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07/27/88

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: BI-METAL

ALTERNATE NAMES:
MCGUIRE
ORO FINO
UNA WEEP
CADILLAC
BAY #1-26
MINERAL POINT & LEWIS PLACERS

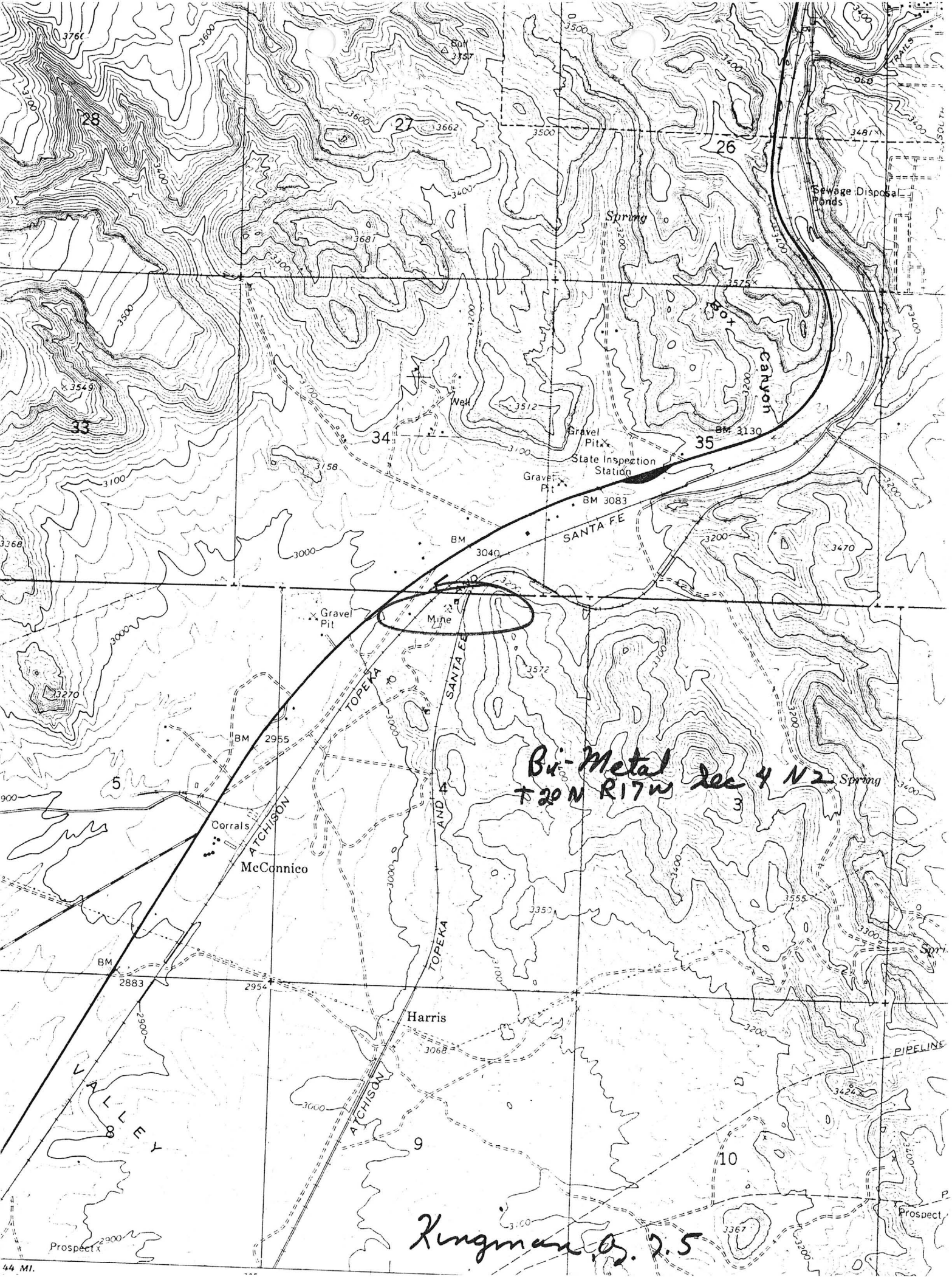
MOHAVE COUNTY MILS NUMBER: 564A

LOCATION: TOWNSHIP 20 N RANGE 17 W SECTION 4 QUARTER N2
LATITUDE: N 35DEG 11MIN 59SEC LONGITUDE: W 114DEG 07MIN 55SEC
TOPO MAP NAME: KINGMAN - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:
GOLD
IRON SULFIDE

BIBLIOGRAPHY:
ADMMR BI-METAL MINE FILE
ADMMR MOHAVE CUSTOM MILL PROJECT
SCHRADER, F.C. "MIN. DPSTS OF CRBT RNGE, BLCK MTN, GRND WSH CLFS,AZ" USGS BULL 397 P 136-7
JOHNSON, M.G. "PLACER GOLD DPSTS OF AZ" USGS BULL 1355 P 29, 1972
WILSON, E D "AZ AU PLACERS" AZBM BUL 160 P 33
MALACH, R., "MOHAVE COUNTY MINES", P. 16


28
27
26
33
34
35
Sewage Disposal Ponds
Spring
Box Canyon
Well
Gravel Pit
State Inspection Station
BM 3130
BM 3083
SANTA FE
BM 3040
Mine
TOPEKA AND SANTA FE
ATCHISON
BM 2955
Corrals
McConnico
Harris
BM 2883
VALLEY
PIPELINE
Prospect
5
4
3
9
10
Bi-Metal
T20N R17W sec 4 N2
Kingman, Q. 2.5
44 MI.

BI-METAL

MOHAVE COUNTY
T20N R17W Sec 4 N2

MILS INdex #564A

Commodity - Gold

USGS Bull. 397, p. 136

ABM Bull 160, p.33

USHS Bull 1355, p. 29

Mohave County miner article, Dec., 1974, Mohave County Correspondence file

ABM Bul 180, p. 33-34

Malach, Roman, Mohave County Mines, p. 16

Mohave County Place Names Booklet, Roman Malach

Mining Journal 2/29/40 (Included in file)

Mining Journal, 3/30/42 (Included in file)

Mining Journal, 6/15/41 (Included in file)

Mohave Custom Mill Project

USGS Kingman, Az. 7.5 (Included in file)

Arizona Department of Mines and Mineral Resources

INFORMATION FROM MINE CARDS IN MUSEUM

ARIZONA

MOHAVE COUNTY

BI-METAL MINE

MILS # 564A
O-AKA's
Bi Metal Mine(field)

MM	1298	Fergusonite with Sphene
	1299	" " "
	1302	Sphene Crystals

BI METAL MINE MOHAVE COUNTY

NJN WR 10/3/86: Made a brief visit to the Bi-Metal Mine (f) Mohave County. The site of the old, small pit has been cleaned up and new benches started. Recent drilling also evidenced. I would estimate that at least 2,000 tons had been mined. this material has been trucked to the Frisco Mine (f) to be leached.

NJN WR 11/7/86: Doug Bonelli (c) of Frisco Land & Mining (c) reported that drilling this spring proved 60,000 tons of .057 - .08 oz/ton au, with higher grade areas at the Bi Metals Mine (file) Mohave County. The drilling consisted of 3 main drill holes and sampling of 15 blast holes. Frisco Land & Mining Co mined about 4,000 tons and trucked it to the leach facility at the Frisco Mine (file) Mohave County where it was crushed to $-\frac{1}{2}$ inch and leached with a 55% recovery. Unfortunately, this is not sufficient to justify the trucking costs.

BI METAL MINE MOHAVE COUNTY

KAP WR 6/5/81: A report was received by a reliable source that U.V. Industries has a deposit of large low-grade potential and some higher grade areas containing gold and silver mineralization at the Bi Metals (file) property which might be currently minable if a processing facility were available in the Kingman area. A portion of this property lies under the new interstate 40 Highway.

NJN WR 11/23/84: Pete Drobeck reported that Sharon Steel, 136 E. South Temple, Salt Lake City, Utah 84111 drilled and defined open pit gold reserves at the Bi Metal Mine (f) Mohave County. Unfortunately, some of the reserves underlie Interstate 40 and the Santa Fe Railroad and can't be mined without moving them and their right of ways.

NJN WR 2/15/85: Dan Maxwell reported that from Sharon Steel's work it appears that 100,000 tons of .075 oz Au/ton material amenable to cyanide treatment could be mined by open pit methods without interferring with the railroad or interstate highway.

NJN WR 6/21/85: Dan Maxwell, P O Box 99, Pinos Altos, Ne Mexico 88053, phone (505) 536-9301 visited and reported that he is going to try to lease the Bi Metals Mine (f) Mohave County. He believes he can mine 60,000 tons of .07 oz Au/ton from the breccia pipe deposit without interfering with any right of ways.

NJN WR 2/28/86: Benjamin Bonelli (c) reported that he has signed a lease on the Bi-Metals (f) Mohave County. My earlier report that the property has been leased was apparently in error. The Frisco Land and Mining Co. plans to truck the ore to the millsite at the Frisco Mine (f) and process it there. Mr. Bonelli estimates they will mine between 30,000 and 60,000 tons. The property will require some additional sampling and drilling to determine what will actually be mined.

NJN WR 6/6/86: Bill Vanderwall (c) reported that Frisco Land and Mining Co has recently been open pit mining at the Bi-Metals Mine (c) Mohave County and shipping by truck to their leaching facilities at the Frisco Mine (f) Mohave County, but have now suspended mining. Apparently, the ore at the Bi-Metals Mine did not run .2 oz/ton Au as indicated in our old file data, but a little less than .1 oz/ton Au. Economics do not justify continuing operations on this grade of material.

1280 24695 35937

SHARONSTEEL • Mining Division

AN NVF COMPANY

SHARON STEEL CORPORATION

19th Floor, University Club Building
136 East South Temple
Salt Lake City, Utah 84111
Telephone (801) 355-5301

November 11, 1980

ARIZONA STATE OFFICE
BU. LAND MANAGEMENT

NOV 14 1980

7:45 A.M.
PHOENIX, ARIZONA

District Supervisor
Bureau of Land Management
Arizona State Office
2400 Valley Bank Center
Phoenix, Arizona 85073

BEY #1 - #26 (file)
WALLAPAI DIST, MOHAVE COUNTY

Dear Sir:

Sharon Steel Corporation does, pursuant to CFR 43, Part 3800, subpart 3833.2-2a, herewith submit exact copies of the Affidavits of Annual Labor for the assessment year ended September 1, 1980, that will be recorded in the records of the counties in which the unpatented lode mining claims are located. The Parent Serial Number assigned to each claim is listed on the Affidavit.

Kindly send return correspondence to this Company, attention the undersigned.

Best regards,

P. W. Lucas

P. W. Lucas
Engineer of MINES

PWL:ms
Encls.

AFFIDAVIT OF LABOR PERFORMED AND IMPROVEMENTS MADE
FOR THE ASSESSMENT YEAR ENDED SEPTEMBER 1, 1980

STATE OF UTAH)
) ss.
COUNTY OF SALT LAKE)

WILLIAM R. KASTELIC, being duly sworn, deposes and says that he is a citizen of the United States and more than 21 years of age, resides in Salt Lake City, in Salt Lake County, Utah; that he is Vice President of Mining Operations for Sharon Steel Corporation, and is personally acquainted with the hereinafter described mining claims owned by said Company situated in the Maynard and Wallapai Mining District, Mohave County, Arizona, the location notices or amended location notices of which are recorded in the office of the County Recorder of said County, as follows:

Name of Claim	Sec.	Tws.	Rng.	Certificate of Location Recorded at Book	Page	BLM Serial Number
Bey #1	4	20N	17W	142	203-4	A-MC 35937
Bey #2	4	20N	17W	142	205-6	A-MC 35938
Bey #3	4	20N	17W	142	207-8	A-MC 35939
Bey #4	4	20N	17W	142	209-10	A-MC 35940
Bey #5	4	20N	17W	142	211-12	A-MC 35941
Bey #6	4	20N	17W	142	213-14	A-MC 35942
Bey #7	4	20N	17W	142	215-16	A-MC 35943
Bey #8	4	20N	17W	142	217-18	A-MC 35944
Bey #9	4	20N	17W	142	219-20	A-MC 35945
Bey #10	4	20N	17W	142	221-22	A-MC 35946
Bey #11	4	20N	17W	142	223-24	A-MC 35947
Bey #12	4	20N	17W	142	225-26	A-MC 35948
Bey #13	4	20N	17W	142	227-28	A-MC 35949
Bey #14	4	20N	17W	142	[illegible]	[illegible]

BM

6
P
Y

December 1st, 1945.

Mr. M. B. Dudley
P. O. Box 1071
Kingman, Arizona

Dear Mr. Dudley:

In 1941, while Director of the Department of Mineral Resources of the State of Arizona, I had occasion to examine the Bi-Metal Mine near Kingman. The examination was only a casual one, as I took no measurements or samples, but did discuss the physical characteristics with several of the engineers and operators who had put in considerable time on the property. From my notes as a result of this visit, and some information acquired since then, I can briefly summarize my observations.

PROPERTY:

The property consists of a group of 6 patented mining claims, located about 3½ miles southerly from Kingman, county-seat of Mohave County, Arizona. The Atchison, Topeka, & Santa Fe Railroad passes through the property, and about 300 yards of dirt road connects directly with U. S. Highway #66. The elevation is about the same as Kingman, 3,300 feet.

TITLE:

The property was formerly known as the McGuire Mine and is patented. Title clear and unemcumbered now rests in the hands of M. B. Dudley and J. H. Dungan, both of Kingman.

GEOLOGY:

The geology of this particular property is fully covered in the U. S. G. S. Bulletin #397, "Mineral Deposits of the Cerbat Range, etc., Mohave County, Arizona," by F. C. Schrader, 1909. Briefly the deposit occurs in a shear zone of altered mineralized granite, clearly associated with an intrusive diabase.

The granite has been shattered and sheared by the intrusion, and along these fractures a stockwork of veinlets, carrying silica, some hematite and gold values, exists. Alterations by the vapors and solutions from the diabase intrusion extend will into the sheared granitic mass and form the net-work of veinlets which may be considered the mineralized and mineable ore zone.

TOPOGRAPHY, etc.:

The area consists of low, rolling foot-hills, and the deposit occurs near the bottom of one of the foot-hill slopes which has about a 30° slope. The elevation is about 3,300 feet, making an ideal elevation for year-around work. The vegetation is sparse and of the semi-arid type of the southwest desert country.

The annual precipitation is about 5 inches, and falls mostly in the winter months of December, January, and February, and the summer months of July and August.

MINE WORKING:

There is an open pit showing about 300 feet in width by 350 feet in length, with numerous shallow shafts, pits, and tunnels. From the open pit a substantial tonnage has been mined and milled. From the various tunnels and shafts selective high-grading has been done, yielding shipping ores of from 0.6 to 0.9 ounces per ton in gold.

GENERAL MINE INFORMATION:

I have had access to a number of reports, among them one by E. Ross Householder, mining engineer of Kingman, with whom I discussed the property at the time he made the report. The object of the report was to refute a claim that there were 200,000 tons of definite tonnage and definite value blocked out. A deposit of this type is seldom developed in a manner which permits of definite blocking out of ore values and tonnages. The work can well indicate a large tonnage of ore practically in sight or assured, but not blocked out.

The property was examined and reported on by Howard Fields of the American Smelting & Refining Company, and a summary of his results of drilling showed as follows:

74 drill holes, average value,	$3.15 per ton in gold.
58 " " " "	4.92 " " " "
16 pits and surface cuts,	3.01 " " " "

An average value was given as $3.89 per ton in gold, but no information as to depth or weighted value to check on, nor of tonnage represented by this average.

A series of drill holes by the operating company shows 290 holes averaging $4.00 per ton in gold. These holes were sunk to an average depth of 22 feet.

About 15,000 tons of ore were mined and milled in ore operation, and the superintendent in charge at that prticular time stated that he maintained an average value of the mill heads at $5.25 per ton in gold.

Recently the 60-foot shaft was unwatered and sampled, each 4 feet in depth being assayed and samples separately, and the following results are reported:

Sample Number	Gold Per Ton	
	Ounces	Value
#1	0.13	$4.55
#2	0.14	4.90
#3	0.10	3.50
#4	0.90	31.50
#5	0.14	4.90
#6	0.13	4.55
#7	0.02	0.70
#8	0.04	1.40
#9	0.30	10.50
#10	0.77	26.95
#11	0.24	8.40

Sample Number	Gold Per Ton	
	Ounces	Value
#12	0.08	2.80
#13	0.22	7.70
#14	0.87	30.45
#15	0.18	6.30

CONCLUSIONS:

The extent of the mineralized zone has not been determined laterally nor in depth. Further exploration may show extensions in length, width and depth.

The probable tonnage is in no way indicated. The drilling and open pit work have, however, showed sufficient tonnage to call for a lawsuit to prove that the 200,000 tons of claimed ore was not definitely blocked out.

The property is most favorable located for cheap mining; proximity to rail and road facilities; within 3½ miles of Kingman where mine supplies and labor are available; ample water available at shallow depth by wells; cheap electric power near the property, and an ideal climate for year-around operations.

The ore is free milling, and a high extraction of values can be made by cyanidation and/or flotation.

The problem of tonnage is the only questionable point. The value of the ore from the various mine operations, drill holes, and samplings show the ore to be of a profitable commercial grade, and costs by open pit mining should be extremely low. Costs of mining and milling should be about $1.50 to $2.00 per ton if an efficient plant of 250 to 300 tons per day capacity is installed.

As to tonnage; estimates varying from 1,000,000 to 3,000,000 tons have been made. Sufficient work has not been done to substantiate such figures. Definitely about 200,000 tons seem assured. From reasonable extensions of this developed zone it is quite probable that in excess of 500,000 tons may be assumed. At 250 tons per day, this would indicate several years of active work.

I can highly recommend the property for extensive examination and study, with an objective of a 250 to 300 ton daily capacity milling operation.

Very truly yours,

J. S. Coupal

REPORT

on

BI METAL MINE

Kingman, Mohave County, Arizona.

By

Howard H. Fields.

R E S U M E

NAME--Bi Metal Mine.

LOCATION--5 miles West of Kingman, Arizona; railroad, highway, power line cross claims.

ORE OCCURENCE--+- Gold bearing pyrite in fractured zone in pre-Cambrian granite. Known productive area 100 feet by 200 feet.

PAST PRODUCTION--Gasoline shovel operation for mill and selective hand mining have produced an estimated 20,837 tons, with a gross value of $136,499, or $6.55 per ton at present gold price.

TONNAGE--Downward extension present pit, 300 feet, gives	400,000	tons,
Plus wall dilution	112,000	"
Total to be mined at 250 tons daily	512,000	" .
Possible lateral extension (similar area)	512,000	"
Total possible ore to be mined at 500 T.daily..	1,024,000	"

GRADE--Estimated grade ore	.165 oz. Au.		
" diluted ore	.130 " "		
Tailings loss	.025 " "		
	.110 " " at $34.90		$ 3.83

COSTS--Mining (both tonnages)	.50 per ton	
Milling " "	1.00 " "	
General " "	.25 " "	
Total cost " "		1.75
Profit per ton		$ 2.08

Gross profit on 512,000 tons	$ 1,064,960
" " reduced to present value by Hoskins formula 7-4, 5.7 years	812,554
Gross profit 1,024,000 tons	2,129,920
" " reduced Hoskins formula	1,625,109

R E S U M E

(Continued)

Total Costs

250 Ton basis		500 Ton basis
$160,000	Property	$160,000
45,000	Shaft-mine equipment	54,500
15,000	Exploration & Development	25,000
91,000	Mill-Cyanide Plant--Water	175,000
20,000	General Contingencies	25,000
$331,000	Total Investment	$439,500
7,500	Interest until start Mill	10,000
$338,500		$449,500
12,000	Salvage equipment 15%	24,000
$326,500	Total Net Cost	$425,500
$486,054	Present value net profit	$1,199,609
$ 15,600	Profit per month	$ 31,200
$187,200	Profit per year	$ 374,400

Preliminary diamond drilling--will cost $1,500--2,000.--take 60 days.

CONCLUSION:

The past Bi Metal mine operations has established the presence of commercial ore in considerable volume. The downward extension of this ore and its lateral extensions can be shown by diamond drilling a few 100-foot holes cheaply, to be followed by more detailed and deeper drilling for development.

The ore in sight and to be proven can be cheaply mined and cheaply and simply milled, producing bullion. Power, water, and

R E S U M E

(Continued)

labor can be easily obtained. The price of the property is not excessive.

Considering all of these very favorable facts, the preliminary diamond drilling is well warranted and should indicate sufficient commercial ore to warrant detailed drilling and subsequent equipment of mine and mill, with the expectation of a fairly long lived and very profitable operation.

BI METAL MINE

LOCATION:

The Bi Metal Mine is located in Section 34, T 21, N R 17 W and Section 3, T 20 N R 17 W of Mohave County, Arizona. The Santa Fe Railroad crosses the property five miles West of Kingman, Arizona.

TITLE:

The property consists of the following patented mining claims:

Mineral Point,
Bi Metal,
Oro Fino,
Una Weep,
Cadillac
) U. S. Mineral Survey No. 2750.

Klondyke --------- U. S. Mineral Survey No. 4005.

These claims are owned by Mrs. Grace Trout of North Girard, Pennsylvania, and are held under option by Claude M. Wilkerson of Kingman, Arizona. Title is reported to be in perfect condition with taxes paid.

TOPOGRAPHY--CLIMATE:

The elevation at the Bi Metal Mine is about 3,250 feet. The climate ranges from 8 F to 117 F and the normal annual rainfall is 11.5 inches.

The mine lies largely in a gently dipping valley floor and extends up a steep hillside to the East. The major portion of the property can be driven over by truck.

MINING FACILITIES:

Kingman, County Seat of Mohave County, lies five miles East, affording a local source for supplies and labor. Los Angeles supplies overnight service for supplies.

Electrical power is available from the high tension lines of the Desert Power Company, running from Kingman to Oatman. Present power cost is estimated 1.75 ¢ KWH. A power line from Boulder Dam to Kingman is under construction and will begin serving the Desert Power Company in August. Power costs will be lowered by the replacing of local steam produced power by Boulder Dam.

Water for milling is at present purchased from a private source about a mile distant. This is too expensive for steady operation of any size. A 100 foot well nearby produces 30,000 gallons per day. Wells drilled on adjoining railroad and government lands in the same valley as the producing Santa Fe Railroad wells will probably supply all the water required from a distance not to exceed 3500 feet but slightly up grade.

HISTORY:

In 1907--8--9, John Hays Hammond is reported to have taken an option to purchase this group for $350,000.00. He sank Shaft "A" on Map I. 135 feet, and ran 200 feet of drift and cross-cut and 200 feet of shallow tunnel. A 10 stamp mill, steam powered, was built and from 7 to 8 thousand tons milled with reported heads of .20 Au and tails of .06 Au. Some 66 shallow drill holes were reported to have averaged .094 au. This block milled .20 Au. but high tailing loss caused a shutdown in late 1909.

Between 1909 and 1935 the property was examined by U.S.S.R. and M. Co., American Metals, and Clarence King for R. E. Talley of the United Verde Copper Company.

In 1935 C. M. Wilkerson and S. S. Jones took an option from Mrs. Trout and by selective mining shipped about 700 tons crude to the Tom Reed Mill at Oatman, which averaged about $18.73 per ton. In June, 1936, C. F. Weeks joined them, rehabilitated the old mill, milled about 15,000 tons. His operation consisted of mining in the pit by gas shovel, truck to mill, floating gold, amalgamating the concentrates and shipping treated concentrates to Oatman for cyaniding and amalgam to the mine.

Dissension among the partners and the unprecedented winter of 1937 closed down the operation. The option reverted to the owners.

Wilkerson obtained a new option in September, 1937, and since has shipped selected ore from a windlass shaft 40 feet deep in the bottom of the old pit, some 978 tons having a net value per ton to him of $23.55per ton. He is still shipping.

About the time Wilkerson resumed shipping in 1937, Louis Reiber examined the property for the Phelps Dodge Corporation and recommended that they option it, to enable them to do some drilling.

The Phelps Dodge Corporation drilled sixteen 10-foot Jackhammer holes, sampled the tunnel, dumps, and inall, took seventy-six 100 pound samples. The terms were too onerous so nothing resulted.

Wilkerson has set up a small tripod headframe, installed a gasoline hoist and is working two shifts, shipping crude ore to the Vivian Mill at Oatman.

GEOLOGY:

The surface and underground work at the Bi Metal shows a complex of various types of granitic rocks, apparently of pre-Cambrian age. This granite is a medium fine grained silicious rock, showing abundant aplite where mineralization is most intense. Regionally the various rocks show a NW trend with vertical contacts. In the pit some sheeting with a westerly flat dip is conspicious, also there are a series of slips NE dipping 40° -- 50° N and an E-W vertical series. The downward trend of the mineralization might be controlled by any of these, but the steep regional structure seems most significant. The values are apparently associated with fine grained pyrite in the more silicious areas of granite. The gold is mechanically combined for the most part as all the sulphides pan. Oxidation is shallow as sulphides occur close to grass roots. Coarse and fine grained pyrite is the only sulphide noted. A dark colored mineral, probably manganese, shows with the better grade ore.

A dark basic dike, possibly gabbro, shows on the South side of the pit and mining was stopped in this direction by the dike. Similar intrusive rock shows in the NE corner of the pit, in the railroad cut and in the present shaft isolated fragments, both fresh and altered and more or less mineralized, with angular and rounded outlines, were noted. It is not clear whether the dike intrusion caused more intense fracturing near it or whether it followed previous fracturing, but apparently more intense mineralization lies in the areas near the dike rocks. The dike itself is reported to carry about $1.00 in gold

In the area around Shaft A, 130 feet deep, there may be more commercial ore, judging from the old records. While the presence of dike rock here is not clearly shown, yet the nearby exposures of it may have some bearing on its occurence.

Southeast of the main dike area and adjoining it, a couple of shallow cuts and shafts show a mineralized, silicious granite, similar to that in the pit area. Aside from these, no work has been done in this direction, which appears to be an exceedingly promising one. If the areas adjoining the dikes are the most likely ore bearing areas, then it is logical to expect ore on both sides. Since all the

other factors are apparently similar and commercial ore found in the pits shown on the map, prospecting should show a similar ore body on the SE side of the dike. If other dike areas are discovered, they also will offer promising prospects.

Aside from the comparatively shallow workings, there is no direct evidence as to the probable depth the commercial mineralization may extend. However, on the surface there is commercial ore from the mill to Shaft A, a distance of 400 feet. The granite is pre-Cambrian. There is no evidence of weakening mineralization.

Considering all this evidence, it seems safe to assume the present grade of ore will continue to at least a depth of 300 feet.

MINE DEVELOPMENT:

The attached map shows the outlines of the pits, the various shafts and tunnels, together with assays in ounces of gold,and the location of buildings.

Shaft A shown in plan and section demonstrates that the mineralization at that point continues regularly to a depth of 130 feet below the surface. This means 70 feet below the pit floor. While this is not accessible now, yet Wilkerson trenched the dump and Weeks milled 50 tons, both reporting .10 oz. Au., confirming the ore persistence to that depth.

The incline showing on the map produced shipping ore to a depth of 35 feet, where a hard, low grade granite ore stopped their shipping. Wilkerson claims this has a value of $7.00. My ore sample, no fines included, assayed $4.90.

The present shaft is 43 feet deep and followed shipping ore all the way. This shaft passed through the hard ore that stopped the incline and the last shipment of 34.6 tons ran .95 oz. gold. Not over a couple of tons were sorted.

From the incline and this new shaft, Wilkerson has shipped 978 tons, having an average gross value of $23.55 per ton. The grade is apparently best at the present bottom as his last shipment of 34.6 tons assayed .95 oz. Au. The continuation of this good grade of ore from the surface to its present depth, indicates that the entire area of mineralization also will continue down with similar values.

The Bi Metal mine has a definitely established area of commercial ore in the present pit area with indications of persistence to depth, but no blocked out ore. Diamond drilling seems to furnish the solution for quick preliminary exploration, both as to depth and lateral extension.

It is proposed to drill a series of 100 foot holes as shown on the map and in sequence of numbering. The results of these drillings will determine the next step. If they prove satisfactory, a number of deeper holes should be drilled and the ore bodies outlined to make possible the location of the shaft mill and indicate the size of the operation. The preliminary 9 holes to 100 foot depth should not cost over $1500.00--$2000.00, including assaying, etc. Since past dry Jackhammer drilling has been so accurate, it appears that careful diamond drilling properly located will develop the ore bodies, so the next step will be shaft sinking and mill construction.

The mining method proposed in either sized operation is "glory hole". A shaft sufficient for the tonnage planned will be sunk in wall rock and a drift put in to the center of the ore. The shaft will have an ore pocket of proper size. Two raises terminating in bulldozing chambers will be driven to surface and the ore benched down from the surface with Jackhammers--grizzlies at the bulldozing chambers will make it possible to reduce large pieces to skip size.

An alternate will be an incline shaft from wall rock to the center of the ore, with ore pocket, grizzlies and bulldozing chamber above it, eliminating any underground tramming, but tying up some ore in a shaft pillar. The glory hole walls will be benched but the average inclination will be about 74°.

Milling will be the usual step--crushing and grinding in a ball mill. Ball mill discharge will pass through a mineral jig before reaching the classifier where 50% of the gold is removed. Bulk flotation, 200--1 ratio concentration, will treat classifier overflow. Both jig and flotation concentrates will be amalgamated, recovering over 60% total gold in amalgam. After amalgamation the concentrates are cyanided.

The Oatman mills pay for 95% of the gold in flotation concentrates so their recovery is probably 97--98.

Overall recoveries are expected to be over 90%. 85% is used in these calculations. The pyrite floats easily and fineness of grind is apparently the governing factor in the flotation recovery, so 90% plus is expected which should give an overall recovery over 90. The recovery of such a large proportion of gold in the amalgam re-

duces the period of tieup in process to a minimum.

MINE--MILL EQUIPMENT:

The mine has no equipment beyond a gas powered portable air compressor, large enough for two Jackhammers, a 12 HP gasoline hoist, car bucket, track, drills and steel.

The mill is an old remodeled stamp mill with stamps replaced with ball mill. It is powered by steam through a Corliss valve engine driving both a D.C. generator and line shaft. The jaw crusher is motor driven. The ball mill is a remodeled standard mill--the jig between it and an Aikens Classifier is too small -- the flotation cells are Denver Sub A and in good shape. The amalgamators, thickeners, feeders, etc., are all home made. There is a first class water softener for boiler water. The mill can easily be used for a pilot plant or for bulk sampling but is too costly to use for any medium or large size operation, and further is located on a possible ore extension.

ORE VALUES and TONNAGES:

Value of ore mined in 1936 operation:

Gross value crude ore shipped prior milling Mined from block milled		$ 11,999.71
Gross value bullion and Cts. shipped 6/12/36--2/28/37		
Concentrates	$ 15,862.86	
Plus 5% deducted by mill	793.14	
	$ 16,656.00	
Bullion		
Mint receipts	35,813.20	
		52,469.20
Total gross value in ore (less tailings loss)..		$ 64,468.91

Tons ore milled	12,206.00	
Tons ore crude (shipped)	653.42	
	12,859.42	
Value per ton crude (less tailings).....		$ 5.01
Tailing loss .025 at 34.90		.86
Calculated value ore in pit before mining		$ 5.87
for shipment or mill--Per ton		.165

In addition to the foregoing shipments, a clean up was made after mill closed down. The value of this is not available but is reported to be between $10,000 and $20,000, which will add to the value per ton.

Weeks'sampling before milling consisted of drilling 60 holes, about 20 feet deep, from the surface and bottom of old pit, with a dry Jackhammer drill. The first two feet were not sampled but the drillings from each succeeding four feet were blown out by air and caught in a canvas bag fastened to a 1 1/2 inch pipe collared in the hole. These were averaged and the grand average was.128 oz. gold per ton. This does not include the crude ore mined and shipped from this area just previous to the sampling. The average of the ore mined and milled from this area from actual bullion and concentrate returns, excluding crude ore shipments, was .1235 oz. per ton, to which should be added the tailing loss of .025, making it .1485 oz. per ton. The ore actually mined better than it sampled by drilling, 71 ¢ per ton.

From the records kept by O. K. Lewis, connected with the 1907--8 operations, the heads averaged about .20 and tails.06. The tailings are covered by the tailings from the second milling operation.

To spotcheck these samples, a few samples were cut in the pit, as shown on the attached plan map. Some of these were cut from pit walls which were too low grade for the last operation to mine. Several not listed were cut in the present shaft in shipping ore.

No.	Width in Ft.	Description	Oz. Per T. Assay
1	23	Vertical cut ore pit wall S. face near dike-60 #--no fines	.105
2	24	Vertical cut--schisty ore E. wall, possibly lens of dike--low grade--75#--no fines	.035
3	10	2 vertical cuts in old winze from short tunnel under schist sampled as #2, 6 feet below pit floor--grey granite	.170
5	16	Vertical cut N wall--reddish granite shattered leached-no fines	.035
6	7	Vertical cut in floor of pit in trench--hard granite, few sulphides--no fines	.060

(Continued)

No.	Width in Ft.	Description	Assay--Oz. Per T.
7	18	Vertical cut face Incline shaft from floor pit-- above bulkhead about 35' below floor pit--no fines	.140
11	4	Vertical cut--in new shaft 36'--40' Nwest wall near shipping ore--no fines	.380
13	4	Vertical cut surface pit SE office on S side of dike-- no fines	.140
15	3	Vertical cut in new shaft 40'-43' bottom hard granite showing sulphides--no fines	.180

The weighted averages of these are as follows:

All samples	.102
Eliminating No. 5 on extreme N wall-edge ore	.113

Considering the fact that these were mostly taken from ore left by the former mill operators, it seems that they support the records sufficiently to warrant using their results as indicating the grade of ore to be expected in extensions.

The plan of mining, glory hole method, will necessarily mean a dilution and a dilution factor of 28% in a glory hole 300 feet deep is estimated. This low grade is estimated to assay .035 oz., so the average of the block mined and milled by Weeks, et. al., will be reduced from .165 oz. per ton to .130 oz. per ton, which is assumed as an expected head assay.

Two scales of operations are considered (1) the tonnage to 300 feet deep under the present pit, an area 200 x 100 feet, with 15 cubic feet per ton in place, ore 400,000 tons increased by dilution to 512,000 tons; (2) the present pit area plus a similar area to the SE, totalling 800,000 tons, increased by dilution to 1,024,000 tons. The outcome on both bases follows:

Under both bases the recoveries and costs will be considered the same, though a slight reduction might be made in mining and milling costs under the 500 ton basis. Ratio of concentration from past operation is 200-1. The ore will be ground through 100 mesh, floated and the concentrates cyanided.

(Continued)

Heads	.130 oz. gold per ton		
Tails	.020	85% recovery	
Recovered	.110	at $34.90	$ 3.83
Mining	.50		
Milling	1.00		
General	.25		
			1.75
Profit per ton.....			$ 2.08

250 Tons per day		500 Tons per day
$1,064,960	Total Profit.....	$2,129,920
	Present value by Hoskins formula	
$ 812,554	7-4 5.7 years.....	1,625,109
	Mine Development & Equipment	
14,000	350 ft. shaft $40.00	14,000
10,500	700 " raise $15.00	10,500
3,000	Bulldozing chamber	5,000
7,500	Hoist & Equipment	10,000
5,000	Compressor	7,500
2,000	Pipe lines	2,500
3,000	Drills and Steel	5,000
15,000	Exploration & Development	25,000
75,000	Mill at $300 per ton	150,000
10,000	Cyanide Plant Cts.	15,000
3,000	Water system	5,000
3,000	Transformer station	5,000
20,000	General contingencies	25,000
$ 171,000		$ 279,500
	Purchase Price.	
	Interest on investment until mill starts.	
	Salvage value equipment.	
160,000	Purchase property	160,000
7,500	Interest to start mill	10,000
$ 338,500		$ 449.500
12,000	Salvage equipment 15%	24,000
$ 326,500	Total net cost	$ 425,500
$ 486,054	Present cash value profit	1,199,609
$ 15,600	Profit per month	31,200
$ 187,200	Profit per year	374,400

CONCLUSION:

The past Bi Metal mine operations has established the presence of commercial ore in considerable volume. The downward extension of this ore and its lateral extension can be shown by diamond drilling a few 100 foot holes cheaply, to be followed by more detailed and deeper drilling for development.

The ore in sight and to be proven can be cheaply mined and cheaply and simply milled, producing bullion. Power, water, and labor can be easily obtained. The price of the property is not excessive.

Considering all of these very favorable facts, the preliminary diamond drilling is well warranted and should indicate sufficient commercial ore to warrant detailed drilling and subsequent equipment of mine and mill, with the expectation of a fairly long lived and very profitable operation.

Howard H. Fields.

Howard H. Fields.

MINE AND PROSPECT FIELD VISIT DATA SUMMARY

Sheet 1 of 2

COMMODITIES Gold

MILS ID No. 564A Date 4-15-85

ENGINEER Nyal J. Niemuth

INFORMATION FROM: same

PROPERTY SUMMARY

I. MINE NAME Bi-Metal (f) OTHER POSSIBLE NAMES INCLUDING ANY CLAIM NAMES NOTED

II. LOCATION: T 20N R 17W SEC(S) 4 N½ MINE DISTRICT McConnico

ELEV. 3000 COUNTY Mohave TOPO QUAD. Kingman 7½

DIRECTIONS Access off freeway I-40 frontage road to cross railroad tracks

MAP ATTACHED Yes

III. OWNERSHIP: NAME Sharon Steel Corp PHONE

ADDRESS: 136 E. South Temple, Salt Lake City, UT 84111

COMPANY NAME IF ANY: as above

PERTINENT PEOPLE

IV. PROPERTY AND HOLDINGS: 6 patented claims, BEY #1-28 unpatented claims

V. PAST PRODUCTION - NOTED, KNOWN, PROBABLE, UNKNOWN, NONE Known

VI. CURRENT STATUS: Under exploration, drilling in 1982 or later

VII. WORKINGS: Open pit with older underground workings - shafts and drifts seen in pit, plus additional prospects elsewhere on property. Tailings pile exists to west of mill foundations.

VIII. GEOLOGY AND MINERALOGY: DEPOSIT TYPE: Zone of silicification, pyrite and hematite mineralization.

LENGTH: ? WIDTH: + 100 VEIN STRIKE zone trends north DIP appears verti

HOST ROCK: Leucocratic gneiss

ECONOMIC MINERALS: gold

COMMENTS: Zone (pit) is bounded by mafic dikes. To west mineralization appears in leucocratic unit of gneiss again. Mineralization evidenced by silica flooding, pyrite, limonite, hematite, alteration of feldspars, Brecciation and silica cement.

IX. EQUIPMENT ON SIGHT: None

— only one in file when scanned —

Name of Mine or Prospect:	Township	Range	Section	Priority
Bi-Metal Mines (McGuire)	20N	17W	4a	B
Principal Minerals:	1:250,000 Quad		7.5' - 15' Quad	
Free Gold	Williams		Kingman SE	
Associated Minerals:	District		Principal Product	
Pyrite, Hematite	Maynard		Gold	
Type of Operation:	County	State	Type of Deposit	
Underground, Surface	Mohave	Ar.	Vein	

Ownership or Controlling Interest:
Consult current tax assessment records

Access: From Kingman, Ar. proceed SW on Old Trails Road for 2.5 miles. Cross over SFP RR tracks and adit is 200 m. SW. Adit is located (unnamed) on topographic quadrangle.

Structural Control or Geological Association:

"The country rock containing the deposits is an altered and mineralized Precambrian microcline granite. The mineralized area is marked by a dark grey intrusive dike rock, which cuts the granite. The solutions which mineralized the deposit may have accompanied or closely followed the intrusion of this rock."[3]

Age of Mineralization:

Production History	Geochemical Analyses
250 Ft.-open cut; 130 ft. of tunnel and 80 ft, shaft Patented claim Bk #206 MS #2750	

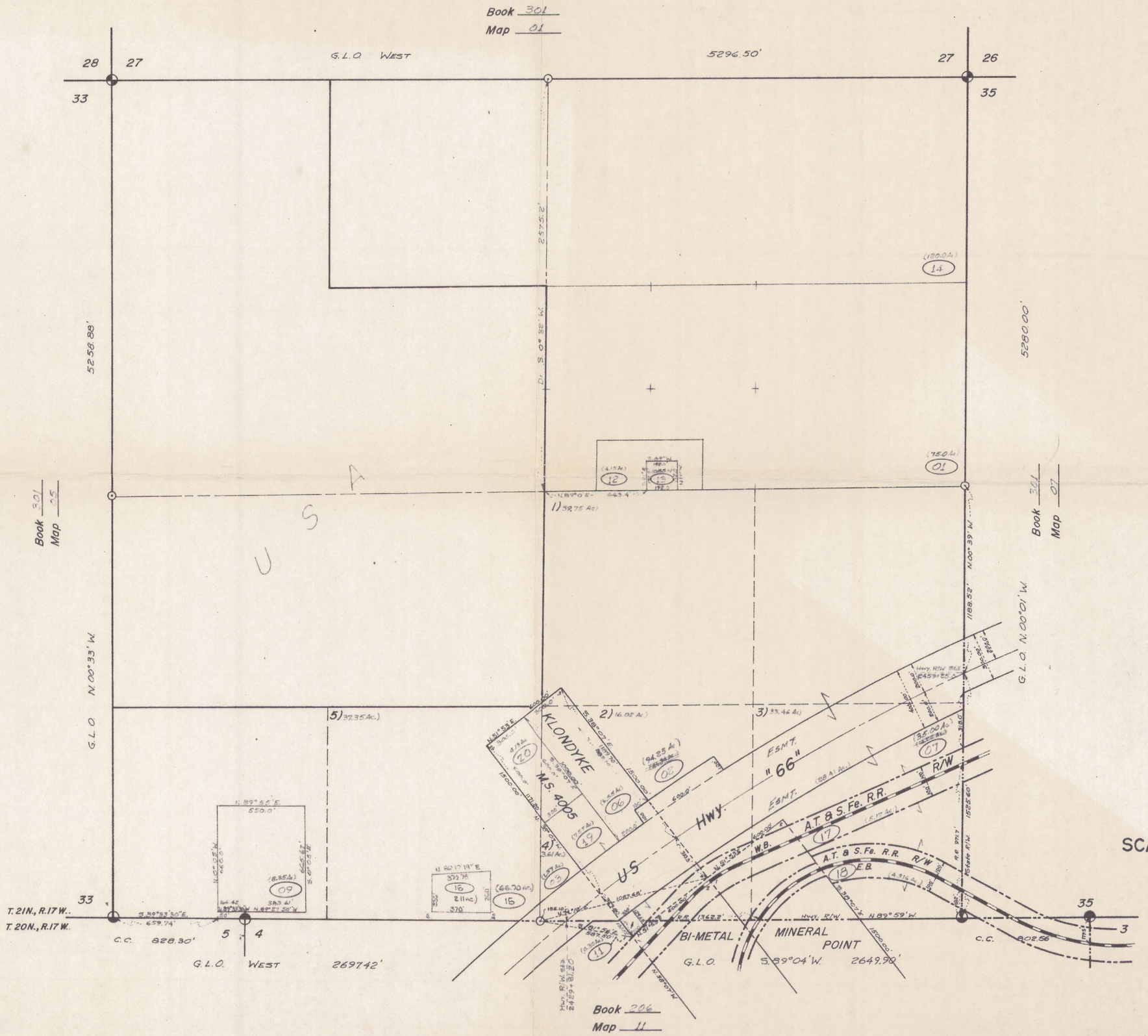
References

1) CETA map file Rack #5, claim map.
2) CETA map file Rack #27, assay underground map.
3) Schrader (1909), p. 136-137.
4) Mallach (1977), p. 16.

SEC. 34 T. 21 N., R. 17 W..

BOOK 301
MAP 06

Code 0400



21N., 17W.. 34

Date MARCH 6, 1974

MOHAVE COUNTY
ASSESSOR'S MAP

OLD TRAILS Hwy. KINGMAN 3½ MI →

Klondike Survey No 4005
Bi-Metal Survey No 2750

Mineral Point Surv No 2750
Bi-Metal Survey No 2750

Bi-Metal Surv No 2750
Ore Fire Surv No 2750

A.T. & S.F. RR
WESTBOUND

A.T.&S.F.R.R.
EASTBOUND

Shaft 100

10' Shaft Dump 14

Pit 1908
± 700 TONS

Pit 1936
± 3000 TONS

SHAFT

TRENCH

MILL

OFFICE

Area 18
6 ft deep

POSSIBLE
EXTENSION

50 tons milled

Shaft "A"

DIKE

FILL

CUT

- Proposed DD Hole
- .10 J.H. Sample Hole-Assay
- 1 Cut Sample Number
- Gabbro Dike

PLAN
BIMETAL MINE

LEGEND

1907-09 Pit-Tunnels
1936-37 " Drill Holes
P.D.Co " "
1938 Samples-Work

Scale 1"=50' June 30,38

HF

SECTION THRU SHAFT "A"

Pit Level

Pit 10

Pit 20

0.1057 oz Gold

W E

N S

RR

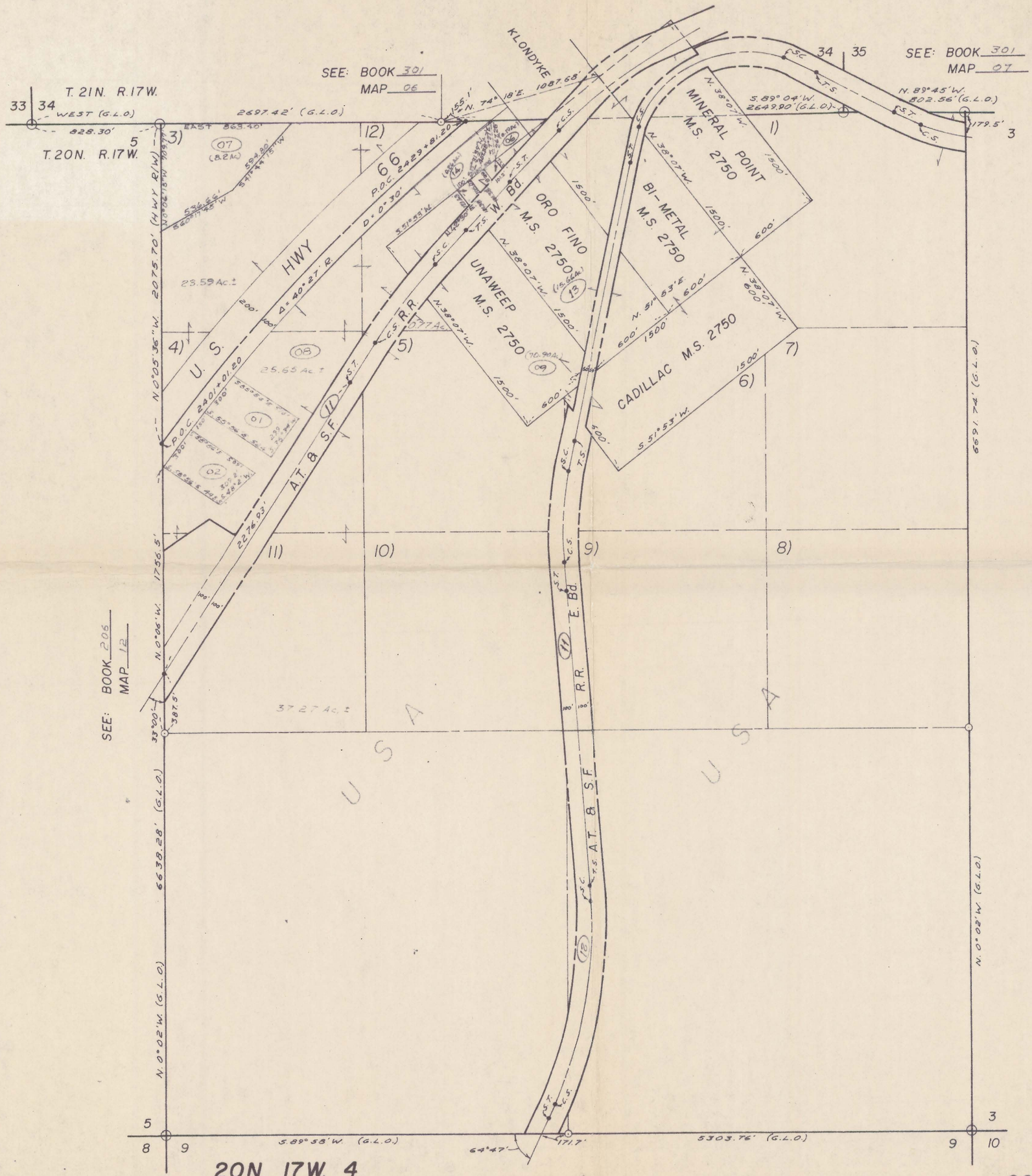
Bi Metals file

SEC. 4 TN. 20N. RG. 17W.

BOOK 206

MAP 11

CODE 0400



SCALE: 1" = 600'

MOHAVE COUNTY ASSESSOR'S MAP