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04/25/96

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: SILVER BELL-MARTINEZ

ALTERNATE NAMES:
PATENTED CLAIM MS 799
MARTINEZ
COLUMBIA-SIVER BELL

PINAL COUNTY MILS NUMBER: 195

LOCATION: TOWNSHIP 3 S RANGE 12 E SECTION 18 QUARTER E2
LATITUDE: N 33DEG 10MIN 05SEC LONGITUDE: W 111DEG 09MIN 17SEC
TOPO MAP NAME: MINERAL MTN - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:
LEAD SULFIDE
SILVER
ZINC
GOLD
COPPER OXIDE
COPPER SULFIDE

BIBLIOGRAPHY:
ADMMR SILVER BELL-MARTINEZ FILE
BLM MINING DISTRICT SHEET 612
ELSING, M J, ET AL, AZBM BULL 140, P 99; 1939
SCHMIDT, E A, "GEOL OF MINERAL MTN QUAD PINAL CO, AZ" UOFA THESIS, 1967, P 77-78
SEE: ADMMR ORPHAN BOY FILE
ADMMR "U" FILE
CLAIMS EXTEND INTO SEC 7,17,19 & 24 T3S R11E
HINKLE, M.E. GEOCHEM SAMPLING IN ARED ENVIROM BY USGS, USGS CIRC 997, 1988
S.B. Mieritz file collection


Silver Bell Mine
Columbia Mine
Martinez Canyon
Martinez Mine
Well
Well
Spring
Spring
JEEP TRAIL
JEEP TRAIL
JEEP TRAIL
Canyon
12
7
8
13
18
17
24
19
20
25
30
29
Silver Bell Martinez
T3S R10E Sec. 18
Mineral Mts. 15'

* GENERAL REFERENCES

REFERENCE 1 F1 <USBM-ABGMT ACTION FILE DATA.

REFERENCE 2 F2 <ARIZONA DEPARTMENT OF MINERAL RESOURCES FILE DATA

REFERENCE 3 F3 <ABGMT CLIPPINGS FILE DATA

REFERENCE 4 F4 <USBM FILE DATA, CLUSTER # 754

C30<PYROMORPHITE, CERARGYRITE, EMBOLITE, LIMONITE>

A12<PRODUCTS CO.(1944), SUNBEAM GOLD MINING CO.(1934), UNITED ARIZONA MINES(1951), MARTINEZ MINING CO.(1947), GEORGE P. MANGUS (1922), B.O.W. MINING CO.(1966)>

A13<SUNBEAM GOLD MINING CO.(1937-38), UNITED ARIZONA MINES(1951-62), SILVER BELL CONSOLIDATED(1940-43), J.W. WINGFIELD, PAUL BRYANT, RICHARD MALIK.>

M110<THE SILVER BELL-COLUMBIA MINES HAVE A HIGH SILVER-LOW LEAD RATIO ORE WHILE THE MARTINEZ IS HIGH LEAD-LOW SILVER RATIO.

M220<900 FT ALONG STRIKE AND TO A DEPTH OF 200 FT BY AN INCLINED SHAFT, AN 3 INTERMEDIATE ADIT LEVELS.>

F5<SCHMIDT, E.A., GEOLOGY OF THE MINERAL MOUNTAIN QUAD, PINAL COUNTY, ARIZONA, UNIVERSITY OF ARIZONA THESIS, 1967, p. 77-78>

F6<USGS OFR 78-468, 1978>

N70<MARTINEZ [redacted] SHAFT, S END OF MINES>

MLS # 196

U.S. CRIB-SITE FORM

RECORD IDENTIFICATION

*RECORD NUMBER B10 <>

*RECORD TYPE B20 <X,1,M>

*REPORT DATE G1 <82:10:03> YR. MO.

*INFORMATION SOURCE B30 <1,2>

DEPOSIT NUMBER B40 <>

*FILE LINK IDENT. B50 <USBM-004021.0067>

*REPORTER(SUPERVISOR) G2 <LARABA, PETER (last, first, middle initial) ; GEST, DON (last, first, middle initial)>

*REPORTER AFFILIATION G5 <ABGMT>

*SITE NAME A10 <SILVER BELL-MARTINEZ MINE>

*SYNONYMS A11 <>

LOCATION

*MINING DISTRICT/AREA A30 <MARTINEZ CANYON DISTRICT>

*COUNTY A60 <PINAL>

*STATE A50 <A,Z>

*COUNTRY A40 <U,S>

*PHYSIOGRAPHIC PROV A63 <12>

*DRAINAGE AREA A62 <1,50,50,100>

*LAND STATUS A64 <01, , , (1,9,7,9)>

*QUADRANGLE NAME A90 <MINERAL MOUNTAIN (1,9,6,4)>

*QUADRANGLE SCALE A100 <24,000>

SECOND QUAD NAME A92 < (, , , ,)>

SECOND QUAD SCALE A91 < , , , , , >

*ELEVATION A107 <2,900 FT>

UTM

*NORTHING A120 <3,670,640>

*EASTING A130 <485,320>

*ZONE NUMBER A110 <+12>

*ACCURACY

ACCURATE ACC (circle)

ESTIMATED EST <>

GEODETIC

*LATITUDE A70 < , , , N>

*LONGITUDE A80 < , , , W>

CADASTRAL

*TOWNSHIP(S) A77 <003S>

*RANGE(S) A78 <012E>

*SECTION(S) A79 <18>

*SECTION FRACTION(S) A76 <C OF N½ AND C OF SE>

*MERIDIAN(S) A81 <GILA AND SALT RIVER>

*POSITION FROM NEAREST PROMINENT LOCALITY A82 <4.2 MILES E OF MINERAL MOUNTAIN (ELV. 3351)>

*LOCATION COMMENTS A83 <LOCATED ON THE WEST SIDE OF MARTINEZ CANYON, THE CLAIMS RUN FROM SOUTH TO NORTH ALONG THE EAST SIDE OF SECTION 18. UTM TAKEN TO SILVER BELL SHAFT.>

* ESSENTIAL INFORMATION

· ESSENTIAL SOMETIMES OR HIGHLY RECOMMENDED

COMMODITY INFORMATIC

COMMODITIES PRESENT C10 <CU, AG, AU, PB, ZN,>
ORE MINERALS C30 <GALENA, CERUSSITE, ANGLESITE, HEMATITE, AZURITE, CHRYSOCOLLA.>
COMMODITY SUBTYPES C41 <>
GEN. ANALYTICAL DATA C43 <>
COM. INFO. COMMENTS C50 <ABUNDANT GALENA NODULES.>

* SIGNIFICANCE

	PRODUCER	NON-PRODUCER
MAJOR PRODUCTS	MAJOR <AG, PB,>	MAIN COMMODITIES PRESENT C11 <>
MINOR PRODUCTS	MINOR <CU, AU, ZN,>	MINOR COMMODITIES PRESENT C12 <>
POTENTIAL PRODUCTS	POTEN <>	
OCCURRENCES	OCCUR <>	OCCURRENCES OCCUR <>

*PRODUCTION

PRODUCER	NON-PRODUCER
PRODUCTION (YES) (circle) PRODUCTION SIZE SML (MED) LGE (circle one)	PRODUCTION UND NO (circle one)

*STATUS EXPLORATION OR DEVELOPMENT

PRODUCER	NON-PRODUCER
STATUS AND ACTIVITY A20 <4>	STATUS AND ACTIVITY A20 <>

DISCOVERER L20 <>
YEAR OF DISCOVERY L10 <> NATURE OF DISCOVERY L30 <B> YEAR OF FIRST PRODUCTION L40 <1890> YEAR OF LAST PRODUCTION L45 <1971>
PRESENT/LAST OWNER A12 <G.F. BONTC1957), SILVER BELL CONSOLIDATED MINING CO.(1942), CALIFORNIA STEEL
PRESENT/LAST OPERATOR A13 <BOW MINING CO.(1966-68), CALIFORNIA STEEL PRODUCTS CO.(1944-46), O.H. WALL(1940),
EXPL./DEV.COMMENTS L110 <24 UNPATENTED CLAIMS, 3 PATENTED, SILVERBELL, COLUMBIA, AND MARTINEZ
ALL 3 PATENTED IN 1890-1891.>

DESCRIPTION OF DEPOSIT

DEPOSIT TYPE(S) C40 <VEIN/SHEAR ZONE>
DEPOSIT FORM/SHAPE M10 <TABULAR>
DEPTH TO TOP M20 <> UNITS M21 <> MAXIMUM LENGTH M40 <> UNITS M41 <>
DEPTH TO BOTTOM M30 <> UNITS M31 <> MAXIMUM WIDTH M50 <20> UNITS M51 <FT>
DEPOSIT SIZE M15 <SMALL> M15 <MEDIUM> M15 <LARGE> (circle one) MAXIMUM THICKNESS M60 <> UNITS M61 <>
STRIKE M70 <N 15 W TO N 15 E> DIP M80 <67 W>
DIRECTION OF PLUNGE M100 <> PLUNGE M90 <>
DEP. DESC. COMMENTS M110 <LEAD, SILVER SOME COPPER AND A SMALL AMOUNT OF ZINC OCCURS AS LENSES WITHIN SHEAR ZONES. COPPER MINERALIZATION PRESENT AT THE 200 FT LEVEL.>

DESCRIPTION OF WORKINGS

Workings are: SURFACE M120 UNDERGROUND M130 (BOTH M140) (circle one)
DEPTH BELOW SURFACE M160 <550> UNITS M161 <FT> OVERALL LENGTH M190 <4,000> UNITS M191 <FT>
LENGTH OF WORKINGS M170 <2600> UNITS M171 <FT> OVERALL WIDTH M200 <> UNITS M201 <>
OVERALL AREA M210 <> UNITS M211 <>
DESC. OF WORK. COM. M220 <TWO MINES HAVE BEEN DEVELOPED ON THE PROPERTY. THE SILVERBELL - COLUMBIA MINE HAS VARIOUS ADIT LEVELS, INTERIOR SHAFTS, WINZES, AND DRIFTS OVER A 500 FT STRIKE LENGTH AND A VERTICAL DEPTH OF 300 FT. THE MARTINEZ MINE HAS BEEN DEVELOPED APPROX.>

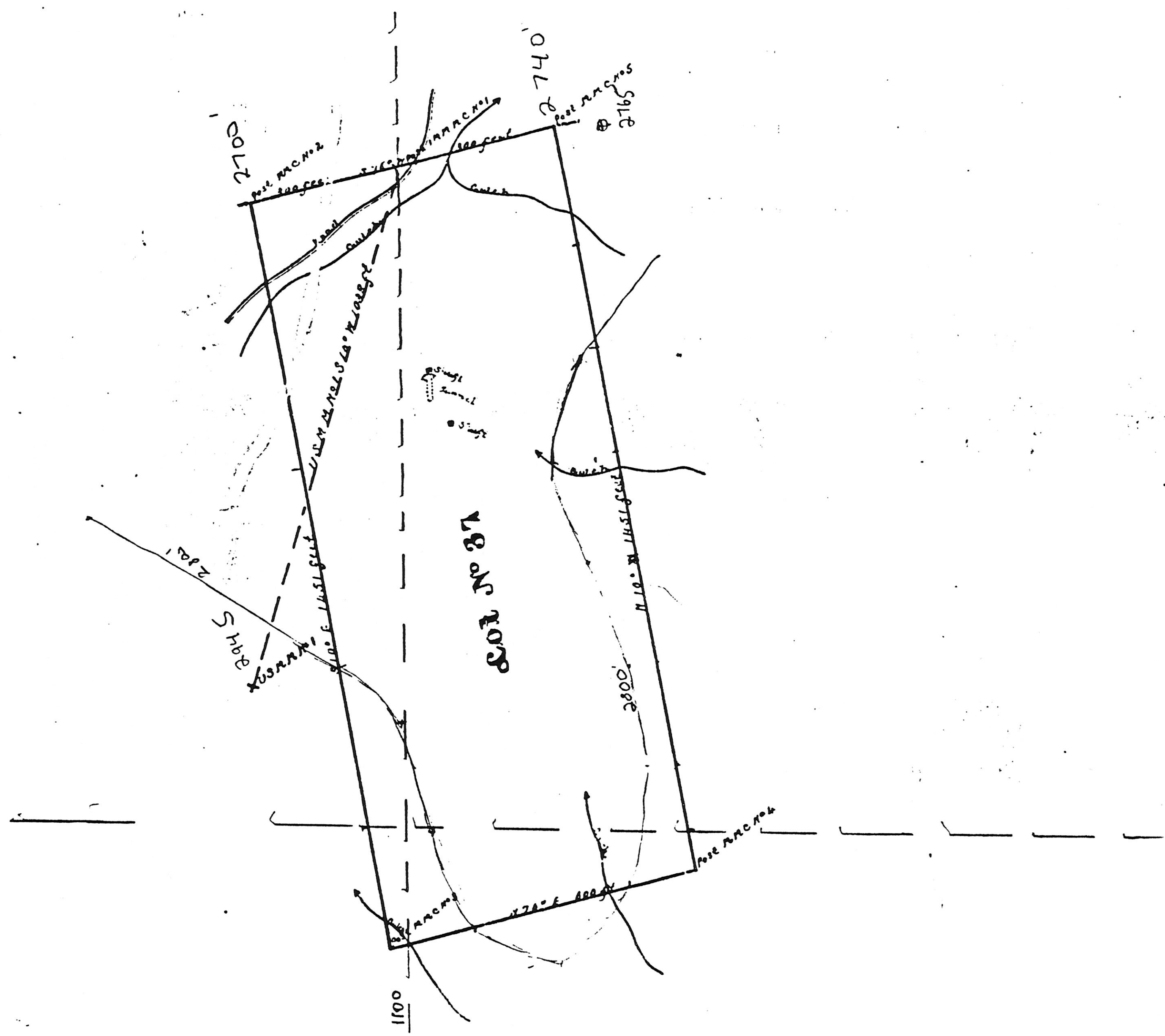
GEOLOGY

AGE OF HOST ROCK(S) K1 <T,E,R,T,>
HOST ROCK TYPE(S) K1A <RHYOLITE>
AGE OF IGNEOUS ROCK(S) K2 <T,E,R,T,>
IGNEOUS ROCK TYPE(S) K2A <RHYOLITE>
AGE OF MINERALIZATION K3 <T,E,R,T, ~~MIDDLE TERTIARY~~ PROBABLY MIOCENE>
PERT. MINERALS (NOT ORE) K4 <QUARTZ, FLUORITE, BARITE IN RHYOLITE BRECCIA>
ORE CONTROL/LOCUS K5 <ALONG FAULT ZONES, VEINS AND VEINLETS>
MAJ. REG. TRENDS/STRUCT. N5 <FAULTING AND SHEARING IN RHYOLITE OVERLYING PINAL SCHIST>
TECTONIC SETTING N15 <>
SIGNIFICANT LOCAL STRUCT. N70 <SILVER BELL MAIN VEIN N8W 67W. N TO NNE TRENDING FAULTS [redacted] IN AREA SHORT NW TRENDING FAULT AT>
SIGNIFICANT ALTERATION N75 <STRONG OXIDATION THROUGHOUT MINE>
PROCESS OF CONC./ENRICH. N80 <SILVER ENRICHMENT ON UPPER LEVELS>
FORMATION AGE N30 <>
FORMATION NAME N30A <>
SECOND FM AGE N35 <>
SECOND FM NAME N35A <>
IGNEOUS UNIT AGE N50 <>
IGNEOUS UNIT NAME N50A <>
SECOND IG. UNIT AGE N55 <>
SECOND IG. UNIT NAME N55A <>
GEOLOGY COMMENTS N85 <EARLIER INTERPRETATIONS OF PRE-CAMBRIAN MINERALIZATION AND PRE-CAMBRIAN HOST ROCKS INCORRECT>

GENERAL COMMENTS

GENERAL COMMENTS GEN <>

Survey No. 799



PLAT

OF THE

Martinez

MINING CLAIM,

Halstead Mining District,

Pinal County,

ARIZONA.

Claimed by J. Champion

Located 1st Jan'y 1884

Surveyed by L. L. Chilison U. S. D. S.

February 4th 1887

Containing an Area of 19.93 Acres.

Scale 200 feet to the inch.

Variation 12° 35' East.

The original Field Notes of the Survey of the Martinez Mining Claim, from which this plat has been made, have been examined and approved and are on file in this office; and I hereby certify that they furnish such an accurate description of said Mining Claim as will, if incorporated into a patent, serve fully to identify the premises; and that such reference is made therein to natural objects and permanent monuments, as will perpetuate and fix the locus thereof.

I further certify that the value of the labor and improvements placed thereon by the applicant or his grantors is not less than Five Hundred Dollars, and that said improvements consist of

Shaft 6 x 20 x 20 feet

Shaft 4 x 6 x 15 feet

Tunnel 4 x 6 x 50 feet

Inclines, Drifts etc

as appears by the report of the Deputy Surveyor and the testimony of two disinterested witnesses.

And I further certify that this is a correct Plat of said Mining Claim, made in conformity with said original Field Notes of the survey thereof.

John Hise
U. S. Surveyor General for Arizona.

U. S. Surveyor General's Office,
Tucson, Arizona,

February 15th 1887

Patent No. 17026
Serial No

SILVER-BELL MARTINEZ PINAL COUNTY

MG WR 8/7/81: Requested file on Silver Bell-Martinez mine (Pinal County) be copied in Phoenix office and sent to Tucson office. ALANCO Inc. wanted to see the file.

NJN WR 5/28/82: Don Coleman, President of Western Energy and Resources Corp, 4101 E. Camelback Rd. #13, Phoenix, AZ 85018, (602-959-6787) visited. He reported that they have a lease/purchase option on the Silver Bell-Martinez Mine, Pinal County. Don Bryant, Geologist of Englewood, Colorado has been in charge of the exploration program. Currently they have 400,000 tons of high silica, silver, lead, copper blocked out. Average grade would be 6½ oz. Ag., ½% Cu and 1½%Pb. Grade and tonnage has been determined by underground sampling and by long hole drilling for 200' extensions in both directions. Induced polarization studies indicate potential for a sulphide body at 1000-1500', but this has not been tested by drilling.

The material is good for smelter flux and reportedly ASARCO is willing to take 300 tons/day in about 15 months. Unfortunately this is a problem as they need to sell ore or flux now for immediate financial reasons. Initial production of 40-60,000 tons could be open-pitted from a 40' width with a 1-1 stripping ratio.

MG WR 2/10/84: Learned that Phelps Dodge has been looking at the Silver-Bell Martinez mine (Pinal County)

CJH 8/10/84: Thomas B. Buza, Manager, Sales, Product Development, Kerley Industries, Inc., Mining Chemical Division, Santo Tomas Rt., Box 73, Sahuarita, Az. 85629. ph: 791-2940 (Tucson) 625-2129 (green Valley) visited. He researched the Silver Bell-Martinez mine file, Pinal County and had portions reporoduced by Tucson Blueprint. He reported that Kerley Industries purchased the property and is looking to acquire other precious metal properties.

NJN WR 5/9/87: Graham Sutton (card) reports that during a recent visit to the Silverbel Martinez (file) Pinal County, the watchman let him enter several of the underground workings. He reports them to be in fair shape and showing abundant argentiferous galena.

SILVERBELL-MARTINEZ MINE PINAL COUNTY

Mr. Waughtel said he had conferred with Charles Wingfield last week and found out that no work was being done at the Martinez and that future plans were indefinite.
LAS Interview with Roy Waughtel 9-16-64

According to the caretaker at the plant, Mr. Wingfield had been in an accident in early October and had broken both legs. However, he stated that nothing had been done for several months. The road from the Box Canyon to the mine had been severely damaged and in places almost obliterated by the rains of August and September. The mill equipment being well covered was still in good condition. Some time back Wingfield attempted to drill a test hole, in an attempt to reach a copper vein in depth, but the tools were lost and for the present, at least, no plans have been formulated to continue the drilling, or other operations. The present mill is a gravity type, utilizing 2 larger Wilfley Tables. The available reserves run 8-10 percent lead and 4-5 oz. silver to the ton. Memo LAS 11-9-64
Mine Visit with George A. Tweedy Tax Review Commission

Interview with G. L. Augustadt, Manager, at the Superior Division Copper Co.
Mr. Augustadt said that Mr. J. W. Wingfield had shipped a few ore lots of copper-silver ore to Magma at Superior, but bad rain had curtailed shipments recently (past 3 wks.). This ore comes from a new area north of the Silver Bell mine. LAS Memo 2-16-66

J. Wesley Wingfield was in the office for information about OME loans. Says they need to put down holes in an exploration program to tell where to enlarge their present open pit operations. They have been cut to 2 cars per week by Magma (had been shipping 6 cars). M r. Wingfield showed the writer settlement sheets from both Inspiration and Magma with silver assays running from 4.5 to 12.9 and one car averaged 25.3 silver. They are paid for their 75% silica content average. Mr. Wingfield states the silver averages 9 oz. on past shipments. LP Memo 8-19-66

Conference with J. W. Wingfield 10-19-66
Mr. Wingfield reported that he had shipped close to 250 carloads this year (400 cars all together) to Magma Copper Co.'s smelter at Superior. This ore assayed 72% silica, 9-11 ounces silver to the ton, 0.2 to 0.4 percent copper and a little lead. The ore was obtained from an open cut on the ridge crest; the cut is about 1000 feet long, up to 75 feet deep, and 20 to 60 feet wide, and lies along a fault zone. Wingfield said that he needs to sell 400 tons per week and in order to approximate this figure he has a supplementary contract of 150 tons per week with Inspiration at Miami. However, this entails an additional haul from Superior to Miami over the mountains, although he may get a little better return settlement. Cerro Corp. is to examine the property shortly. Wingfield claims 300,000 tons of reserves at 9 ounces silver to the ton and 1-3 percent lead. Wingfield has a front loader, two trucks and a cat, that hauls the ore. The road from the mine to Hwy. 60-70 (4 miles east of Florence Junction, is not a Freeway, especially if the weather is bad at all.)
Wingfield plans to improve the road soon. Memo LAS 10-19-66

SILVERBELL-MARTINEZ MINE

PINAL COUNTY
Mineral Creek District

Mrs. Charles Wingfield and Richard Mieritz of the Martinez mine, Mineral Creek district, Pinal County was in with a specimen of rich "steel" galena encountered while driving a drift southward from the old Martinez shaft. Mr. Wingfield stated that recent developments a reserve studies indicated that there might now be around $1,000,000 of developed or probable reserves, at present metal prices. The ore at the Martinez mine is lead-silver bearing. LAS WR 11-23-62

Mr. Wingfield stated that the 220 foot inclined shaft had been finished and connected to the 200-ft. level of the old Martinez mine. The area between the bottom of the inclined shaft and the junction with the old mine is in good milling ore. This runs 6-8 per cent lead and 4.3 ounces silver. The drift on the 90 ft. Martinez shaft level has encountered 2 ft. of massive galena. The specimens show some black coating which appears to be argentite. Mr. Wingfield said they planned to drift northeast toward the Silver Bell along the Columbia vein. This vein shows fair copper with gold values. Previous sampling indicated 2-3 per cent lead, 0.5 - 1.0 per cent copper, 8.3 ounces silver, and some gold. Better spots run 16-18 ounces silver to the ton.
The test drill hole is down to 352 feet where extremely broken ground halted the progress temporarily. According to calculations the drill hole would have to go to 450 feet to encounter the veins.
The mill is making about 75 per cent extraction, leaving 2-3 per cent of lead in the tailings. Some of the lead is as anglesite and cerussite. Experimental work is now being done by which it is hoped to cut this tailing loss. Roy V. Waugtel, general mill and mine supt., is in charge of field operations. A recent shipment of concentrates and sorted ore was made to Asarco's smelter at El Paso. Memo LAS Interview with J. Wesley Wingfield 2-4-63

The B.O.W. Mining Company has made it's first carload shipment of lead-silver concentrates from the Silver Bell-Martinez mine 15 miles NE of Florence, Arizona. The shipment was made by Southern Pacific from the loading siding at Price to Asarco's El Paso Smelting Works, El Paso, Texas. Since the present group took over the property, first opened in 1870, a new inclined shaft has been sunk and a 100 ton per day mill constructed. At present, a crew of 16 men is employed. J. W. Wingfield, Phoenix, is general manager and secretary-treasurer of the company. Associated with him are Bob Hall and Vernon Owen, president and vice-pres. respectively. Roy V. Waughtel is general mill and mine superintendent. Mining World 1-1963 p37

The higher silver price spurred two small mining companies - BOW Mining Co. and Arizona Silver, Inc. to start mining and shipping. Mining World Feb. 1963 p. 13

Mrs. Waughtel said that the mill was still down due to the replacement of the Dynamics Research crushers by another type. The performance of these was not considered to be good. Meanwhile a 4.5 inch rain had destroyed portions of the road in the Martinez "box". This is now being repaired, so as to bring in the new crusher. Mr. Wingfield stated that a copper bearing vein had recently been struck in the south portion of the Martinez mine (200 foot level). This was anticipated, from the gossan character. Memo LAS 2-20-63

Mrs. Waughtel reported that J. W. Wingfield had 3 men, at the Martinez, drilling test holes on the new copper vein that was discovered last spring. The operations there were severely hampered by floods in the Box Canyon. LAS Memo - Interview with Mrs. Roy Waughtel 9-26-63

Active Oct. 1963

Silver Bell-Martinez

DATE: January 18, 1985

TO: Mr. F. J. Menzer, Chief Geologist

FROM: J. A. Waegli, Geologist

SUBJECT: Arizona Department of Mineral Resources
List of Flux Properties

In early October, 1984, Mr. John Robertson, Ore Buyer for Phelps Dodge Corporation, requested that the Arizona Department of Mineral Resources (ADMR) compile a list of properties in the state that could produce material grading +80% SiO_2 and +1/3 O/T Au. In response, Mr. Nyal Niemuth, Mineral Resources Specialist with the ADMR, compiled a list of 16 properties (attached) that he feels are capable of producing +70% SiO_2 with $100.00 metal credits. (He stated that he did not know of any mines capable of meeting Mr. Robertson's criteria.)

November 19-21 were spent in Phoenix examining ADMR files to obtain information on each of the mines. Mr. J. E. DuHamel of Western Exploration screened their files and compiled the resulting information in a memo dated November 27 (attached). Based on his memo, pertinent reports were copied from the Western Exploration files on December 3 and 4.

The following is a listing of these 16 properties arranged in order by quad number. A brief description of each property is given, with information on current activity and a summary of past work conducted by Phelps Dodge Corporation. Recommendations based on information compiled to date are also given. Table 1 summarizes information compiled in this report.

14. SILVER BELL-MARTINEZ (Figure 6): Pinal County, T.3S., R.12E., Sec. 18, AZ 341

The geology and history of this silver-lead property are well summarized in a report by Mr. D. M. Boggess, Morenci Branch geologist, dated October, 1982. The most recent report is by J. A. Waegli, dated May 16, 1984. This was written during contract negotiations with the owners, Western Energy and Resources Corporation (WERC). No agreement was signed due to lack of funds to conduct exploration on the property.

The ADMR files indicate that the property was acquired in August, 1984 by Kerley Industries, Inc. of Sahuarita, Arizona. It is suggested that Mr. Thomas Buza of Kerley be contacted to determine the property status. The Silver Bell is still considered to be an attractive exploration target, and if funds are available, an exploration lease could be pursued. It should be noted, however, that studies to date indicate that Silver Bell material will not make suitable smelter flux.

15. OKLAHOMA GROUP (Figure 6): Pinal County, T.3S., R.11E., Sec. 16, AZ 341

The ADMR files on this base and precious metal property are very sketchy since their main file was stolen several years ago. J. E. DuHamel's memo dated November 27, 1984 gives a good summary of the geology and mineralization, taken from a 1971 examination report by J. D. Forrester of Western Exploration. Mr. Forrester did not give a tonnage potential for veins on the property.

Based on available information, no specific recommendations can be made. A review of the current BLM index shows no Oklahoma claims in the area. However, Forrester's 1971 report indicated that the property is also known as the Gorilla, and a group of Lost Gorilla claims do appear on the index. The claimants are Messrs. Billy Upchurch, Nyle Leonard, and Emil Cody, and Mmes. Mary Cody and Judith Wylie. (Mr. Cody was listed as one of the submitters in Forrester's report).

It is suggested that the current owners be contacted for more information. If, based on this contact, the property sounds interesting, a field examination can be scheduled.

16. PAPAGO CHIEF (Figure 7): Pima County, T.20S., R.7E., Sec. 21, AZ 458

This property has produced base and precious metals from a north-south striking quartz-calcite vein stockwork that is approximately 1,000 feet long and up to 100 feet wide. Host rocks are metamorphosed Cretaceous sedimentary rocks. Base metal oxides and

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine	Silver Bell -Martinez Mine Mineral Creek	Date	10-25-62
District	~~Martinez~~ District, Pinal Co.	Engineer	Lewis A. Smith

Subject: Interview with Richard Mieritz, Consultant.

Mieritz had had a long interview with J.W. Wingfield during which Wingfield said that the large crusher (recently purchased from Dynamics Research) worked quite well, when crushing the ore from 6 inches to 3/8 of an inch. But when they attempted to go down to 10 mesh, the break-downs became much more frequent. It is now proposed to reduce the feed to 3/8-3/4 of an inch in the larger crusher and then reduce it the rest of the way in the smaller unit. They may even be able to reduce it further, this way. It is believed, by Roy ~~Waughtel~~, metallurgist, that 20-25 mesh would give better extraction on the tables, since the finer mesh would permit recovery of some finely disseminated galena now lost.

Waughtel

The inclined shaft is now down to 211 feet and the diamond drill test hole, west of the mill, is now at 176 feet. In the test hole a vein was encountered between 171 and 176 feet, and this vein contained, what is considered to be very good lead ore, as galena. Assay results have not been received, as yet. This vein does not appear to be connected to the other veins further east since it was calculated that the westernmost of these should be encountered at under 400 feet. Mieritz believes this to be a new vein.

Mieritz stated that the company had better financial status due to recently obtained help.

Active Mine List Oct. 1962 - 14 men working

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine: Silver Belle-Martinez Mine — Date: 9-20-62

District: Pioneer Dist. (Martinez Canyon Dist.) Pinal County — Engineer: Lewis A. Smith

Subject:

Conference with Richard Mieritz, Consulting Engineer-9-20-62.

Mr. Mieritz is consultant for J. W. Wingfield and Roy Waddell. Wingfield, (Arizona Silver, Inc.) is affiliated with Independent Machinery Co., Phoenix (5550 E. Washington St.) Waddell is a metallurgist (Mill man). Waddell lives in a trailer at Florence Junction. Wingfield lives at 1265 E. Cambridge in Phoenix.

Mr. Mieritz stated that the new mill has been completed and has worked intermittently during the past month. It now consists of a Dynamics Research Crusher (Jonas) and 2 Denver Jigs. The heads have run about 7-10 percent lead, and 1 ounce of silver per ton, and the concentrates have run 55-57 percent lead and a few ounces of silver per ton. The crusher accepts rock which has passed through a 6-inch grizzly, and reduces it to 1/8-inch. 4 tables are on the ground and may be installed later, if deemed advisable.

The new inclined shaft, located about 600' north of the old Martinez shaft is down 160' on a 35 degree angle to the N-NW. To reach the 200 foot level, the new shaft will have to go a little over 400 feet. A slusher is being used for part of the mucking up the incline. Some new ore was hit in 2 places. The shaft is partly prospective.

A diamond drill hole, located 100' SW of the mill is down 140 feet. This has been temporarily stopped because a rod twisted off and must be fished. This hole is calculated to intercept the Martinez vein at 425-430 feet. It will also cut through a dike which shows indications of mineralization on both sides. The dike is also somewhat mineralized. This dike trends northward for 150 feet but then swings northeastward near the northwest corner of the mill.

The Martinez vein strikes a little west of north to north and dips 37 to 51 degrees W (Average 45 degrees). Several ore shoots have been outlined in the 100 and 200 foot levels. These are nearly parallel and are separated by zones which are high in manganese content. The high-manganese zones have shown very little of value. The reason for these manganese zones being negative has not been explained. The shoots appear to have been defined by shear breaks, which cross the vein at about 70 degrees to 90 degrees. The near parallelism of the shoot borders, in almost every case indicates shear control. The vein pinches and swells but averages between 4 and 6 feet in width. The gangue is quartz, iron oxides, and brecciated country rock. The hanging wall is very definite but the footwall is very indefinite. The ore breaks well.

Mr. Mieritz reported that the "Jonas" crusher works quite well, so far. He is doing detailed geological mapping now.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Silver Belle-Martinez Mine Date June 19, 1962

District Martinez Dist., Pinal Co. Engineer Lewis A. Smith

Subject: Interview with Richard Mieritz (Consultant) 6-18-62

Mieritz stated that J.W. Wingfield, et al, are concentrating their work on the Martinez and Silver Belle. They are now sinking a 30 degree incline on a vein which is more or less parallel to Martinez vein. The shaft will be sunk to 300 feet and then a cross-cut will be driven to the Martinez 200-foot level and drifting will be done on the new vein. Old workings are timbered, but the timber is rotten and the ground very heavy, because the earlier operators locally caved the hanging wall which formed a good cover for operations. The new shaft was begun in a 12-foot silicified zone, of which 4-feet appears to be sufficiently mineralized with lead-silver to be millable ore. This ore is on the hanging wall of the zone. This zone strikes generally about N-S and dips 41-43 degrees westward. The Martinez mineral zone strikes a little more northwest than the new zone, but dips similarly. A 900-foot diamond drill hole, located west of the old mill is calculated to intercept the Martinez zone at 400-425 feet and the second zone at 200-250 feet below the surface. Further up the big wash to the south, on a hidden outcrop of what is believed to be a continuation of the Martinez vein, a 10-foot pit has encountered galena of undetermined extent. This exposure, along with one north of the present Martinez workings, indicates a greater strike mineralization length than was previously known. On occasion of a visit, two years ago, exposures capping both north and south from the Martinez workings indicated the possibility of some copper mineralization deeper. If copper is present deeper in the Martinez vein, the D.D. hole should disclose it. Some copper showings were reported from the 200-foot level in the Martinez, but they were not then believed to be sufficient for development. The second zone, near the surface, has a strong silicified band, several feet wide, along the hanging wall. At the surface a narrow soft gange zone appears along the hanging wall and this apparently tends to widen deeper down. This gange contains fragments of rhyolite indicating that the mineralized zone is following an apparently strong fracture.

Mieritz suggests that the rhyolite is in an old erosional trough and that this trough could be relatively thick, locally. This trough was cut into the pre-rhyolite formations which probably were once composed of andesite (early Tertiary or late Cretaceous) Paleozoics, and Precambrian schists and affiliated granitic rocks. In this area, on the whole, no Paleozoic formations have been seen, and if they were once present, they largely have been eroded away by the pre-rhyolite streams. Many places between Price (on the Gila) and the Martinez mine, the rhyolite unconformably fills U-shaped ancient channels deeply incised in the older formations. Andesite has rarely been found in between, such as at the Crockett manganese mine near Cochran. If this old general area physiographic pattern holds true, the deeper potential of the Martinez Mine area could depend upon the local rhyolite thickness or upon the mineralization potential of the underlying precambrian rocks.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine: Martinez Mine Date: 10-9-62

District: Martinez District, Pinal co. Engineer: Lewis A. Smith

Subject: Interview with Richard Mieritz, consultant, (Supplementary Report-See Report of 9-20-62)

Mr. Mieritz said that the 10x16 inch Dynamics Research crusher was very hard on plates and had burned a bearing. This crusher was being pushed too hard in the crushing of 12 inch material to 10-12 mesh. A larger unit (16x30 inches) has recently been purchased. They may use the larger unit for coarse crushing and the smaller unit for secondary crushing. Dick Mieritz feels that the stress is too great for the full reduction.

The inclined shaft is now down to about 195 feet and has about reached the same depth as the 200 level in the Martinez shaft. A drift is now being begun to connect with the 200 level N drift from the Martinez shaft. The shaft has other levels at 30 and 60 feet below the collar. The inclined shaft has encountered $2\frac{1}{2}$ to 4 feet of ore in the 7 foot width of the shaft. Several samples across this vein have assayed an average of 7-8 percent lead (mostly galena) and 2-3 ounces of silver. This material was concentrated by tables and yielded a lead concentrate which averaged 62-64 percent lead and 18-20 ounces of silver. Some of the lead carbonate was also recovered, although this makes up but a small proportion of the metallic content of the ore.

A drift was driven north on the 60 foot level of the Martinez shaft and this contacted very good lead ore (mostly galena) which may be a continuation of the locally called No. 2 stope to the north of the drift face.

Dick Mieritz also stated that his samples show that the silver content of the Silver Bell ore is much higher than that in the Martinez Mine. This may be accounted for by the fact that the Martinez is considerably lower in elevation than the Silver Bell, the latter being in the main silver enriched zone of the area. Some copper was encountered near the bottom of the inclined shaft.

Another drift is to be driven on the 60-foot level toward the south to under cut a gossan area.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Silver Belle-Martinez Mine Date November 25, 1957

District Martinez District, Pinal County Engineer Lewis A. Smith

Subject: Visit to Property.

Location: Sec. 18, T3S, R12E, 8 miles south of Superior and 8 miles north of Price.

Owner: A. H. Mackenzie, 112 W. Granada Rd., Phoenix, Arizona
G. F. Bont, Richmond, California

Property: 3 patented and 24 unpatented claims.

Development: See accompanying reports by Richard Mieritz and Starbirds.

General Geology:

The geological column of the Martinez Canyon Area is as follows:

Pre-Cambrian; Granitic Rocks (Granodiorite, and biotite Granite)
Sericite Schist
Mica Quartz Schist
Erosional Unconformity
Miocene Volcanic Flows
(a) Lower Agglomerate
(b) Lower Rhyolite
Erosional Unconformity (Tuff and Conglomerate)
(c) Upper Agglomerate
(d) Upper Rhyolite and glasses
Erosional Unconformity

Pliocene - Pleistocene - Lake Beds
Pleistocene - Quarternary Basalt Flows (Olivine or hypersthene)
Quaternary - Gravels, Fan-glomerates, etc.
Structural History;

Pre Cambrian Intrusives;
Diorite Dikes and masses
Andesite (?) Porphyry
Miocene Intrusives
Middle Miocene: Rhyolite Porphyry
Lower Miocene: Andesite Porphyry
Pleistocene (?); Basalt (?) (Probably Volcanic Vent)

Pre-Cambrian Folding and Faulting
Post - Lower Rhyolite Faulting
Post - Upper Rhyolite Faulting
Post - Basalt Block Faulting

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine

Date 7/25/57

District

Engineer

Subject:

In most parts of this gorge this erosion has bearly reached the Lower Rhyolite except over a very narrow width.

The mineralization appears to have conformed to the zonal mode of depositbn. The order of this from top to bottom is:

(1) Silver
(2) Silver-lead
(3) Lead
(4) Lead-Copper
(5) Copper. gold

The deposit should be drilled to determine the depth and tenor of the copper and lead-copper zones before milling operations are begun.

NAME OF MINE: SILVER-BELL-MARTINEZ
OWNER:

COUNTY: Pinal
DISTRICT:
METALS: Pb,Ag

OPERATOR AND ADDRESS		MINE STATUS	
Date:		Date:	
10/44	Calif. Steel Products Co., T.S. O'Brien, Superior	6/46	Working mill Milling & shipping

O'BRIEN, T. S.
Calif. Steel Products Co.
Silver Bell-Martinez Mines
Superior, Ariz.

9-24-43

See SILVER BELL-MARTINEZ MINES
Re sample of ore for identification.

[redacted]

NOV 7 1943

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
OWNERS MINE REPORT

Date May

1. Mine Silver Bell - Martinez
2. Mining District & County Pioneer -
3. Former name Orig nan
4. Location 21 N.E. fm Florence. 4 miles below Box Canyon -
5. Owner Sunbeam Gold Mining Co.
6. Address (Owner) Box 28, Palo Alto Calif
7. Operator - Percy E Wright -
8. Address (Operator) Box 241 - Florence
9. President - Glennille H. Collins
10. Gen. Mgr.
11. Mine Supt. -
12. Mill Supt.
13. Principal Metals Silver - Lead.
14. Men Employed
15. Production Rate Not established
16. Mill: Type & Cap.
17. Power: Amt. & Type 45 HP Tipps, (Diesel) inadequate
18. Operations: Present — Idle
19. Operations Planned - Sinking on Martinez incl - 100 ft. At Silver Bell -
20. Number Claims, Title, etc. Twenty eight claims, 3 patented. Assess. work for other 25 done for 1941.
21. Description: Topography & Geography
22. Mine Workings: Amt. & Condition

(over)

23. Geology & Mineralization Porphyry is Low copper.

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

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

25. Mine, Mill Equipment & Flow Sheet 50 Ton Mill - Crusher - B.M. - Classifier Conditioner, Air Float (poor condition) - Denver Filter, 4' Oliver type. Thickener 30' (de not installed). Generator for lights. I-R Comp. 3 Drills copy - Blacksmith & small tools

26. Road Conditions, Route → Shipping point, Price, 9 miles from mine. Improved road, needs repairing but is passable. County Highway dept will put equipment on to make repairs when ready to operate

27. Water Supply → adequate water for 50 ton mill in [illegible] mine.

28. Brief History

29. Special Problems, Reports Filed

30. Remarks

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

32. Signed..

33. Use additional sheets if necessary.

PENDIX

1.

TABULATION OF ORE RESERVES

MARTINEZ.

Ore in sight.

Block	Tons	Assay.	Pb.%	Pb. Value.	Ag. Value.
A	840	17	5.0	7,560.00	588.00
B	3,547	2.4	8.2	52,921.00	8,796.00
C	320	1.7	9.0	5,344.00	544.00
D	895	3.2	9.8	15,787.00	2,864.00
E	481	3.3	7.5	6,493.00	1,587.00
	6,083			88,105.00	14,379.00
Dumps					
Sorted	20	4.6	19.5	702.00	92.00
Shaft D.	150	1.6	6.8	1,836.00	240.00
Adit D.	740	2.6	9.7	12,920.00	1,924.00
	910			15,458.00	2,256.00
Total	6,083			88,105.00	14,379.00
	6,993			103,563.00	16,635.00

PROBABLE ORE.

C	800	1.0	9.0	12,960.00	800.00
D	900	3.2	9.8	15,876.00	2,880.00
E	1,356	3.3	9.5	18,306.00	4,474.00
	3,065			47,142.00	8,154.00

POSSIBLE ORE.

	14,878			268,494.00	45,066.00

TOTAL OF ORE RESERVE.

	22,317			402,741.00	67,599.00

The possible ore consists of the ore in sight, plus the probable ore, plus the addition of sight and probable, as this seems to be the extension of the ore body into the foot wall for an equal distance as shown by the present development work, and which systematic cross cutting will undoubtedly verify.

SAMPLE NUMBERS AND ORE BLOCKED OUT.

MARTINEZ.

Block A	Sample No.	Width	Ag.	Pb.%	
	1	5 ft.	0.4	0.5	
	2	4	0.2	3.5	
	3	4	0.2	0.0	
	4	4	0.6	0.0	
	5	5	0.2	0.0	
	6	5	0.2	1.6	
	8	8	0.6	3.8	
	20	7	1.6	6.6	Equated Values
	21	7	1.6	11.6	Ag. Pb.
	10-2	7	0.6	7.3	0.7 5%
Block B					
	9	6	1.0	6.1	
	10	5	3.6	9.5	
	11	7	2.4	10.1	
	12	6	13.2	11.8	
	13	7	5.2	9.0	
	14	6	2.4	12.3	
	15	7	1.0	7.0	
	16	6	1.0	12.9	
	17	5	2.4	0.3	
	18	5	1.0	4.9	
	19	5	0.2	4.0	
	20	7	1.6	6.6	Equated Values
	21	7	1.6	11.6	Ag. Pb.
	10-2	7	0.6	7.3	2.4 8.3
Block C					
	5	5	0.2	0.0	
	6	5	0.2	1.6	
	8	8	0.6	3.8	
	32	4	0.4	6.2	
	33	4	0.6	2.0	
	23	6	6.0	16.4	Equated Values
	24	6	1.2	11.8	Ag. Pb.
	25	6	0.4	5.1	1.7 9.0
Block D					
	23	6	6.0	16.4	
	24	6	1.2	11.8	
	25	6	0.4	5.1	

	Sample No.	Width	Ag.	Pb.%		
	26	6	1.2	8.4		
	27	5	1.4	8.2		
	28	5	1.8	8.1		
	29	5	1.8	8.6		
	30	7	4.8	10.2		
	31	7	2.2	15.9		
	9	6	1.0	6.1		
	10	5	3.6	9.6		
	11	7	2.4	10.2		
	12	6	13.2	11.8	Equated Values	
	13	7	5.2	9.0	Ag.	Pb.
	14	6	2.4	12.8	3.2	9.8
Block E						
	34	10	1.6	4.4		
	35	6	10.6	9.9		
	36	6	0.2	6.9		
	37	4	4.4	13.1		
	38	5	1.2	11.3		
	40	7	0.4	5.8		
	26	6	1.2	8.4		
	27	5	1.4	9.2	Equated Values	
	28	5	1.8	8.1	Ag.	Pb.
	29	5	1.8	8.6	3.3	7.5
PRobable Ore						
Block C	1	5	0.4	0.5		
	2	4	0.2	3.5		
	3	4	0.2	0.0		
	4	4	006	0.0		
Block D	15	7	1.0	7.0		
	16	7	1.0	12.9		
	17	5	2.4	0.3		
	18	5	1.0	4.9		
	19	5	0.2	4.0		
Block E	30	7	4.8	10.2		
	31	7	2.2	15.9		
	32	4	0.4	6.2		
	33	4	0.6	2.0		

TABULATION OF ORE RESERVES.

COLUMBIA AND SILVER BELL

ore in Sight.

Block	Tons	Ag.Oz.	Pb.%	Pb. Values	Ag. Values
A	1,224	13.0	2.7	5,948.00	15,812.00
B	720	8.5	2.2	2,851.00	6,120.00
C	3,018	13.1	2.6	14,126.00	39,535.00
D	2,024	7.2	0.5	3,643.00	14,572.00
E	1,000	12.5	3.0	5,400.00	12,500.00
F	2,220	9.2	0.4	1,598.00	20,424.00
G	2,500	10.8	2.2	9,900.00	27,000.00
H	2,062	13.00	2.5	9,279.00	26,806.00
I	7,272	8.2	0.7	9,288.00	60,450.00
J	17,955	7.7	100	32,319.00	138,253.00
K	11,066	7.4	1.5	29,878.00	67,502.00
L	3,618	6.[illegible]	2.6	16,932.00	26,763.00
M	655	9.0	1.4	1,659.00	5,895.00
N	3,373	8.0	1.1	6,678.00	26,984.00
	58,807			149,499.00	489,616.00
Dumps					
1	2,000	24.6	5.5	19,800.00	49,200.00
2	2,800	13.5	3.3	16,732.00	37,800.00
3	86	30.4	1.8	278.00	2,614.00
3	150	7.2	2.8	756.00	1,080.00
3	5,000	11.0	4.0	36,000.00	55,000.00
3	2,500	5.6	0.7	3,150.00	14,000.00
	12,536			76,716.00	159,694.00
	58,807			149,499.00	489,616.00
Total	71,343			226,215.00	649,310.00
				649,310.00	
		Grand Total		875,525.00	

TABULATION OF ORE RESERVES

COLUMBIA AND SILVER BELL

PROBABLE ORE

Block	Tons	Ag. Oz.	Pb.%	Pb. Values	Ag. Values
H	4,124	13,0	2/5	9,279.00	26,806.00
I-29%	2,137	8.2	0.7	2,692.00	16,532.00
J-50%	8,977	7.7	1.0	16,158.00	69,122.00
L-100%	3,618	7.4	2.6	16,932.00	26,763.00
N-100%	3,373	8.0	1.1	6,678.00	26,984.00
	22,229			51,739.00	166,207.00

POSSIBLE ORE

K-20ft	40,000	13.6	1.0	72,000.00	544,000.00
L-20ft	13,000	6.4	2.0	46,800.00	83,200.00
G100%	2,500	10.8	z 2.2	9,900.00	27,000.00
H100%	2,062	13.0	2.5	9,279.00	26,806.00
100% of "sight"	58,807	--	--	149,499.00	489,616.00
100% of "probable"	22,229	--	--	51,739.00	166,207.00
	138,598			339,217.00	336,829.00

TOTAL ORE RESERVE OF BELL AND COLUMBIA

Sight	58,807	149,499.00	489,616.00
Dumps	12,536	76,716.00	159,694.00
Probable	22,229	51,739.00	166,207.00
Possible	138,598	339.217.00	1,336,829.00
	232,170	617,171.00	2,152,346.00
			617,171.00
			2,769,517.00

SAMPLE NUMBERS OF ORE BLOCKED OUT.

COLUMBIA-SILVER BELL.

	Assays.	Sample#.	Width ft.	Ag. Oz.	Pb.%	
Block A.	290	8	25	7.4	0.8	
	286	4	25	12.8	2.7	
	287	5	12	22.6	2.2	
	288	6	10	16.4	5.3	
	289	7	4	10.6	3.3	Equated Values
						Ag. Pb.%
	296	fill		10.8	3.3	13.0 2.7
Block B.	291	12	12	7.6	0.9	
	292	10	10	6.8	1.1	
	293	11	15	2.4	0.0	Equated value
						ag. Pb.%
	296	fill		10.8	3.3	8.5 2.2%
Block C.	280	1	11	6.4	4.9	
	284	2	10	16.2	4.1	
	285	3	14	17.8	3.7	
	283	1	10	11.0	2.0	
	286	4	13	12.8	2.7	
	286	4	25	12.8	2.7	
	287	5	12	22.6	2.2	Equated Value
	288	6	10	16.4	5.3	Ag. Pb.%
	289	7	4	10.6	3.3	13.1 2.6%
Block D.	291	9	12	7.6	0.9	
	292	10	10	6.8	1.1	
	293	11	15	2.4	0.0	
	276	20	20	10.2	0.0	Equated Value
	278	21	5	11.0	2.2	Ag. Pb.%
	279	22	14	7.4	0.8	7.2 0.5
Block E.	273	17	14	13.6	5.0	
	274	18	12	10.0	1.4	
	340	19	14	11.8	2.3	
	280	1	11	6.4	4.9	Equated Value
	284	2	10	16.2	1.1	Ag. Pb.%
	285	3	14	17.8	3.7	12.5 3.0%
Block F.	250	68	7	11.0	2.7	
	251	69	8	5.4	0.0	
	252	70	8	5.8	0.0	
	253	71	8	10.8	0.5	
	254	72	8	10.2	0.0	
	255	73	7	8.6	0.0	
	256	74	7	8.4	0.0	
	257	75	7	11.2	0.0	
	276	20	20	10.2	0.0	Equated Value
	278	21	5	11.0	2.2	Ag. Pb.%

Block G.	Assay#.	Sample#.	Width ft.	Ag. Oz.	Pb.&	
	202	26	5	5.6	1.0	
	203	27	5	2.6	1.5	
	204	28	5	9.2	0.0	
	205	29	5	10.2	0.0	
	206	30	6	10.0	0.0	
	208	32	5	12.6	o.7	
	273	17	14	13.6	5.0	EquatedValu
	274	18	17	10.0	1.4	Ag. Pb.%
	340	19	14	11.8	2.3	10.8 2.2%
Block H.	273	17	14	13.6	5.0	
	274	18	17	10.0	1.4	
	340	19	14	11.8	2.3	
		11	4	31.4	1.7	
		12	4	24.8	4.1	
		13	4	15.8	2.9	
		14	5	11.4	3.7	EquatedValu
		15	7	15.4	o.9	Ag. Pb.%
		16	5	2.8	0.5	13.0 2.5%
Block H. probable		1	11	16.2	3.1	
		2	7	9.8	4.9	
		3	6	14.2	5.7	
		4	12	6.6	2.2	
		5	5	13.6	4.6	
		7	6	5.2	o.8	
		9	7	3.2	1.1	
		10	5	13.2	1.5	
Block I	202	26	5	5.6	1.0	
	203	27	5	2.6	1.5	
	204	28	5	9.2	0.0	
	205	29	5	10.2	0.0	
	206	30	6	10.0	o.7	
	206	32	3	12.6	o.7	
		33	6	11.0	0.7	
		34	7	9.0	0.8	
	250	68	7	11.0	2.7	
	251	69	8	5.4	0.0	
	252	70	8	5.8	0.0	
	253	71	8	10.8	0.5	
	254	72	8	10.2	0.0	
	255	73	7	8.6	0.0	
	256	74	7	8.4	0.0	
	257	75	7	11.2	0.0	
		30	7	6.0	0.4	
		32	5	11.0	0.6	
		33	5	7.2	1.1	
		34	5	4.6	o.0	
		35	5	2.6	0.6	
		36	5	2.4	0.5	
		37	6	1.8	0.7	

	Assay#.	Sample#.	Width ft.	Ag. Oz.	Pb.%	
Block I contin.		77	7	8.8	0.7	
		78	7	7.6	2.1	
		79	6	4.8	1.5	
		80	5	omit		
		81	6	8.6	1.8	
		82	5	8.2	1.2	
		83	6	3.8	1.7	
		84	6	13.6	1.5	
		85	5	13.2	2.7	
		86	6	14.8	0.9	Value Equated
		87	5	11.2	0.8	Ag. Pb.%
		88	6	10.6	1.0	8.2 0.7%
Block J.		77	7	8.8	0.7	
		78	7	7.6	2.1	
		79	6	4.8	1.5	
		80	3	omit		
		81	6	8.6	1.8	
		82	5	8.2	1.2	
		83	6	3.8	1.7	
		84	6	13.6	1.5	
		85	5	13.2	2.7	
		86	6	14.8	0.9	
		87	8	11.2	0.8	
		88	6	10.6	1.0	
	101	1	6	6.8	1.8	
	102	2	6	7.0	1.8	
	103	3	6	12.4	2.0	
	103	4	5	7.6	2.3	
	110	5	5	7.6	1.0	
	112	6	5	8.2	1.0	
	111	7	6	9.2	0.7	
	113	8	5	9.4	0.5	
	114	9	5	6.6	0.0	
	115	10	4	8.0	0.8	
	116	11	6	8.0	0.8	
	117	12	5	7.2	0.7	
	118	13	4	7.8	0.7	
	119	14	5	6.4	0.5	
	120	15	4	1.2	0.5	
	121	16	4	4.2	0.0	
	123	17	4	5.8	0.9	
	124	18	4	5.0	0.0	
	125	19	4	3.2	0.0	
	126	20	5	6.6	0.5	
	127	21	5	7.6	0.8	
	107	22	5	6.8	1.8	
	129	23	8	8.4	2.1	
	130	24	6	9.0	2.7	
	132	25	4	9.0	2.3	
	133	26	4	9.2	0.0	
	134	27	4	7.8	1.3	
	270	28	4	5.0	1.0	Value Equated
	135	29	4	9.6	1.1	Ag. Pb.%
	136	30	8	6.0	0.4	7.7 1.0%

Block K	Assay#.	Sample	Width Ft.	Ag.Oz	Pb.%
	101	1	6	6.8	1.8
	102	2	6	7.0	1.8
	103	3	8	12.4	2.0
	108	4	5	7.6	2.3
	110	5	5	7.6	1.0
	112	6	5	8.2	1.0
	111	7	6	9.2	0.7
	113	8	6	9.4	0.5
	114	9	5	6.6	0.0
	115	10	4	8.0	0.8
	116	11	6	8.0	0.8
	117	12	5	7.2	0.7
	118	13	4	7.8	0.7
	76	1	6	5.6	1.2
	83	2	6	7.0	1.6
	84	3	7	4.8	1.5
	85	4	7	6.0	1.5
	86	5	7	4.6	0.7
	87	6	6	6.8	0.3
	88	7	6	8.2	0.0
	89	8	6	1.6	0.0
	90	9	6	3.2	0.0
	66	41	7	10.4	7.3
	67	42	6	11.8	7.2
	68	43	7	10.6	2.3
	69	44	7	5.6	1.2
	70	45	6	5.8	0.5
	73	49	5	0.4	0.6
	74	50	6	9.8	4.4
	75	51	5	8.0	4.0
	76	52	5	4.4	0.0
	45	20	5	4.2	0.0
	47	21	5	2.4	0.0
	48	22	5	0.4	0.0
	49	22	5	0.4	0.0
	50	23	4	2.8	0.0
	51	24	4	2.0	0.0
	52	25	4	3.0	0.0
	53	26	4	7.4	0.3
	54	27	5	11.4	2.2
	55	28	4	8.6	3.3
	56	29	4	9.8	1.6
	57	30	4	5.8	3.0
	58	31	4	13.6	1.0
	59	32	4	9.6	3.2

Equated Value	
Ag.	Pb.%
6.1	1.5%

Block L	Assay#	Sample#	Width ft.	Ag.	Pb.%		
	66	41	7	10.4	7.3		
	67	42	6	11.8	7.2		
	68	43	7	10.6	2.3		
	69	44	6	5.6	1.2		
	70	45	6	5.8	o.5		
	73	49	5	0.4	0.0		
	74	50	6	9.8	4.4		
	76	51	5	8.0	4.0		
	75	52	5	4.4	0.0		
	60	33	6	6.4	3.2		
	61	34	7	10.0	3.3		
	62	35	5	5.8	o.3		
	63	36	5	4.0	0.4		
	64	37	6	5.4	7.5		
	65	38	6	12.0	4.3		
		39	8	12.0	4.3		
		40	8	12.0	4.3		
	119	14	5	6.4	0.5		
	120	15	4	1.2	o.5		
	121	16	4	4.2	0.0		
	123	17	4	5.8	0.9		
	124	18	4	3.2	0.0		
	125	10	4	5.0	0.0	Equated	Value
	126	20	5	6.6	0.5	Ag.	Pb.%
	127	21	5	7.6	o.8	7.4	2.6
Block M	228	50	6	10.0	3.7		
	222	44	5	0.6	0.0		
	223	45	5	2.8	0.0		
		46	5	4.2	0.0		
		47	6	13.6	1.5		
		48	6	13.4	1.2		
		49	6	7.8	2.1		
	52	230	7	9.2	1.1		
	229	51	6	7.6	2.3		
	237	58	6	8.0	3.1		
	238	58	7	8.2	2.7	Equated	Value
	241	60	6	14.0	1.3	Ag.	Pb1%
	242	61	7	6.6	o.6	9.0	1.4%
Block N	237	58	6	8.0	3.1		
	229	51	6	7.6	2.3		
	230	52	7	9.2	1.1		
	231	53	6	6.8	0.5		
	232	54	6	7.0	0.7		
	233	55	6	4.0	3.5		
	235	56	5	4.4	0.5		
	236	57	5	7.2	0.0		
	244	63	5	3.8	1.0		
	246	64	6	6.4	o.0		
	247	65	5	6.8	0.9	Equated	Value
	248	66	5	9.6	o.0	Ag.	Pb.%
	249	67	5	14.8	1.3	8.0	1.1

Tonnage based on ten cubic feet in place, make one ton.

Prescott, Arizona

February 6, 1963

Silver Bell Martinez and
Columbia Mines.

Mr. Thomas Bardon,
New York 5, N. Y.

Enclosed 2 copies of the report on the above mentioned property by Messrs. Sloan and Raabe. After discussing the matter with them and reading their report, I concur in their recommendation that Shattuck Denn show no further interest in the property.

D. M. Kentro

DMK/j

Intra-Company Correspondence

SHATTUCK DENN MINING CORPORATION

and

SUBSIDIARIES

Engineering/Geology Office

Date February 6, 1963

TO: D. M. Kentro

SUBJECT: Silver Bell Martinez and Columbia Mines. B. O. W. Mining Company 5550 E. Washington, Phoenix, Ariz. BR 5-5392

Summary

Both the Silver Bell Martinez and Columbia Mines are decreasing in ore grade with depth. Production and assay data showing high grade ore can be attributed to hand sorting and selective mining. Past production came from enriched near surface zones and the possibility of developing similar high grade ore is remote.

General

On January 17, 1963, we visited the Silver Bell Martinez Mine located in section 18, T 3 S, R 12 E, Pioneer Mining District, Pinal County, Arizona. On January 23-24, 1963, I (R. G. Raabe) revisited the Silver Bell Martinez Mine, examined the Silver Bell Columbia Mine and consulted with Mr. Reed F. Welch of American Smelting & Refining Company, Tucson, Arizona.

This property consists of two mines and fifty contiguous claims on federal land. Three claims are patented, one covering the Silver Bell Martinez Mine and two covering the Silver Bell Columbia Mine (see attached map). The Silver Bell Columbia lies about one mile north of the Silver Bell Martinez. The Martinez is accessible by gravel road--the Columbia is reached via a primitive trail over steep and rugged terrain. The Martinez is presently in operation.

The B. O. W. Mining Company (a Corporation of Nevada) owns this property--the officers of this corporation are:

Mr. C. R. Ball.....President
Mr. F. V. Owens.....Vice Pres.
Mr. J. W. Wingfield.....Sec-Tres.

The corporation consists of seven persons and one half of the stock is reported to be held in the treasury.

Production & History

The property dates back to 1880 and has been known as a silver-lead producer. Most of the production appears to have been mined from enriched, near surface, chloride zones in the Silver Bell Columbia.

Arizona Metal Production: Arizona Bureau of Mines, Economic Series No. 19, Bulletin No. 140 (1936), records the following production data:

	Copper (pounds)	Lead (pounds)	Gold (value)	Silver (value)	Total (value)
Silver Bell, 1926-28		1,200,000		$20,000	$100,000

Mr. Reed F. Welch, Ore Buyer, Southwest District, American Smelting & Refining Company, Valley National Bank Building, Tucson, Arizona, supplied the following production data from AS&RCO files:

1/26/37 to 1/17/38
Concentrates shipped to AS&RCO, El Paso, Texas--Silver Bell Mines

Total Tons	Total Ag oz.	Total Pb lbs.
294.6	9458.73	248,150

(Average grade of conc. after smelter deductions: 32.1 oz. Ag/ton, 42.1 % Pb/ton)

1/12/37 to 1/3/40
Ore shipped (Calif. Steel Prod. Co.) from Silver Bell Martinez Mines to AS&RCO, El Paso, Texas, and Hayden, Arizona.

Total Tons	Total Ag oz.	Total Pb lbs.
1,637.468	29,499.1	245,854.5

(Average grade of ore after smelter deductions: 18.02 oz. Ag/ton, 7.5 % Pb/ton)

Receipts, El Paso Plant, 1943-62, concentrates and ore. Silver Bell Martinez property, Pioneer District, Pinal County, Arizona.

Concentrates

Shipper	Year	Tons	Approx. Average Assays Au	Ag	Pb	Zn	Cu
Cal. Steel Prod.	1945	34	--	1.70	54.00	0.10	0.01
	1946	30	0.01	2.00	53.60	0.60	0.01
United Ariz. Mines	1951	66	--	2.50	50.60	--	--
	1952	30	--	3.00	52.50	--	0.20
B. O. W. Min. Co.	1962	30	--	2.70	45.7	--	--

Weighted average grade of 190 tons of conc. (1945-62) after smelter deductions:

0.002 2.39 51.21 1.13 .35

Shipper	Year	Ore Tons	Approx. Average Assays Au	Ag	Pb	Zn	Cu
Cal. Steel Prod.	1943	345	0.01	1.20	19.40	--	0.10
	1944	424	--	10.10	17.00	1.25	0.10
	1945	280	--	2.65	16.20	0.50	0.02
	1946	52	--	1.00	20.00	2.70	0.05
Mart. Bell Min. Co.	1948	21	--	1.50	23.50	1.20	0.05
United Ariz. Mines	1951	243	--	2.00	27.00	--	0.12
	1952	42	--	3.20	32.35	--	0.20
S. B. Smith	1961	17	0.006	3.90	14.26	--	--
B. O. W. Min. Co.	1962	13	--	1.10	17.90	--	--
Weighted average grade of 1,437 tons of ore (1943-62) after smelter deductions:			0.002	4.33	22.83	0.06	0.09

The above figures (conc. & ore) correspond to shipment records included in a report on the Silver Bell Martinez Mines by R. E. Mieritz, consultant, Phoenix, Arizona, October 24, 1957. Mr. Mieritz concludes: "The above production record is not overly impressive, but it does provide an indication of what had been shipped through hand sorting and milling of the ore."

AS&RCO files on the Silver Bell Martinez-Columbia property also includes the following notations:

"July 6, 1952, F. M. Stephens report to Wilson, AS&RCO--fluorite may run as high as 40 %, lead about 4.5 % (Pb ranges from 0.5-20.0 %), and silver about 2.5 oz. ton. The vein width varies from 2.0-7.0'. Combination of lead and fluorite may be economic--neither singly."

"Property is of no interest to the company. Ore is confined to a small vein deposit in a fault or fracture zone. Possibility of small concentration of high grade ore, but apparently the vein is narrow and with little continuity horizontally or vertically."

Richard G. Boyne

"Small scattered pods of galena in a fluorite vein."

Mr. R. E. Mieritz in his report of October 24, 1957, quotes a Mr. Stanford (1920 report) as follows:

"Martinez Mine--measured and indicated ore reserves as delimited by existing workings are meager at this writing due to a lack of adequate sampling and up to date maps. Columbia Mine--approximately 60,000 tons of measured ore."

Copy

ARIZONA HANCOCK COPPER

Form MF-103

Item 22

The present known lead-zinc ore body is locallized in a strong fault zone which attains a maximum width in excess of ten feet. Similarity of the geologic environment to the environment of the main ore body of the Magma mine which lies one mile to the northward implies the strong possibility of continuation of the Arizona Hancock ore body to depth. In both cases the ore is of the replacement type, locallized in altered diabase within a strong fault zone. It is further noteworthy that the fault within which the Arizona - Hancock vein has been emplaced taps the Concentrator-Main fault system in which the main ore body of the Magma mine developed (see attached photostat of Geologic Map of Superior Mining Area Arizona, published by Arizona Bureau of Mines).

Reported early "high-grading" operations have opened up a stope above the main level which is approximately 90 feet in length, 70 feet in height at the northwest end, about 45 feet in height at the southeast end, and 9-1/2 feet wide at its present widest point. (The stope at present has the appearance of a typical "gambusino" operation, with irregular blocks of vein material, a block of zinc ore, and two ore pillars left within its boundaries by the early "high graders" Below the level an underhand stope has been started in the vein, attaining a stope length of roughly 25 feet, a depth of about 25 feet and a width of about 5 feet.

Since mining has so far been limited to a very shallow depth, the lead and zinc minerals are predominantly "oxides". Cerussite is the most prominent mineral with lesser amounts of galena, and subordinate wulfenite,

Together the two stopes indicate an ore body within the fault pitching toward the southwest, from which a worthwhile tonnage of lead-zinc ore may be mined following a relatively small amount of exploratory sinking and drifting.

/s/

Seton S. Williams

Tucson, Arizona
May 17, 1951

7-17-51

WHITE, Franklin B.
Box 1174
Superior, Arizona

Lead-Zinc ARIZONA HANCOCK COPPER CORP (not defunct)

Copy

HAWLEY & HAWLEY,
Box 1060 - 537 12th Street
Douglas, Arizona

We hereby certify that the following results were obtained from samples of F.B.White

Office No.	MARKED	Gold ozs	Silver ozs	Lead per cent	copper per cent	zinc per cent
216009	Winze Sample	.10	1.05	5.4	5.5	

Charges: $3.75 (paid credit 50¢)

Date 9/22/48 per:/s/ H. Bollweg Jr., Assayer

Copy

Sept. 29, 1943.

Mr. T. S. O'Brien
California Steel Products Co.,
Silver Bell-Martinez Mines,
Superior, Arizona

Dear Mr. O'Brien:

Mr. J. S. Coupal of the State Department of Mineral Resources has forwarded a mineral sample of yours to us for identification. This is our file No. 21103.

The sample is composed of a mixture of pyrite and chalcopyrite. Pyrite is sulphide of iron and chalcopyrite is sulphide of iron and copper. A percentage analysis should be run on the sample for copper. The sample submitted is far too small for this purpose. I would suggest that you obtain a sample weighing two or three pounds and submit it to any good commercial assayer for a copper assay. In case you wish to send it to us our rate for having the sample run for copper is $1.00. Samples of this nature some times carry values in gold and silver, and you might also have it run for possible values in those two metals. Our rate in that case for gold, silver and copper is $2.00.

Yours very truly,

R. E. Heineman,
Mineralogist.

September 24, 1943

Dr. T. G. Chapman, Director
Arizona Bureau of Mines
University Station
Tucson, Arizona

Dear Tom:

Under separate cover, I am sending a sample of ore from T. S. O'Brien, California Steel Products Co., Silver Bell-Martinez Mines, Superior, Arizona. Mr. O'Brien writes as follows:

"I enclose specimen for Identification, and if it shows any minerals of commercial importance, please advise what the charge will be for percentage report."

Very truly yours,

J. S. Coupal
Director

JSC:JE

CALIFORNIA STEEL PRODUCTS CO.
SILVER BELL - MARTINEZ MINES
SUPERIOR, ARIZONA

September 16-43

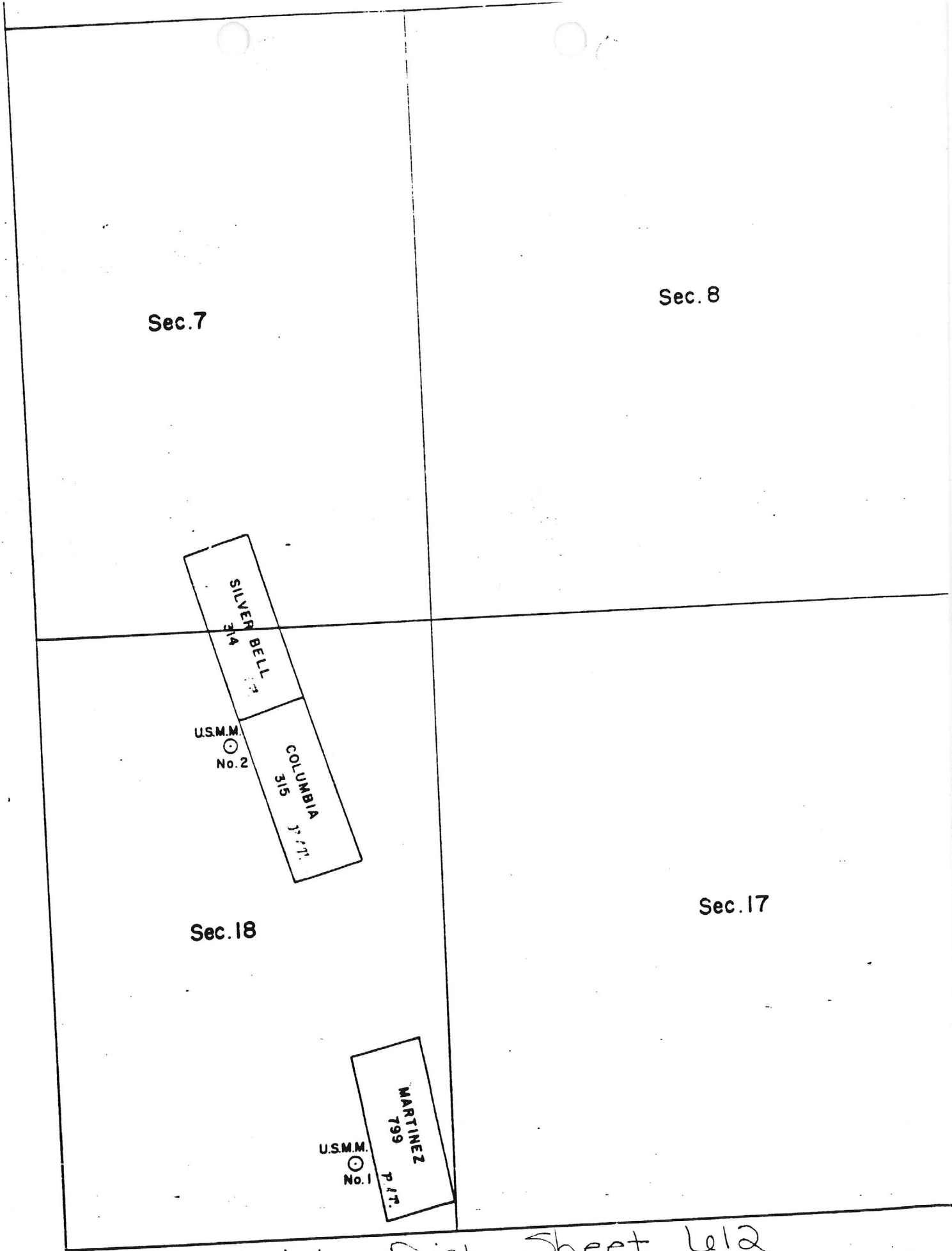
Department of Mineral Resources
State of Arizona
Tucson, Arizona.

Gentlemen;

I enclose specimen for Identification, and if it shows any minerals of Commercial importance please advise what the charge will for percentage report.

Yours Trully,

T. S. O'Brien



BLM Mining Dist. Sheet 612

M E M O R A N D U M

TO: BILL BROADGATE

FROM: J. S. COUPAL

SUBJECT: Mine Loan Application, $30,000, Martinez Mine, Pioneer Mining District, Arizona

Mr. T. S. O'Brien has just phoned to make an inquiry about progress on the application for a $30,000 RFC loan made by R. C; Garner, Richmond, California, on the Martinez Mine located in the Pioneer District, Arizona, of which mine T. S. O'Brien, Superior, is the operating manager. The application was filed about three months ago and I assisted Lee Boyer in changes in his report on the property at that time. The property has been examined twice by R. A. Frisbee, one of the examining engineers for the RFC. The last examination by Frisbee was about two months ago. It seems as though some decision could be rendered on a report which has been in the files for this time.

J. S. Coupal

JSC:JES

c.c. T. S. O'Brien
Superior, Arizona

Washington, D. C.
Oct. 3, 1943

SUBJECT: Mine Loan,
Martinez Mine,
C. R. Cramer

C

This loan was rejected.

It appears that there was considerable disagreement as to the merits of the property among the engineers who handled it, and I suppose a turndown was the safe thing.

I imagine, as they are not too sure of themselves, a request for reopening, accompanied by more data if possible, might be agreeably regarded by Rait.

Bill Broadgate

c
o
p
y

UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Mines

340 Federal Building
Salt Lake City, 1, Utah

Mr. Frank B. White
Box 1174
Superior, Arizona

Dear Mr. White:

In compliance with your request, the production of the Columbia Group located in the Pioneer district, Pinal County, Arizona, and operated by the Arizona Hancock Copper Co. in 1916 is as follows: (in terms of recovered metals) Crude ore shipped to smelter, 43 tons; ounces gold, 9; ounces silver 264; pounds copper 6, and pounds lead, 29,890. We hope that this is the information you are seeking.

Yours very truly,

GEORGE E. WOODWARD

Supervising Engineer
Salt Lake Section

c
o
p
y

SILVER BELLE-MARTINEZ MINE

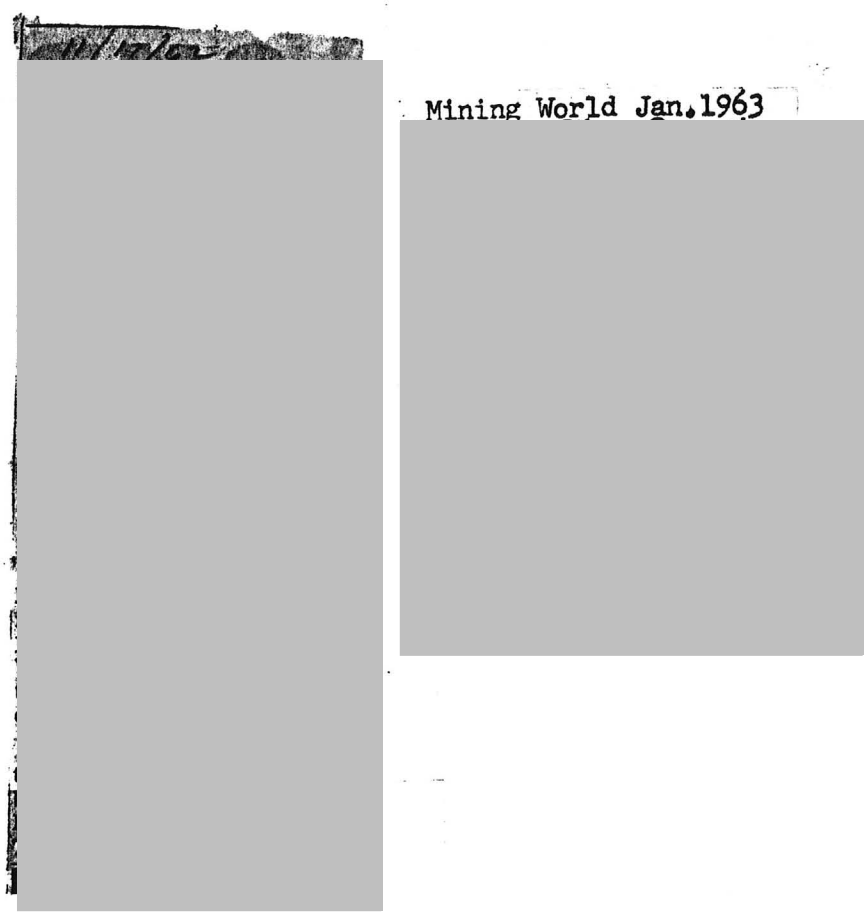
PINAL COUNTY
MARTINEZ DIST.
(PIONEER)

See: MINERAL BUTTE MILL (file) Pinal Co.

See: MINING WORLD, January 1963, p 37 (In file)
See: " " Feb.--- 1963, p 13

See: MINING WORLD CATALOG, SURVEY & DIRECTORY NUMBER APRIL 25, 1963 p77
See: E & M J Vol 165 No. 6 June 1964 p200

BLM Mining District Sheet 612
USGS Bul. 140 p.99
Orphan Boy file,
Schmidt, Eberhard, A geology of the Mineral Mountain Quad - Geology File
USBM "U" Files
MILS Sheets sequence numbers 0040210670 (p. 7028) and 0040210756 (p. 7355)
MAPS - Upstairs in Drawer 4
Mineral Mountain 7.5' Topo (included in file)



Mieritz agrees with Starbird's ore reserve calculation for the Columbia Mine and adds:

"I (Mieritz) weighted the grade of each block and an average grade of 8.3 oz. Ag and 1.4 % lead/ton was obtained."

Mr. Joe Roberts, Boyles Bros. Drilling Co., Phoenix, Arizona (telephone conversation) indicated that his company had looked at the Silver Bell Martinez-Columbia property and were offered stock in the B. O. W. Mining Company in exchange for diamond drilling. Mr. Roberts stated his company was not interested in this type of deal and would only drill on a contract basis, not for shares in the company.

Physical Plant

In brief, the physical plant consists of the following:

One jig, four tables, one 5 ton ball mill and a pan feeder. Power is supplied by three diesel generators, 37½ KVA each. Mine water pumped by 10 HP pump, 60 gpm to 15,000 gallon surface tank. Air supplied by two worthington compressors, diesel powered. Also one Ingersoll unit that could be placed in service. Small blacksmith shop and warehouse on the property. Fourteen-sixteen men on payroll. The concentrates are hauled to the railroad.

Geology

The Pinal County Geologic Map shows rocks in the Silver Bell Martinez Columbia Mines area to be Tertiary volcanics. The examination indicates these volcanics to be bedded fragmentals and flows grading in composition from rhyolite to dacite. These formations strike almost due north and dip steeply west. The two mines are localized along separate faults essentially parallel to the attitude of the enclosing volcanics. The Columbia Mine is almost directly north (about 1 mile) of the Martinez Mine--the Martinez fault is east of the Columbia fault.

Ore mineralization is associated with the faults. The vein material consists of moderate visible galena, cerrusite, anglesite, quartz, carbonates, fluorite, and silver bearing minerals.

The Martinez Mine has a higher ratio of lead to silver--the Columbia is essentially silver with minor lead.

Sample Data

Martinez Mine

The Martinez Mine consists of six levels (adit, 30', 60', 100', and 200' levels). The shaft is inclined to the west (in the vein) and intersects the first five levels (average drift lengths 150') at their approximate mid-points. The bottom level, 200', has been driven 600' further north along the vein (total drift length 800') than the upper levels. Six samples were cut in the vein during the examination. Sample # 5273 was taken from the stope presently feeding the mill, # 5266 is a mill feed sample, and # 5259 is a sample of the concentrates.

Sample #	Level	Dist. fr. Shaft	Width	Au	Ag	Pb	Zn	Cu	CaF_2
5261	200	600' North	5.0'	tr	0.2	0.2	1.7	0.18	
5262	200	500' North	4.5'	tr	0.4	2.7	1.0	0.12	3.01
5263	200	400' North	3.0'	tr	0.8	4.1	0.9	0.20	
5264	200	100' South	3.0'	0.01	0.6	2.8	0.4	2.06	28.87
5265	200	85 South	5.5'	tr	0.8	0.6	2.0	1.36	
5273	100	40' South	10.0'	0.01	0.5	2.6	0.2	0.10	
5266	Mill feed			0.01	0.3	8.4	0.5	0.16	
5259	Concentrates			0.01	2.0	31.3	nil	0.16	

Data compiled from assay maps furnished by J. W. Wingfield & R. F. Welch indicates the width and grade of ore on the various levels in the Martinez Mine as follows:

Level	Width	% Lead
Adit	4.0'	5.80
30'	3.5'	4.39
60'	3.8'	10.31
100'	4.6'	10.76
150'	4.6'	4.94
200	4.0'	4.50

The south end of the 200 level drift (for 80') shows 1.91 % copper with an average width of 3.5'.

Columbia Mine

The Columbia Mine consists of four levels (adit, 30', 150', and 220' levels). The levels are connected by winzes and shafts in the vein. The shaft has been sunk to 265' with a small 30' drift at 265'. Only the 150' and 220' levels were examined and five samples were cut in the vein, sample # 5272 was hand sorted ore gathered at the portal. The sample results are posted below:

Sample #	Level	Dist. fr. Shaft	Width	Au	Ag	Pb	Zn	Cu
5267	150	50' South	6.0'	tr	7.4	0.3	0.9	0.12
5268	150	150' South	3.0'	nil	9.4	2.6	1.2	0.14
5269	150'	70 North	3.8'	tr	10.8	0.9	1.2	0.06
5270	220'	50' South	6.0'	nil	3.4	0.1	0.6	0.04
5271	220'	150' South	5.5'	nil	7.6	0.3	1.0	0.26
5272	Dump grab at portal			nil	5.3	20.6	0.7	0.66

Data compiled from assay maps furnished by J. W. Wingfield & R. F. Welch indicates the width and grade of ore on the various levels in the Columbia Mine as follows:

Level	Width	oz. Silver	% Lead
Adit			
30'			
150'	5.1'	6.99	0.99
220'	5.2'	8.17	3.03
265	--	0.85	0.30

Samples taken in the shaft between the 220 and 265 levels show an average grade of 2.6 oz. Ag and o.12 % Pb.

Conclusions & Recommendations

It is concluded from the information obtained (examination & production data) on the Martinez and Columbia Mines that neither can be considered as economic today.

Past production has undoubtedly depleted the best part of the Columbia ore body from enriched silver zones near the surface--samples cut during the examination show lead to be unimportant. Mine assay maps made available during the examination indicate the silver content of the vein drops sharply between the 250 level and the bottom level (265')--8.17 oz. Ag to 0.85 oz. Ag/ton. A weighted average in the shaft joining these levels carries only 2.60 oz. Ag/ton.

The Martinez Mine, although presently in production is probably losing money. It appears the Martinez is primarily a fluorite vein carrying some lead, but not enough to be considered economic. Mine assay maps indicate a definite drop in the lead content of the vein with depth. There is nothing to suggest the grade of lead will increase with depth. The copper showing at the south end of the bottom level, although interesting, is not economic.

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

William F. Sloan
Chief Engineer

Robert G. Raabe
Geologist

cc: Jack Pierce

Follow-up Report on the Sillver Bell Mine Mineral Creek Mining District Pinal County, Arizona

by

John D. Chakarun

February 1975

previously mined may have been carried along faults that intersected a larger, more continuous vein structure, remnants of which remain to be discovered. Prior to any underground mining, these faults should be studied in an attempt to determine the type of movement that has occurred along them.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine SILVER BELL MARTINEZ MINE Date 11/9/66

District Martinez Canyon Dist. Pinal County Engineer Lewis A. Smith

Subject: Mine Visit with J. W. Wingfield, Mgr. BOW Mining Co.

The old Silver Bell Workings range from 700 feet to 900 feet higher than the Martinez Mill and shaft collar. The present work is concentrated in an opencut that occupies a saddle which in turn is near the center of the underground stoping area. Wingfield had made a series of intermittent bulldozer cuts along the deposit's strike over a length of 1000-1200 feet. The ore-bearing area consists of a strong shear zone that closely conforms to the rhyolite-tuff material (that carries ore) and overlying beds of vitrophyre and perlitic rhyolite. The latter formation is altered to a gray or white color that is streaked with yellow to red by iron oxides and is no more than 1-3 feet thick. What seems to be a gouge zone, 1-foot to 18-inches thick, separates the altered vitrophyre from the rhyolitic tuff-rhyolite ore gangue. The best ore seems to be in this tuffaceous material next to the gouge. The vitrophyre-perlitic-rhyolite rock is overlain by dense light-colored dacite typical of that which forms the upper portion of Picket Post Mountain and the Apache Leap above the town of Superior. This dacite does not occur in the immediate mine area, but forms bold cliffs within a mile of it. The shear zone is 100-200 feet wide and carries variable silver values across its whole width (1½ to 28 ounces to the ton). The ore shoots seem to have been localized by secondary premineral oblique shears, or by transverse faults or rolls. The observed transverse shears do not seem to have displaced the ore, appreciably, in the mining area. However, to the North about 600 feet from the saddle the main shear zone was dropped several tens of feet by a transverse fault zone that is stronger than many other faults in the area.

In the saddle an open pit was developed and about 500 cars of ore have been removed from it and shipped to Magma, at Superior, and to Hayden. The open pit is 100-120 feet long, up to 20 feet deep, and 50-60 feet wide. A very steep bulldozed road connects the pit to Martinez Canyon where a truck bin is located. The ore is hauled by bulldozer in an attached steel box trailer that is 8x8x4 feet, and holds 9-12 tons. From the Martinez Canyon terminus, 10-ton and 12-ton Chevrolet trucks haul the ore to the smelter at Superior. The haul is, in part, rugged but from the Sunset Mine to Hwy 60-70 is a fair graded one. Two front loaders (1 yard each) and 2 RD Cats, 2 or 3 pickups, plus miscellaneous drilling equipment, etc. comprises the present mining equipment. According to Mr. Wingfield, the BOW Mining Co., of which he is a principal, has a 20 year option from the Calbot Investment Co., George F. Bont, Agent, 50 Lunada Court, San Raphael, Calif., the owners.

Wingfield said his company spent approximately $60,000 in development work at the Martinez Mine and in rehabilitating the Martinez Mill, which eventually failed to do its job. According to Wingfield, there are reserves of over 500,000 tons of ore that will run 3 percent lead and 8 ounces of silver at the Silver Bell Mine, and a considerable reserve at the Martinez that will run 6-8 percent lead and a few ounces silver. Since in these projected reserves there is a large proportion of sulphides, Wingfield thinks he should have a flotation unit and a new crusher. The Martinez Mill, by gravity concentration produced a concentrate containing 53-54 percent lead and a few ounces silver, but losses were high.

Dick Mieritz reported a copper vein in the Martinez and that some copper is present in the bottom level of the Silver Bell. It is believed that the Silver Bell Mine mineralization shear continues Southward into the Martinez Mine area and could contain both deposits.

According to T. S. O'Brien's Report (5/14/43) about $1,000,000 worth of ore was mined from 1880 to 1893. Since then he reports the following shipments:

(1) 1926-28 - 2400 tons of ore containing 28,169 ounces Ag and 1,200,000 lbs. of lead, valued at $131,000.

(2) 7/26/37 to 1/17/38 - 200 tons containing 8,986 oz. Ag and 239,000 lbs of lead; valued at $28,516.

(3) Oct. 1937 - January 1940 - 1,637 tons; containing 29,499 oz. Ag and 246,254 Lbs. of lead, valued at $43,522.

(4) 2/23/1943 - 52 Tons, containing 577 oz. Ag., 19,564 Lbs. of lead, valued at $1,535..

Wingfield has shipped, according to him, close to 500 cars in a little less than two years, 1965 and 1966 to Nov. 1st. This ore is said to have assayed close to 9-10 ounces silver (ranging from 3.5 to 28 ounces) per ton, slightly under 3 percent lead and a little copper. The lead was lost in smelting.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine: Martinez Mine, Mineral Creek

District: ~~Martinez~~ Dist., Pinal Co.

Date: November 20, 1962

Engineer: Lewis A. Smith

Subject: Interview with Richard Mieritz, Consultant.

Mr. Mieritz stated that recent mapping had revealed that a second vein west of the main vein had been encountered in the drill hole. This vein has an almost identical strike and dip as the main Martinez Vein that trends north-south and dips 40-45 degrees W. To the north, in the 200' inclined shaft in the bottom, or 200-foot drift, shows that the main vein tends to swing slightly to the NE and to be a little steeper. In the main vein as seen on the 90 and 200 foot levels, the hanging wall is clear but not too strong and is lined by a rhyolitic breccia which, toward the inside, is bordered by 2 inches to 6 inches of fine gouge. This gouge, at the north end of the vein, stays well against the brecciated hangingwall, but swings toward the footwall at the south. The gouge pinches and swells locally in width. Along this vein, three good shoots have been developed between the Martinez shaft and the end of the new inclined shaft to the north. No. 1 shoot begins 10-15' north of the Martinez shaft and extends 81 feet further north. No. 2 shoot begins about 50' north of No. 1 shoot and is 60 feet long on the vein strike. No. 3 shoot begins at 100' north of No. 2 and is 50' long. The ore in these shoots, assayed about 8 percent lead and 3 ounces of silver to the ton, and the intervening areas are low grade material that is silicified. The drift from the bottom of the incline back south toward the old Martinez 200 level north drift is well advanced. The west, or second, vein was in good galena ore near the top and then passes into 30-40 feet of 2½ percent Pb material, thence through 20 feet of 7-10 percent Pb ore, then through 15-20' of 2½ percent material. This variance somewhat checks with the ore occurrence in the main vein, ~~of~~ which the poorer areas, between shoots, runs a very low percent of lead. The drill hole which penetrated this vein goes through breccia composed of andesite fragments into a dense, fine-grained rhyolite which continues down to 176 feet, 4 feet from the present bottom. The last 4 feet was in a broken zone containing schist fragments along with some andesite. This vein also contains a gouge zone which weaves from hanging wall to footwall. Mr. Mieritz believes that these gouge zones may have influenced the localization of the ore shoots within the vein. There is also evidence of pre-mineralization shearing transverse to the veins which may have delimited the length of the ore shoots. The ore areas are severely broken in places whereas the intervening lower grade areas appear to be much less broken. The breccias are composed mostly of drag fragments of older rocks rather than the rhyolite wall rocks. Mr. Mieritz thinks these breccia zones indicate earlier faults and that the gouge bands represent later reopening of the veins. They contain minor lead values in them. Along the margins, the lead content increases. This could be caused by the gouges being more impervious than the brecciated and silicified vein material through which they weave. If this is true, they too could be at least partly pre-lead-silver mineralization. Other evidence in the area indicates that the lead-silver mineralization is later, by a considerable time interval, than the copper, pyrite and gold mineralization. So far, the developed ore is nearly all lead-silver. In the drill hole, near the bottom, minor copper

and gold appeared. The west vein may eventually align with the Silver Bell vein further north. The isolation of the shoots into bands within the vein may also have been due to more intense silicification areas between the bands prior to the introduction of lead-silver solutions, or the silicified material could have been sheared, causing pervious zones, at intervals in the previously more impervious rock, that would permit entrance of the metallizing solutions. The ore shoots appear to rake somewhat steeply to the south, or north, in the main vein. It is not yet known how they rake in the west vein. The shoot terminations, along the strike, are roughly parallel.

A short car of combined concentrates and sorted ore is ready and this apparently assays 60 percent lead and 28 ounces in silver. The two Dynamics Research crushers have been combined to break the ore in two stages. This appears to give better results, as far as wear and tear on the crushers and gives a more consistent product as far as size is concerned. It is now believed that the larger crusher will crush to 1 inch to 3/4 inch, and the secondary crusher to 10 mesh. A screen between the two crushers will act as a classifier.

These veins show a maximum width of 75 feet and can be traced for a mile on the strike. Both show much fault movement by "slicken slides" mud gouch and cemented wall rock breccia, as well as extensive fault and cross fracturing. The vein filling is a red hematite of iron and hematite stained replacement deposit, carrying silica, lime and maganese, together with the valuable metals, both in the form of galena and its alteration forms, carbonate and sulphate, and silver as chloride mainly close to the surface. The sulphides are coming in in the lower portions.

The ore shoot in the Columbia-Bell vein dips 45 degrees and strikes south 14 degrees West. The strike of the martinez shoot is South 60 degrees West and the dip 35 degrees. Both show 4000 feet in length and are extneding.

The other veins on the property are: The Aspen, the Aspen #2 two veins on the Aspen #3, the Cave Vein, Cave #2 (2) and #3 and the Lorddo. All of these veins show exceedingly strong and are all well mineralized. While but little work has been done on them, the indications are such that there seems to be no doubt that they will open up valuable and extensive ores bodies when developed.

ORE RESERVES

At the time of this examination, the survey and sampling shows the following ore reserves, classified as follows:-

Ore in sight.
These are ore bodies, with two, three, and four sides exposed and sampled every ten feet.

Probably ore.
These are ore bodies estimated as probably to be found for a limited distance beyond the ore in sight. One side was exposed and sampled every ten feet.

Possible ore.
This is a calculation based on general indications of the ore likely to be found within the limits of the Columbia-Bell and Marintez, as far as opened up. The extension of the ore in sight and probably ore to the extent of 100% of the block values, laterally and into the foot or hanging wall, is very much indicated as possible.

ORE IN SIGHT.

			Equated Metal Value in place
Columbia and Bell, blocked out,	58,807	tons....	$ 639,115.00
Martinez Do	6,083	"	102,484.00
	64,890	"	741,599.00
On Dumps, Martinez	910		18,014.00
On Dumps, Columbia-Bell	12,536	tons	236,410.00
	78,336	"	$ 996,023.00

PROBABLE ORE.

Columbia and Bell	22,229 tons	$217,946.00
Martinez	3,056 "	54,296.00

POSSIBLE ORE.

Columbia and Bell	138,598 Tons	1676,046.00
Martinez	14,878 "	313,560.00
Ore reserve total	257,097 tons	3,257,871.00

In calculating the ore bodies, only the ore deposits of the Columbia-Bell and Martinez Mines were taken into consideration, and no attention paid to the rest of the veins, on the property, which will materially add to the ore reserves, when opened up. The method of sampling and the system used was such, as to give the value of the ore, if same is properly mined and treated, and the property developed and explored to the best advantage. Owing to the size of the veins, the drifts were entirely enclosed in them and the samples were taken by a cut, three inches wide and three inches deep, from both sides of the drift and across the top, making a section sample from 25 to 75 pounds in weight. This was mixed and broken to one half to a quarterinch diameter and progressively mixed and halved to about six pound weight. This sample was then broken to minimum one quarter mesh, mixed and quartered to one third pound and then assayed by Baverstock and Payne of Los Angeles, California.

The rejections from the samples were filed and retained at the mines. Galvanized sheet iron tags with stenciled numbers were nailed firmly into the sample cuts and the rejections from the 75 pound of the half inch material was left at the near each sample cut.

The estimation of the ore reserves involves the character of the veins and ore shoots. The veins show to be true fissures and possess marked evidence of extensive faulting and remarkable persistency in maintaining their course and parallelism in strike Some portions of the ore shoots, are low grade, other of high grade, but the change occurs both ways alternately, so that the estimation of the block values necessitates the mining of the lower grade ore with the better grade and higher grade ores, for often the difference in character is not plainly visible by simple observation. In addition with the nature of true fault fissures, parallel shoots may occure at intervals, so that the lateral extension of the commercial ore can be predicted and estimated and such estimation safely allowed for possible ore, as the veins are strong in all drifts and laterally on the strike.

Originating in dislocations, caused by extensive movements, the extension in depth will be great and should give permanent and long life to the mines.

COST OF MINING, TREATMENT, etc.

This is based on the following analysis:

Insolubles	70 to 80%
Iron (oxides	5 to 10%
Lime (Carbonates	2 to 4%
Manganese	1 to 2%

This is exlusive of lead and the metal values and gives a fair idea of the gangue material. There will be no difficulties in the mechanical reduction (grinding.)

MINING

The mining costs will be very low. The ore drills easily and breaks easily. It stands without timbering. There is absolutely no water to contend with and shrinkage stoping system can be employed. The ore can be drawn without hoisting. Judging from costs incurred under similar conditions, $2.00 per ton will be more than ample, to pay for the expenses of placing the ore in the mill or reduction plant bins, on a daily tonnage of 100 tons or more.

The simple system of shrinkage overhand stopping should be used, for when the block is mined it can be drawn and the country rock allowed to cave. As mentioned before, no hoisting will then be required and just sufficient timbering for chutes and man ways.

TREATMENT:

As the valuable metals are mostly in the form of carbonates of lead and chloride of silver, and much of the minerals disseminated, concentration of some form must be used. Stage breaking classification and classified machine treatment will recover at least 70% of the metal values, the balance up to 90% can be saved by flotation. Smelting of the concentrates to follow. Cost of this milling and concentrating should be less than $2.00 the ton, based on a 100 ton daily capacity.

The ore seems also adaptable to the Chloridization Volatilization Roasting process, where the resulting metal fumes are collected with s Cottrell electric precipitator.

Six representative samples of 50 lbs. each were sent to the U.S. Gov't. Mining Experimental station at Salt Lake city, Utah and thoroughly test by Mr. Varley, to see whether or not the ore is adaptable to this process. Results were very gratifying and tabulated details of this test are attached to this report. Under favorable conditions practically 100% of the gold and lead may be recovered. 85 to 98% of the silver, and 80 to 98% of the copper. This process will reclaim all metals contained in an ore.

Roughly speaking the cost of such a plant would be $1,000 per ton capacity and the cost of treating the ore, $4.00 per ton. The resultant saving in freight when shipping pure metal, instead of ore or concentrates of ore, would increase the profits of the operation considerable. This process would also do away with the expensive smelter treatment charges, as the product would be shipped and sold to the refiners of metal direct.

Next a good truck road should be construxted from the Martinez mine up to the Columbia Bell Mines, a distance of about 2500 feet. As soon as the Martinez mine is shipping, or even before, an adit connecting with the lower workings of the Columbia Bell should be constructed.

This would consist of a 150 cross cut to the Columbia vein, and a drift of some 800 feet on the vein proper. Besides making it possible to draw the ore from the Columbia-Bell workings, without hoisting, this adit will without doubt open up large and valuable new ore bodies and materially increase the ore reserve, and thus pay for itself many times over. This opinion is expressed by several other engineers who have examined the property.

A power plant should next be installed at the Columbia-Bell Mine. Would suggest a 150 HP internal combustion oil engine, with compressors, drills, electric and other equipment of proportionate size (NOTE: Since the government electric power has become available, so that we won't have to generate our own electricity.)

TREATMENTPLANT:

While much of the ore from either Martinez or Columbia-Bell Mine can be shipped direct to the smelters, the most profitable and ecomomical way would be to take the ore as a whole and in some manner concentrate and reclaim the metal values. Whether a milling or the Cottrell precipitation plan is adopted, the logical place for the erection of either plant would be at the latitude 10500 departure 16000 in the main draw, and just below the Martinez Mine.

The ore from the Martinez Mine would thus go directly into the hauling. When productions have reached a large scale, an arterial tram would be the most economical means of transporting the ore to the reduction plant, but until a plant of at least 300 ton capacity is in operation, hauling by truck will be more economical.

If ore hauling by truck is contracted for, no initial equipment expenses is required and the ore could be hauled for 40 cents per ton-mile. This would mean 20 cents per ton for the distance hauled. An aerial tramway handling 100 tons per day, which will no doubt be the capacity of the first reduction plant unit, is in proportion far more expensive than a tramway that handles several hundred tons per day, as both sizes will require the same expensive terminal and necessary equipment.

Aerial tram hauling would come to about ten cents per ton. Based on a 100 ton per day capacity the actual saving is small and would amount to only $3,000 per year. Against this must be figured the tram investment charges, depreciation, etc. Also, that with an initial cost of such a tram of $25,000.00 it would require eight years to offset this outlay and at the end of eight years to offset this outlay and at the end of eight years the value will practically have depreciated.

When however a reduction plant of 300 tons and more is up, a larger tram will be required, but the savings will be greater the proportionate cost of this tram smaller, and the same will pay for itself before it is worn out.

MARKETING

Whether a combination milling-concentration-flotation process or the Cottrell precipitation is used, the reduction of the ore into concentrates or bullion will be about 20 to 25 tons of ore into one ton of concentrates or bullion. Hence the marketing cost against each ton of ore original ore should be within $1.00 the ton, for on above basis this would give $20.00 to $25,00 per ton for the product to be shipped. The cost would be approximately $2.00 per ton for hauling to railroad, about $12.00 smelter charges and $6.00 per ton freight. The smelter charges would fall away when bullion is shipped, but there would be an increased freight charge for shipping bullion.

TOTAL COST MINING? TREATMENT, MARKETING

Mining.....	$2.00	per ton
Treatment.....	2.00	" "
Marketing.....	1.00	" "
	$5.00	per ton

RECOMMENDATIONS:

Owing to the particular nature of the Martinez Mine ore deposit, considerable of the ore in sight contains lenses of solid galena and carbonate of lead. By sorting, this ore could be shipped and made to yield 80% of lead and over 5 ounces of silver. The combined mining and sorting cost should not run over $5.00 the ton. A five mile haul by truck to the railroad, the freight and smelter treatment charges would amount to about $16.00 which would leave a net profit of some $20.00 per ton on such ore shipments.

In order to start shipping from the Martinez and draw the ore from the bottom workings of this mine, 296 feet of adit should be constructed, which adit would connect with the bottom of the present incline shaft. This would do away with all hoisting operations. An ore bin should also be constructed near portal of this adit. The present wagon road to be railroad is in bad repair. About two and a half miles of the five miles, require new construction. The balance can be repaired. Work on both adit and the road might be started simultaneously, as both will require about the same amount of time for their construction, and with the adit completed and the road ready for hauling, ore shipments from the Martinez can begin.

It will also be necessary to put in a railroad siding about half way between Cochran and Price, and an ore bin and loading platform at this siding.

There should also be installed at the Martinez a mediumsize power plant, such as a 75 HP internal combustion engine, with compressor, air receiver, drills and other accessories of proportionate size. With this power equipment and by keeping half of a force of men developing ore, and the other half breaking ore, the Marintez would open up rapidly and produce a handsome monthly net profit.

CONCLUSIONS

Five weeks, spent in a thorough examination, careful and systematic sampling, and the use of conservative figures, has established the following facts.

ORE IN SIGHT

Blocks opened of two, three and four sides, sampled every 10'.

Columbia-Silver Bell Mine, Blocks		58,807 tons	$639,115.00
Matinez Mine	"	6,083 "	102,484.00
		64,890 "	741,599.00
Columbia Silver Bell	Dumps	12,536 tons	236,410.00
Martinez	"	910 "	18,014.00
	Total	78,336 tons	996,023.00
Less 15% loss in course of treatment.....			149,403.00
			846,620.00
Mining, Marketing, Treatment. $5 per ton.....			391,680.00
Resulting net profits from this part.....			454,940.00

It should be borne inmind, that the ore in place values have been estimated very conservatively and that there are scattered throughout the ore bodies kidneys of exceedingly high grade ore, which will materially incre se the value of the ore in sight, but which factor has not been considered at all, when computing these figures.

In estimating the total ore reserve, including the probable and possible ore, this estimate has been computed solely on the Martinez and Columbia Silver Bell Mines, not taking into consideration the veins of the Lorado, the Aspen, the Aspen #2 two veins on the Aspen #3, the Cave, the Cave #2, Cave #3, and the Silver Pick.

Proper development work on these veins will without doubt open up additional ore bodies similar to the ones encountered aon the Bell, Columbia and Martines, and immensely increase the ore reserves of the property, assuring it permanency and long life.

The total ore reserve of ore now in sight, probably and possible ore, (not counting the undeveloped veins) would yield as follows:

Columbia-Silver Bell Mine.....	232,170 tons	$2,769,517.00
Martinez Mine.....	23,227 "	488,354.00
	255,397 "	$3,257,871.00
Less 15% loss in treatment.....		488,680.00
		$2,769,191.00
Mining, Treatment, and Marketing $5 p.t.....		1,276,985.00
Net profit on operation.....		$1,492,206.00

SUMMARY

To summarize I wish to say that I consider the property to be one of exceptional merit. Much of the success of the enterprise will, of course, depend upon competent and efficient management, and upon the result of systematic exploration of the veins and ore bodies, but I do not hesitate to say, that I believe that the metal values will prove permanent with depth and that the property will be not only a very productive one of long life, but also a WELL PAYING ONE.

Signed, H.B. Starbird, E.M.

May 25, 1920
Superior, Arizona

not a good indication. The absence of copper carbonate is. The chalcopyrite and pyrite seen should be altered and tarnished. These indications may be favorable to enrichment of copper.

GEOLOGIC AND ENGINEERING REPORT

of the

SILVER BELL-MARTINEZ MINES

in

Pioneer Mining District
(Mineral Creek Mining District)

PINAL COUNTY, ARIZONA

by

R. E. Klaritz
Mining Consultant
Phoenix, Arizona

October 24, 1957

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APPENDIX

INTRODUCTION

At the request of Mr. A. H. Mackenzie, Phoenix, Ariz., a field examination of the Silver Bell-Martinez lead-silver mine was made by the writer to ascertain the merit of the property which is located in the Pioneer (Mineral Creek) Mining District, Pinal County, Arizona.

This report contains the writers unbiased evaluation of the property with particular reference to existing geological conditions, present and future potentials of the property and equipment considerations.

The surface and underground examination was completed at intervals during the early weeks of October, 1957. All available records, etc, were reviewed which included a report by Mr. H. B. Startird, May 1920, and much correspondence from 1943 to 1955 between Mr. T. M. O'Brien, Consulting Engineer and Mr. C. F. Bont of Calfironia Iron Products Co., Richmond, California.

Some of the maps herein included have wholly or in part been traced from older maps.

The writer has also made an impartial check of the early report which delimited ore reserves and grade and has also checked information as late as January, 1955.

CONCLUSIONS

The following are conclusions resulting from the examination and study of the property by the writer.

1- Neither of the two mines, the Martinez nor the Columbia-Silver Bell, can be called immediate potential producers. The Martinez lacks sufficient

"indicated" or "measured" ore (3000 tons "inferred") as contrasted to the Columbia-Silver Bell which has ample reserves but of sub-marginal grade ($13.00 value per ton) at present day metal prices and production costs.

2- The future of the Martinez Mine lies in the geologic potential the mine exhibits by its existing development. A well planned exploration and sampling program must be adopted and exercised to transpose "inferred" ore to "indicated" or "measured" ore before mining operations can be considered.

3- Any "ore" from the Martinez Mine which has a combined lead-silver value in excess of $18.00 (estimated mining, milling, marketing costs including losses) will show a profit before royalty and taxes.

4- Metallurgically, the lead-silver mineralization of the Martinez Mine is amendable to concentration by jigs, flotation and gravity tables.

PROPERTY

The Silver Bell-Martinez lead-silver property is currently owned by Mr. G. F. Bont, Richmond, California. Twenty seven claims, approximately 500 acres, include three patented claims.

These claims are located in Section 18, Twp. 3 S., Rge. 12 E., Gila and Salt River Base and Meridian, Pinal County, Arizona. Though no personal check was made in the County Recorders office, the claims appear valid and clear of any liens.

Claims included in the property are as follows:

Patented Claims

Silver Bell--Survey 314--April 18, 1890
Columbia --Survey 315--April 18, 1890
Martinez --Survey 799--January 10, 1891

Unpatented Claims

Aspen	Flunk Out	Lorado No.3
Aspen No.2	Good Luck	Over Sight
Aspen No.3	Good Luck No.2	Over Sight No.2

SILVER-BELL MARTINEZ [redacted] PINAL COUNTY

Went to the Silver-Bell Martinez property and saw Ed Fegert who has 8-10 tons of real high-grade lead-silver ore out which he estimates will net $8,000. However he is now prospecting for additional oreof similar quality. He contemplates renting a small core drill to put down a few short angle holes into a newly discovered parallel vein. GW WR 5-10-71

The Martinez-Silver Bell silver mine is being reopened by Messrs. Paul Bryant and Ed Fegert. According to Fegert, they intend to "strip" the 8" - 18" high grade vein which he reports assays up to $2 per lb. in Ag. GW QR 4-8-71

Stopped at McNiece Rock shop at Florence Junction where Mr. Wagner said Ed Fegert was still working at the Silver Bell-Martinez mine. GW WR 6-21-71

Started to Silver-Bell Martinez silver mine but was cautioned about condition of road since the recent rains. GW WR 7-26-71

C.R. Bob Ball in Phoenix said his group had let their option lapse on the Silver Bell-Martinez group to the owner, a trust in California. He said John C. Munson, 267 Seaview Avenue, San Rafael, California, 94901, was the agent for the trust. VBD WR 12/27/74

Polaris is attempting to open pit the Silver Bell-Martinez at a point directly over the major old stope. GW WR 4/2/75

Paul Bryant reported that he had been involved in the production of high grade ore from the Silver Bell Martinez Mine. In 1968 they shipped a pickup load of 3,160 pounds on which the smelter returned about $2,900.00. WR KP 5-20-77

WR KAP 6-26-78 - The Silver Bell Martinez claims are idle and show no sign of work other than road repairs and maintenance since the last visit. 10-20-78 bh

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KAP WR 2/16/80: Donald D. Coleman, President, Western Energy & Resources Corp., 4101 East Camelback Road #13, Phoenix, Arizona 85018, phone (602) 959-6787 or 952-0362, reported he is in the process of acquiring the Silver Bell-Martinez Mine, Mineral Hill District, Pinal County. He is hiring Richard Mercitz, a consulting geologist, to map and sample the property.

RRB WR 11/14/80 Theo Scheele, owner of the Connie M. Claims, in Pinal Cpunty, reports that Donald M. Coleman of the Silverbell-Martinez, is sending some of the ore from the Connie M to Utah to have it tested to see if they want to acquire them.

SILVERBELL-MARTINEZ MINE [redacted] PINAL COUNTY

Mr. Neil E. McNeice, who has been interested with Mr. J. W. Wingfield in the Silverbell-Martinez property informed me that operations have been slowed down due to their inability to ship ore to the smelter because of the strike in the copper industry. Four men are employed at present.
An option on the property has recently been granted to the Cerro Corporation and diamond drilling is scheduled to be done in the near future.
Mr. Wingfield recently was seriously ill, and although he is now out of the hospital, he is still far from a well man. Robt. F. Playter 10-18-67

Have a report that Cerro Corporation is doing some work at the Silverbell-Martinez. GWI Note 12-18-67

Active Mine List Nov. 1967 - 4 men

Interest of B.O.W. Mining Co. in Silverbell-Martinez mine purchased by Cerro Corporation which will develop and drill the property. CLH WR 2-24-68

Cerro Corporation is continuing surface and underground sampling and mapping at the Silverbell Martinez mine. Drilling has not yet been started. (See separate memo) CLH Visit 4-15-68

Active Mine List April 1968 - Expl.
Active Mine List Oct. 1968 - 3 men

Visited McNeice at stoneyard near Florence Jct. He said Utah Mining and Construction Co. were examining Silverbell-Martinez. FTJ WR 3-28-69

Mr. Bryant said State Mining and Exploration Co., of Pueblo, Colorado, were sampling and may explore the B.O.W.'s Silverbell-Martinez Mine. FTJ WR 9-26-69

C. R. "Bob" Ball, 816 E. Camelback Rd., 279-5432, is Phoenix agent for Silverbell-Martinez. Utah Mining was still investigating Silverbell. FTJ WR 1-30-70

Visited Mr. Wagner at McNeice's rock shop - he said no work had been done at the Silverbell-Martinez mine for sometime. GW WR 5-29-70

Visited the Silverbell-Martinez - no one there. FTJ WR 9-25-70

Mr. Wyler of Phoenix and Mr. Roy Martin a Canadian geologist for Noranda visited office and Mr. Wyler stated that he has an option on the Silverbell-Martinez. GW WR 12-21-70

Went to the Silverbell-Martinez mine 17-18 miles southeast of Florence Junction. Ed Fegert and Paul Bryant, of Superior, leased this property February 8, 1971, and are preparing to mine the 6"-18" vein of highgrade oxidized lead-silver ore which is reported to be worth $1,000 per ton. GW WR 3-3-71

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Silver Bell-Martinez Date April 9, 1976

District Martinez, Pinal County Engineer Ken A. Phillips

Subject: Leases and present status

Owners: John C. Munson and Janet B. O'Neill

Leases: As of December 24, 1974, the property has been leased to Polaris Mining Company according to a Non-Liability Agreement posted on the property. The agreement listed 3 patented and 24 unpatented claims:

Patented:	Silver Bell	Columbia	Martinez
Unpatented:	Loredo	Cave #3	Good Luck #2
	Silver Pick	Silver Pick #2	Good Luck #3
	Flunk Out	Silver Pick #3	Good Luck #4
	Copper King	House	Silver Pick #4
	Cave	Oversight	Loredo #3
	Cave #2	Oversight #2	Aspen
	Columbia West Ext.	Silver Bell West Ext.	Aspen #2
			Aspen #3

The notice listed Russell Twifford and Robert Paul as principles for Polaris.

George Shaffer, owner of nearby B&G claims contacted the Colorado State Corporation authorities and learned that Polaris Mining Company, Lakewood, Colorado, no longer exists.

Notes: Mine visit showed no one around property, but the camp with a large mobile home and cabin were left in good order. The most recent work at the property appears to have been dump sampling. The old mill is still reasonably intact.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Silverbell-Martinez Mine Date February 23, 1967

District Mineral Creek District, Pinal County Engineer Lewis A. Smith

Subject: Conference with Wm. Webster at Magma and McNeice (Superstition Secret Stone Co.) at Florence Junction.

Webster said that Magma at Superior had taken no J. W. Wingfield ore since early January. McNeice said that shipments are now being made to AS&R at Hayden under a flux contract. There ore is placed on the Ray-Hayden S.P. Branch at Price. The ore runs 7-8 oz. silver to the ton and 80% silica. Wingfield could not ship less than 3-4 cars per week to Superior and make out, and was cut to 1½ cars in early January. (4-5 work here as of now) The haul to Price is shorter, but is rough.

tion is possibly by this means, precautions and preventative measures must therefore be considered for any new road alignment and construction, also for placement, installation and construction of new machinery and/or buildings.

FACILITIES

The property is too remote for any modern day utility excepting a source of water. Gas for heating and domestic purposes must be in bottled form and trucked from Florence. Electricity for mine, mill and camp operation must be developed on the property. Timber for mining and construction purposes in carload lots mu be trucked from Price.

An existing well located near the camp at the wash bottom can possibly supply the domestic requirements of a small camp. Water for mine and mill operation may have to be developed. A possible limited and unreliable ? supply might be the water from below the 200 level of the Martinez Mine. A previous operators correspondence in 1948 indicated the shaft sump could provide 160 gpm. Another more recent source of information places the capacity at 15 gpm, continuous pumping. The latter figure is about ample to operate the present mill at its 50 ton per day capacity.

HISTORY AND PRODUCTION

The property was well known for its silver production, the majority of which had been mined from enriched, near surface, chloride zones in the Columbia-Silver Bell Mine. Production dates back to 1880. Demonetization of silver took its toll here also. The property no doubt changed

ownership several times until the present owner, Mr. Bont purchased same several years ago.

Two lessors, besides Mr. Bont, have operated the property intermittently under options to purchase. All options have been cancelled.

The writer obtained the following shipment records from the Smelting Company to which the ore and concentrates had been shipped.

Producer	Type	Tons	Ounces Silver	Percent Lead	Lead Price
Calif. Steel Prod.					
Year 1943	Ore	345	1.2	14.4-24.3	6.5¢
1944	"	424	.4-19.8	8.0-26.0	6.5¢
1945	"	280	.7- 4.6	11.6-20.8	6.5¢
"	Conc.	34	1.7	54.0	6.5¢
1946	Ore	52	1.0	20.0	8.109¢
"	Conc.	30	2.0	53.6	8.109¢
Martinez-Bell Mining					
Year 1948	Ore	21	1.5	23.5	18.04¢
United Ariz. Mines					
Year 1951	Ore	243	2.0	19.3-34.7	17.50¢
"	Conc.	66	2.5	42.9-58.3	17.50¢
1952	Ore	42	2.3	27.0-37.7	16.467¢
1952	Conc.	30	1.9- 4.1	47.7-57.3	16.467¢
Totals	Ore	1407	1.0-19.8	8.0-37.7	
	Conc.	160	1.7- 4.1	42.9-58.3	

The above production record is not overly impressive but it does provide an indication of what had been shipped through hand sorting and milling of the ore.

GEOLOGY

The property is situated in an area of Tertiary Volcanic ~~flows~~ (Probable Miocene age) which have been uplifted and distorted to some extent. Rhyolite and its many phases of mineralogical composition and physical textures is the principal country rock. Into this rock there has been intruded some later rhyolite and basalt-diabase (andesite) series dikes. These dikes could have in-

fluenced the metallic mineralization.

Since metallic mineralization is associated with fractures and zones rather than with rock types or phases, no attempt has been made by the writer to differentiate the rhyolite phases. Surface mapping in the area was completed in a general way using physical characteristics such as errosional features, color, texture etc, as a criteria for classification and separation. Obvious rock types as dikes were mapped as observed.

Granite
Schist
E Agglom
E Rhyolite
U Agglom
U Rhyolite
Basalt

Rhy Porphyry
Andesite Porp
Basalt

Ore mineralization confined to lower rhyolite and L agglomerate Localized by fractures.

MINERALIZATION

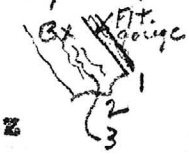
Metallic mineralization, lead, silver, some copper and a small amount of zinc occurs as lenses within wide parallel zones of weakness in the rhyolite series. These zones are identified on the surface by the greater amount of iron oxide and quartz present in the zone as contrasted to the lesser degree in content in the various rhyolite phases.

Zoning
Ag
Pb
Pb-Cu
Cu

Also Possible mineralization with Rhyolite Porphyry Dike

The general trend of the zones of weakness is north-south and their dip is westerly at a moderate angle. Local strike and dip changes vary from N. 15 W. to N. 15 E. and 35 to 60 W. These changes apparently control "pay" mineral deposition. This criteria must be further studied and used in development of future ore reserves.

Main Fault has 2 periods of reopening



Lead and silver mineralization at both mines (Martinez and Columbia-Silver Bell) is contained in the minerals galena, a sulphide; cerrusite, a carbonate; anglesite, a sulphate; pyromorphite, a chloride and phosphate and the silver mineral cerargyrite. Little Enargite (Cu3(As-Sb)S4) Copper-chalcopyrite with galena.

Cave	Good Luck No.3	Silver Bell West Ext.
Cave No.2	Good Luck No.4	Silver Pick
Cave No.3	Good Luck No.5	Silver Pick No.2
Columbia West Ext.	House	Silver Pick No.3
Copper King	Lorado	Silver Pick No.4

The property is located approximately 20 miles northeast of Florence, Arizona. Access to the area is over 20 miles of County maintained road, 10 miles of which parallels a branch of the Southern Pacific Railroad to Price, the railroad ore loading ramp servicing the area. The last 10 miles for the most part utilizes the bed of several washes. Unfortunately such road locations can be extremely expensive as to maintenance and particularly when destroyed by flash flood conditions.

PHYSICAL FEATURES

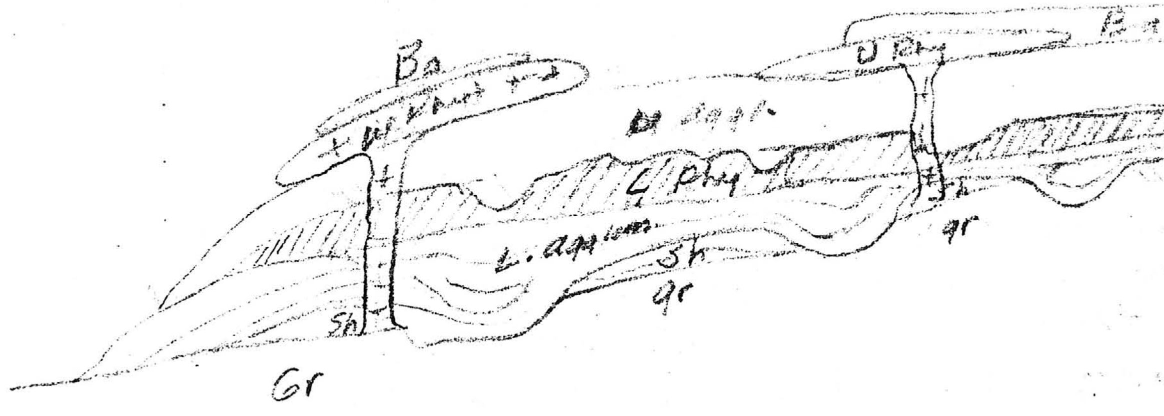
Rugged topographic features abound in the immediate mine vicinity. Recent erosion of the rhyolite flows create steep near vertical pinnacles of great relief. A mean elevation for mining activity can be considered as 2700 feet above sea level with a range of elevation from 2400 feet down wash from the Martinez Mine to 3450 feet up slope above the Columbia-Silver Bell Mine.

Climate wise, the property is ideally situated to permit an uninterrupted yearly operation. The one jeopardizing act of nature that could cause damage is flash food conditions because the wash traversing the property is the only escape for rain waters precipitated north, east and south of the property. The writer had been advised that flash flood conditions did exist in 1955 and had for the most part obliterated approximately six miles of road. Since destruc-

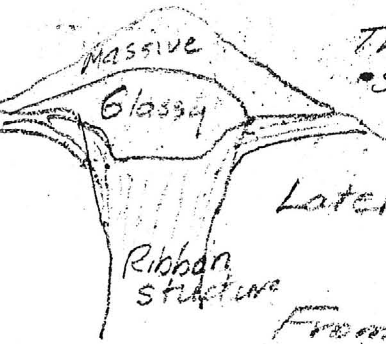
Martinez - Silver Belle Mine

By Richard Mertz.

November 1957.



Granite = Range from Biotite Granite to granodiorite
Schist = " " Sericite schist to chloritic schist
L agglomerate Tuff matrix containing Schist, Granitic rocks, quartzite, and andesite fragments. It is of local origin since fragments are only slightly rounded. Probable that fragments were plucked from weathered surface and blown from volcanic vents. Lies on Erosional unconformity. The old erosional surface was in existence for a long time. The topography at time of agglomerate outpouring was rolling and had wide deep river or stream valleys. The hills bordering the valleys were not steep but more or less in form of rounded mesas with local prominences. No noteable erosion had attacked the L agglomerate surface since the L Rhyolite is more or less conformable and in places a thin tuff bed separates the two flows. Both these and the underlying older rocks were intruded and faulted prior to the outpouring of the U agglomerate. The surface on top of the L Rhyolite was eroded somewhat prior to the U agglomerate epoch but to a far less extent than was the case in the unconformity between the L agglomerate and the older formations. An U agglomerate, locally appearing, overlies the L Rhyolite indicating a period of erosion in the middle Miocene. This rhyolite was found in one old channel in the flows. The Later agglomerate is much thicker than the other flows (2000-2500 feet) and lies unconformably on the earlier rhyolite. The Later rhyolite appears as a plug in two craters in the area and its flows being very viscous, have little areal extent beyond the craters, except that ... [illegible]



This rhyolite shows very fine ribbon structure in the middle with glassy elements in the middle and massive rhyolite at the top. All members show definite Later Agglomerate and intricate flow structure.

From all evidence it would appear that the mineralization, much faulting and intrusion occurred in the erosional epoch between the Earlier (Lower) rhyolite and the Later Agglomerate flow epochs. The upper agglomerate base members contain fragments of quartz, rhyolite porphyry and andesite porphyry in addition to the Pre Cambrian rocks. This flow apparently started with a fine ground tuff explosion. This consists of fine ash + small particles of glass. Due to the rather recent exposure of the sulphides oxidation has been less extensive than in other deposits of a similar nature further to the north.

Several indications point to a shift from lead to copper in depth:

(1) Presence of some chalcopyrite near the bottom of the exposed galena.

(2) Presence of some oxidized copper within the lead oxide minerals.

(3) Oxidized capping indicating both chalcopyrite and chalcocite; thus far no chalcocite has appeared, but some galena fractures show argentite (the silver enrichment sulphide). This would not indicate that chalcocite is present except that one of the principal lead oxide minerals is anglesite ($PbSO_4$). Probably the formation of cerussite ($PbCO_3$) and the absence of azurite or malachite could be factors favoring some copper enrichment. This adds up to the the fact that the gangue is not too reactive. Cerargyrite and embolite are the silver minerals in the oxide zone. Since carbonates have no effect on silver enrichment this is perhaps

Lead mineral distribution is somewhat sporadic, being moderately localized in areas of sufficient dimensions to spearhead and justify exploitation as stopes. The mineralization also shows a greater vertical tendency than horizontally, the control of which may be the changes or rolling of strike and dip directions combined with the cross-fracturing observed during the examination.

Copper mineralization as oxides and sulphides were observed in the south drift of the Martinez 200 level. The appearance of copper here may will be significant as to possibilities of same at depth. Lack of adequate information will not permit a definite conclusion.

Gangue minerals include quartz, iron oxide, fluorite and minor barite. Fluorite is more prominent in the lower level.

DEVELOPMENT

Two mines have been developed on the property. The Columbia-Silver Bell mine is primarily a high silver-low lead ratio ore on the order of 6 to 1 with the lead seldom exceeding 2%. The combined monetary value of the reserve blocked out by Mr. Starbird would not exceed $13.00 in place and therefore can not be considered as "ore" since it cannot be mined, milled and marketed for a profit on a scale which we are concerned with.

The Martinez mine on the other hand has a high lead-low silver ratio of approximately 6 or better to one. The monetary value of this ore at present day metal prices is

PREFACE TO ENGINEER'S REPORT.

The Examination and sampling of the property of the Silver Bell Consolidated Mining Company was made by Mr. H. B. Starbird, a mining engineer of some twenty five years of experience.

Mr. Starbird is a graduate as Engineer of Mining and Metallurgy from the State School of Mines, Colorado, Class 1897

The following are some of the responsible positions held by Mr. Starbird.

Chemist of Empire and Columbia Smelting Company, Crittendon, Patagonia, Arizona.

Chemist and Cyanide Superintendent, New Year Mining Company, Maiden, Montana.

Superintendent, Rode Gold Mining and Milling Co.

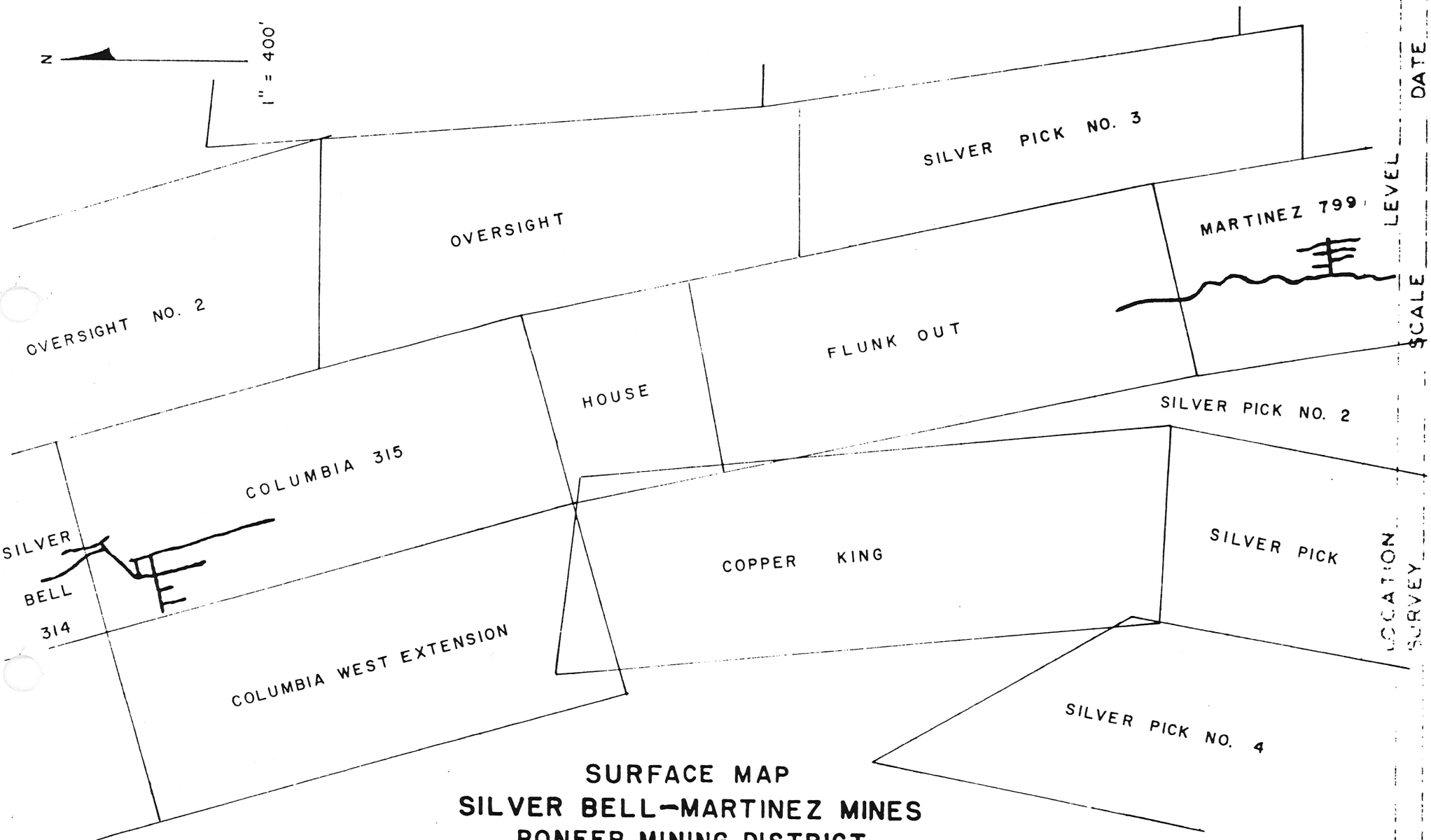
Superintendent and Metallurgist, in charge of Luna Lead Company, Deming, N.M.

Engineer in charge of El Tajo Mining Company, Moza Senora, Mexico.

Engineer in charge Silver King of Arizona Mining Company, Silver King, Superior, Arizona,

In addition Mr. Starbird has made many examinations of mines for various capitalists, sampled and reported on properties.

Silver Bell Consolidated
Mining Company



SURFACE MAP
SILVER BELL–MARTINEZ MINES
PONEER MINING DISTRICT
Pinal County, Arizona

(from R. E. Mieritz report – Oct. 1957)

MINE LEVEL
GEOLOGY BY DATE
SCALE
LOCATION SURVEY

DEVELOPMENT WORK

The development work in the Silver Bell and Columbia workings consists of 4,330 feet of adit, drifts, cross cuts, inclines and winzes, as tabulated below:

Number one adit..	60	feet
Number two adit	750	"
Number three adit (including drifts and cross cuts)	1750	"
Intermediate, between number one and two adit	150	"
Intermediate, between number two and three, drifts.	240	"
Below adit number three, drifts	830	"
Incline and winzes	550	"
Total	4330	"

Most of the development work is in the ore body. In fact, ALL but 450 feet of adit number three, which is parallel to the deposit on the foot wall side and connects with the drifts on the vein by cross cuts.

The upper workings, close to the surface consists of overhand stopes, and an underhand open pit or glory hole, from which several hundred thousand dollars worth of high grade ore was extracted. The deposit showing stope width of approximately twenty feet as mined.

Intermediate drift below adit number one, for 150 feet shows ore for the entire width of the drift. It is connected with the number one and two adits By four winzes.

Number two adit has followed pay ore in two parallel drifts, which show good values the entire width of the drifts and the sample value from cross cuts and connections is such as to indicate, that the valuable ore deposit extends from drift to drift, which fact may be easily established beyond doubt, by very little further cross cutting.

Between the number two and three adits, the ore shoot dips to the South and West and has been followed by two winzes and a small stope, all of which show strong high grade values. The extreme limits North and South, as well as the thinkness of the ore body here, has not been thoroughly explored, but even at that, a considerable tonnage of valuable ore is in sight.

In the North and South breast of the drifts from the number three adit the ore body shows strong and further extension will probably expose parallel ore shoots of similar value to the one already so well developed.

Below the number three adit no large amount of work has been done. The main drift has penetrated the shoot on its southerly strike and dip, showing high grade ore of good strength. The small stope has caved badly but evidence of further extension

to the south and below is great. Cross cuts show excellent values extedding twenty feet into the hanging wall side, which evidence is also exhibited in the level above. Further development by cross cutting here will open up a large additional tonnage of good ore.

THE MARTINEZ MINE

is opened up by an incline, 108 feet in depth, sunk on the vein, and 45 feet sown, an adit on the vein cuts the incline and extends for 120 feet further on the strike of the vein. At eighty feet down a drift extends sixty feet to the South and twenty feet North, all in fine ore. At 108 feet and the bottom of the incline a drift South, and thirty feet long, exposed a fine grade of ore for the entire distance.

The ore body as a whole shows great strength. Most of the drifts and incline are entirely in ore, and the limits of the valuable ore are yet outside of the present workings. Numerous cross cuts will increase the developed tonnage materially without having to extend the adit, drifts and the incline.

I believe the workable ore, for milling purposes will prove to be ten or twelve feet and possibly more in average width in which case the possible ore reserve estimated will be double than exposed at present. Several sections of the drift expose a definite hanging wall, but the foot wall does not seem to have been reached as yet.

FORMATION

The rock formation of the district is entirely eruptive. Sedimentary rock is strikingly absent. The prewailing rock is a Rhyolite and its blocky condition shows a well-developed fracture plane, parallel with the strike of the Columbia-Bell vein. Much cross-faulting is evidence of extensive movements.

The Columbia-Bell mineralization has immense strength, filling the broken area on either side of the central fissure of fissures to a considerable extent, locally in places 75 feet wide, seldom does the main line of lines of weakness show less than five feet in width and always accompanied by large fracture zones on either side. The Rhyolite generally is much broken and cut by canyons 1500 feet in depth, which expose the fault fissuring the block movement for a long distance, together with a very strong mineralization. The district rock formation is similar to the formation of the largest silver-lead mining districts of Western America, such as Comstock, Virginia City, Nevada; Tonopah, Nevada, etc.

VEINS AND ORE

The two main veins on the property of the Silver Bell Consolidated Minigg Company are the Columbia Bell vein and the Martinez vein. Both have the same strike, viz. north 16 degrees West, and dip 41 degrees west. The latter shows to be a branch of the former, as the veins come together in the Silver Bell claim, north of the present workings.

CONCLUSIONS

The sampling results have shown that the silver values are not necessarily highest in the areas where black oxides are prevalent. This is important because much of the mine contains maroon breccia-gouge zones that appear economically lean, but which may prove to be worthy of exploitation. Much of the drifting in the southerly portion of the mine is in this type of material.

Ore-grade rock containing about $92/ton in combined Ag-Pb-Zn values is readily available at the surface in the open-cut. Additional values in barite and fluorite may also be realized. The extent of this body is unknown and can only be proven by additional excavation and/or drilling. I suggest a lowering of the 50 foot bluff which overhangs the open-cut so that the open-cut can be safely dropped at least 15 feet. This will allow better exposure of the ore zone and a better understanding of the complex structures involved. Also, when the open-cut is dropped, a short-cut access route will be opened through which additional ore may be trammed from the vicinity of the stope.

The most obvious and perhaps the most important observation that resulted from this study is the fact that no vestige of the original galena-rich vein could be found in the mine. All of the stoping and much of the drifting have been done along post-mineral faults that carry brecciated vein material and fault gouge. This means that much of the ore that was

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine | Date

District | Engineer

Subject:

LEWIS A. SMITH - Interview with Richard Mieritz (Consultant) 6-18-62

This, in turn, would probably be determined by the fracture patterns of both groups of rocks. At the Ajax, Woodpecker and other mines northwest of the Silver Belle and Martinez, the ore is in schist and tends to be lenticular, the lenses being developed at, or near, intersecting veins or fractures where both systems are pre-mineral. It appears, from present developments at lease, that the Martinez area zones have shown little evidence to indicate that they deviate much from this general area pattern. Much should be learned from the D.D. hole. A wide iron stained shear zone, west of the mill, appears worthy of study.

The old mill at the Martinez mine presently consists of:

An ore bin
An 8 x 14-inch Blake Jaw Crusher.
A Denver 4 x 5 foot Ball Mill and Classifier.
2 Feeders connected with two Wilfley 6 x 14 foot tables.=
4 Denver Flotation Cells (Battery of 6 cells).
A Drum Filter.
3 Large Deisel Generators.
A Hot Head Compressor Unit (Serviceable).
A Settling Tank.

Some machinery (such as screens and conveyors) will probably have to be added. Otherwise gauges, bearings, pullies, belts, motors, etc., will probably have to be repaired, or replaced, since the plant has been idle for a considerable time.

At present, it is planned to mill ores from the Silver Belle and Martinez mines. The previous plan to erect a central mill at the Ajax mine has not yet materialized due to inadequate finance and to difficult trucking access from the Ajax to the Silver Belle and Martinez. A survey disclosed no other suitable access route could be located over the steep canyons and precipitous hills from the Ajax. The alternate route, via Martinez Canyon to Price, on the Gila River, is mainly through a difficult box canyon. The haul from Price to the Ajax would be much longer. Martinez Canyon is sometimes impassible during the rainy season. The success of the central mill was believed to be, in part, dependent upon Silver Belle and Martinez ores. The water situation at the Martinez Mill could also be better than at the Central Mill site.

MINERALOGY

Ore minerals that have been identified in the mine by this writer include the following:

Galena	PbS
Cerussite	$PbCO_3$
Anglesite	$PbSO_4$
Massicot	PbO
Hemimorphite	$Zn_4 (Si_2O_7) (OH)_2 H_2O$
Hydrozincite	$Zn_5 (OH)_6 (CO_3)_2$
Barite	$BaSO_4$
Fluorite	CaF_2

No silver minerals have been positively identified. The light color of the pillar material (SB-2) combined with its high Ag value suggests that the Ag minerals accompanying the cerussite may be one or more of the halides Cerargyrite (AgCl), Embolite (AgBr), or Iodyrite (AgI). The very fine-grained metallic gray crystals found on the hanging wall (SB-2) may be Argentite (Ag_2S) formed as a result of supergene processes. No primary silver sulfides were found. Manganese oxides were suspected to comprise a large portion of the "wad" (SB-5). However, Mn represented only 360 ppm. Also, the V_2O_5 content was negligible, thus eliminating the black oxide Mottramite ($PbCu\ VO_4\ OH$). It is suspected that Plattnerite (PbO_2) is the primary black constituent in the "wad".

INTRODUCTION

This report was written at the request of Russell Twiford, Jr., and is directed to Polaris Mining Company. Five days were spent studying the mineralization of the Silver Bell mine in an effort to help set forth guidelines for the immediate extraction of ore.

The old workings of the Silver Bell are now accessible and it was possible to gain a better understanding of the vein structure and ore-bearing zones within. The Silver Bell consists of about 5,000 feet of development work along with minor stoping. After a quick examination of the entire mine, I decided to concentrate my efforts on the most northerly end of the old workings. It is at this end where the highest grade outcrops of vein material were exploited by the early mines.

The old workings at the north end were mapped with tape and brunton, this being accomplished with the assistance of Pete Villaverde, Sr. and Pete Villaverde, Jr. Channel samples were cut from selected areas as shown on the attached plat. The muck-filled original discovery shaft is partly exposed in the face of the open-cut (sec plat). The muck-covered floor of the open cut is at a level about 15 feet above the north entrance to the mine.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine

Date 7/25/57

District

Engineer

Subject:

Mineralization:

(a) Pre-Cambrian Pegmatites (Rare Earths, Feldspar etc.)
(b) Pre-Cambrian Shear Faults (Copper-Gold)
(c) Post Lower Rhyolite Veins along faults shears and Dikes. (Lead-Silver-Copper-Gold)
(d) Late Tertiary Oxidation and Enrichment.

The post-lower Rhyolite mineralization, dikes and accompanying structural deformation does not reach into the Upper Agglomerate. A considerable period of erosion preceeded the outpouring of the Upper Agglomerate as evidenced by the erosional unconformity between it and the Lower Agglomerate and by the presence of old well consolidated gravel deposit overlain by several feet of very fine tuff. The tuff is an excellent marker bed. It is probable that this erosional epoch caused considerable oxidation of the exposed ores which were deposited shortly after the Lower Rhyolite Flow was extended. The time of exposure was not extensive since the depth of oxidation is not great and the oxidation, itself was incomplete. This is evidenced by the presence of a large proportion of galena. - Kernels scattered through the oxidized material. Likewise, the presence of chalcopyrite and some argentite in these kernels is indicative. The oxide consists of anglesite, cerussite, cerargyrite, and a lead phosphate, the anglesite being predominent. Since Anglesite is predominent, acid supergene soluctions are indicated. Likewise, the large quantity of limonite-hematite, indicates that much pyrite must have been present. The type of limonite and the absence of notable amounts of green copper oxides indicates a more or less neutral gangue and an iron to copper ratio of 6 : 1.

The Limonite is partly indigenous and partly migratory (local). However, since lead oxidation tends, by forming protective oxides to seal up, to a considerable degree, itself from further oxidation, there is not a chance for excessive enrichment in the copper sulphides which probably underlie the lead. The silver, above the then existing water table, was oxidized to cerargyrite and only a very limited amount of silver sulphide (Argentite) now remains within the galena kernels. The silver was doubtless enriched in the upper portions of both mines and this part of the ore body has been worked to a considerable extent. Much sampling had been done in both mines and this varifies richer silver in the top 75 to 100 feet. From that point the silver values decrease downward. The increase in Copper in assays from the bottom level of the Martinez Mine coupled with nearly unaltered chalcopyrite in places, indicates that lead will be superceeded by copper in depth.

The earlier oxidation and limited enrichment epoch was followed by a great extrusion of agglomerate which probably exceeded 3000 feet in thickness. This, coupled with the uplift of the area by Basin and Range Faulting, Upper Rhyolitic flows, lake deposition and basaltic flows, protected the partly attacked ore bodies from further oxidation until well in Quaternary time.. During this period, uplift and volcanism mostly abated, and the Martinez wash was rejuvenated. It soon back cut into the great volcanic flows to again expose the ore bodies, However, as evidenced by the narrow and very deep canyon, a mere slit, the reexposure of mineralized area has been very brief, and little of it has been removed.

SAMPLING RESULTS

The highest grade sample (SB-2) came from a 3 foot pillar that was left at the south end of the old stope shown in the plat. It ran 43% Pb and 64.35 oz Ag/ton. Cerussite is the most abundant ore mineral visible. Hazardous conditions prevented the examination of both the north end of this stope and its continuation to depth, which is estimated at 150 feet below the drift (see plat). The Pb-rich fault zone along which the stoping was done appears to die out southward into a reddish gouge and brecciated zone containing little visible mineralization. However, as shown by the following samples, this red zone does carry significant values. Samples SB-3 and SB-4 were cut from a 3 foot width above, and a 4 foot width below the planar fault surface. These samples contained 7.23 and 9.48 oz Ag/ton, and 9.7 and 1% Pb, respectively. Twenty-five feet farther south along this structure samples SB-8 and SB-9 showed an average of 4 oz Ag and 4.6% Pb over a combined width of 6 feet.

The hanging wall of the stoped area is mantled with a white-to-pinkish, kaolinitic gouge not more than 3-4 inches thick that contains patches and disseminations of finely-crystalline metallic gray and transparent minerals. One sample of this material (SB-1) contained 9.62 oz Ag/ton.

The present open-cut trends N-NW and was excavated on a surface exposure of a breccia-gouge zone that strikes N-NW

and contains "goose eggs" of massive galena as large as 3 feet in diameter. This zone is separate from the one that was stoped within the mine. A highly siliceous, crackled, green rhyolite is exposed across a 20 foot width of the face of the open-cut. The rock is impregnated with an abundance of stringers and lenses of grayish-black, dense, sooty "wad". A 6 inch wide stringer of this material (SB-5) containing visible Hemimorphite, Hydrozincite, and Barite ran 16.39 oz Ag/ton, 8.3% Zn, and 1.4% Pb. A 40 pound sample (SB-6) taken across the face ran 11.79 oz Ag, 3.2% Pb, and 3.1% Zn. This green crackled rock appears to have a more vertical aspect than does the adjacent maroon breccia-gouge zone, and may be quite large in the form of a plug, lens, or pipe-like body.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine: Silver Bell-Martinez

Date: February 28, 1962

District: Mineral Hill (or Martinez) District, Pinal County

Engineer: Lewis A. Smith

Subject: Conference with Lee Boyer, 1010 Lemon St., Tempe

Mr. Boyer stated that J. Weston Wingfield, 1265 E. Cambridge, Phoenix and Vernon Owens (Florence Junction temporarily) had combined various properties in the area including the Woodpecker, Blue Crystal, Ajax, Orphan Boy and Silver Belle-Martinez plus some new claims into some sort of option agreement, the details of which he did not yet know. These people plan to erect a sink float plant on the Ajax claims.

approximately $20.00 in place. The ore reserves of the mine are, however, quite limited.

UNDERGROUND DEVELOPMENT OF EACH MINE

The Columbia-Silver Bell Mine is developed by marious adit levels, interior shafts, winzes and drifts over a 500 foot strike length and a vertical depth of 300 feet measured from the discovery in the saddle through which this zone passes. High grade silver ore had been mined above the No. 3 Adit level (see Plate 4). Apparently some enrichment occurred in the two veins with in the zone, the footwall and hanging wall. The two veins became one at a short distance above the No. 3 Adit level. Below this junction the silver values remained but in amounts which will not satisfy dollar-wise the present day costs involved to mine and mill the material.

The writer did not enter the mine to examine same. Records indicate this mine has not bee worked since 1920 and that the workings as shown in Mr. Starbirds report (plate4) are essentially correct. From 1943 to 1946, Mr. T. S. O'Brien obtained some ore for metallurgical tests. It would therefore appear that many of the workings should be accessible.

The Martinez Mine which we are more concerned with , was entered and most of the underground workings examined but mapped geologically because of the time factor. This mine is developed approximately 900 feet along the strike and to a depth of 200 feet by an inclined shaft, an adit level and three intermediate levels including the long 200 level. (See Plate 3).

A moderate lead-silver tonnage has been mined from four stopes above the 200 level. The previous mentioned production record indicates the tenor of hand sorted crude ore and the milled concentrates marketed by the operators.

ORE RESERVES

Columbia-Silver Bell

Starbird, in his 1920 report, calculated approximately 60,000 tons of measured and indicated ore available using the existing development as limits. This tonnage has been substantiated by the writer. The writer also weighted the grade of each block of ore and obtained an average grade of 8.3 ounces of silver and 1.4% lead. The unfortunate circumstance however, is the fact that mining, trucking, milling and marketing costs will equal or exceed the monetary value of the ore after a 10% mill loss and a 5% smelter deduction of current metal prices.

In a letter dated August 19, 1946, Mr. T. S. O'Brien indicated that some 1600 tons were mined from various parts of the old workings and shipped to the smelter. The average grade of this material was 7.5% lead and 18 ounces of silver. Plate 4 of this report does not indicate that ore of this tenor is available any place in the mine. The wide variation therefore infers two thoughts, (1) that the ore obtained was to some degree hand sorted and (2) that the sampling completed by Mr. Starbird is unreliable and not representative of the material. The writer is of the opinion the sampling is within the realm of its own right for rea-

son of the consistent distribution of the lead and silver values from sample to sample and level to level. A check sampling program on a limited basis would be very helpful.

We must therefore assume that the tonnage of concern was removed from higher grade areas and hand sorted.

Martinez

The measured and indicated ore reserves of the Martinez Mine as delimited by existing workings are quite meager at this writing. Lack of adequate sampling, lack of correct and up to date maps and the limited field examination time, requires the authors' ore calculations be classified as inferred.

Much mining has been done since Mr. Stertird sampled and calculated a 6000 ton reserve of 8.5% lead and 2.5 ounces of silver. Additional development indicated other ore shoots which since have been mined also.

Five ore blocks have been indicated on Plate 3, blocks "A" to "E". The dimensions used and tonnage of each block is given below:

Block "A"	30'L x 60'H x 4'T equals	620 tons
Block "B"	70'L x 20'H x 4'T equals	480 tons
Block "C"	50'L x 55'H x 4'T equals	940 tons
Block "D"	50'L x 30'H x 4'T equals	510 tons
Block "E"	50'L x 30'H x 4'T equals	510 tons
Total "inferred" ore		3060 tons

"L" is length along strike of zone
"H" is height on slope of zone
"T" is thickness or width of zone
A cubic foot factor of 11.6 was used or a factor of .345 times the length and height.

The assumed average grade of this tonnage is 8% lead and 2 ounces of silver.

Approximately 800 tons of ore exists as pillars on both sides of the Martinez Shaft, however, the writer can not justify the robbing of these pillars for the sake of the small tonnage involved. The shaft in place and in good condition has more value to an operation than the monetary value which would be received from the extraction of the ore.

EXPLORATION

There is not sufficient ore available in the Martinez Mine at this time to justify a mill operation for any great length of time. Monies must therefore be expended in exploration and development of additional reserves to assure a feed to the 50 ton capacity mill for at least a year ahead of itself. The future of this mine and the justification for purchase lies in its ability to provide adequate additional reserves laterally, vertically in depth below the present bottom level and horizontally in breath along the strike and normal to it.

A well planned, professionally supervised surface and underground drilling programs are a prerequisite to any decision to purchase. This program must be designed to test the known ore shoots at depths below the bottom level and to test the horizontal breath of the zone to intercept hidden paralleling footwall mineralization. Some twenty to forty thousand tons might be developed by this work.

A prerequisite to the drilling program is a detailed surface and underground survey, underground geological mapping and sampling program. The writer found many discrep-

anoies while reviewing early data and compositing the Martinez underground map in this report from early maps.

EQUIPMENT

To say the least, the property is well equipped with the necessary tools and machinery to start operations in a very short period of time. Some renovation and cleaning of machinery and tools would be required since little to any item has been used for several years.

The present owner can no doubt provide an inventory and to duplicate same in this report would be without point except to evaluate same. All tools, equipment, machinery and buildings on the ground represents, in the writers opinion, an expenditure of approximately $100,000. To purchase these items on the used market, excepting buildings and installation, something like $40,000 might be required.

The mine is equipped with electric hoist, cable, skip, cars drilling machines, sump pump, rail, etc. The mill and power house is equipped as shown in Plate 5.

Such necessary but unusual items on the ground include laboratory sample pulverizer, pulp balance, gold-silver balance, acetylene hoses, nozzles and tips.

Office, Bunk house and Superintendents house are well equipped with bunks, tables, desks, chairs, gas refrigerator, stoves, cooking utensils, etc.

METALLURGY

The ore tenor of both mines is such that the success of the property lies in the amendability of the ore to concen-

tration. Mr. T. S. O'Brien conducted many metallurgical tests on both the Martinez and Columbia-Silver Bell ores. Subsequent lessors took advantage of the findings and the last operator used the mill flow sheet as indicated on Plate 5.

Concentrates from the present circuit were obtained as three products, two from the tables and one from the float section. The present flow sheet is somewhat congested by the multiple handling of the material in closed circuits between the classification, float and table circuits. Although recoveries may have been 85 to 90 % with this flow, the writer believes much improvement can be made by eliminating the inefficient material handling without materially reducing the recovery factor.

In October, 1947, Denver Equipment Company of Denver, Colorado, completed a mill test on the Martinez ore at the request of Martinez-Bell Mining Co., Superior, Arizona. The resulting flow sheet, Plate 6, was recommended. The sample tested contained the following percentage of elements.

Gold (ounces)	.01	Silver (ounces)	0.69
Total Lead	10.40%	Iron	4.20%
Oxide Lead	5.25%	Sulphur	0.33%
Zinc	0.65%	Insoluble	68.12%
Copper	0.12%		

Calculated head assay was; Total lead, 9.58%, Oxide Lead, 4.90%.

Five test were completed, four using flotation and gravity tabling while the other used jigs, flotation and gravity tables. Lead recoveries ranged from 59% to 87% for concentrates which contained 36% to 62% lead. The cartonate,

sulphate and in particular the chloride-phosphate of lead presented the greatest problem for recovery.

The two most successful and accepted tests had the following results using the identified methods of recovery.

	% lead Recovered	Grade % lead	Concentration Ratio
Jigs	45.05	50.9	12.2 to 1
Flotation	27.54	52.3	20.4 to 1
Tables	11.33	38.0	36.2 to 1
Total	83.92	49.6	6.25 to 1

100 tons ore would produce 16 tons concentrate of 49.6 % lead. Concentration ratio of 6.25 to 1.

Flotation	63.99	46.2	7.5 to 1
Table	22.81	45.8	20.9 to 1
	86.80	46.1	5.55 to 1

100 tons ore would produce 18 tons concentrate of 46.1 % lead. Concentration ratio of 5.55 to 1.

Denver Equipment recommended the flow sheet employing jigs, flotation and table concentration even though the recovery was 3 % lower. Their recommendation was based on the production of a better product, simplicity in design and without much recirculting along with a slightly higher concentration ratio which in effect provides a substantial saving in rail freight to the smelter.

ESTIMATED EXPENDITURES

The following is an estimated itemized schedule of expenditures necessary to accomplish the individual phases required to properly initiate and execute an operation of the property. These initial expenditures, solely related to the Martinez Mine, do not include purchase of tools, supplies, etc, unless so mentioned in the item.

Access Road

Approximately six miles of access road must be re-aligned and rebuilt to eliminate as much erosion damage as possible caused by the intermittent cloud bursts common to the area. The necessity of this much reconstruction is laid to the fact that concentrates would be trucked over the road and any improvement made now will effect a saving in haulage expense.

Drilling

Since a relatively small reserve, based on present development, exists in the Martinez Mine, the future of any operation is dependent on what additional ore reserves can be developed above and below the bottom level of the mine. Mineralization, mill grade rock of about $20.00 value, tends toward rectangular shaped lenses, the vertical length of which is greater than the horizontal dimension. A years reserve should always be maintained in advance of mining operations. An exploration program is therefore a requirement which must be considered. A minimum program would include surface drilling and underground sampling. A later program of underground drilling would also be advised only however after a mining operation was considered. The necessary expense involved in a mine "cleanup" operation could not be justified for the small amount of short hole drilling that would be recommended.

A mimimum surface drilling program should consists of six to eight holes totaling approximately 1500 feet. The 200 level should be adequately sampled as well as the stope and walls where accessible.

Mining

Much rehabilitation and "cleanup" will be required to make the mine safe and provide for efficient operation. A general clean up must be made, rotten timber replaced, rail laid in shaft, air and water lines installed, vent lines provided, electrical equipment checked along with any other equipment which will be required in mine operation.

Milling

A general mill "cleanup" will be required along with a general equipment check.

The writer can only provide but a rough estimate for such items as "cleanup" and equipment repairs. Other expenditures can be reasonably estimated.

Access Roads	
Rehabilitate and align 6 miles of 12 foot wide road with turn outs.(blasting required, Cat, compressor rental, 1 mo.)	$ 5,000.00
Exploration	
Mine survey, Geol. Mapping, Drill. Supervision, logging, Exp.	$ 1,750.00
Water supply, Check electrical equipment for shaft pump	$ 100.00
Drilling 1500 feet. @$5.00/ft.	$ 7,500.00
20% for extras, cementing, etc.	$ 1,500.00
Sampling and assaying 10¢/ft.	$ 150.00
Total	$ 11,000.00
Mining	
Mine cleanup 800 ft @$1.75/ft	$ 1,400.00
Timber	300.00
Equipment check and repair, Labor and parts	$ 500.00
Installation of shaft rails etc.	$ 200.00
Total	$ 2,400.00
Milling	
Mill cleanup and rehabilitation	$ 300.00
Equipment check and repair.	$ 800.00
Total	$ 1,100.00

Recapitulation		Total
Access roads	$ 5,000.00	$ 5,000.00
Exploration	$11,000.00	$ 16,000.00

		Total
Mining	$ 2,400.00	$ 18,400.00
Milling	$ 1,100.00	$ 19,500.00

ESTIMATED OUTCOME

The estimated outcome can best be projected on a one ton crude ore basis. Certain provisions must be assumed such as average grade, mill recovery and mill capacity. For convenience, the writer will assume an average mill feed comparable to the sample tested by Denver Equipment. The calculated head of this sample was 9.29% lead and 0.75 ounces of silver. The mill recoveries assumed are those obtained by Denver Equipment in their recommended flow sheet and the mill capacity is assumed as 50 tons per 24 hour operation.

A smelter schedule by American Smelting and Refining Co. stipulates the following charges and credits.

Payments

Silver "Pay 95% at average silver quotation for calender week less 1½¢ per ounce. Minimum deduction one troy ounce."

Lead "Deduct 1.5 units of wet assay and pay 90% or remaining at New York common quotation less a deduction of 2.2¢ per pound."

Deductions

Base Charge-Concentrates $13.50/ton
Credit- 10¢per uint per ton over 30% lead
Charge- 10¢ per unit per ton under 30% lead

Value of Concentrate

Lead- 48.7% -1.5% equals 47.2% x 20lbs equals 944 lbs x(14.0¢-2.2¢)equals	$ 111.39
Lead credit-17.2 units x 10¢ equals	1.72
Silver 2 ounces x 95%--min. deduct. 1 oz x (90.6¢ -1.5¢) equals	.89
	$ 114.00
concentration ratio 6.25 to 1	
Value per ton of crude ore	$ 18.24

ESTIMATED PRODUCTION COSTS

The following production costs are based on providing the 50 ton capacity mill with its daily requirement for a seven day per week operation. Mining has been assumed on a six day per week basis with a production of 60 tons per day or 360 tons per week.

Mining--360 tons per week, 6 day operation	
1 Hoistman @ $20.00 per day	$ 130.00
3 Miners $18.00 " "	$ 351.00
1 Miners Helper $16.00 " "	$ 104.00
3 Trammers $16.00 " "	$ 312.00
1 Comp./mill man 1/2 time @$20.00	$ 65.00
1 Mine/Mill Foreman @ $600.00/mo	$ 75.00
Total	$1037.00
14% insurance, etc.	$ 145.18
Professional Services	$ 50.00
Total Labor	$1232.18
Supplies, Powder, rail, timber, diesel oil, gasolene, oil	$ 700.00
Total Mining 360 tons.	$1932.18
Initial Capital Exp. 2% $18,400.00	$ 368.00
	$2300.18
Mining Cost per ton Crude Ore	$ 6.39
Milling	
1 Mine/mill Foreman $600.00/mo	$ 75.00
3 Mill men @ $20.00 per day	$ 390.00
1 Trammer $16.00 " "	$ 104.00
1 Comp./mill man 1/2 time @$20.00	$ 65.00
Total	$ 634.00
14% Insurance, etc.	$ 88.76
Professional Services	$ 50.00
Total Labor	$ 772.76
Supplies, reagents, gasolene, diesel oil, oil, etc.	$ 550.00
Initial Capital Exp. 2% $1100.00	$ 22.00
Additional Equipment, repairs	$ 180.00
Total milling 360 tons	$1524.76
Milling Cost per ton Crude Ore	$ 4.24
Trucking to Price, Arizona	
1 Truck Driver @ $16.00 per day	$ 104.00
14% Insurance, etc.	$ 14.56
Total Labor	$ 114.56
Truck operation and repair	$ 125.00
Total Trucking Charge	$ 239.56
Trucking charge per ton Crude Ore	$ 0.67

Rail Freight to El Paso, Texas

Freight rate for concentrates between $100.00 and $125.00

is $11. 59 plus tax of 3% which brings the total to $11.94. With a 6.25 to 1 ratio, Cost per ton of Crude Ore is $1.91

Smelter Charge

Base rate for one ton of concentrate is $13.50 and with a 6.25 to 1 ratio, Cost per Ton of Crude Ore is $2.16

Recapitualation

Mining	$ 6.39
Milling	$ 4.24
Trucking	$ 0.67
Freight	$ 1.91
Smelting	$ 2.16
Total production cost	$15.37
Value of assumed ore(after Conc.)	$18.24
Production Costs	$15.37
Profit-Per Ton of Crude Ore before royalty and taxes	$ 2.87

A 1% lead decrease in the mill feed will reduce the margin of profit by $2.36 per ton and will therefore be about the breaking point between a profit and a non-profit operation. The minimum mill feed must not be lower than 8% lead and 1 ounce of silver. Similarly, any increase in grade above the 9.2% lead content will add that much to the profit figure.

RECOMMENDATIONS

The writer, having completed a brief field examination and an office study of the property and circumstances, can recommend the following:

1.- That the property be optioned for no money down and with an exploration period grant of four months but not more than six months,
2.- that an estimated expenditure of some $13,000 be made for limited access road repair, mine survey and geological mapping, surface drilling and an underground sampling program,
3.- contingent on the results of recommendation two, the option be continued or canceled as the case may be, and
4.- if results of recommendation two are favorable, continue access road rehabilitation and initiate mining and milling operations, milling operations as herein

described, and also,

5.- that the amendability and economics of the copper and flourite mineralization should be determined as possible by products in the milling schedule. These minerals could provide extra revenue at a minimum of expense.

Respectfully submitted,

R. E. Mieritz

R. E. Mieritz, P. E.
Mining Consultant
Phoenix, Arizona

October 24, 1957

The Magma Copper Company is capitalized at $1,500,000.00 owns 1,160 acres of mineral lands at Superior. Equipped with a 300 ton mill. Product: Copper, Silver, Lead and Gold. Paid in dividends to January, 1920, $1,704,000.00 NOTE. This company has just decided to spends $4,000,000.00 with which to build a smelter at Superior and increase the mill from 300 to 600 tons per day capacity., also broaden the railroad they own.

SUPPLIES

Cost of supplies will be normal, since goods can be shipped in over standard gauge railroad, the A.E.R.R. subject to a five-mile haul by truck, after wagon road has been repaired and rebuilt.

WATER

The present water supply is more than sufficient for all camp and domestic purposes and ample water can be developed whenever required for milling or reduction operations.

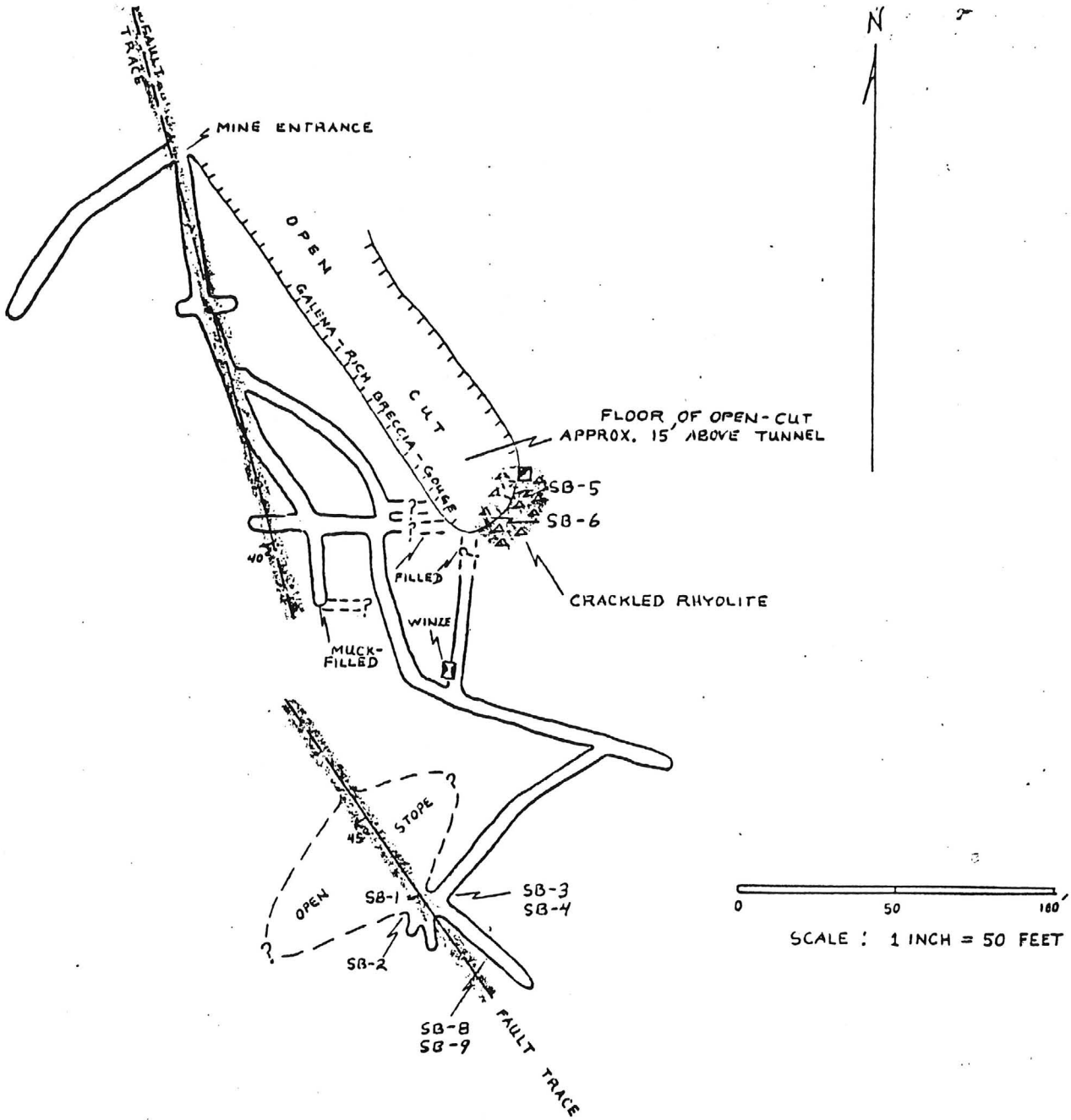
HISTORY OF PROPERTY

The Silver Bell was discovered about forty years ago and famous in the olden days as a silver Bonanza. Dr. Tibbets, in his report dated January 1st, 1901, states "The Columbia and Silver Bell Mines were operated by the Pinal Mining Company at intervals, for a period of ten years. During the time the company operated a smelter on the Gila River, five miles away. At a result of a short run they shipped a hundred and four carloads of bullion, value not obtainable by reason of the looseness with which the books of the old company were kept."

When silver was demonetized and the price of silver took such a material drop, the mine was shut down. At intervals, leasors have since operated the Bell during intermittent periods. Since the nearest railroad in those days was the Southern Pacific with the nearest shipping point, Casa Grande, sixty miles away, it paid only to ship the highest grade of ore. Consequently these leasors did very little development work, but contented themselves with hunting for the exceedingly rich pockets of ore, scattered throughout the ore deposits. As a result the present sampling really does not do full justice to the property, for due to this gouging by leasors and wandering prospectors, who helped themselves to exposed rich ore, without opening up any new ore bodies, only the leaner ore remained exposed. There is no doubt, that with very little development work, rich kidneys and shoots of the high grade ore for which the Bell was famous in the olden days, will be opened up again.

DESCRIPTION OF THE PROPERTY

The property of the Silver Bell Consolidated Mining Company consists of twenty-five claims, or 450 acres. Three of these claims or 60 acres, the Silver Bell, the Columbia and the Martinez, are patented. The rest is held by right of location. Titles are perfect and there are no litigations or incumbrances against the property. At present there exist no surface improvements, such as shops, buildings or power plants. There is however, quite some track still in place in the mines and a small hoist and skip on the third adit of the Columbia Mine.



PLAN VIEW OF THE NORTH END OF THE SILVER BELL MINE

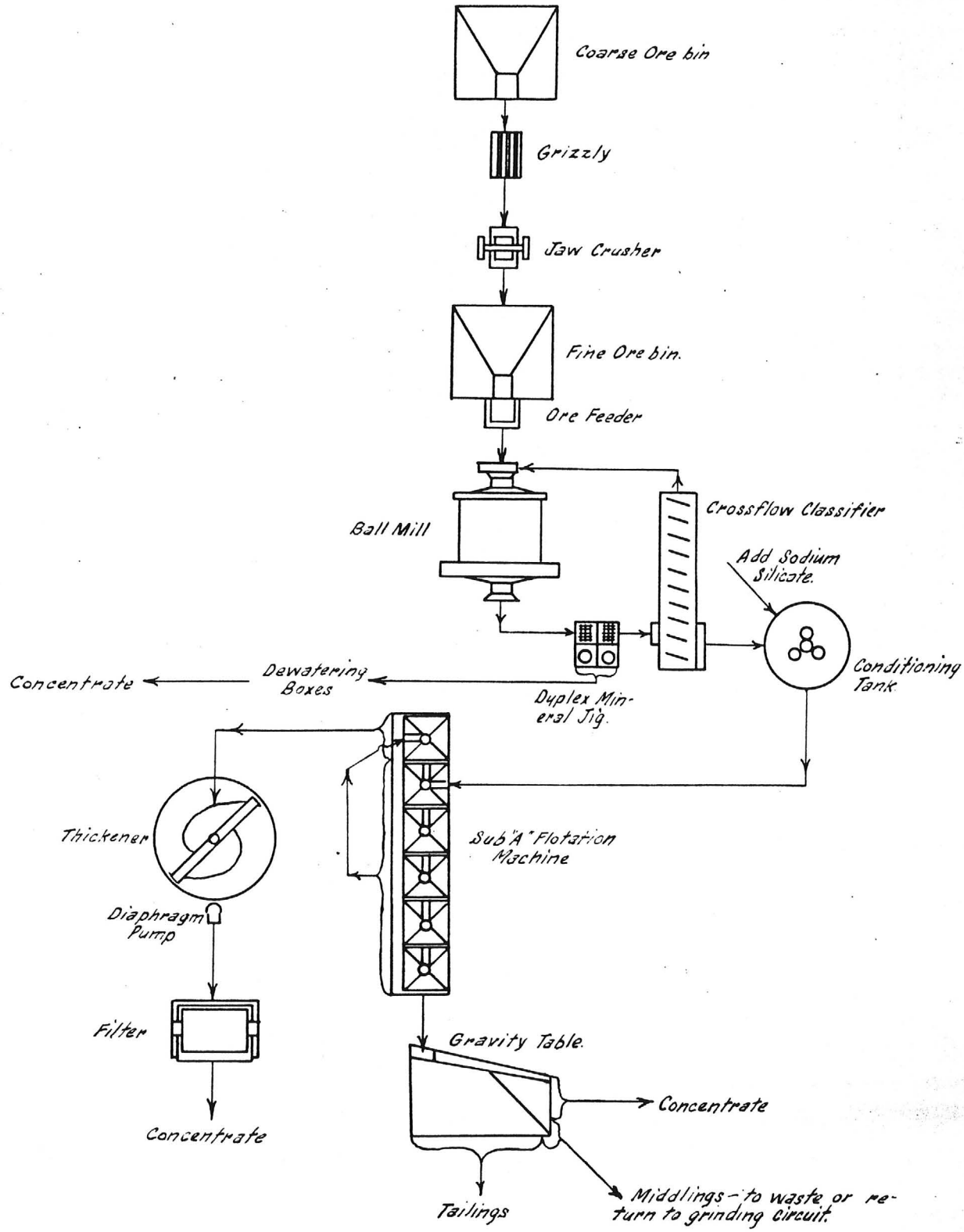
MINERAL CREEK MINING DISTRICT

PINAL COUNTY, ARIZONA

by

JOHN D. CHAKARUN

FEBRUARY, 1975



MARTINEZ ORE FLOW SHEET

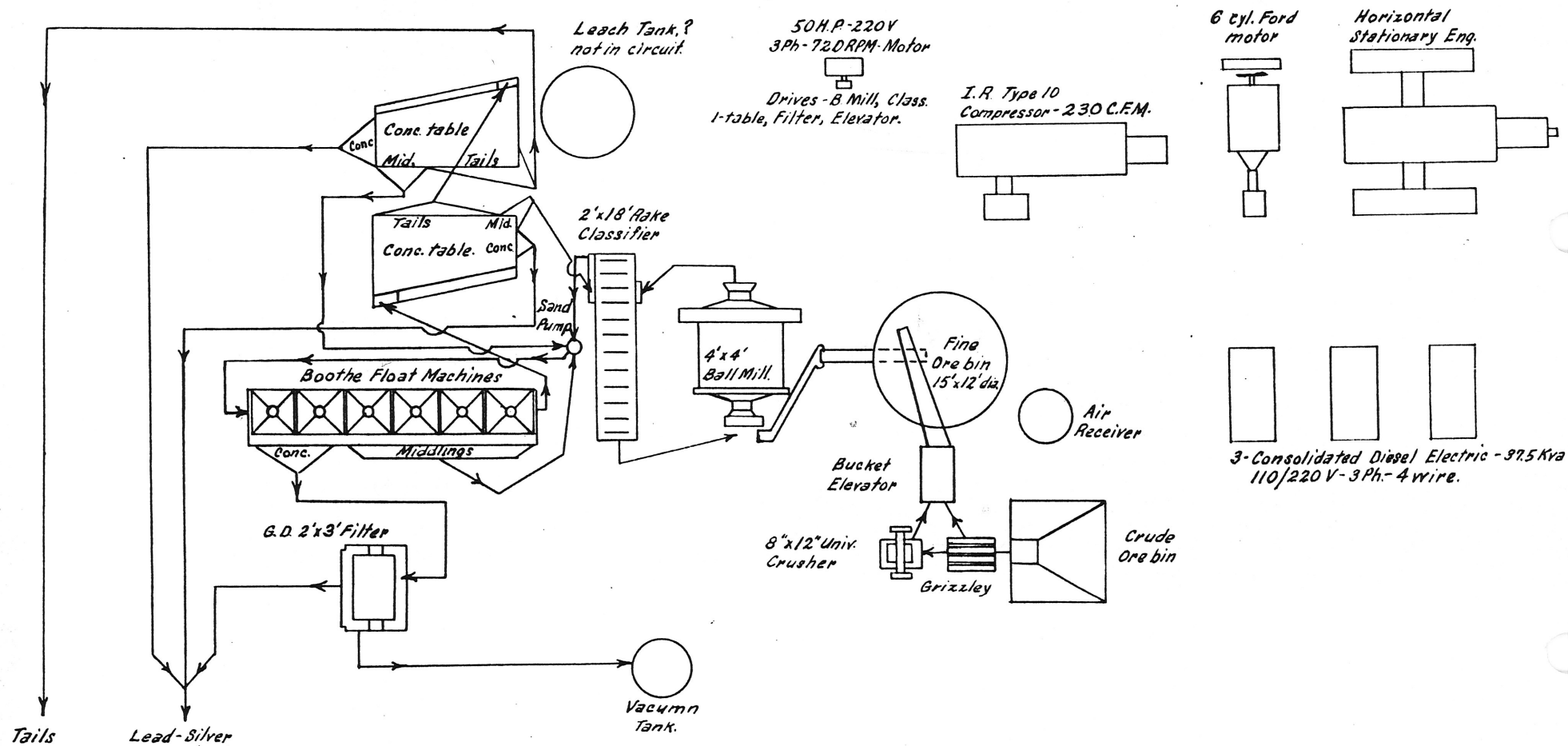
as recommended by

DENVER EQUIPMENT CO.

OCT., 1947

OCT., 1957 R.E.M

PLATE: 6



MARTINEZ MILL

PRESENT FLOW SHEET

and

EQUIPMENT ARRANGMENT

OCT. 1957 R.E.M.

PLATE: 5

Since most of the work done so far is, to a large degree, within the oxide zone, it will be most interesting to find out how deep the water tables were during the pre-Later agglomerate erosional epoch. This could best be determined by core-drilling. Since the canyon at the mines is narrow and very deeply incised, the topography is new. This rapid down cutting could not cause complete or even extensive oxidation. This verified by the presence of relict (residual) kernels in the oxidized area with a short distance of the present topographic surface. In the bottom level of the Martinez these kernels are more prevalent and larger. Here chalcopyrite and argentite are more prevalent. Probably as development is progressed away from the canyon more true sulphides will appear with respect to the oxidized minerals present. This means that future development should be done laterally away from the canyon and downward. Much of the present work is along the major (call it Martinez) Fault zone. However the rhyolite porphyry dike which is offset slightly by the Martinez fault shows some good copper capping and my also bear some prospecting.

Is seems most expedient to drill at least 2 or 3 holes before proceeding with production under present market conditions and under the present extended and uncertain transportation [illegible].

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
OWNERS MINE REPORT

Date May

1. Mine Silver Bell - Martinez
2. Mining District & County Pioneer -
3. Former name Orig Dan
4. Location 21 N.E. from Florence. 4 miles below Box Canyon.
5. Owner Sunbeam Gold Mining Co.
6. Address (Owner) Box 28, Palo Alto, Calif
7. Operator - Percy E Wright -
8. Address (Operator) Box 241 - Florence
9. President - Glenville A. Collins
10. Gen. Mgr.
11. Mine Supt. -
12. Mill Supt.
13. Principal Metals Silver - Lead.
14. Men Employed
15. Production Rate Not established
16. Mill: Type & Cap.
17. Power: Amt. & Type 45 HP Typo, (Diesel Elec) inadequate
18. Operations: Present — Idle

19. Operations Planned — Sinking on Martinez vein - 100 ft. At Silver Bell -

20. Number Claims, Title, etc. Twenty eight claims, 3 patented assess. work for other 25 done for 1941.

21. Description: Topography & Geography

22. Mine Workings: Amt. & Condition

(over)

23. Geology & Mineralization Country is being [illegible].

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

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

25. Mine, Mill Equipment & Flow Sheet 50 Ton Mill - Crusher - B.M. - Classifier - Conditioner, Air Float (poor condition) - Denver Filter 4' Oliver type. Thickener 30' dia not installed. Generator for lights. 1-R Comp 3 Drills copy - Blacksmith & small tool

26. Road Conditions, Route → Shipping point, Price, 9 miles from mine. Improved road, needs repairing but is passable. County highway dept will put equipment on to make repairs when ready to operate.

27. Water Supply → adequate water for 50 ton mill in [illegible] mine.

28. Brief History

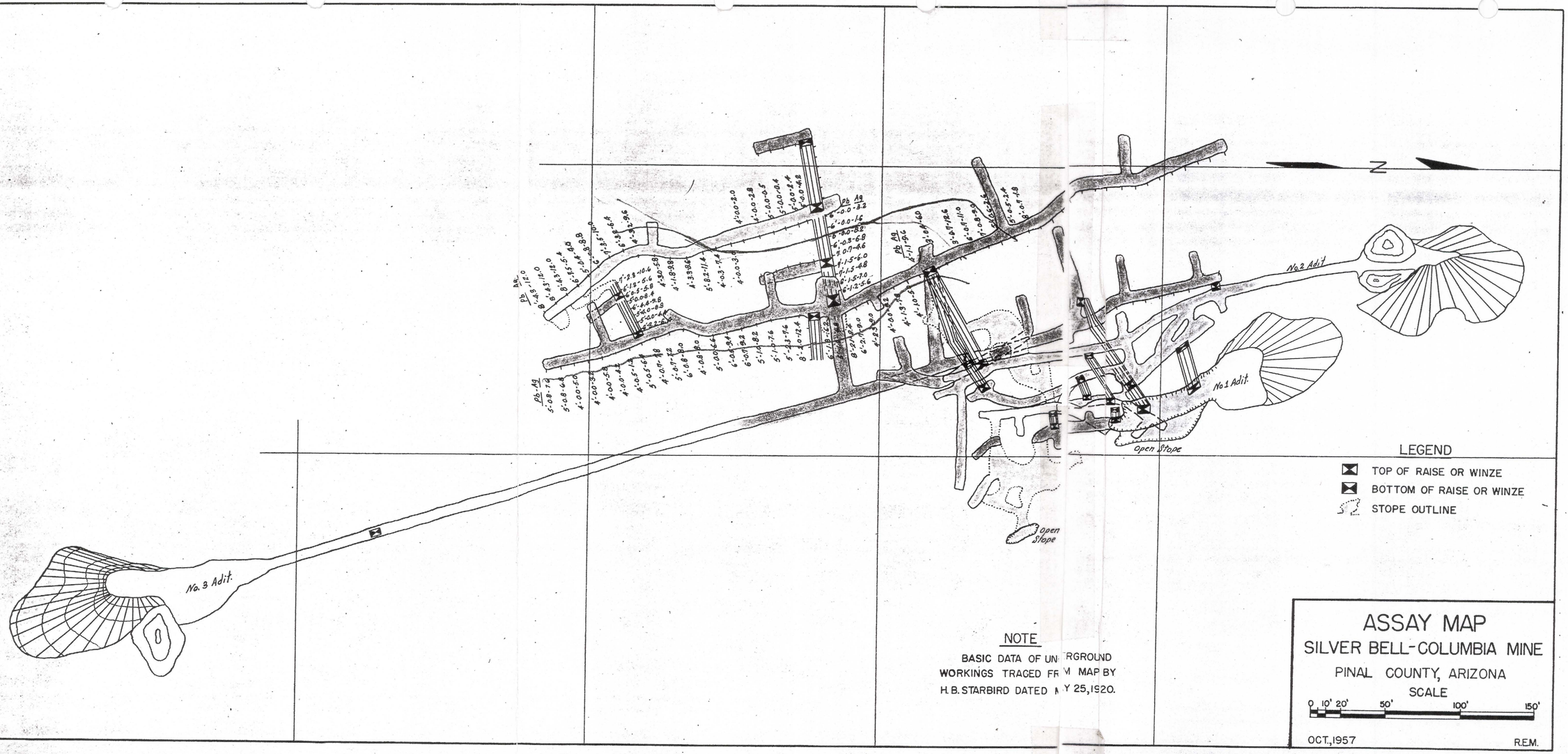
29. Special Problems, Reports Filed

30. Remarks

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

32. Signed..

33. Use additional sheets if necessary.



LEGEND

- TOP OF RAISE OR WINZE
- BOTTOM OF RAISE OR WINZE
- STOPE OUTLINE

NOTE

BASIC DATA OF UNDERGROUND WORKINGS TRACED FROM MAP BY H.B. STARBIRD DATED MAY 25, 1920.

ASSAY MAP

SILVER BELL-COLUMBIA MINE

PINAL COUNTY, ARIZONA

SCALE

0 10' 20' 50' 100' 150'

OCT., 1957 R.E.M.

PLATE: 4