2242 E. Lincoln Drive
Phoenix, Az 85016
955-3535 (4/88)
(

See Powdered Metals (file)

Copper World (file) Mohave

TIMA OIL & MINING CO. INC. Letter
5913 W. Glendale Ave. 10-1-62
Glendale, Arizona

Phone: 939-3716

Incorporated since 1951

(8/10/66) - - - 2409 W. Orangewood Apt E (LAS 4/9/65)
Steve Tima, Pres. ~~1928 W. Tuckey Lane~~, Phoenix 85015
Eugene W. Sears, V. Pres.
June M. Tima, Sr., Secy. & Treas.

Ariz. Oil & Mining prop. Financed & Developed -
Specialists in Leases - Exploration - Drilling Blocks -
Mining Appraisals - Development.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Copper World

Date May 15, 1952

District Haulpai, Mohave Co.

Engineer Mark Gemmill

Subject: Present operations

The present owners, The Copper World Mining Co. Yucca, Ariz. are now operating at almost full capacity of their mill, or from 75 to 100 tons per day. They produce a Zinc and copper-lead concentate by selective flotation. Last year their operations were limited to about 50 tons per day due to short water supply and insufficient development word. Now they have plenty of water and also have the mine in much better shape for larger production. Mr. Freeman, Manager reports that they now have substantial orebodies opened up and partially developed.

Mr. Freeman reported to me that they have recently discovered in portions of the orebody, tungsten in the form of Schellite running as high as 1.0% in places. They are making tests to determine a method of recovering and seperating this from the other minerals. He stated that this appears to be quite a problem.

The property appears to be well equipped and managed and to be operating profitably. It should be a substantial producer unless market conditions would interfere.

STATUS OF DORMANT MINES

MINE NAME: Copper World

LOCATION: 18 miles East of Yucca Arizona

OWNER ~~AND/OR LESSEE~~: Dye & Bathrick

ADDRESS: Box 1069 Kingman Ariz.

APPROXIMATE PRODUCTION (Year of 1945):

COPPER 241,288 Lbs. LEAD _____ Lbs.

ZINC 857,731 Lbs. (OTHER) _____

CHECK THE CHIEF CAUSE OF YOUR DISCONTINUED PRODUCTION:

(A) Easily available ore worked out.
(B) Increased costs, but have quantity similar to past grade of ore.
(C) Too close a margin to develop more ore.
(D) Production has been started on a small way to handle the higher grade but am filling with ore mined 2½ Cu + 6 2 N

If you have ore ready to mine please give your estimate of the amount of metal (name each metal) that you could produce in one year (after allowing 60 days to get started) if there were premiums above present market prices. Name amount with a low premium, and amount at a high premium; such as:

Copper at 22½¢ plus 5¢ premium..... 1,000,000 Lbs.
Copper at 22½¢ plus 10¢ premium..... 1,500,000 Lbs.

Cu 500,000 22½ + .05
" 750,000 22½ + .10
2N 1500,000 .15 + .04 = .06

If you do not have ore ready to mine please discuss the following:

(A) Do you think a reasonable development program would produce a justified tonnage of commercial ore at above mine?

Estimated 30,000 to 40,000 Ton were developed during 1948 under high price but could not be mined when price fell

(B) With a premium price (guaranteed for one year) could you carry out such a development program yourself? What premium?

To get out Necessary ore 3 to 5 years Premium guarantee is Necessary, This could be based on cost index and added above market price of Metals. one year is not long enough time.

(C) If you could not do this yourself, would a quick drilling program by some government agency (at government expense) be sufficient?

Drilling plus small amount g development by shafts + drifts.

(D) Or would you prefer a loan plan similar to the arrangements during World War II?

yes for a limited amount g development + a mill.

How about a combination plan in two stages such as follows?

Stage 1: Government engineers review project and, if a little drilling appears to be justified and a preliminary key to the situation, such drilling program to be agreed upon by owner and government engineer, paid for by the government, but let by contract.

Stage 2: If results of drilling (or without drilling) justify underground development and/or production equipment, same to be obtainable via a mortgage loan on property.

Please discuss the above:

above plan would be very good, but a stable price metal market is more important, to take care g higher costs. Most costs have increased better than 50% since 1945, so prices must increase the same.

SUGGESTIONS:

We need to develop more ore below our present levels and install a 50 Ton Mill on the property because the road conditions hauling to other mills require use to leave lower grade ore in the mine which can never be recovered

DATE Aug 7 1950 SIGNATURE R L Hyde

Partner

* * * * *

1. Copper World Mine
2. Mojave County, Arizona
3. J. H. Bathrick and H. L. Dye, Owners
4. W. B. Loring and G. J. Duff
5. Visited January 28, 1950
6. Copper-zinc-silver ore
7. The property should be able to supply ore to a local mill at the rate of 50 tons a day for one and a half or two years, and quite likely for three or four. If such a market for the ore were to materialize, the Copper World property should be evaluated and an offer made for it.
8. _____

* * * * *

*

NAME OF MINE: COPPER WORLD
(16 mi. E. Yucca)

COUNTY: MOHAVE
DISTRICT:
METALS: CU, ZN

OPERATOR AND ADDRESS:		MINE STATUS	
DATE:		DATE:	
5/1/44	R. L. Dye, Box 1069, Kingman	5/1/44	Developing
		6/44	Building access Road
		7/44	Road completed
		11/44	Developing
		10/45	Idle
		6/46	Shipping

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

June 17, 1953

Mr. A. D. Look
Bureau of Mines
140 W. Monroe St.
Phoenix, Arizona

SUBJECT: Visit to the Copper World mine, Allison Steel Manufacturing Co., to give assistance in determining the feasibility of using roof bolts for ground support.

Dear Mr. Look:

On June 9, 1953 a visit was made at the Copper World mine, Allison Steel Manufacturing Co., Mohave County, Arizona to give assistance in determining the feasibility of using roof bolts for ground support. Tests were conducted to determine the anchorage qualities of the strata, and ground conditions were noted.

This copper-zinc ore deposit occurs in a vertical vein which varies in width from 4 to 20 feet and has a strike of approximately N 55° E. The surrounding strata is an igneous intrusive and the immediate walls of the ore zone vary from a few feet of fairly hard and competent gneiss to a few feet of weak schist. At the northeast end of the mine workings the ore is predominantly copper, the north wall is gneiss, and the south wall is schist. To the southwest end of the mine workings the ore is copper-zinc, the north wall is schist, and the south wall is gneiss.

The mine is opened on two levels, the 350 and the 500, and mining was done in the past by the cut-and-fill method, without timbering except where the ground was affected by a fault which cut directly across the vein with an easterly dip of 45 degrees. Square-set timbering had been used in addition to waste filling in the vicinity of the fault.

Plans were to mine in the future by the shrinkage-stope method if roof bolts could be used to support the immediate walls to prevent dilution. It appeared that the gneiss was sufficiently strong that bearing plates only would be needed, whereas the schist tended to slough with exposure and would probably require the use of 3- by 12- by 36-inch headboards in addition to bearing plates. Five-foot bolts placed on 5-foot centers for the schist, and probably on as great as 10-foot centers for the gneiss, should provide adequate support. Roof bolts can also be applied to advantage in drifts to prevent sloughing of the walls, as well as for overhead support where needed.

cc: G. A. Freeman, mgr. (2)
J. Westfield
S. H. Ash
E. Thomas
E. A. Morgan (through E. H. Denny)
E. R. Rodriguez
Files

No stopes were ready for bolting at the time of the visit, so tests were conducted on the 500 level. Three tests were made to check the anchorage qualities of the type of rock that it was believed the bolts in the walls would be anchored in. With one of these tests a hole size of 1-7/16 inches was used and was found to be too large. The two other tests were made with a hole size of approximately 1-3/8 inches and showed that both the igneous rock and the gneiss would afford suitable anchorage for bolting. Wedges of 7/8-inch spread were used with the bolts that were tested. Although the 1-3/8-inch holes afforded good anchorage there was little or no wedge projection after the bolt was anchored, so it is recommended that holes be drilled with 1-1/4-inch bits for bolting with wedges of 7/8-inch spread.

Spacing requirements for bolts in the walls of stopes will have to be determined by experiment. However, where bolts are used for support of the roof or back, the spacing should be a maximum of 5 feet.

Respectfully submitted,

Ernest R. Rodriguez

ERNEST R. RODRIGUEZ
Mining Health & Safety Engineer

*

ANCHORAGE TEST DATA FOR ROOF BOLTS

Mine - Copper World | Company - Allison Steel Mfg. Co. | Place - Mohave County | State - Arizona

Test Location - 500 Level Drift | By - E. R. Rodriguez | Date - June 9, 1953

Bolt No.	Date Installed	Anchorage Material	Drilling Method	Hole Diameter	Bolt Specification: Size	Bolt Specification: Length	Anchorage Specification: Wedge	Anchoring Method	Tightening Method	Wedge Ext. after Anchoring	Ft. Lb. Torque	Pounds Pull	Accumulated Movement (inches)	Remarks
Bolts in North Wall of drift, 20' west of No. 4 Raise:														
1	6/9	Igneous Intrusive (dry)	Jack-hammer on jack-leg	1-7/16"	1"	6½"	7/8" spread	Same machine as used in drilling	Tested without nut	Not measured	None	2,250 5,000 7,500 10,000 15,000	0 2/32+ 6/32+ 10/32+ 14/32+	No anchorage, hole too large.
2	"	"	"	1-13/32"1/	"	"	"	"	"	"	2/4"	"	3,000 5,000 7,500 10,000 12,000 15,000 18,000 20,000 22,000 0	0 0+ 1/32+ 2/32+ 3/32 4/32+ 6/32 7/32- 8/32+ 5/32+	Anchorage good for at least 20,000 lbs.

Note: Bolts were of mild steel. Measurements of accumulated movement were taken independent of movement of base of jack.

1/ Bit size was 1-23/64"

cc: G. A. Freeman, mgr. (2)
E. Thomas
E. A. Morgan
A. J. Barry
A. D. Look
E. R. Rodriguez
Files

ANCHORAGE TEST DATA FOR ROOF BOLTS

Mine - Copper World Company - Allison Steel Mfg. Co. Place - Mohave County State - Arizona

Test Location - 500 Level Drift By - E. R. Rodriguez Date - June 9, 1953

Bolt No.	Date Installed	Anchorage Material	Drilling Method	Hole Diameter	Bolt Specification: Size	Bolt Specification: Length	Anchorage Specification: Wedge	Anchoring Method	Tightening Method	Wedge Ext. after Anchoring	Ft. Lb. Torque	Pounds Pull	Accumulated Movement (inches)	Remarks
Bolts in south wall of drift, 30' west of adit intersection:														
3	6/9	Highly fractured gneiss (dry)	Jack-hammer on jack-leg	1-3/8"	1"	6½"	7/8" spread	Same machine as used in drilling	Tested without nut	None	None	3,000 5,000 7,500 10,000 12,000 15,000 18,000 20,000 24,000 0	0 0+ 1/32+ 2/32- 2/32+ 4/32- 6/32- 7/32- 9/32+ 8/32	Anchorage good for at least 20,000 lbs.

*

STATE OF ARIZONA
DEPARTMENT OF MINERAL RESOURCES
MINERAL BUILDING, FAIRGROUNDS
PHOENIX, ARIZONA

April 12,1953.

From:
P.O.Box 1246
Kingman,Ariz.

Mr. Charles F. Willis,
508 Title & Trust Bldg.,
Phoenix, Arizona.

Dear Mr. Willis:-

Replying to your letter of the 10th in which you pass on Bill Broadgate's question,"what kind of an outfit is the Mountain States Metal Company-Copper World Mine;are they well financed;are they in production;do they have large reserves; and, how high cost?".

The Mountain States Metals Company got the Copper World Mine under bond and lease from Dye & Bathrick of Kingman. Mountain States spent over $100,000.00 building a very nice 75 ton per 24 hours flotation mill at the portal of their 500 level adit, and in re-opening the mine, getting water supply,etc. Under managership of George A. Freeman they were producing copper and zinc concentrates from ore averaging about 10% zinc and 3% copper. As they got into full production, zinc price started down a year or so ago. They were in debt and those putting up the money got tired of it and let Freeman try to make it go from the mine.

During the latter part of this time Freeman and other members of the company spent a lot of time and money phoning and going to Washington,etc., and were led to believe that they would get 10¢ copper premium and that they had about $20,000 coming retro-active.

Freeman interested Bill Allison (Allison Steel) in the property and I understand that Allison is in control now and if he continues, will pick up the debts. They have been running the mill about two shifts lately and doing development besides some mining. They have been opening ore with higher copper and silver and lower zinc than usual. Some of this in drifting and some indicated below the adit in three diamond drill holes. At reasonable metal prices, they are reasonably sure of say two or three years ore at fifty tons per day. Development may open much more than this laterly and below the adit.

They have fairly high costs, due to size of operation, distance from railroad (Yucca 16 miles) and fairly bad ground requiring timber and fill.

Dye & Bathrick bought the mine from Phelps Dodge. They still are getting royalty applying on the purchase in the present operation. Freeman and I and some associates started buying the mine in 1948 & 1949 from D. & B., drove the adit,etc., and went broke in the 1949 metal crash. Since 1945 the mine has produced roughly 25,000 tons of ore grading about 3½% copper and 10½% zinc.

Sincerely,
George F. Reed
George F. Reed,Field Engr.

*

C.C. to R.I.C.M.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine COPPER WORLD Date August 3, 1943

District Cedar Valley, Mohave Co., Ariz. Engineer Elgin B. Holt

Subject:

R E P O R T

OWNER: Phelps Dodge Corporation.

LESSEES: Dye and Bathrick, Kingman, Arizona.

METALS: Zinc, copper, gold and silver

AREA & LOCATION:

This property, consisting of one patented mining claim, is located in Cedar Valley Mining District No. 43, in Mohave County, Arizona, about 16 miles easterly from Yucca, a station on the Santa Fe Railroad. From Yucca, property is reached by following the Boriana road east about 14.5 miles; thence southeast around 1.5 miles by a rough pack trail, along a mountain canyon.

EXAMINATION:

On August 2, 1943, I visited the Copper World mine in company with Dye & Bathrick, who are making plans to apply for a preliminary development loan from RFC with which to clean out and make accessible the principal workings of property. My inspection of property was confined to a few hours and I made no attempt to cut samples. Hence, this report is mainly a rough physical description of the mine.

REPORTS:

Dye & Bathrick furnished me with the following data on property:

1. A report and assay maps by W. Tovote, 1916;

2. An assay map by C. E. Mills and P. F. Yates, 1942; and

3. Assays by Dye & Bathrick.

This data is available for inspection by anyone that may becme interested in this property.

GEOLOGY - ORE SHOOT:

Per Tovote, "While the fact remains that the proven ore shoot is rather short and that the vein in depth turns into zinc almost to the exclusi n of copper, still there are indications that ore might be developed beyond the present ore shoot, whose length is about 250 feet, and there is quite an amount of oxidized copper ore in the mine and dumps which might be handled with profit.

"The mine is situated about 16 or 17 miles east of Yucca high on the shoulder of a schist ridge which rises t the high granite massive bordering the schist basin on the east.

"The vein system of the Copper World has a general strike of N %0 degrees to 60 degrees E, with vertical or steep dip NW. Outside of sometimes fairly strong N 30 degrees W and N 60 degrees W cross fractures that do not show decided influence upon the mineralization, there are N 30 degrees E pegmatite dikes and veins and at least one strong E-W fault with dip to the north which seems to deflect the ore-bearing veins and to terminate at least temporarily the mineralization to the SW. xxxxxxxxxxxxxxxxx

"Below and to the NE is the main open cut from where considerable ore has been mined. The vein zone here conists in 4 slightly converging veins with oxidized copper ore and bunches of ore or copper stain through the altered material separating the veins. The maximum width of the vein zone here is 40 feet narrowing to the NE."

MINE WORKINGS:

Workings in the productive area of the mine are: Tunnel No. 1, Tunnel No. 2 and Tunnel No. 4; the latter also being known as the Main Tunnel. I entered these workings as far as the caved ground would permit. The Main Tunnel, per Tevote's maps, has a total length of around 275 feet; but we were only able to enter it for a length of 190 feet, or t a point adjacent to the main pay vein, on which, per maps, a drift was run NE 180 feet; and SW 50 feet. This level is now inacessible due to caved ground at the 190-foot point mentioned. However Tevote's assay map gives the following results for the level:

No.	Width	Cu-%	Oz-Au	Oz-Ag	Zn-%	Remarks
40	14"	-	Tr.	0.84	35.9	Widest part, 20' sul. lens
41	12"	-	Tr	0.80	33.7	Irregular sul.,partly leached
42	19"	-	Tr	0.52	30.8	Sul. lens in vein
43	43"	5.84	Tr	0.80	29.4	Mixed sulphide
44	17"	5.02	Tr	0.68	40.7	Sphalerite breccia, ptly leached
45	60"	4.31	Tr	0.88	40.2	Solid sulphide
46	15"	2.65	Tr	0.80	5.4	Poor silicious sul. vein
47	15"	10.40	Tr	1.28	-	Do-hanging split
48	65"	11.30	Tr	1.24	32.4	Sul. & altered granite

However, the mineralized shear zone cut by the Main Tunnel has a width of at least 50 feet, with bands of zinc and sopper sulphide ores crossing the said tunnel. One of these bands of ore has a width of 8 feet and this was sampled by Dye & Bathrick, with the following results:

No.	Width	Cu%	Oz-Au	Oz-Ag	Zn-%
DB12	8 ft.	3.35	0.01	0.40	1.20

WINZE:

Tovote states that a winze was sunk from the Main Tunnel level, on the main ore vein, to a depth of 100 feet; that "the winze is practically vertical and untimbered except for occasional stulls. I did not consider it safe to go down, as the strong sulphatization has probably destroyed the iron of the nails." From other sources, Dye & Bathrick have been informed that this winze was sunk on a vein of solid zinc sulphide ore; but there is no data at all available as to the assay values of ores found in this winze.

CONCLUSION:

From facts herein set forth, I believe this property warrants the expenditure of around $5,000, to be used for the purpose of cleaning out the Main Tunnel and lateral workings therefrom, including the winze mentioned above. If this is done, I am confident enough ore can be exposed to justify a comprehensive plan of development work with a view to blocking out an underground ore supply that should later warrant the erection, at some point near the property, of a selective flotation plant with a capacity commensurate with the amount of ore that may be developed, and which I would now estimate at not less than 50 tons daily.

Elgin B. Holt,
Field Engineer.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

RECOMMENDATIONS OF ROOF CONTROL ENGINEER

COMPANY Allison Steel Mfg. Co. MINE Copper World

ADDRESS Kingman, Arizona COUNTY Mohave

LOCATION IN MINE Roof of stations, drift intersections, drifts, etc. and back in drifts, or stopes.

TYPICAL ROOF SECTION, IMMEDIATE AREA

Same as shown on "recommendations for walls of stopes or drifts."

HAVE PREVIOUS INSTALLATIONS BEEN TRIED: No.

cc: G. A. Freeman, mgr. (2)
E. Thomas
E. A. Morgan
A. D. Look
E. R. Rodriguez
Files

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

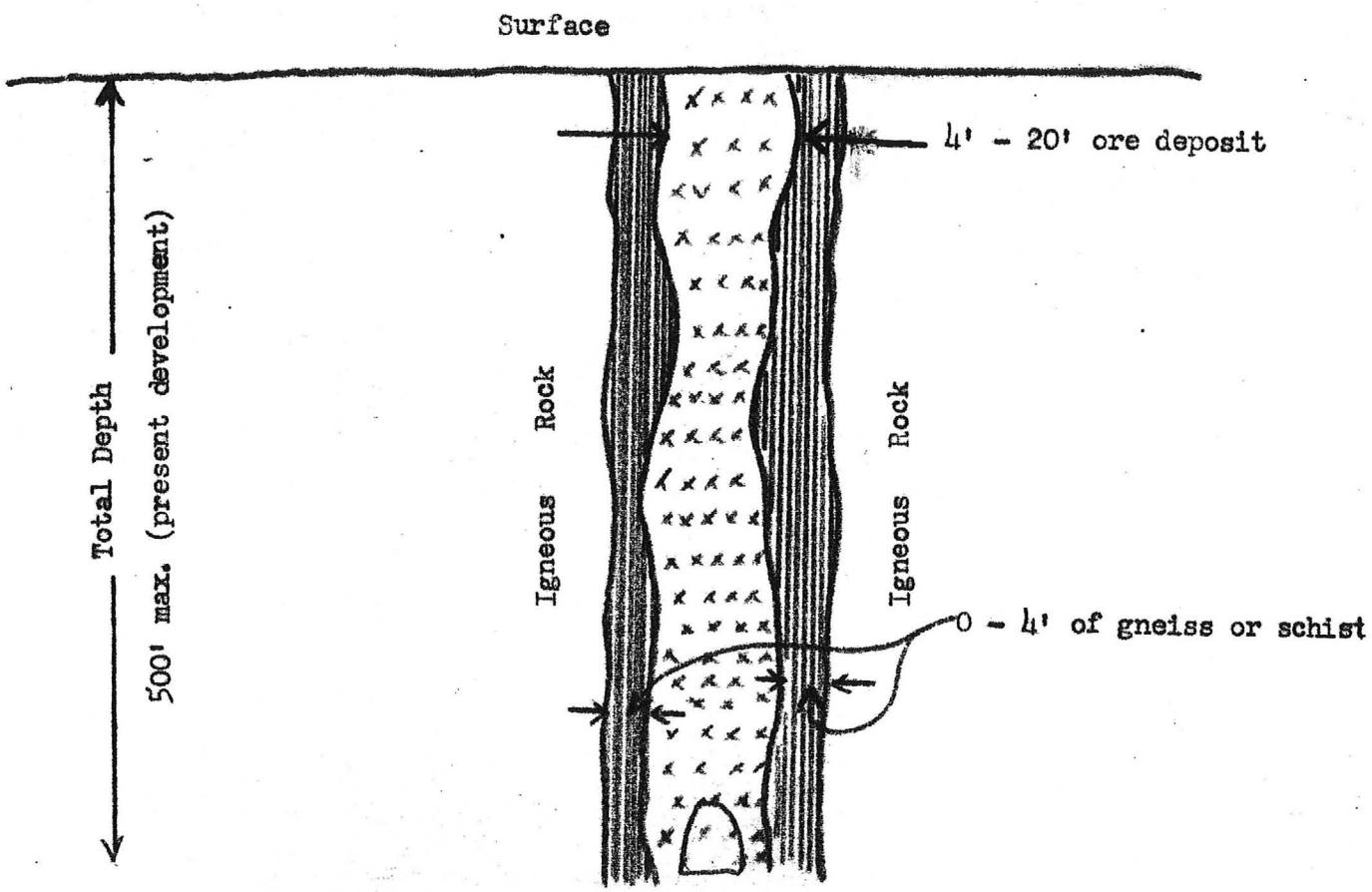
RECOMMENDATIONS OF ROOF CONTROL ENGINEER

COMPANY Allison Steel Mfg. Co. MINE Copper World

ADDRESS Kingman, Arizona COUNTY Mohave

LOCATION IN MINEL Walls of stopes or drifts

TYPICAL SECTION, IMMEDIATE AREA

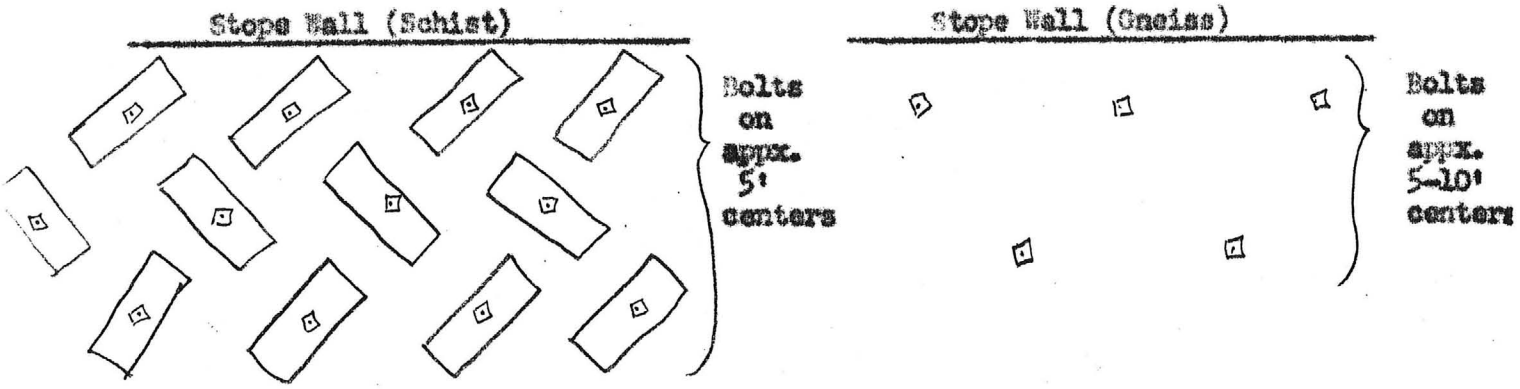


HAVE PREVIOUS INSTALLATIONS BEEN TRIED? No

cc: G. A. Freeman, mgr. (2)
E. Thomas
E. A. Morgan
A. D. Look
E. R. Rodriguez
Files

PROPOSED METHOD OF INSTALLATION:

Longitudinal Sections of Either Wall of Stope



Bolts installed in similar manner in walls of drift.

Diameter of drill holes: 1¾" Method of drilling: Jackhammer on jackleg

Material to be used: Steel Kind of steel: Low-carbon (mild)

Bolts, diameter: 7/8" or 1" Length of bolts: 5'

Type of threads: Rolled on 7/8" bolt, cut on 1" bolt.

Type of anchor: Wedge, 7/8" spread

Method for tightening bolts: Impact wrench (tighten to 200-300 ft. lbs. torque)

Type and size of bearing plates: 3/8" x 8" x 8" with 3" x 12" x 36" headboards where necessary

Distance apart (centers) of bolts: 5-10'

Number of bolts to be used in cross section of drift: 1 - 4

SAFETY PRECAUTIONS TO BE TAKEN: Install bolts as soon as possible after the ground is opened. Take necessary precautions while drilling for and installing bolts. Where ground conditions indicate need, use additional bolts. Where the stope wall is badly fractured, exercise special care in drilling and blasting of the ore.

Bolts will be installed within ____ inches of face before cutting. (Does not apply)

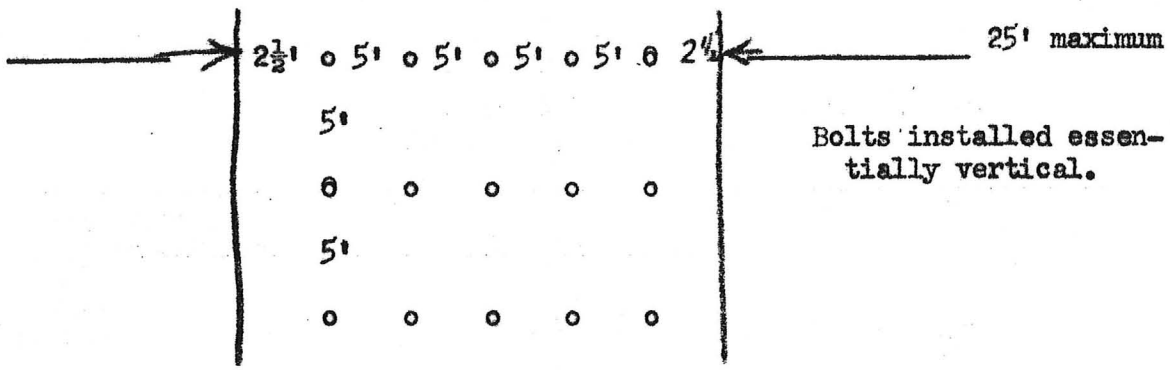
The pattern can be varied between the two extremes shown above according to conditions. Headboards can be placed in all directions so as to give maximum coverage of the wall.

Ernest R. Rodriguez

ERNEST R. RODRIGUEZ
Roof Control Engineer
Bureau of Mines

PROPOSED METHOD OF INSTALLATION:

Entry | Rooms | Intersections



Diameter of drill holes: 1¼" Method of drilling: Stoper

Material to be used: Steel Kind of steel: Low-carbon (mild)

Bolts, diameter: 7/8" or 1" Length of vertical bolts: 5'

Type of threads: Rolled on 7/8" bolt, cut on 1" bolt

Type of anchor: Wedge, 7/8" spread

Method for tightening bolts: Impact wrench (tighten to 200-300 ft. lbs. torque)

Type and size of bearing plates: 3/8" x 8" x 8" with 3" x 12" x 36" headboards where necessary

Distance apart (centers) of bolts, across place: 5' Lengthwise: 5'

Number of bolts to be used in cross section of entries or stope: At least 5 in maximum span of 25'.

SAFETY PRECAUTIONS TO BE TAKEN: Install bolts as soon as possible after the ground is opened. Take necessary precautions while drilling for and installing bolts. Where ground conditions indicate need, use additional bolts. Do not attempt to secure broken ground by bolting.

Bolts will be installed within 60 inches of face before drilling.

Ernest R. Rodriguez

ERNEST R. RODRIGUEZ
Roof Control Engineer
Bureau of Mines

*

List of

Special Equipment for Roof Bolting

Bits of 1¼-inch diameter for last change of steel.

2 thread-type Driving Dollys for use in anchoring bolts.
(Can be purchased from Ingersoll Rand)

12-inch, 18-inch, and 24-inch lengths of drill steel for use with driving dolly in anchoring bolts. If one of these lengths will be suitable for all drill set-ups then only that length is needed. The end of the steel that fits in the driving dolly should be hardened.

Impact Wrench (Chicago Pneumatic No. CP-365-RPSH or
Ingersoll Rand size 534).

Extra Deep Special Roof Bolt Socket for use with impact wrench
(Can be purchased either from Chicago Pneumatic or Ingersoll Rand)

*

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine COPPER WORLD Date August 3, 1943

District Cedar Valley, Mohave Co., Ariz. Engineer Elgin B. Holt

Subject:

R E P O R T

OWNER: Phelps Dodge Corporation.

LESSEES: Dye and Bathrick, Kingman, Arizona.

METALS: Zinc, copper, gold and silver

AREA & LOCATION:

This property, consisting of one patented mining claim, is located in Cedar Valley Mining District No. 43, in Mohave County, Arizona, about 16 miles easterly from Yucca, a station on the Santa Fe Railroad. From Yucca, property is reached by following the Boriana road east about 14.5 miles; thence southeast around 1.5 miles by a rough pack trail, along a mountain canyon.

EXAMINATION:

On August 2, 1943, I visited the Copper World mine in company with Dye & Bathrick, who are making plans to apply for a preliminary development loan from RFC with which to clean out and make accessible the principal workings of property. My inspection of property was confined to a few hours and I made no attempt to cut samples. Hence, this report is mainly a rough physical description of the mine.

REPORTS:

Dye & Bathrick furnished me with the following data on property:

1. A report and assay maps by W. Tovote, 1916;

2. An assay map by C. E. Mills and P. F. Yates, 1942; and

3. Assays by Dye & Bathrick.

This data is available for inspection by anyone that may become interested in this property.

GEOLOGY - ORE SHOOT:

Per Tovote, "While the fact remains that the proven ore shoot is rather short and that the vein in depth turns into zinc almost to the exclusi n of copper, still there are indications that ore might be developed beyond the present ore shoot, whose length is about 250 feet, and there is quite an amount of oxidized copper ore in the mine and dumps which might be handled with profit.

"The mine is situated about 16 or 17 miles east of Yucca high on the shoulder of a schist ridge which rises t the high granite massive bordering the schist basin on the east.

"The vein system of the Copper World has a general strike of N %0 degrees to 60 degrees E, with vertical or steep dip NW. Outside of sometimes fairly strong N 30 degrees W and N 60 degrees W cross fractures that do not show decided influence upon the mineralization, there are N 30 degrees E pegmatite dikes and veins and at least one strong E-W fault with dip to the north which seems to deflect the ore-bearing veins and to terminate at least temporarily the mineralization to the SW. xxxxxxxxxxxxxxxx

"Below and to the NE is the main open cut from where considerable ore has been mined. The vein zone here conists in 4 slightly converging veins with oxidized copper ore and bunches of ore or copper stain through the altered material separating the veins. The maximum width of the vein zone here is 40 feet narrowing to the NE."

MINE WORKINGS:

Workings in the productive area of the mine are: Tunnel No. 1, Tunnel No. 2 and Tunnel No. 4; the latter also being known as the Main Tunnel. I entered these workings as far as the caved ground would permit. The Main Tunnel, per Tevote's maps, has a total length of around 275 feet; but we were only able to enter it for a length of 190 feet, or t a point adjacent to the main pay vein, on which, per maps, a drift was run NE 180 feet; and SW 50 feet. This level is now inacessible due to caved ground at the 190-foot point mentioned. However Tevote's assay map gives the following results for the level:

No.	Width	Cu-%	Oz-Au	Oz-Ag	Zn-%	Remarks
40	14"	-	Tr.	0.84	35.9	Widest part, 20' sul. lens
41	12"	-	Tr	0.80	33.7	Irregular sul.,partly leached
42	19"	-	Tr	0.52	30.8	Sul. lens in vein
43	43"	5.84	Tr	0.80	29.4	Mixed sulphide
44	17"	5.02	Tr	0.68	40.7	Sphalerite breccia, ptly leached
45	60"	4.31	Tr	0.88	40.2	Solid sulphide
46	15"	2.65	Tr	0.80	5.4	Poor silicious sul. vein
47	15"	10.40	Tr	1.28	-	Do-hanging split
48	65"	11.30	Tr	1.24	32.4	Sul. & altered granite

However, the mineralized shear zone cut by the Main Tunnel has a width of at least 50 feet, with bands of zinc and sopper sulphide ores crossing the said tunnel. One of these bands of ore has a width of 8 feet and this was sampled by Dye & Bathrick, with the following results:

No.	Width	Cu%	Oz-Au	Oz-Ag	Zn-%
DB12	8 ft.	3.35	0.01	0.40	1.20

WINZE:

Tovote states that a winze was sunk from the Main Tunnel level, on the main ore vein, to a depth of 100 feet; that "the winze is practically vertical and untimbered except for occasional stulls. I did not consider it safe to go down, as the strong sulphatization has probably destroyed the iron of the nails." From other sources, Dye & Bathrick have been informed that this winze was sunk on a vein of solid zinc sulphide ore; but there is no data at all available as to the assay values of ores found in this winze.

*

CONCLUSION:

From facts herein set forth, I believe this property warrants the expenditure of around $5,000, to be used for the purpose of cleaning out the Main Tunnel and lateral workings therefrom, including the winze mentioned above. If this is done, I am confident enough ore can be exposed to justify a comprehensive plan of development work with a view to blocking out an underground ore supply that should later warrant the erection, at some point near the property, of a selective flotation plant with a capacity commensurate with the amount of ore that may be developed, and which I would now estimate at not less than 50 tons daily.

Elgin B. Holt,
Field Engineer.

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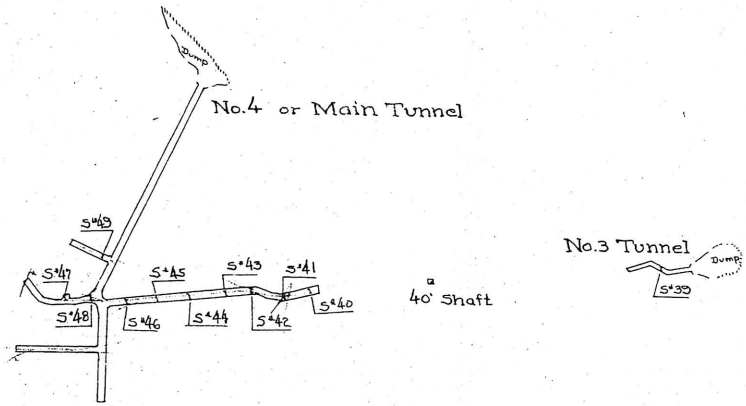
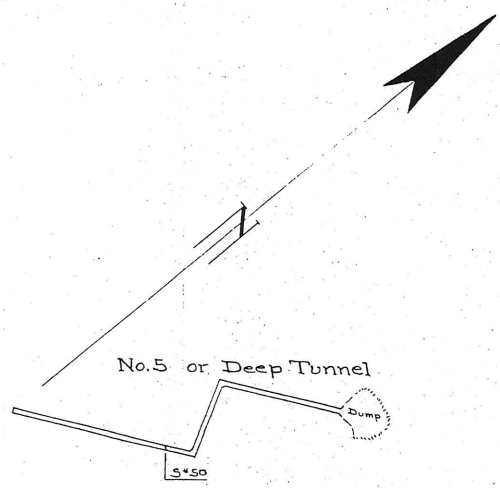




Sample No	Width	%Cu	Oz Au	Oz Ag	%Zn	
39	18"					Oxidized
40	14"	-	Tr	.84	35.9	Widest part, 20' sulphide lense
41	12"	-	Tr	.80	33.7	Irregular sulphide, partly leached
42	19"	-	Tr	.52	30.8	Sulphide lense in Vein
43	43"	5.84	Tr	.80	29.4	Mixed sulphides.
44	17"	5.02	Tr	.68	40.7	Sphalerite breccia, partly leached
45	60"	4.31	Tr	.88	40.2	Solid Sulphide
46	15"	2.65	Tr	.80	5.4	Poor silicious sulphide Vein
47	15"	10.4	Tr	1.28	-	Do - Hanging split
48	65"	11.3	Tr	1.24	32.4	Sulphide & altered granite
49	10"	4.40	Ni	.64	33.2	Solid sulphide, Hanging Vein
50	26"	.88	Tr	.84	-	Qtz lense with Sulphide

Brunton Survey

COPPER WORLD CLAIM

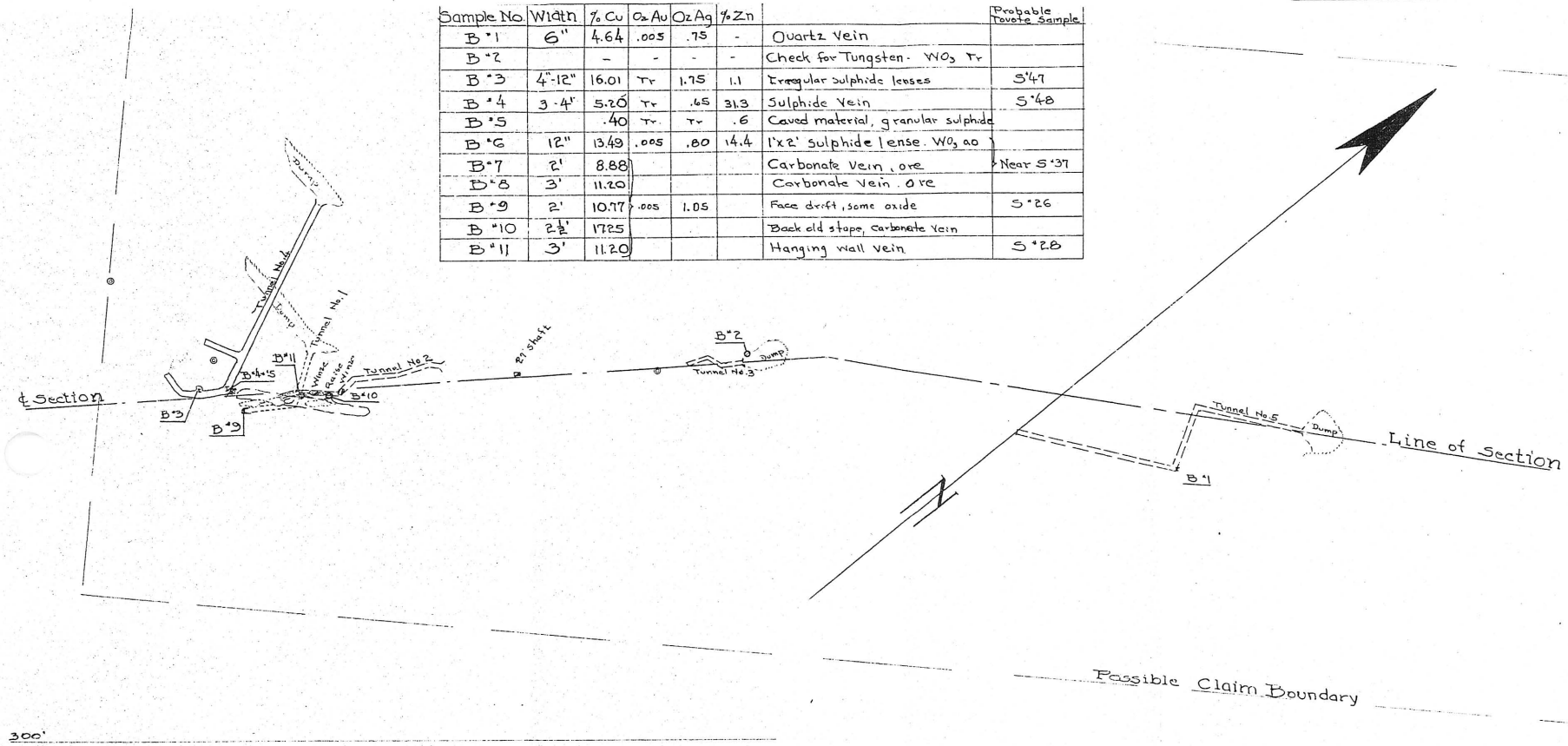
Cedar Valley Mining Dist. Mohave Co.

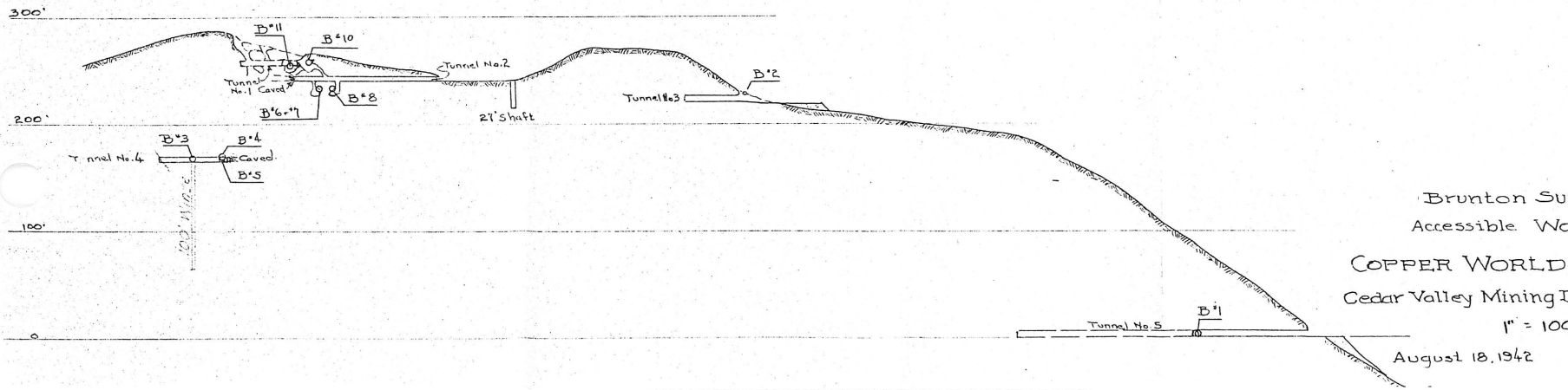
1" = 100'

August 27, 1916 W. Tovote

(Traced from original sketch 9-3-42 PFX)

Sample No.	Width	% Cu	Oz Au	Oz Ag	% Zn		Probable Tovote Sample
B "1	6"	4.64	.005	.75	-	Quartz Vein	
B "2		-	-	-	-	Check for Tungsten - WO_3 Tr	
B "3	4"-12"	16.01	Tr	1.75	1.1	Irregular sulphide lenses	S'47
B "4	3 - 4'	5.20	Tr	.65	31.3	Sulphide Vein	S'48
B "5		.40	Tr	Tr	.6	Caved material, granular sulphide	
B "6	12"	13.49	.005	.80	14.4	1'x2' sulphide lense. WO_3 80	
B "7	2'	8.88				Carbonate Vein, ore	Near S'37
B "8	3'	11.20				Carbonate Vein. Ore	
B "9	2'	10.77	.005	1.05		Face drift, some oxide	S'26
B "10	2½'	17.25				Back old stope, Carbonate Vein	
B "11	3'	11.20				Hanging Wall Vein	S'28





Brunton Survey

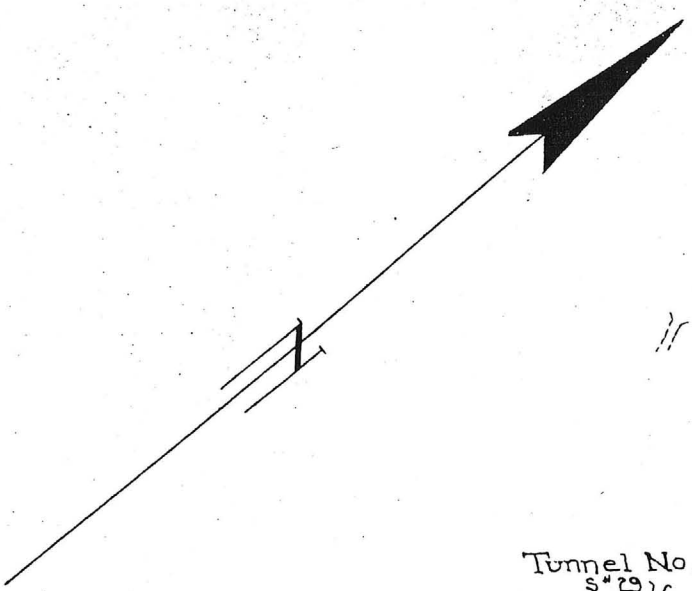
Accessible Workings

COPPER WORLD MINING CLAIM

Cedar Valley Mining Dist. Mohave Co.

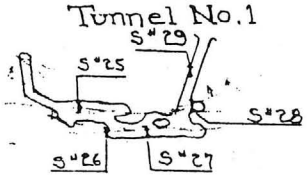
1" = 100'

August 18, 1942 C.E. Mills, P.F. Yates



Tunnel No. 4

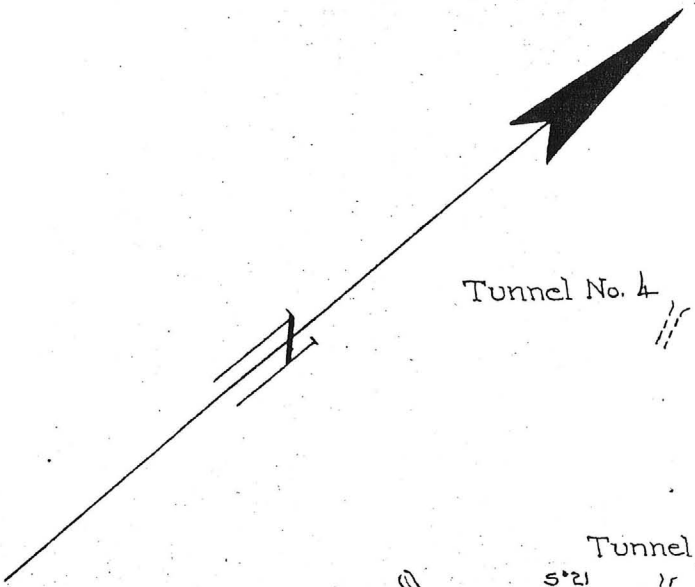
Tunnel No. 1

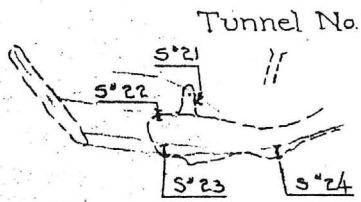


Tunnel No. 2

Sample No	Width	% Cu	Oz Au	Oz Ag	% Zn	
25	27"	2.78	Nil	.36	-	Roof stope 15' above level. Oxidized
26	45"	10.03	Tr	.84	-	Footwall split on level.
27	78"	16.7	Tr	.88	-	Part of vein at winze
28	46"	9.48	Tr	.92	-	Hanging vein in X-cut
29	7"	16.98	Tr	1.84	-	Flat vein in X-cut

No. 1 Tunnel Level
COPPER WORLD CLAIM
1" = 100'
August 27, 1916 W. Tovote



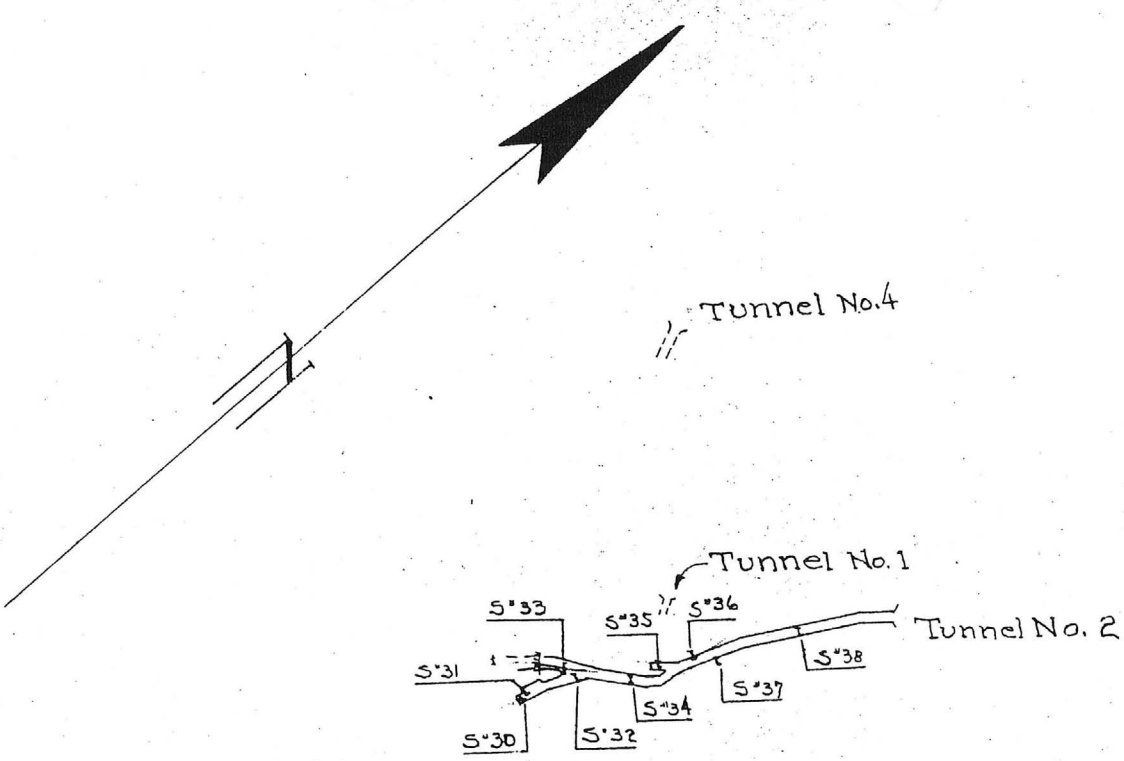


Tunnel No. 2

"Shaft

Sample No	Width	% Cu	Oz Au	Oz Ag	% Zn	
21	66"	7.48	Tr	.72	-	Rough surface Sample
22	40"	17.93	.01	1.56	-	North split Vein Zone
23	40"	11.81	Tr	.88	-	South split Vein Zone
24	11"	8.95	Tr	.44	-	Oxidized

Surface and Open Cut
COPPER WORLD CLAIM
1" = 100'
August 27, 1916 W. Tovote



Sample No.	Width	% Cu	Oz Au	Oz Ag	% Zn	
30	40"	8.20	.01	2.12	-	South face, Mostly oxidized
31	1½"	21.8	Nil	1.50	-	Streak azurite & malachite
32	3"	41.2	Tr	1.70	-	Cuprite lense, part Sample #30
33	15"	11.10	Nil	1.12	-	Foot wall streak in back
34	4"	43.7	Tr	1.40	3.0	Streak, part sulphide
35	28"	8.55	Tr	.72	13.4	Hanging Vein, part sulphide
36	26"	8.20	Tr	1.80	-	Hanging Vein, Oxidized
37	36"	4.58	Nil	.72	-	Footwall vein, Oxidized
38	42"	5.65	Tr	.80	-	Across back, oxidized

No. 2 Tunnel Level
COPPER WORLD CLAIM
1" = 100'

August 27, 1916 W. Tovote

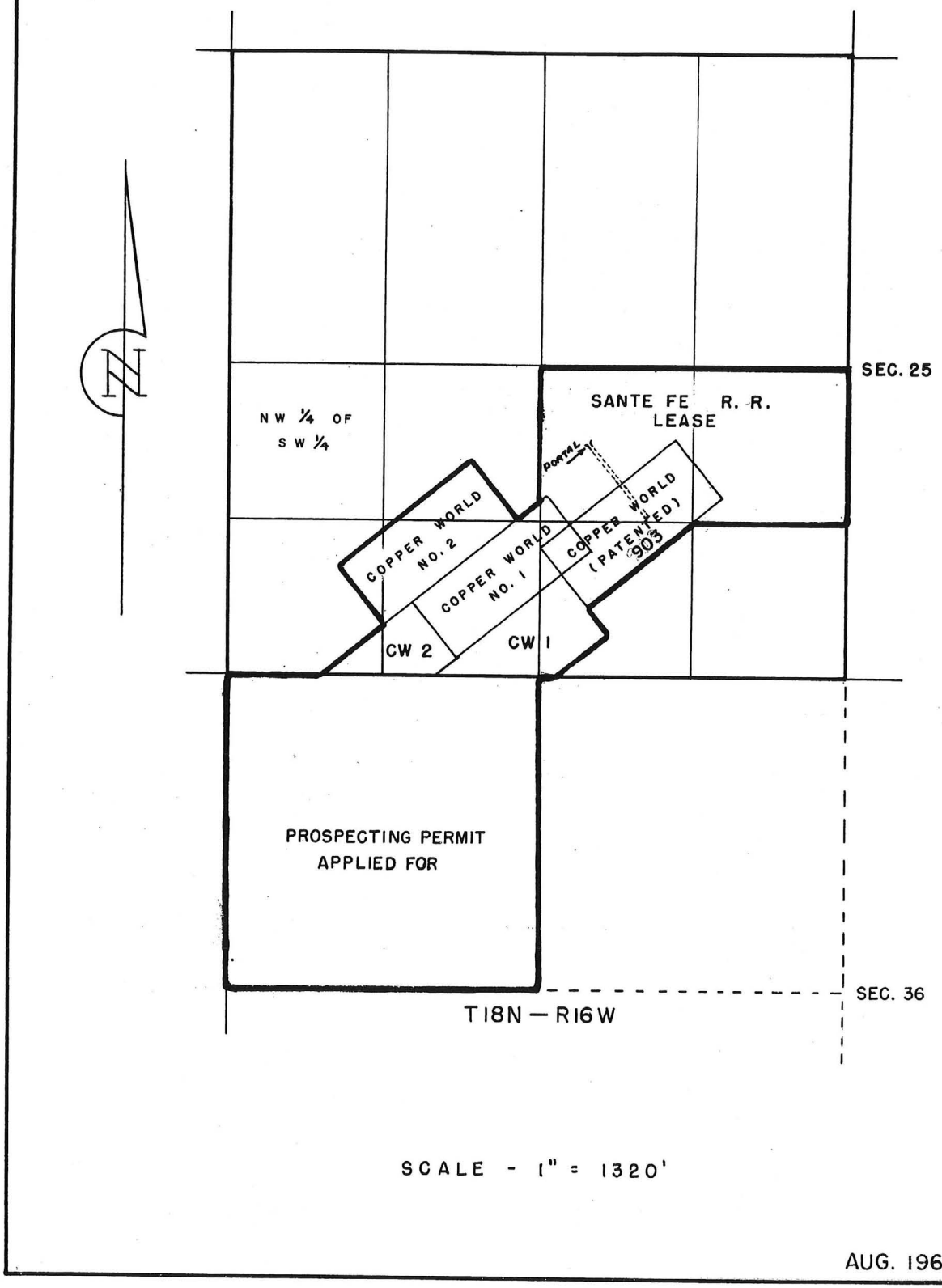


FIGURE 2.-CLAIM MAP - COPPER WORLD MINE
STANDARD COPPER CORPORATION

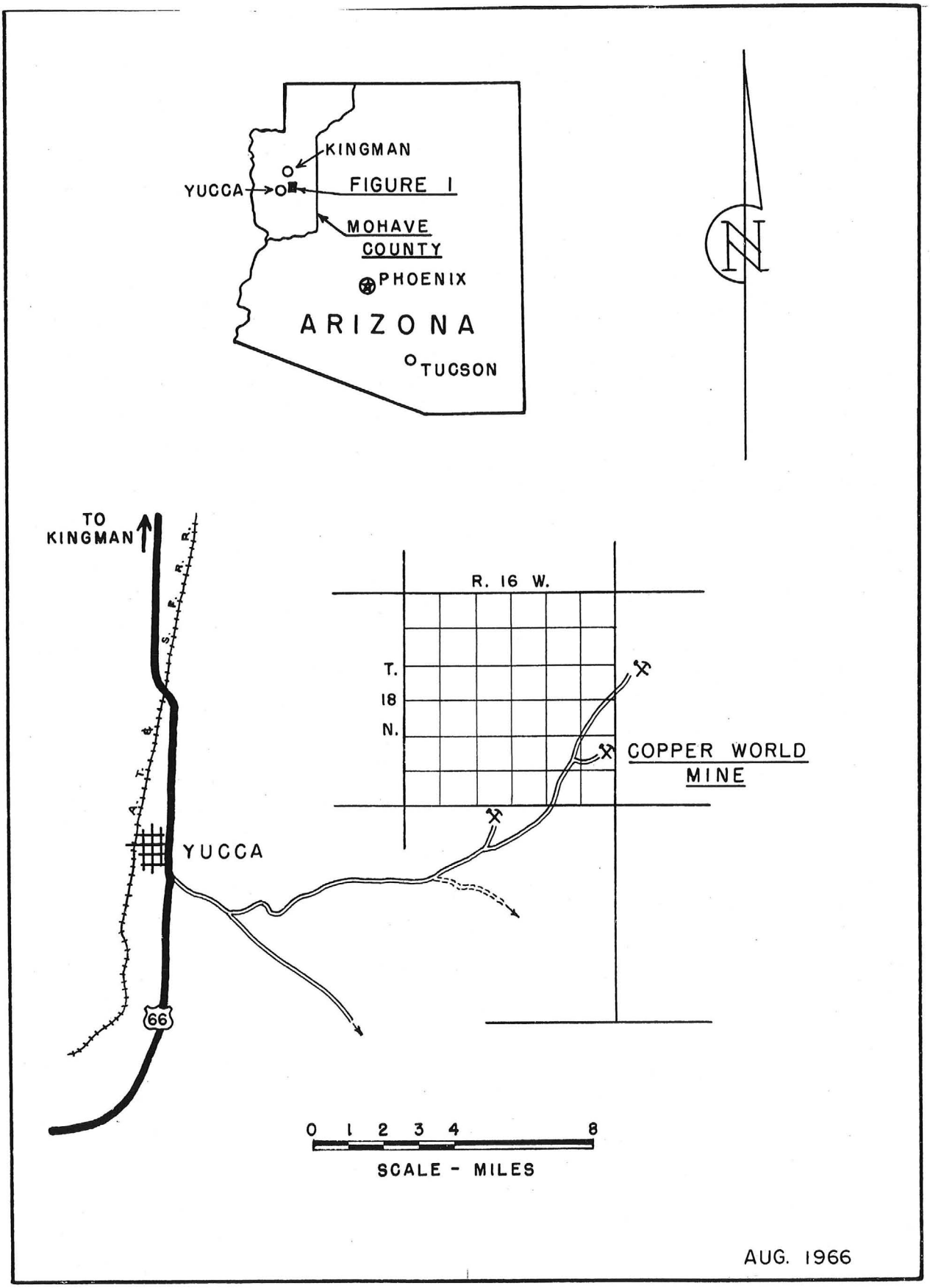


FIGURE 1. - LOCATION MAP - COPPER WORLD MINE
MOHAVE COUNTY, ARIZONA

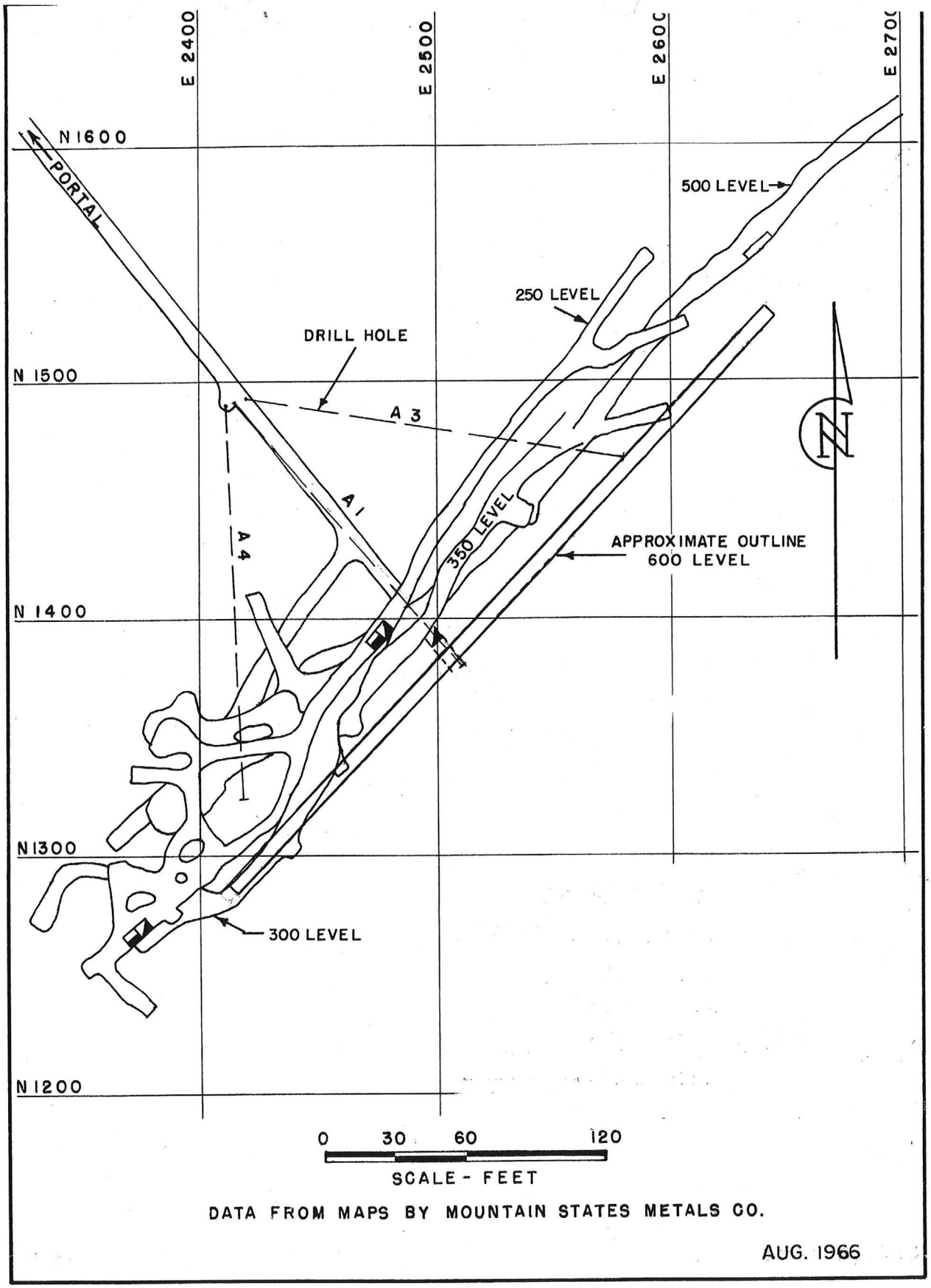


FIGURE 5. - LEVEL PLAN, COPPER WORLD MINE

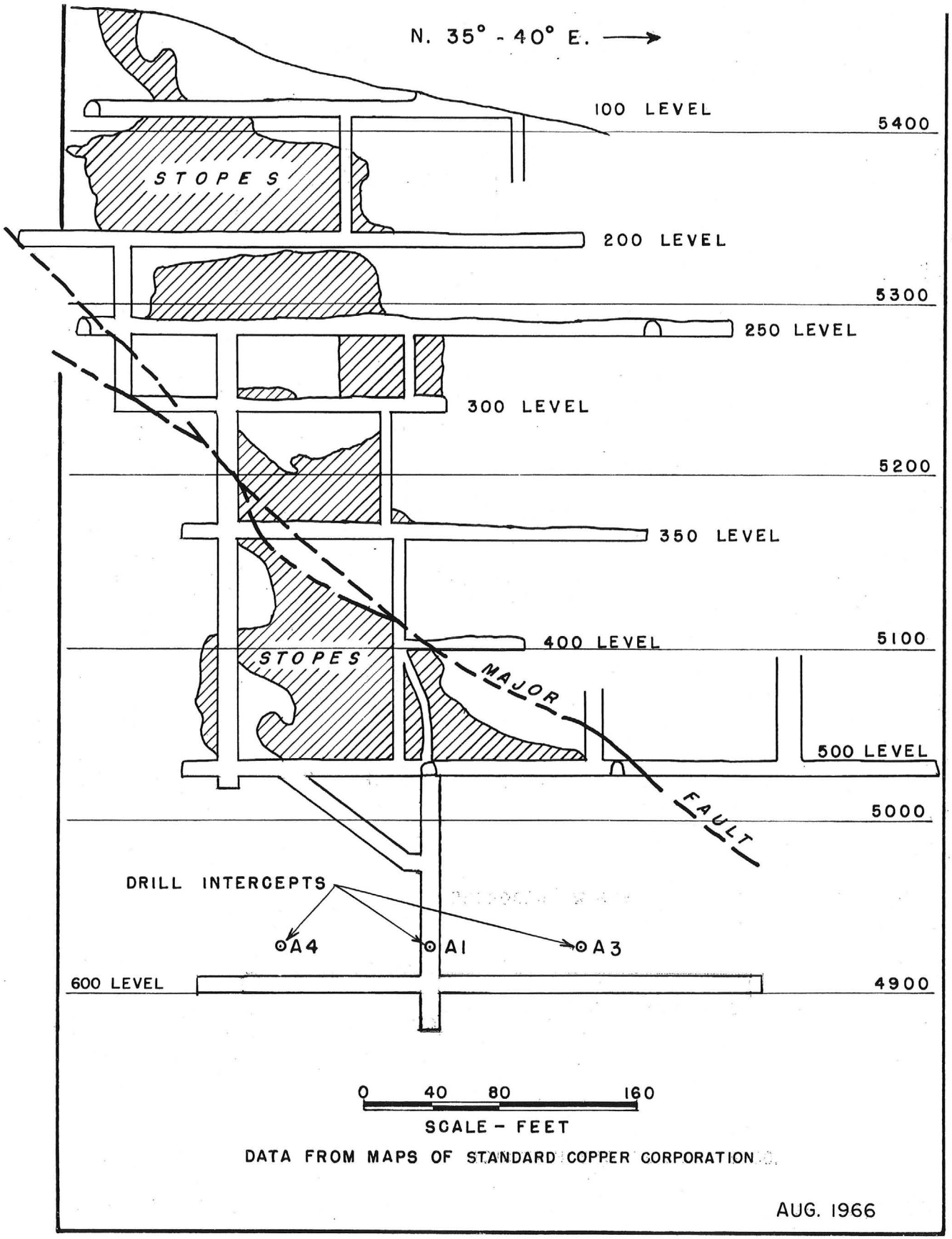
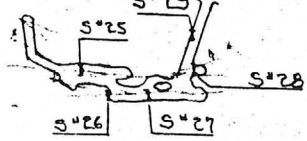


FIGURE 6.- LONGITUDINAL PROJECTION OF WORKINGS COPPER WORLD MINE

Tunnel No. 4

Tunnel No. 1



Tunnel No. 2

Sample No.	Width	% Cu	Oz Au	Oz Ag	% Zn	
25	27"	2.78	Nil	.36	-	Roof stope 15' above level. Oxidized
26	45"	10.03	Tr	.84	-	Footwall split on level.
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28	46"	9.48	Tr	.92	-	Hanging vein in X-cut
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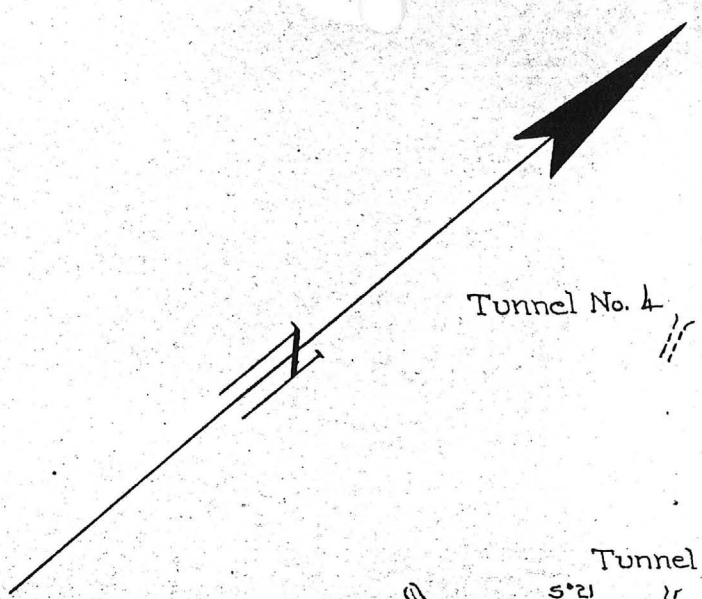
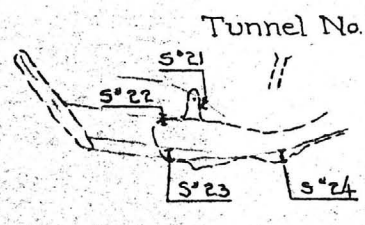
No. 1 Tunnel Level
COPPER WORLD CLAIM
1" = 100'
August 27, 1916 W. Tovote



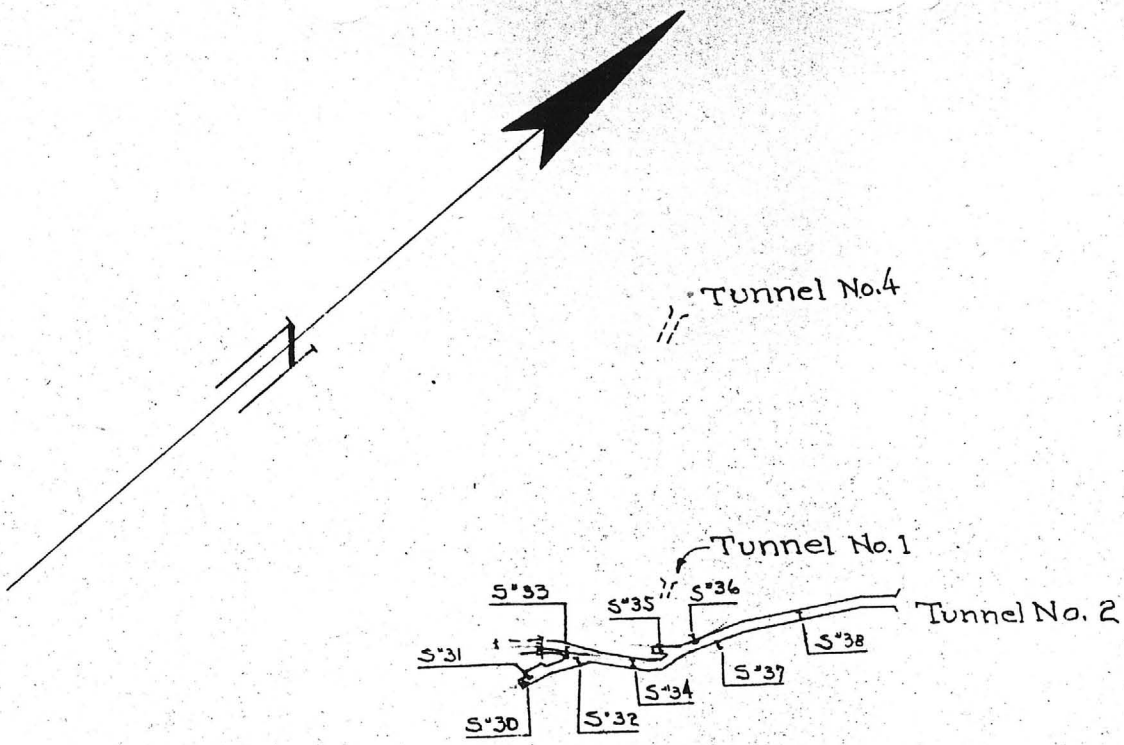


Tunnel No. 2

Shaft

Sample No	Width	% Cu	Oz Au	Oz Ag	% Zn	
21	66"	7.48	Tr	.72	-	Rough surface Sample
22	40"	1.793	.01	1.56	-	North split Vein Zone
23	40"	11.81	Tr	.88	-	South split Vein Zone
24	11"	8.95	Tr	.44	-	Oxidized

Surface and Open Cut
COPPER WORLD CLAIM
1" = 100'
August 29, 1916 W. Tovote



Sample No.	Width	% Cu	Oz Au	Oz Ag	% Zn	
30	40"	8.20	.01	2.12	-	South face, Mostly oxidized
31	1½"	21.8	Nil	1.50	-	Streak azurite & malachite
32	3"	41.2	Tr	1.70	-	Cuprite lense, part Sample #30
33	15"	11.10	Nil	1.12	-	Footwall streak in back
34	4"	43.7	Tr	1.40	3.0	Streak, part sulphide
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No. 2 Tunnel Level
COPPER WORLD CLAIM
1" = 100'

August 27, 1916 W. Tovote

COPPER WORLD (F/MOHAVE

OCT 2005
"4 SALE"

Tima Oil & Mining, Co.

Radar · Equipment · Exploration

NED RALFSON 602-23--5988

TOMCO
10142 W. MONTEROSA AVE.
PHOENIX, AZ. 85037

fax cover sheet

Date 10-28-05 Number of pages 14 (including cover page)

to: Name Nyal J. Niemuth from: Name Steve Tuma

Company AZ. Mines & Min. Resources Company TOMCO

Telephone 602-255-3795 XT-14 Telephone 623-772-6262

Fax 602-255-3777 FAX. 623-877-8314

Comments

Nyal: Please update the file on the Copper world Patented mine if you need more info., Please call me Best Regards

Steve Tuma
10-28-05

Incorporated 1953

Corporate Center 2715 North Third Street • Suites 209 & 210 • Phoenix, AZ 85004 US E Mail: TIMAOIL@cfcf.com

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P+

1

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine: Copper World

Date: December 2, 1958

District: Cedar Valley - Mohave County

Engineer: Travis P. Lane

Subject: Status

Interviewed Dye and Bathrick on November 26 and discussed letter recently received from Inspiration Consolidated Copper Co. by Lewis Smith requesting information regarding present status of property, past production, ore reserve and grade, etc. They had received a similar letter directly from Inspiration.

Dye and Bathrick reported that the sales contract with Mountain States Mining Co. is still in effect. Sherwood Owens took over from Mountain States and leased to Bobcat Mining Company. The lessees let go October 31, 1957. The Mountain States contract (assigned to Owens) has been in default 1 year.

Work done on the property since Mark Gemmill's report of April 14, 1956 consists of the following:

A winze was sunk 152' in the floor of the main adit and a 75' crosscut was driven at 127' depth, and 300' of drifting was done from the crosscut. Also, the main adit was drifted 300' northeast and a raise put through to an old adit.

[redacted]

F. P. Knight notes COPPER WORLD MINE, [illegible] e County

George F. Reed, brother of John J. Reed, Prof. & head of Department of Mining Engineering Colorado School of Mines at Golden.

R.F.C.
Loan of $4,500 8/25/43
Loan of $23,000 approved 2/16/44 - out of which 1st loan repaid.
Shipments started October 1944
Loan repaid by 11/7/46
Final RFC report
Charles A. Rasor, Chief, Ore Reserves & Prod. Analysis Br., AEC, Grand Junction.

Report of Loan

Ore change from narrow fissure to replacement of schist - mainly altered.
RI 4214 1948 "Antler Cu-Zn Dep" T. M. Romslo

Holt report 8/3/43 - Dye and Bathrick owners
1/28/50 W. B. Loring & G. Duff - Dye and Bathrick owners
Loring - Mine geologist, Eagle Picher, Tucson. Duff - Mgr., San Xavier
"The property should be able to supply ore to a local mill at the rate of 50 tpd for 1-1/2 or 2 years, and quite likely for 3 or 4. If such a market for the ore were to materialize, the Copper World property should be evaluated and an offer made for it."

5/1/44 Developing
6 /44 Building access road
to 7 /44 " " completed.
11/44 Developing
10/45 Idle
6/46 Shipping
3/25/57 Bobcat Mining Co., R. E. Mieritz , Engineer, Sub-leased from Mt. States Metals Co. and started a winze where adit tunnel cut vein and orebody.
11/31/57 Closed down and lease reverted to Mt. States
12/2/58 Sales contract with Mt. States Metals Co. taken up.

*

F.P.Knight notes

NOTES RE COPPER WORLD MINE, Mohave County

Dye and Bathrick bought from Phelps Dodge - operated in World War II

Freeman, Reed et al started buying in 1948-49, drove adit & went broke in 1949.
1953 - Sometime prior, Mt. States Metals Co. got property from Dye and Bathrick under bond & lease; spent $100,000 on good 75 ton mill and mine rehabilitation under Geo. Freeman. Got to full production & zinc started down early in 1952. Financial backing pulled out.

Mark Gemmill's report of May 15, 1952 has the Copper World Mining Co., Yucca, Ariz. operating the mill with Freeman manager. Mines Register - 1952 shows Mt. States Metals operated 100 ton mill & leased Copper World from B. T. Whitaker of Tucson. Whitaker prominent in swimming pool construction & Freeman had worked for him. Freeman had interested a group of his U of A co-students, of which I think Whitaker may have been one. Mines Register - 1956 lists - Copper World Mining Co., c/o Jim Hodges, Manager. Mine and mill: copper zinc property in Mohave County.

Hard to tell how Mt. States and Copper World Mining get into the picture in 1952 unless the latter picked up soon after the former closed. Therefore, Copper World Mining Co. may be the Allison-formed concern.

Allison closed the mine down in 1953 and the property reverted to Dye and Bathrick although the Mt. States lease held.

Walter E. Remmers, V.P. Union Carbide & Carbon Corp., and Associates took over with plans for a 100 foot shaft and about 400 feet of U.G. exploration in late 1956.

Bobcat Mng Co. took over probably in 1956 or possibly early 1957 under sub-lease from Sherwood Owens, who apparently had an assignment of the Mt. States contract. Closed down on October 31, 1957.
On 12/2/58 T. Lane reported the contract, held by Owens, had been in default 1 year. (see Lane report for work done from 4/14/56 to 12/2/58)

Sometime after 1958 the property was given to the U of A. Standard Copper Co. leased it from the University early in 1966. Plans were to use heavy media ahead of the flotation circuit which would handle 100 tpd. By July 1966 they reported mining and milling about 300 tpd with heavy media feeding about 200 tpd to flotation. In September they were mining and milling but not at full capacity because of water trouble. The first of May 1967 they were mining and milling about 85 tpd on 6 days per week.

*

11-27-57

COPPER WORLD MINE MOHAVE COUNTY

CLOSED DOWN

FPK

February 23, 1944

MEMORANDUM

TO: W. C. Broadgate

FROM: J. S. Coupal

ACCESS ROAD
COPPER WORLD
Dye & Bathrick
Box 1069, Kingman

Dye and Bathrick have just called and talked with me regarding their work at the Copper World property, a copper-zinc located 18 miles from Yucca, Mohave County. The property has over 9,000 tons of ore blocked ready to be mined and moved.

They have received a $23,000 development loan and have spent $4,000 or $5,000 of it getting the property fully opened ready for mining. Included in this $23,000 development loan is the privilege of spending up to $3,000 on the road if necessary.

Application for an access road was made some time in January and the Bureau of Mines' engineer was on the property on February 2. In checking here in Phoenix no report has yet been received by the Grazing Service or the Bureau of Public Roads from the Bureau of Mines as to the approval on the road, although it is believed that the report is very favorable.

Here is the problem and I have advised Dye and Bathrick that you will look into it and wire them the results: Their lease calls for continuous work. They are now stymied and can proceed no further without a road. They believe they are entitled to the construction of this road by the mine access road program as they know other properties far less deserving have been given roads. They would like to go ahead immediately on the road using their own money by asking that the expense they go to on the road be refunded to them or to the R.F.C. if and when the additional appropriation is made and their road project is approved.

Can you get a determination on this point and wire collect to Dye and Bathrick at Kingman?

The access road program calls for 1-1/2 miles of road to cost about $4,000. They believe they can put their road in themselves for $3,000 and, knowing their ability, I believe they could do it.

It is imperative in order to preserve their contract that they start work immediately and continue.

I would appreciate your stepping on this and wiring Dye and Bathrick.

JSC:LP

CLASS OF SERVICE

This is a full-rate Telegram or Cablegram unless its deferred character is indicated by a suitable symbol above or preceding the address.

(12)

WESTERN UNION

1201

SYMBOLS

DL = Day Letter
NT = Overnight Telegram
LC = Deferred Cable
NLT = Cable Night Letter
Ship Radiogram

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NEWCOMB CARLTON, CHAIRMAN OF THE BOARD
J. C. WILLEVER, FIRST VICE-PRESIDENT

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NI.SA35 S.CE95 C.WB69

FEB 25 AM 9 42

WUSN12W DL COLLECT=WUSN WASHINGTON DC 25 1110A

J S COUPAL=ARIZONA STATE DEPT MINERAL RESOURCES

413 HOWE BUILDERS BLDG(PHOENIX ARIZ)=

REGARDING COPPER WORLD MINE YOU HAD BETTER CHECK WITH HEDGES AS THERE IS A VAST DISCREPANCY IN YOUR FIGURES AND THE BUREAU OF MINES REPORT TONNAGE MILES OF ROAD AND COST ALL DIFFERENT=

W C BROADGATE.

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

304xx

February 25, 1944

Mr. J D. Hedges
Bureau of Mines
Tucson, Arizona

Dear Mr. Hedges:

I have just had a call from Dye and Bathrick, Box 1069, Kingman, on an access road for the Copper World Mine located about 18 miles from Yucca. They have made application for an access road and I have told them that even though the road was approved it would probably take considerable time before funds were available to start actual construction.

I wired W. C. Broadgate, Assistant Director of this Department in Washington, and asked him to see if arrangements could be made whereby Dye and Bathrick could do the road work on their own account, using part of the funds which they have on hand from an R.F.C. development loan for this purpose and if and when the access road project was approved, this money could be repaid by the access road fund and reverted to the R.F.C. loan.

Dye and Bathrick reported that they had 9,000 tons of ore in sight ready to be moved and that the access road calls for 1-1/2 miles at a cost of $4,000.

In reply to my letter to Broadgate I have received the following telegram: "Regarding Copper World Mine you had better check with Hedges as there is a vast discrepancy in your figures and the Bureau of Mines report tonnage miles of road and cost all different."

Can you advise me of the results of your examination and the general conclusions as to ore available, miles of road needed and cost so that I may follow this up with Broadgate and also Dye and Bathrick.

Yours very truly,

J. S. Coupal, Director

JSC:LP

304 xx

February 25, 1944

Dye and Bathrick
Box 1069
Kingman, Arizona

Dear Ray:

I wrote Broadgate as requested and stated that your property had 9,000 tons of ore in sight ready to be mined and moved and that the access road program calls for 1-1/2 miles of road to cost $4,000. I also asked him to get a determination on whether or not you could build the road out of your R.F.C. money earmarked for this purpose and expect to get it returned to the development fund if and when the access road project was approved and constructed.

I have just received a wire from Broadgate as follows: "Regarding Copper World Mine you had better check with Hedges as there is a vast discrepancy in your figures and the Bureau of Mines report; tonnage, miles of road and cost all different."

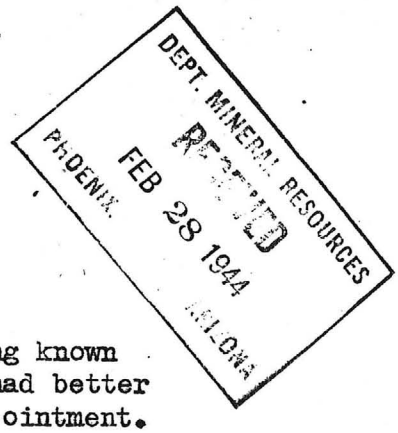
I am trying to get this information from Mr. Hedges, Bureau of Mines, and will then follow up this subject with Broadgate.

Yours very truly,

J. S. Coupal, Director

JSC:LP

Washington, D.C.
Feb. 26, 1944



SUBJECT: Access Road,
COPPER WORLD

Your memo of the 23rd does not square with anything known about the application here, and, as I wired, you had better check with Hedges, who seems to be the fly in the ointment.

According to the B of M file the application is for 4 miles of road at a cost of 12,000 dollars, which is something else again than 1½ miles at 4,000 dollars.

Also, they do not confirm the reserves, and state that a winze shows the ore cut off.

On all of this B of M is not likely to approve the application for the road unless you get a different report sent here from Hedges.

Bill Broadgate

What is the silica content?

304 xx

February 28, 1944

Mr. R. L. Dye
Dye and Bathrick
P. O. Box 1069
Kingman, Arizona

Dear Ray:

I have received the following additional memorandum from Bill Broadgate regarding your access road on the Copper World:

"Your memo of the 23rd does not square with anything known about the application here, and, as I wired, you had better check with Hedges, who seems to be the fly in the ointment.

"According to the B of M file the application is for 4 miles of road at a cost of 12,000 dollars, which is something else again than 1½ miles at 4,000 dollars.

"Also, they do not confirm the reserves, and state that a winze shows the ore cut off.

"On all of this B of M is not likely to approve the application for the road unless you get a different report sent here from Hedges.

"What is the silica content?"

I have also written to Hedges and hope to get a line on just what he did report as evidently things do not check. Please advise.

Yours very truly,

J. S. Coupal, Director

JSC:LP

DYE & BATHRICK
Mining

C. P. Dye
R. L. Dye
J. H. Bathrick

P. O. Box 1069
Kingman Arizona

February,27 1944

Department of Mineral Resources
304 Home Builders Bldg.,
Phoenix,Arizona.

Dear Mr.Coupal:

Your letter of the 25th recieved this morning. We recieved a telegram from Broadgate as follows:

"No possibility of building own road. Check with Coupal on costs and mileage."

We felt sure that the report the Bureau of Mines would turn in would be unfavorable because they seemed upset in not finding us at the mine. And we are sorry we did miss them because they could not know where the road is to be built. The mine is on a very steep hill side and we are putting a tram way down to the canyon where the road will end.From this point on to the mine would be nearly a mile farther,with heavy rock work, which is probably the impression they got of the road, as to costs and mileage.As to the tonnage, those are the figures of the RFC Engineer who assayed, mapped and measured the ore. The cost of $4000.00 is our estimate but arrived at from talking to contractors who have built miles of roads in this part of the country,they say it is a tough road that cannot be built for $2000.00 per mile.

Well,we really didnt expect much help and this mine is the first time we have ever asked for any, and we didnt apply for the road in to it until we had packed in on jack asses for three months to satisfy ourselves and the RFC that there is shipping ore in sight; So as soon as our loan is made available we will go ahead and rough a road in to get equipment and supplies over, with hope that we can improve it later as we are shipping.

Any thing you can do for us along this line will be greatly appreciated and we want to thank you for your efforts so far.

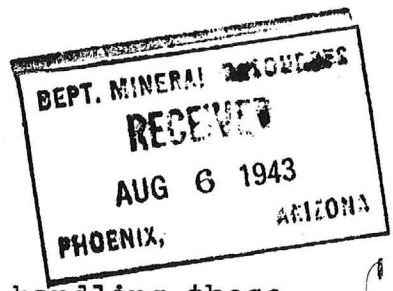
Yours very truly,

Dye & Bathrick
R.L.Dye

August 4, 1943

Copper World Mine,
Dye & Bathrick,
$4500 preliminary
Development loan
Application, RFC.

MEMORANDUM



To: J. S. Coupal

From: Elgin B. Holt

As I do not know whether Earl Hastings is still handling these loans for our Department, and RFC, I am herewith enclosing my report on the Copper World Mine to you, on which Dye & Bathrick are drawing up an application for a preliminary development loan for the sum of $4500.

I have assisted them in every way in this matter and do not hesitate to recommend that the loan be granted. They have ample documentary evidence that this property has a considerable amount of goodly grade zinc-copper ore now developed in the mine workings. Said documentary evidence consisting of engineer's reports and assay maps, by W. Tovote and others.

A number of car loads of copper ore have been shipped from the oxidized zone in surface workings; the ore turning into copper and zinc sulphide at around 100 feet in depth, mainly zinc sulphide.

As my report explains the situation at this property fairly well, there is no use to write at length about it, except to say I recommend the loan. Dye is leaving here for Phoenix today in order to file his loan personally with Gohring. I told him to drop in and have a talk with you about this matter.

Elgin B. Holt,
Field Engineer.

DYE & BATHRICK

Mining

C. P. Dye
R. L. Dye
J. H. Bathrick

P. O. Box 1069
Kingman Arizona

March,6,1944.

J.S.Coupal
Department of Mineral Resources
Phoenix,Arizona

Dear Sir:

Yo ur letter of February,28 recieved,but thought I might hear from you on what Hedges reported.

I cannot understand where the application in the B of M file came from unless it was reported as such by the examining Engineer of the B of M.

In our original application the mileage was 1½ miles with no estimated cost.Then we filled in form PR-Da-3 and returned to the Grazing Service together with an assay map made recently by RFC and a map showing location of road. 10,000 tons of 6% cu- 24% zc in sight with a possible 20,000 tons of lower grade ore and I believe an estimated cost of $4000. was on this application. I have'nt a copy but it can probably be seen at the Grazing Service office in the Heard building.I,also advised to check with RFC data.

Most of the ore in sight is a copper zinc ore which will be shipped to a custom mill. However, there is direct smelting copper ore on the hanging wall which assays 4to 8%cu 2.4% zc. This same ore comes in where the cu-zc vein faults in the winze,and dips away from the winze before the bottom is reached. There is no work in the winze so the extent of this ore is not known. But a 24foot sample on the level above assayed 2.8%cu-2.4%zc -58% silica,so it can be thatwide in the winze.

From Broabgate's telegram it apparently is not possible for us to build the road and then be refunded if and when an access road would be approved. However, if we knew whether or not a road would be approved,it would make a difference as to how much we will spend on it at present.

Is Mr. Hedges in the Bof M in Tucson? I do not know him.

Sam,could you call the U.S.Land office and have a photostat copy made of the Copper World map on record there,and mailed on to us COD. Legal description is W½ of SE¼ of Sec.25 Township 18 Range 16.Mohave county. Survey # 903. We are having trouble finding the corners of the claim. Thanking you in advance.

Yours very truly,

Dye & Bathrick

R.L.Dye

Survey No 903
2.

March 10, 1944

Mr. R. L. Dye
P. O. Box 1060
Kingman, Arizona

Dear Rae:

I have your letter of March 6, and I am waiting for a reply from Mr. Hedges, who is the Chief Engineer in the U.S. Bureau of Mines, at Tucson.

I will look up the records in the Grazing Service and see what additional information I can find on your application.

I have had a photostatic copy of the Copper World map made, and I am enclosing map and bills. I paid for these bills personally, so you can remit direct to me.

Very truly yours,

J. S. Coupal, Director

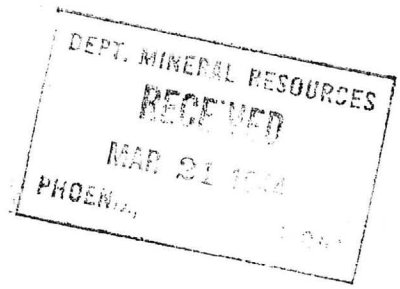
JSC:LP

DYE & BATHRICK
Mining

C. P. Dye
R. L. Dye
J. H. Bathrick

P. O. Box 1069
Kingman Arizona

March 20, 1944



Mr.J. S. Coupal,Director
Department of Mineral Resources
413 Home Buildres Bldg.,
Phoenix,Arizona.

Dear Mr. Coupal:

Enclosed is check for photostat copy of map of Copper World. Thanks very much.

Mr. Chapman, of B of M was here the past week, so I got the dope from him in regard to his report. He recommended a road and that the mine would stand up to $12000. on it. He estimated it would cost between nine and twelve thousand dollars to put the road up to the mine. The Public Roads Engineer was out to look it over and he estimated it to cost $8000, to put it where ~~it~~ we planned. It sounds high but he explained that last year it could probably have been built for $4000, due mainly to labor. They are setting up the project and will have to be acted upon by the WPB to finally be approved. The Grazing Service will be finishing a job in Neveda about the first of April, and could move in on our road if we can get it approved by WPB by then. It not only would speed up our operation but it would save a long move back with there equipment.

We expect to start work next week but there is not much we can do until we get a road of some kind in to the mine,so if we cannot get the road approved right away we will have to start it ourselves,and hope to get it improved later.

Mr. Chapman was down to the mine Saturday with me,he said it looks better this time than it did the first time. I guess when he got his assays the first trip they ran pretty good,in fact lots better than he had expected. Probably accounted for his second trip. However his report is in and it now is up to the WPB as soon as they get the Public Roads estimate, which should be in this week.

I think I will write some of the Senators in a few days to see if they can speed it up. After allowing a few days for estimate to get to WPB,could Bill do anything to speed it up?

Yours very truly,
R.L.Dye
R L Dye

March 23, 1944

Mr. R. L. Dye
P. O. Box 1069
Kingman, Arizona

Dear Rae:

I have received your check for $1.00 for the photostat copy of map. This was paid personally be me and is O.K. The bill of $1.00 was for a service charge by the Land Department which we objected to but which we paid for. There is an added bill for 84 cents which we paid out of the Department funds.

I have forwarded a copy of your letter to Bill Broadgate in Washington and have asked him to keep after and get approval, if possible, on your application for a road, making note to him that you were going ahead spending your own money roughing out a preliminary road so as to get in equipment and go to work.

I have a serious question about being able to get quick action on the road but will do our best. Broadgate will note the reference to the Grazing Service equipment and it may be possible that we can get quick action.

Yours very truly,

J. S. Coupal, Director

JSC:LP
Enc.

March 23, 1944

MEMORANDUM

TO: W. C. Broadgate

FROM: J. S. Coupal

COPPER WORLD MINE
ACCESS ROAD

I am enclosing a copy of a letter just received from R. L. Dye of Dye and Bathrick regarding their access road.

The report by the Bureau of Mines has undoubtedly been forwarded by now and the Public Roads Administration estimate should be in within a few days.

Here is immediate production and Dye and Bathrick plan to go ahead and rough out a preliminary road and then hope an access road project may be set up so as to give them improvements and make the road fit for steady hauling.

JSC:LP
Enc.

CC: R. L. Dye

C. P. Dye
R. L. Dye
J. H. Bathrick

DYE & BATHRICK
Mining
March 27, 1944

P. O. Box 1069
Kingman Arizona

Mr. J. S. Coupal, Director
Mineral Resources
Phoenix,Arizona.

Dear Mr. Coupal:

Enclosed is check for .84, I over looked the other attached bill.

Please mail us two blanks "Affidavit of owner or lessee of mining property applying for zero quota".

Thanking you.

Yours very truly,

Dye & Bathrick
R. L. Dye
R. L. Dye

304 xx

March 28, 1944

Mr. R. L. Dye
Dye and Bathrick
P. O. Box 1069
Kingman, Arizona

Dear Mr. Dye:

As Mr. Coupal is out of town, I wish to acknowledge your letter and check of March 27. They will be called to Mr. Coupal's attention upon his return to the office.

Enclosed are two forms, "Affidavit of Owner or Lessee of Mining Property Applying for Zero Quota", as requested.

Yours very truly,

Secretary

Enc.

Washington, D.C.
March 31, 1944

SUBJECT: Copper World Access Road.

I sent quite a lengthy memo on this a short time ago.

I am afraid that they may have misinterpreted the recent visit of the Bureau of Mines engineer.

The reports on the property to date did not match with the statements of Dye and Bathrick and I asked to have it looked at again.

I expect to get a report in a few days.

Bill Broadgate

Washington, D.C.
April 4, 1944

Subject; Dye and Bathrick.... access road.... Copper World

Has been approved by Bureau of Mines and Public Roads Administration and Copper Division has today sent approval to WPB Mining Division. There should be no trouble there.

(By the way, did you know that Lynn Hersey has left WPB?)

Bill Broadgate

304 xxx

April 6, 1944

Mr. R. L. Dye
Dye & Bathrick
P. O. Box 1069
Kingman, Arizona

Dear Rae:

I am very glad to hear that your access road approval has gone through the Bureau of Mines, Public Roads and is up to the War Production Board and that approval will undoubtedly be granted.

I understand from the Grazing Service that advice had been received that it passed the War Production Board so that work should start on it at a very early date.

Yours very truly,

J. S. Coupal, Director

JSC:LP

1. Copper World Mine
2. Helvetia Distr[illegible], Pima County, Arizona
3. D. G. Chilson
4. Truman H. Kuhn
5. Sometime in 1946
6. Copper. No tungsten production, but the tungsten mineral--scheelite--was noted at several places.
7. Not enough of the Copper World Mine was accessible to give any idea of the continuity of ore pockets and shoots.
8. ———

* * * * *

THE EAGLE-PICHER MINING & SMELTING COMPANY
MIAMI, OKLAHOMA

INTRA-COMPANY CORRESPONDENCE

TO Grover Duff - Tucson Office DATE April 6, 1951

FROM John W. Chandler - Miami Office

SUBJECT: Exploration Work

Dear Grover:

We are presently compiling a record of all the mines and prospects which we have examined for the Company during the past 10 years.

Starting with 1940, and listing the work done by years, such as 1940, 1941, 1942, etc., we would like to have the following information tabulated:

1. Name of property
2. Location - (State and County)
3. Who it was submitted by
4. Who made the examination
5. Time spent on the examination
6. Metals involved
7. General conclusions drawn from examination
8. Remarks - Under this heading could be shown whether we have done drilling or any other work in addition to the examination. Give brief outline. If the property subsequently became a mine unit and was operated so state.

We do not have a complete file in this office on all properties examined by the Company and we will combine your report with the one being made up from our files to make the final report complete. I would appreciate it if you could put someone on this work until it is completed, sending me three copies of your tabulation.

Best regards,

Jack.

John W. Chandler.

JWC/jm

4-25-51 - Mr. Chandler will send us a list of the properties on which they have reports in their files, and we will then send him the information on the others.

GJD

If Shattuck-Denn should decide to take over the Antlers property and put a mill on the place, the additional tonnage assured at the Copper World would spread the cost of plant over a longer period. Although Antlers is certain to have sufficient ore to justify a mill on the property, the developed ore at Copper World would give a longer period for the preparation of the Antlers mine for efficient production methods.

J. A. Wilcox

J. A. Wilcox
Manager

REPORT ON THE COPPER WORLD
Yucca, Arizona
November 18, 1948

While on a visit to the Antlers Mine near Yucca, Arizona, I visited the Copper World Mine located five miles from the Antlers Mine.

Two former superintendents from the Coronado Copper Company have leased the mine and the old Boriana mill site. The Boriana mill site is five miles from the Copper World mine and at an elevation considerably higher than the mine.

A new tunnel has been driven to come under the old mine workings and has cut the ore at an elevation that assures 30,000 to 50,000 tons of ore above the tunnel. The ore extends below the new tunnel. The ore is copper-zinc and of good milling quality. Several thousand tons of this ore were treated at the Denn Mill during the war, under the name of Dye and Batherick. The long rail haul to the mill dissipated most of the profits and the mine was closed when premiums ceased.

The present lessees are building what will eventually be a 50 ton mill on the foundations of the old Boriana mill which was a tungsten mill. The unit now installed will handle only 20 tons per day. They still lack a ball mill and classifier. Most of the ore put through the mill so far is tungsten ore from small shippers. They hoped to re-mill the old Boriana tailings dumps in addition to the ore from the Copper World mine, but test runs on the tailings did not give encouraging results.

The ore haul from the mine to the mill site is down a steep grade for $1\frac{1}{2}$ miles and then up a steeper one for $3\frac{1}{2}$ miles. The concentrates will then have to be returned $3\frac{1}{2}$ miles down the same road on the way to the railroad and pass the Antler's mine on the way.

My observation was that the ore haul and concentrate return are going to be excessively expensive. Also that the small capacity of the mill would lead to high overhead. This condition is accentuated by the distance between the mill and mine which means that it will require two surface crews, two camps, in fact two of everything that makes up general overhead costs.

The purpose of my visit to the property was two-fold. First, I believed their ore could be more profitably milled at a mill located at the Antler's property. The ore haul would be the same distance, but $3\frac{1}{2}$ miles of the road would be on a down grade with a good surface and the concentrates would have 5 miles less distance to the railroad. The savings in larger scale milling would be appreciable, and the Copper World people would have only the mining problems to confront them.

I talked with Mr. Reed and Mr. Freeman the lessees and they admitted these things but had gone so far with their mill that they felt they must continue with their plan. I am convinced that the economics of their venture will cause them to see things different at some later date.

The second purpose was to induce them to send their ore to the Denn Mill. Their mine is in a position to produce ore now, but their mill will not be ready for full operation for some time. I proposed that they ship to us until their mill was ready. They decided to give this some thought and just yesterday Mr. Hamilton said they had about decided to start shipments.

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D[illegible] ARTMENT OF MINERAL RESOU[illegible]ES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Copper World Date April 14, 1956

District Near Borianna - 18 miles east of Yucca Engineer Mark Gemmill

Subject: Present Status

This propery was patented and held by Phelps Dodge Corp. for many years. It had only a small amout of development work and had produced only a few hundred tons of ore, practically all values being in Copper and Zinc.

About 1943 Dye and Bathrick, Kingman, Arizona, acquired the property, put it in production and shipped several thousand tons of ore. With the discontinuance of premium prices it became unprofitable and they closed down. Shortly after that they leased the mine. The lessees drove an adit tunnel which tapped the orebody at the 500 ft. level. They built a 75 ton Flotation plant near the portal of the adit, brought in electric power and installed other neccessary facilities. This was never financially successful. The Lessees reshuffled and refinanced two or three times but could not make a go of it. They finally quit entirely very much in debt. The property has reverted to Dye & Bathrick who are the present owners.

Mr. Dye furnished the following information on production and ore reserves.

Production to date - Approx. 35,000 tons gross value approx. $600,000.00

Average values 3% copper - 8% Zinc with trace amounts of gold and silver

Probable ore reserves above adit or 500' level - 10000 tons of above average value

To 100 ft. below adit, shown by drilling 20000 tons of above average value

Mr. Dye stated that he getting the property free of financial and other entanglement left by the former lessees as there are people who want to take it over.

*

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Copper World

Date March 25, 1957

District Cedar Valley

Engineer Mark Gemmill

Subject: Present Operation

Since my report of April 14, 1956, the property has been taken over by the Bobcat Mining Co. Richard E. Mieritz Egr. 307 E. Indian School Road, Phoenix.

When last visited a winze was being sunk in the adit tunnel where it cut the vein and orebody.

Present and future plans of this last operator have not been available.

*

phelps dodge Corporation Western Exploration Office, Drawer 1217, Douglas, Arizona 85607 • (602) 364-8414

July 12, 1974

Mr. Steve E. Tima
Tima Oil & Mining Company, Inc.
2242 E. Lincoln Dr.
Phoenix, Arizona 85016

Dear Mr. Tima:

Enclosed are the laboratory analyses of samples taken of your Copper World Mine, Mohave County, Arizona, during my recent visit.

Sincerely yours,

H. S. Jacobson
Senior Geologist

HSJ: s

Enclosures

300 Park Avenue, New York, N. Y. 10022 • (212) 751-3200

6-26-74

GEOCHEMICAL ANALYSIS

Date Received 6-18-74 Location Copper World Mine 176, Ariz.

Em. Spec. ..... X-Ray 6-25-74 Chem. ..... Geologist HSJ

Pulp No.	SAMPLE NUMBER T. R. S. IDENT.	Mo P.P.M.	Pb P.P.M.	Zn P.P.M.	Cu P.P.M.	Ag OZ/TON	Au OZ/TON		
3303	18-16-25 1BJ			X	X				
				60	50				
3304	3C			X	X				
				350	540				
3305	4			X	X				
				8579	2.6%				
3306	5B			X	X				
				590	590				
3307	7			X	X				
				190	145				
3308	8			X	X				
				115	1.6%				
3309	10			X	X				
				1075	7540				
3310	13			X	X				
				1.1%	3.7%				

1 Troy Oz/Ton = 34.28 PPM: ES = Em. Spectrograph X = X-Ray A = Atomic Absorption C = Colorometric O = Other

VS = Very Strong S = Strong M = Medium F = Faint ND = Not Detected

GEOCHEMICAL ANALYSIS

Date Received 6-18-74

Location Copper World Mine 176 Ariz.

Em. Spec. ..... X-Ray ..... Chem. .....

Geologist HSJ

Pulp No.	SAMPLE NUMBER T. R. S. IDENT.	Mo P.P.M.	Pb P.P.M.	Zn P.P.M.	Cu P.P.M.	Ag OZ/TON	Au OZ/TON		
3311	18-16-25 14J			X	X				
				1105	530				
3312	15			X	X				
				4400	9535				
3313	16			X	X				
				2.2%	2825				

1 Troy Oz/Ton = 34.28 PPM: ES = Em. Spectrograph X = X-Ray A = Atomic Absorption C = Colorometric O = Other

VS = Very Strong S = Strong M = Medium F = Faint ND = Not Detected

CARLOS ROCHIN
MANAGER
REGISTERED ASSAYER
ARIZONA REG. No. 7126

HECTOR C. ROCHIN SR.
FOUNDER
REGISTERED ASSAYER
ARIZONA REG. No. 4073

HECTOR A. ROCHIN JR.
MINING ENGINEER AND
LAND SURVEYOR
ARIZONA REG. No. 2473

LOCATION: Arizona
500 Lu. M16 AJ

Rochin Assay Office, Inc.

P. O. BOX 1323 PHONE (AC 602) 364-8092
DOUGLAS, ARIZONA - 85607

ASSAYERS & METALLURGICAL CHEMISTS

CERTIFICATE OF ASSAY

Name Western Exploration Office Drawer 1217 Douglas, Arizona 85607

Attn: H. Jacobson		GOLD OZS.	SILVER OZS.	COPPER %	LEAD %	ZINC %			
4345	13472	0.01	2.10	0.13		2.88	500 Lu.	M16	AJ
4346	13473	0.02	2.16	0.45		0.67	"	M16	Bj
4347	13474	0.02	11.36	4.47		19.39	"	M17	J

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LOCATION: Copper World Mine
Arizona
T18R16Sec25
Quad 176

Rochin Assay Office, Inc.

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DOUGLAS, ARIZONA - 85607

ASSAYERS & METALLURGICAL CHEMISTS

CERTIFICATE OF ASSAY

Name Western Exploration Office Drawer 1217 Douglas, Arizona 85607

Attn: H. Jacobson		GOLD OZS.	SILVER OZS.	COPPER %	LEAD %	ZINC %			
34286	13469	Tr	3.00		0.55	2.98	5	AJ	3 Dump
34287	13470	Tr	0.40		0.41	21.03	5	BJ	

REGISTERED ASSAYER CERTIFICATE NO. 7126 CARLOS ROCHIN ARIZONA U. S. A.

REMARKS:

DATE: June 29, 1974

CHARGES: $21.00

PETROGRAPHIC ANALYSIS

Date 6/19/74 Sample Location Old Tie 13-16-25-11E

Submitted by: Jacobsen Petrographer Luetke

Probable Original Mode	Present Mode	Notes
%	40 % quartz	
%	7 % plagioclase	
%	3 % biotite	(partly = chlorite)
%	2 % muscovite	(partly = sillimanite)
tr. % monazite	48 % microcline	
tr. % calcite	½ % sillimanite	
tr. % zircon	tr. % chalcopyrite (= tarnish)	

Rock Name gneissic gneiss Original Rock

Alteration: Retrograde metamorphism (syn kinematic)

PETROGRAPHIC ANALYSIS

Date 6/19/74 Sample Location 13-16-25-3DJ Qz. 176 Az

Submitted by: Jackson Petrographer Luetha

Probable Original Mode	Present Mode	Notes
%	50% quartz	
%	30% microcline	
%	5% biotite	
%	4% muscovite	
%	3% plagioclase	
%	%	
%	%	
tr. % zircon	%	

Rock Name Mica schist Original Rock

Alteration: Syn kinematic thermal metamorphism (mesozonal)

PETROGRAPHIC ANALYSIS

Date 6/17/74 Sample Location 13-16-25-AJ. Q 176, AZ

Submitted by: Jacobson Petrographer Luethe

Probable Original Mode	Present Mode	Notes
%	4% tremolite	replaces clinozoisite and diopside
%	2% phlogopite	
% hematite staining	3% clinozoisite	(partly → tremolite)
%	90% diopside	
tr. % zircon	½% chrysocolla	fracture fillings and stainings
tr. % malachite	½% opaques	(carbon?)
tr. % cambyite	%	

Rock Name diopside hornfels Original Rock

Alteration: upper mesozonal thermal metamorphism

10-21-74

WJW 12/18/74 File

GEOCHEMICAL ANALYSIS

Date Received 10-3-74 Location Copper World Mine Arizona

Em. Spec. 10-10-74 X-Ray 10-14-74 Chem. Geologist WJW

Pulp No.	SAMPLE NUMBER T. R. S. IDENT.	Mo P.P.M.		Pb P.P.M.		Zn P.P.M.		Cu P.P.M.		Ag OZ/TON		Au OZ/TON		W PPM			
4949	700' Level				X		X		X								
					145		345		1.8%	ES	.22	ES	ND	ES	<70		

1 Troy Oz/Ton = 34.28 PPM; ES = Em. Spectrograph X = X-Ray A = Atomic Absorption C = Colorometric O = Other

SPECTROGRAPHIC ANALYSIS

DATE RECEIVED Oct 3 '74 LOCATION Copper World Mine Az GEOLOGIST Walker

10-10-74 W.

NO.	PULP #	LOCATION	Mo ppm	Ni ppm	Pb	V ppm	Cu	Zn															
	4949	700 ft Level	6	21	F	20	.15	N															

ALSO CHECKED FOR: Be As Te B P Hg Sb Ge Ag Au Tl Sn Th Dy W Bi Ba Ir La In Cd Ta Pd Rh Ru Re Co

F — Faint S — Strong