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ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

3 of 4

PRIMARY NAME: BUCKEYE APACHE MINE

ALTERNATE NAMES:

BUCKEYE
SUNRISE
APACHE
FAIRVIEW

COCHISE COUNTY MILS NUMBER: 150

LOCATION: TOWNSHIP 14 S RANGE 27 E SECTION 4 QUARTER SE
LATITUDE: N 32DEG 14MIN 26SEC LONGITUDE: W 109DEG 35MIN 07SEC
TOPO MAP NAME: DOS CABEZAS - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:

GOLD LODE
SILVER
LEAD SULFIDE

BIBLIOGRAPHY:

ADMMR BUCKEYE APACHE MINE FILE
KEITH, S.B., 1973, AZBM BULL. 187, P. 72
ADMMR GOLD DEPOSITORY & LOAN CO. FILE
USGS MAP I-1310-B, P. 50; MIN DPST MAP OF
SILVER CITY, NM & AZ
MINES REGISTER 1965-66, P. 70
ADMMR MAP FILE, 2 MAPS

BUCKEYE APACHE MINES Co.
c/o G. P. BERRY & Co.
14A WEST CAMELBACK ROAD
PHOENIX, ARIZONA 85013

April 15, 1966

ATTENTION: JESSE W. ANGLE, PRESIDENT

HEREIN SUBMITTED IS A REPORT ON THE PROPERTY OF THE BUCKEYE APACHE MINES Co. IN THE DOS CABEZAS MOUNTAINS, COCHISE COUNTY, ARIZONA.

UPON YOUR REQUEST, I HAVE VISITED THE PROPERTY, ~~AND~~ REVIEWED THE WORKINGS AND RESEARCHED ALL DATA AVAILABLE RELATING TO PAST OPERATIONS AND REPORTINGS.

THE RESULTS OF MY EFFORTS LEADING TO CONCLUSIONS AND RECOMMENDATIONS REGARDING FUTURE DEVELOPMENT OF THE PROPERTY ARE INCLUDED HEREIN.

RESPECTFULLY SUBMITTED,

WILLIAM P. CRAWFORD

/LW

~~ENCLOSURES~~

Copies: 6 4/1/66

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THE PROPERTY OF THE BUCKEYE APACHE MINES COMPANY IS SITUATED IN THE TEVIS MINING DISTRICT, COCHISE COUNTY, ARIZONA, ABOUT TWELVE MILES SOUTH-WEST OF BOWIE, IN BUCKEYE CANYON AT AN ELEVATION OF ABOUT 5,600 FEET. THE REGION IS VERY SPARSELY POPULATED AND THE TOPOGRAPHY IS EXTREMELY RUGGED WITH NARROW RIDGES SEPARATED BY DEEP AND STEEP SIDED CANYONS SUBJECTED TO FLASH FLOODS DURING THE RAINY SEASON.

THE EARLY HISTORY OF MINING IN THE TEVIS DISTRICT IS OBSCURE. THE DISTRICT WAS NAMED FOR CAPTAIN JAMES H. TEVIS, A SOMEWHAT LEGENDARY CHARACTER WHO OPERATED A TRADING POST AND PROSPECTED IN THE DOS CABEZAS MOUNTAINS IN THE VICINITY OF BUCKEYE CANYON PRIOR TO THE CIVIL WAR. AFTER SERVING IN THE CONFEDERATE ARMY HE RETURNED TO ARIZONA TERRITORY AND HOMESTEADED WHERE THE TOWN OF BOWIE NOW STANDS. WITH TEXAS CAPITAL HE FORMED AND OPERATED A MINING COMPANY IN 1880 LOCATING FIFTY MINING CLAIMS IN BUCKEYE AND CEMENT CANYONS, ERECTING A STAMP-MILL ON THE PRESENT CAMP BONITO CLAIM, BUILDING A TRAMROAD AND PACK-TRAILS FOR THE MOVEMENT OF MEN, SUPPLIES AND ORE. MINING AND MILLING OPERATIONS WERE SERIOUSLY HINDERED BY ROVING BANDS OF RENEGADE APACHE INDIANS AND ALL WORK CEASED IN 1883 DUE TO INDIAN ATTACKS, HIGH OPERATING COSTS AND THE LOSS OF THE COMPANY FUNDS. TEVIS REORGANIZED AND RESUMED OPERATIONS EARLY IN THE NINETIES AND WORK CONTINUED INTERMITTENTLY UNTIL HIS DEATH IN 1905.

THE DISTRICT WAS INACTIVE AND FEW DATA ARE AVAILABLE FOR THE PERIOD 1905-1933. THE INCREASE IN THE PRICE OF GOLD IN 1933 AND 1934 AROUSED INTEREST IN THE AREA RESULTING IN CLAIM RELOCATION AND STAKING BY THOMAS P. BEAN AND E. S. ANDERSON.

ANDERSON AND BEAN HELD TWENTY OR MORE CLAIMS, PURCHASING SEVEN PATENTED CLAIMS AT A TAX SALE IN 1935 AND STAKING THE REMAINDER. THEY MINED A SMALL TONNAGE OF ORE, WORKING HIGH GRADE STRINGERS AND SOLD THEIR PROPERTY IN 1939 TO THE PRESENT OWNER, THE BUCKEYE APACHE MINES COMPANY.

Buckeye Apache Mines
WPC April 1966
HISTORY (CONT'D)

THE BUCKEYE APACHE MINES COMPANY, IN 1939, ESTABLISHED A CAMP ON THE CAMP BONITO CLAIM, ERECTED TWO LARGE QUONSET BUILDINGS AS DORMITORIES, A FRAME MESS HALL, A LIGHTING PLANT, SUNK A WELL FOR DOMESTIC WATER, AND CONSTRUCTED JEEP ROADS FROM THE CAMP TO THE PRINCIPAL WORKINGS. THE ROAD FROM THE CAMP TO THE BUCKEYE STOPE, A DISTANCE OF ABOUT ONE AND ONE-HALF MILES WAS COMPLETELY DESTROYED BY A FLASH FLOOD IN SEPTEMBER 1965.

THE BUCKEYE APACHE MINES COMPANY IN 1947 OWNED THIRTY MINING CLAIMS (PATENTED AND UNPATENTED) IN THREE CONTIGUOUS GROUPS; THE SUNRISE, THE BUCKEYE AND THE APACHE. CLAIMS IN THE SUNRISE GROUP WERE RELINQUISHED AND THE COMPANY NOW OWNS THE SIXTEEN CLAIMS LISTED BELOW:

<u>NAME</u>	<u>LOCATER</u>	<u>DATE LOCATED</u>	<u>GROUP</u>	<u>TITLE</u>
CAMP BONITO	BUCKEYE APACHE MINES COMPANY	OCT. 12, 1939	CAMP SITE	U
PATENT	THOMAS P. BEAN E.S. ANDERSON	APRIL 1, 1935	BUCKEYE	U
MOUNTAIN VIEW	DO "	JULY 26, 1935	DO	U
SILVER CHIEF *	VIRGINIA CHIEF MINING & MILLING Co.	RECEIVER'S RECEIPT OCT. 23, 1891	DO	P
VIRGINIA LODGE *	DO "	RECEIVER'S RECEIPT OCT. 23, 1891	DO	P
STATE OF IOWA *	DO "	DO	DO	P
STATE OF MISSOURI	DO "	DO	DO	P

HISTORY (CONT'D)

<u>NAME</u>	<u>LOCATER</u>	<u>DATE LOCATED</u>	<u>GROUP</u>	<u>TITLE</u>
HALFWAY	T. P. BEAN	Nov. 4, 1935	APACHE	U
SAN FRANCISCO	E.S. ANDERSON	Nov. 4, 1935	APACHE	U
APACHE	E.S. ANDERSON	Nov. 4, 1935	APACHE	U
APACHE No. 1	E.S. ANDERSON	DEC. 19, 1938	APACHE	U
APACHE No. 2	T.P. BEAN AND E.S. ANDERSON	DEC. 19, 1938	APACHE	U
APACHE No. 3	DO"	D/O	APACHE	U
APACHE No. 4	DO"	D/O	APACHE	U
APACHE No. 5	DO"	D/O	APACHE	U
APACHE No. 15	DO"	D/O	APACHE	U

** Patented*

U = UNPATENTED

P = PATENTED

ABOUT 1956 WALLACK AND RIKER, LESSEES, INSTALLED A MOBILE DRY SCREENING PLANT AT THE CAMP BONITO AND RAN SEVERAL TRUCK LOADS OF VEIN ROCK FROM THE BUCKEYE STOPE AND HALFWAY DUMP, MAKING AN IRON CONCENTRATE, AND ~~AN~~ IRON-SILICATMIDDLING AND A CLEAN SILICA TAILING. A GRAB SAMPLE OF THE CONCENTRATE ASSAYED ON FEBRUARY 8, 1966, RETURNED:

GOLD 0.40 oz; SILVER 33.60 ozs; COPPER 0.30%; LEAD 8.80%

WALLACK AND RIKER OPERATED THE SCREENING PLANT FOR ONLY A BRIEF PERIOD AND ^{it} IS STILL ON THE CAMP BONITO CLAIM.

IT HAS BEEN PREVIOUSLY NOTED THAT FEW AUTHENTIC DATA ARE AVAILABLE ON PRODUCTION OR MINING IN THE PERIOD 1880-1933. SUBSEQUENT TO 1933 THE FOLLOWING REPORTS WERE PREPARED:

REPORT AND ASSAYS ON THE APACHE GROUP; RALPH L. MOTZ, MINING ENGINEER AND DEPUTY MINERAL SURVEYOR, BISBEE, ARIZONA; DECEMBER 11, 1935.

REPORT ON BUCKEYE AND SUNRISE GROUP; LESLE L. MOTZ, MINING ENGINEER, BISBEE, ARIZONA; FEBRUARY 29, 1936.

REPORT ON THE BUCKEYE AREA; E.D. NELSON, GENERAL MANAGER, MEXICAN COAL AND COKE COMPANY, LAS ESPERANZAS, COAHUILA, MEXICO; -- 1938.

REPORT ON APACHE AND BUCKEYE AREA (GENERAL); H.F. WILLIAMS; MARCH 11, 1949.

LETTER REPORT ON BUCKEYE AND APACHE; DONALD P. MCCARTHY, CONSULTING GEOLOGIST, MESA, ARIZONA; JUNE 22, 1960.

THE BUCKEYE VEIN; C.W. GABRIELSON, PHOENIX, ARIZONA; AUGUST 1960.

SUMMARY OF REPORT ON FLOATATION TESTS PREPARED BY THE COLLEGE OF MINES & METALLURGY, EL PASO, TEXAS; JANUARY 31, 1936.

VARIOUS NOTES BY FIELD ENGINEERS OF THE ARIZONA DEPARTMENT OF MINERAL RESOURCES AND ASSAY CERTIFICATES BY VARIOUS ASSAYERS.

COPIES OF ALL THE ABOVE NOTED DATA ARE IN POSSESSION OF THE WRITER.

It appears that no systematic ~~hydrofracturing~~ or other means have been accomplished in recent years. ~~property beyond those areas that have~~ actually been mined. There are no records of such to be found and the present owners (since 1939) know of none. There are no records of ~~any~~ core drilling ~~that may ever~~ having been done and so it is believed that ^{the property has never been subjected to a} systematic, thorough investigation.

ANALYSIS

ANALYSIS:

THE MINING CLAIMS OF THE BUCKEYE APACHE MINES COMPANY ARE ON THE STEEP SIDES AND RIDGES BETWEEN BUCKEYE, APACHE AND CEMENT CREEKS. MINE WORKINGS INCLUDE THE BUCKEYE STOPE ON THE PATENT CLAIM, TWO MINE SHAFTS ON THE HALFWAY CLAIM, AND THE APACHE SHAFT AND ~~THE~~ APACHE TUNNEL ON THE APACHE CLAIM.

THE PRINCIPAL GEOLOGICAL FORMATION ON THESE CLAIMS IS GRANITE CUT BY NUMEROUS DIKES OF DIORITE AND ANDESITE, AND BY VEINS OF QUARTZ. SEVERAL OF THESE VEINS ARE OF CONSIDERABLE SIZE, PARTICULARLY THE APACHE VEIN SYSTEM, THE BUCKEYE AND THE MOUNTAIN VIEW VEINS.

APACHE VEIN SYSTEM:

THIS VEIN OUTCROPPING ON THE WEST SIDE OF BUCKEYE CANYON ABOUT FOUR HUNDRED FEET ABOVE THE FLOOR OF THE CANYON HAS BEEN PROSPECTED BY THE HALFWAY SHAFT No. 1 AND THE HALFWAY SHAFT No. 2. R. L. MOTZ, IN HIS REPORT, STATED, ^{that} THE No. 1 SHAFT WAS AT LEAST 85 FEET DEEP, WAS SUNK ON THE VEIN, DIPPING 35 DEGREES AND THAT THE No. 2 SHAFT, 55 FEET DEEP, WAS ALSO SUNK ON THE VEIN. MOTZ SAMPLED THE HALFWAY SHAFT No. 1, BEGINNING AT A DEPTH OF 25 FEET, AT 5 FOOT INTERVALS TO THE BOTTOM. THE AVERAGE WIDTH OF THE SAMPLE CHANNEL WAS 48 INCHES AND ^{the} FIFTY FEET ^{sampled} AVERAGED 0.36 OUNCE GOLD AND 4.70 OUNCES SILVER. THE BOTTOM FIFTEEN FEET OF SHAFT No. 2, SAMPLED BY MOTZ FOR AN AVERAGE WIDTH OF 41 INCHES, AVERAGED 0.549 OUNCES GOLD AND 12.61 OUNCES SILVER PER TON.

→ (A)
THE APACHE SHAFT, ABOUT 1,400 FEET NORTHWEST OF THE HALFWAY No. 1 WAS SAMPLED BY R. L. MOTZ THROUGH A DEPTH OF 35 FEET. THE VEIN WIDTH AVERAGED 36 INCHES AND THE AVERAGE GRADE FOR THE 35 FEET WAS 0.747 OUNCES GOLD AND 12.93 OUNCES SILVER.

(B) The Apache Shaft, visited in 1966, was found filled with water almost to the collar. The Apache Tunnel, driven into the hill at the shaft collar, was open through its length of 35 feet. Samples collected from the mine dump and from the face of the tunnel were quartz with narrow veinlets ($\frac{1}{4}$ -inch) and small masses (1-inch) of pyrite, galena and occasional specks of chalcopyrite and sphalerite. Qualitative tests confirmed the presence of copper, zinc and lead but tests for tellurium were negative. ~~A general sample collected from the dump and the Apache Tunnel face assayed 2.15 oz gold and 2.0 oz silver.~~

No mine buildings nor mine equipment remain on the Halfway Claim. ~~However,~~ ^{but located} ~~but the Apache Claim has no buildings.~~ On the Apache Claim there is a belt driven, single stage, ^{straight} ~~straight~~ line air compressor, an air receiver and ^a gasoline engine (Fairbanks - Morse ?) all in seemingly ~~fair~~ fair condition. The machinery is housed in a corrugated iron building, in poor repair.

BUCKEYE STOPE AND VEIN:

THE BUCKEYE STOPE IS ON THE EAST SIDE OF BUCKEYE CANYON ABOUT 350 FEET ABOVE THE FLOOR OF THE CANYON AND ALMOST DIRECTLY OPPOSITE THE HALFWAY SHAFTS. THE BUCKEYE VEIN IS EXPOSED ON BOTH SIDES OF THE CANYON. ON THE WEST SIDE THE VEIN IS UNPROSPECTED SAVE FOR A FEW SHALLOW PITS AND CUTS, and ON THE EAST SIDE THE VEIN HAS BEEN DEVELOPED BY STOPING AND DRIFTING. THE VEIN IS EXPOSED FOR SEVERAL HUNDRED FEET AT THE STOPE ENTRANCE WHERE IT HAS A WESTERLY DIP OF TWENTY DEGREES AND IN THE MINED AREA HAS A THICKNESS VARYING FROM FOUR TO TEN FEET. THE STOPE COVERING AN AREA OF APPROXIMATELY 30,000 SQUARE FEET STANDS OPEN SUPPORTED BY SEVERAL IRREGULAR PILLARS OF ORE. THE STOPE WALLS AND ORE PILLARS WERE SAMPLED AND ASSAYED BY R. L. MOTZ WHO ALSO APPARENTLY PREPARED AN ASSAY MAP OF THE STOPE, ^{which is included in the appendix of this report.} THE WEIGHTED AVERAGE OF SIXTY NINE SAMPLES IS \$10.58 IN GOLD AND SILVER, THE ONLY METALS DETERMINED. THE ORE IS QUARTZ, IN PLACES HEAVILY IRON STAINED, WITH ASSOCIATED LEAD AND COPPER MINERALS. THE SOUTH END OF THE STOPE IS DEVELOPED BY SEVERAL HUNDRED FEET OF DRIFTING WITH NOTATIONS ON THE ASSAY MAP OF ORE IN THE WALLS AND ROOF AS WELL AS IN THE FLOOR.

THE BUCKEYE STOPE IS THE APPARENT LOCUS OF INTERSECTION OF THE BUCKEYE AND MOUNTAIN VIEW VEINS, BOTH FLAT VEINS WHICH CROSS AT LOW ANGLES. MINING WAS PERFORMED BY CAPTAIN TEVIS IN THE 80'S AND 90'S AND ORE PROCESSED IN HIS STAMP MILL. APPARENTLY NOTHING HAS BEEN DONE SINCE EXCEPT FOR SEVERAL SMALL LOTS REMOVED FOR MILLING TESTS.

TEVIS MINED ABOUT 10,000 TONS WHICH WAS MOVED OVER THE SURFACE TRAMROAD TO THE STAMP MILL WHICH WAS ON THE PRESENT CAMP BONITO CLAIM. ALTHOUGH NO FIGURES ARE AVAILABLE ON ~~X~~ ACTUAL PRODUCTION, THE MINED GRADE WAS PROBABLY \$10 TO \$15 PER TON ^{at that time,}

THE BUCKEYE STOPE, DURING TEVIS' TIME WAS REACHED BY PACK TRAILS
AND ORE WAS MOVED BY PACK ANIMALS, ^{to the trainroad,} BUCKEYE APACHE MINES COMPANY
INSTALLED A DOUBLE DRUM GASOLINE HOIST AND BUCKET LINE FROM THE
BOTTOM OF THE CANYON TO THE STOPE ENTRANCE DURING THE 1940'S.
THE HOIST AND PART OF THE CABLE WAY STILL REMAIN. *It is reported,*
however that no ore was ever actually mined with
this more recent installation.

ORE FROM THE BUCKEYE STOPE MINED BY TEVIS PRIOR TO 1900 WAS MILLED IN A 5-STAMP MILL WITH AMALGAMATION PLATES. IT IS NOT KNOWN DEFINITELY WHETHER THIS MILL CONTAINED EQUIPMENT FOR GRAVITY CONCENTRATION. NEITHER IS THERE ANY EVIDENCE THAT THE TAILINGS WERE TREATED ALTHOUGH THE ORE IS REPORTED AMENABLE TO CYANIDATION.

NELSON IN HIS REPORT REFERS TO FLOTATION TESTS MADE ON ORE FROM THE APACHE SHAFT BY THE COLLEGE OF MINES AND METALLURGY (NOW TEXAS WESTERN), EL PASO, TEXAS, JANUARY 31, 1936, AND QUOTES THE SUMMARY AS FOLLOWS:

"FLOTATION TESTS ON APACHE SHAFT ORE. THIS IS UNUSUALLY GOOD FLOTATION ORE, THE HIGH RECOVERIES OBTAINED BEING MUCH BETTER THAN CAN USUALLY BE EXPECTED.

WHILE THE ORE IS HARD, THE VALUES SHATTER OUT WHILE THE ORE IS STILL COARSE, SO THAT GRINDING COSTS WILL BE ABOUT NORMAL.

THE AMOUNT OF REAGENTS REQUIRED IS A MINIMUM, BOTH IN QUALITY AND KINDS, XANTHATE AND PINE OIL BEING ALL THAT IS NECESSARY. THIRTEEN TONS CONCENTRATE INTO ONE, THUS DIVIDING HAULAGE, FREIGHT AND SMELTER CHARGES AND TREATMENTS BY THIRTEEN.

THE VALUE OF THE (HEAD) SAMPLE TESTED IS Au 0.32 ozs., Ag 5.64 ozs. AND Pb 1.95%

THE GRADE OF CONCENTRATE SHIPPED, ASSUMING THAT THE ORE MILLED IS REPRESENTED BY THE SAMPLE TESTED, WILL BE:

Au - 3.98 oz.
Ag - 67.8 oz.
Pb - 24.6%
Cu - 1.32%

THE RECOVERY IS:

GOLD - 98.7%
SILVER - 96.1%
LEAD - 99.0%

THE VALUE OF A TON OF CONCENTRATE IS	\$ 192.67
HAULAGE, FREIGHT AND SMELTER CHARGES	14.00
RETURNS PER TON OF CONCENTRATE	\$ 178.67
RETURN PER TON OF ORE MILLED	13.85

OUT OF THIS WILL BE PAID MINING AND MILLING CHARGES."

DATE: JANUARY 31, 1936, EL PASO, TEXAS.

ASSAYS IN REPORT BY R.L. MOTZ, DECEMBER 11, 1935

	<u>SAMPLE No.</u>	<u>SAMPLE WIDTH INCHES</u>	<u>AU OZS. PER TON</u>	<u>AG OZS. PER TON</u>
APACHE SHAFT	1	33	0.36	5.7
	2	34	0.42	6.1
	3	15	1.68	15.2
	4	35	1.72	29.2
	5	36	0.49	8.4
	6	37	0.67	8.9
	7	38	0.28	5.2
	8	<u>60</u>	<u>0.84</u>	<u>20.8</u>
	AVERAGE	36	0.7466	12.93
			\$26.13	\$16.68
APACHE TUNNEL	11	53	0.86	10.4
	12	54	0.32	2.3
	13	<u>55</u>	<u>0.67</u>	<u>7.6</u>
	AVERAGE	54	0.6158	6.75
		162	9977	109340
			# 21.55	7.8.68
HALFWAY SHAFT No. 1	17	43	0.18	1.8
	18	44	0.16	3.4
	19	45	0.12	2.0
	20	46	0.21	2.4
	21	47	0.27	2.7
	22	48	0.48	6.9
	23	49	0.44	3.4
	24	50	0.18	2.8
	25	51	0.56	6.1
	26	52	0.37	5.2
	27	<u>56</u>	<u>0.85</u>	<u>12.9</u>
	AVERAGE	48.27	0.3606	4.70
		531	191.53	249600
			#12.62	8.6.68

ASSAYS IN REPORT BY R.L. MOTZ, DECEMBER 11, 1935
(CONTINUED)

	<u>SAMPLE No.</u>	<u>SAMPLE WIDTH INCHES</u>	<u>AU ozs. PER TON</u>	<u>AG ozs. PER TON</u>
HALFWAY SHAFT No. 2	28	42	0.41	12.5
	29	41	0.72	13.7
	30	<u>40</u>	<u>0.52</u>	<u>11.6</u>
	AVERAGE	41	0.549	12.61
		123	6754	1550.70
			\$19.22	\$ 16.22

MOTZ CUT 30 SAMPLES.

ORE RESERVES:

THE U. S. BUREAU OF MINES AND THE U. S. GEOLOGICAL SURVEY HAVE AGREED UPON AND DEFINED THE FOLLOWING TERMS TO SIGNIFY RELATIVE DEPENDABILITY OF INFORMATION:

" 'MEASURED ORE' (POSITIVE ORE) IS ORE FOR WHICH TONNAGE IS COMPUTED FROM DIMENSIONS REVEALED IN OUTCROPS, TRENCHES, WORKINGS AND DRILL HOLES AND FOR WHICH THE GRADE IS COMPUTED FROM THE RESULTS OF DETAILED SAMPLING. THE SITES FOR INSPECTION, SAMPLING, AND MEASUREMENT ARE SO CLOSELY SPACED AND THE GEOLOGICAL CHARACTER IS SO WELL DEFINED THAT THE SIZE, SHAPE AND MINERAL CONTENT ARE WELL ESTABLISHED.

" 'INDICATED ORE' (PROBABLE ORE) IS ORE FOR WHICH TONNAGE AND GRADE ARE COMPUTED PARTLY FROM SPECIFIC MEASUREMENTS, SAMPLES OR PRODUCTION DATA AND PARTLY FROM PROJECTION FOR A REASONABLE DISTANCE ON GEOLOGICAL EVIDENCE.

" 'INFERRED ORE' (POSSIBLE ORE) IS ORE FOR WHICH QUANTITATIVE ESTIMATES ARE BASED LARGELY ON BROAD KNOWLEDGE OF THE GEOLOGIC CHARACTER OF THE DEPOSIT AND FOR WHICH THERE ARE FEW, IF ANY, SAMPLES OR MEASUREMENTS. THE ESTIMATES ARE BASED ON AN ASSUMED CONTINUITY OR REPETITION FOR WHICH THERE IS GEOLOGIC EVIDENCE; THIS EVIDENCE MAY INCLUDE COMPARISON WITH DEPOSITS OF SIMILAR TYPE....."

THE DEFINITION OF "ORE" IS " A NATURAL AGGREGATION OF ONE OR MORE MINERALS FROM WHICH USEFUL METALS MAY BE PROFITABLY EXTRACTED."

USING THESE DEFINITIONS IT IS FOUND THAT THE BUCKEYE APACHE MINES COMPANY DOES NOT HAVE ANY "MEASURED" NOR ANY "INDICATED ORE" BUT HAS CERTAIN AREAS WHICH SHOULD BE EXPLORED TO DETERMINE WHETHER ORE IS PRESENT. FAVORABLE AREAS FOR SUCH INVESTIGATION INCLUDE:

1. A small area outlined in the map section 1, 2, 3, 4.

My opinion of the mining property of the Buckeye Apache Mining Company has been influenced by visits to the area on four separate occasions, by the research and review of the history and data available on the properties and by personal acquaintance with individuals familiar with or associated with the company. Based upon these factors I believe the property will justify an exploration program,

MENT IS MADE ASSUMING THAT IT WILL BE DESIRED TO BEGIN MINING OPERATIONS AS SOON AS A SUFFICIENT QUANTITY AND QUALITY OF MEASURED ORE IS ESTABLISHED. HOWEVER, XX IF IT IS DESIRED TO MERELY DEVELOP ORE RESERVES FOR OTHERS TO MINE, THE SEQUENCE OF EXPLORATION DOES NOT HOLD SUCH A MATTER OF IMPORTANCE.

IN MY OPINION EACH OF THE FOLLOWING AREAS, IN ORDER OF PRIORITY, SHOULD BE EXPLORED:

1. THE BUCKEYE STOPE AND BUCKEYE VEIN ON THE EAST SIDE OF THE CANYON.
2. THE HALFWAY SHAFTS AND VEIN OUTCROP ON THE HALFWAY CLAIM.
3. APACHE SHAFT AND APACHE TUNNEL AND VEIN OUTCROP, INCLUDING THE AREA BETWEEN THE HALFWAY AND APACHE SHAFTS.
4. BUCKEYE VEIN SYSTEM ON THE WEST SIDE OF BUCKEYE CANYON. *near canyon floor.*
5. *Other areas,* OLD DUMPS AND WORKINGS, INCLUDING THE SUNRISE GROUP AND THE FOUR PATENTED CLAIMS BELONGING TO THE BUCKEYE APACHE MINES COMPANY.

→ These shafts, visited by the writer in 1965 and in 1966, were found filled with water. Both shafts were sunk on the vein and are apparently in good ground, standing open with a minimum amount of timber. ~~mine~~ Material ^{on} ~~at~~ the mine dumps is quartz with small masses and veinlets of iron and lead sulphides.

KNOWING THAT THE MINERAL HE SEEKS IS PRESENT. THE MORE POSITIVE FACTS WITH WHICH ~~XXX~~ HE HAS TO WORK, THE BETTER THE PROSPECT. IT IS UPON THIS BASIS THAT THE ABOVE RECOMMENDATION IS MADE.

IF SUFFICIENT ORE IS MEASURED TO BEGIN A PROFITABLE MINING OPERATION IN THE BUCKEYE STOPE, THE REMAINING AREAS CAN BE EXPLORED AS TIME AND MONEY PERMITS. IF EXPLORATION OF THE BUCKEYE STOPE DOES NOT PROVE SATISFACTORY, THE NEXT AREA NOTED ABOVE SHOULD BE EXPLORED AND MINING BEGUN IF THE MEASURED ORE IS PROVEN TO BE SATISFACTORY; AND THE PROCESS CONTINUED UNTIL THE PROPERTY IS DEVELOPED OR PROVEN OUT.

BUILDING OF ROADS AND OTHER ~~X~~ EXPENDITURES SHOULD BE KEPT TO A MINIMUM DURING THE EXPLORATION PHASE. MONEY SHOULD NOT BE SPENT WITH THE ANTICIPATION OF RESUMING MINING OPERATIONS UNTIL SUFFICIENT ORE HAS BEEN ~~XXX~~ BLOCKED OUT. EFFORTS SHOULD BE CONCENTRATED IN FINDING ORE IN ONE AREA AT A TIME WITH A MINIMUM CREW AND CLOSE SUPERVISION.

A BUDGET SHOULD BE SET FOR EXPLORING EACH OF THE ~~FOUR~~ AREAS, *noted.* IN EACH CASE IF THE MONEY ALLOWED IN THE BUDGET HAS NOT BEEN SUFFICIENT TO DEVELOP A CONSIDERABLE QUANTITY OF INDICATED ORE, A HARD LOOK SHOULD BE TAKEN AT THE RESULTS BEFORE ADDITIONAL MONEY IS ALLOCATED. THE FOLLOWING IS AN ESTIMATE OF THE AMOUNT OF MONEY BELIEVED TO BE NECESSARY TO PERFORM A REASONABLY COMPLETE PRELIMINARY INVESTIGATION RELATIVE TO EACH OF THE AREAS OUTLINED ABOVE.

1. THE BUCKEYE STOPE AND BUCKEYE VEIN ON THE EAST SIDE
OF THE CANYON:

more
area

~~PREPARE CAMP BONITO FOR HABITATION.~~ ~~\$1000.00~~
PREPARE SITE AS NECESSARY FOR EQUIPMENT
INSTALLATION AND OPERATION. 2500.00
REHABILITATE THE NECESSARY AREAS IN AND
AROUND THE STOPE TO FACILITATE THE PRE-
LIMINARY DRILLING AND SAMPLING PROGRAM 2500.00
DIAMOND CORE DRILLING OF 1000 TO 1500
LINEAL FEET OF HOLE IN AREAS INDICATING
THE HIGHEST ASSAY VALUES. 6000.00 TO 9000.00
PERCUSSION DRILLING OF 1000 TO 1500
LINEAL FEET OF HOLE IN VARIOUS AREAS
WITHIN THE STOPE. 3000.00 TO 4500.00
ASSAYING AND ENGINEERING CONSULTATION . . . 2500.00

more open

MAXIMUM TOTAL \$22,000.00

2. THE HALFWAY SHAFTS AND VEIN OUTCROP ON THE HALFWAY
CLAIM. *

more
area

PREPARE SITE AS NECESSARY FOR EQUIPMENT
INSTALLATION AND OPERATION. \$1500.00
REHABILITATE THE NECESSARY AREAS IN AND
AROUND THE SHAFTS TO FACILITATE THE
PRELIMINARY DRILLING AND SAMPLING
PROGRAM 2000.00
DIAMOND CORE DRILLING OF 500 TO 1000
LINEAL FEET OF HOLE 3500.00 TO 7000.00
PERCUSSION DRILLING OF 500 TO 1000
LINEAL FEET OF HOLE 1500.00 TO 3000.00
ASSAYING AND ENGINEERING CONSULTATION . . . 1500.00

MAXIMUM TOTAL \$13,500.00

3. APACHE SHAFT AND APACHE TUNNEL AND VEIN OUTCROP,
INCLUDING THE AREA BETWEEN THE HALFWAY AND APACHE
SHAFTS.

PREPARE SITE AS NECESSARY FOR EQUIPMENT
INSTALLATION AND OPERATION. \$2500.00

REHABILITATE THE NECESSARY AREAS IN AND
AROUND THE SHAFT AND TUNNEL TO FACILI-
TATE THE PRELIMINARY DRILLING AND
SAMPLING PROGRAM. 2000.00

DIAMOND CORE DRILLING AND PERCUSSION
DRILLING OF 500 TO 1000 LINEAL FEET
OF HOLE 3500.00 TO 7000.00

ASSAYING AND ENGINEERING CONSULTATION . . . 1500.00

MAXIMUM TOTAL ~~\$9500.00~~
13,000⁰⁰

4. BUCKEYE VEIN SYSTEM ON THE WEST SIDE OF BUCKEYE
CANYON ~~near~~ *near canyon floor.*

*Prepare site as necessary for equipment
installation and operation - - - - - 3000.00*

Diamond core drilling and percussion - copy above - 3500.00 to 7000.00

Assaying - copy above - 1500.00

XXXXXXXXXXXXXXXXXXXXXXXXXXXX

11,500⁰⁰

47

- other areas,*
5. ~~OLD~~ DUMPS AND WORKINGS, INCLUDING THE SUNRISE GROUP AND THE FOUR PATENTED CLAIMS BELONGING TO THE BUCKEYE APACHE MINES COMPANY.

Geology, engineering & assaying - - - - - 2500.00

Note:

IF THE RESULTS OF THE DRILLING PROGRAM REFERRED TO ABOVE IS DETERMINED TO BE SATISFACTORY, THEN ADDITIONAL EXPLORATION WORK SHOULD BE OUTLINED IN AN EFFORT TO ESTABLISH AN ORE BODY OF SUFFICIENT SIZE TO JUSTIFY MINING. ON THE OTHERHAND RESULTS COULD BE DISCOURAGING ENOUGH, EVEN IN THE EARLY STAGES OF THE PROGRAM, TO WARRANT WITHDRAWAL FROM AN AREA WITHOUT SPENDING THE BUDGETED MONEY.

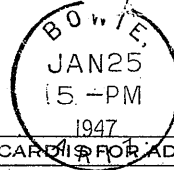
DRIFTING OR OTHER FORMS OF MINING FOR PROSPECT PURPOSES CANNOT BE JUSTIFIED AT THIS STAGE. MUCH MORE INFORMATION CAN BE OBTAINED WITH TODAY'S DOLLAR UTILIZING PROPER DRILLING PROCEDURES STRATEGICALLY ORIENTED TO THE PROSPECT. IT IS MY OPINION THAT MODERATE PRELIMINARY INVESTIGATION PROGRAMS, WITHIN THE BUDGETS AS OUTLINED ABOVE, WILL BE SUFFICIENT TO INDICATE THE PRESENCE OF A REASONABLE AMOUNT OF ORE. FURTHER EXPENSES NECESSARY ~~XX~~ TO DEVELOP A FEASIBLE AMOUNT OF MEASURED ORE CAN ONLY BE ESTIMATED AFTER THE PRELIMINARY DATA IS COMPILED, BUT SHOULD NOT PROVE EXCESSIVE.

See Pg. 17

Note: ~~After~~ budget for ~~2~~ ^{also} ~~more~~ should be included in the event it is desirable to prepare Camp Bonito for habitation.

It is understood that ~~discussion~~ the Buckeye Venn system on the west side ^{and near the floor} of Buckeye Canyon ~~near the floor of~~ is regarded by some members of the Buckeye Apache Mining Co. as being an extremely favorable prospect. Due to an almost complete lack ^{of information on} ~~of knowledge of~~ the particular prospect it is my opinion that other areas should be ~~explored~~ ^{explored} first and that money should be budgeted for this ^{area} ~~prospect~~ only in the event that ~~favorable~~ one is encountered in the first three prospects.

Other ^{work} ~~workings~~ and claims unknown on the Buckeye Apache properties; Other areas including old workings, which little or no knowledge is known by present day personnel should, ^{eventually} be explored. It is my opinion, however, that this approach should be made as a ~~last resort or after~~ explorations should ~~follow~~ ^{await} the findings of 1, 2 and 3 above. The preliminary exploration should consist of ~~something~~ ^{and assaying} ~~prior to~~ geology, engineering and assaying



THIS SIDE OF CARD IS FOR ADDRESS

Roger I.C. Manning
Department of Mineral Resources
304 Arizona Title Bldg.
128 North 1st Ave.
Phoenix, Arizona.

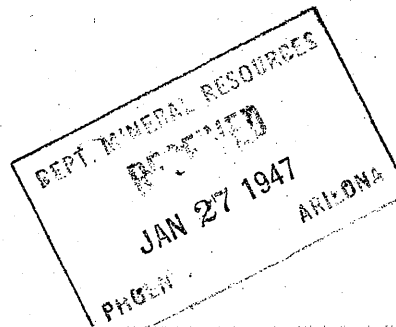
1-23-47.

Please send me a copy of the latest Owners Mine Report on the Buckeye-Apache Mine, in the Tevis Mining District of the Dos Cabezas Mts; also a copy of Mr.E.D.Nelson's report on the above property. Thank you very much.

C.W.Benson

P.O.Box #612

Bowie, Ariz.



Date 8 Feb 1966

**VALUES
Latest Quotation**

THIS CERTIFIES
Samples submitted for assay
contain as follows:

MR. W. F. CRAWFORD
2525 E. INDIAN SCHOOL ROAD
PHOENIX

815 NORTH FIRST STREET
Phone: 253-4001

Arizona Asay Office

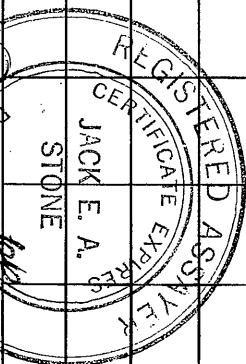
Phoenix, Arizona 85001
P. O. BOX 1148

Short Ton	2000 Lbs
Short Ton Unit	20 Lbs.
Long Ton	2240 Lbs.
Long Ton Unit	22.4 Lbs.

MARKS	SILVER PER TON	VALUE PER TON	GOLD PER TON	VALUE PER TON	TOTAL VALUE PER TON of Gold & Silver
	Ozs. Tenths		Ozs. 100ths		
#1	4.0	\$5.00	.04	\$1.40	
#2	.7	\$.87	.02	\$.70	
#3	35.6	\$42.00	.40	\$14.00	0.30 8.80
#4	.4	\$.50	.02	\$.70	

COPPER LEAD PERCENTAGE

REMARKS



Charges \$ **19.50 PAID**

Assayer.

ANDY CHUKA, PRINT

~~JACK STONE REG. NO. 5479~~

8 FEB 1966

8 FEB 1966

Date.....

Date.....

Date.....

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Date.....

815 NORTH FIRST STREET

Phone: 253-4001

MR. W. F. CRAWFORD
2525 E. INDIAN SCHOOL ROAD
PHOENIX 85016

Short Ton	2000 lbs.
Short Ton Unit	20 lbs.
Long Ton	2240 lbs.
Long Ton Unit	22.4 lbs.

Phoenix, Arizona 85001
P. O. BOX 1148

MARKS	SILVER		VALUE PER TON	GOLD		VALUE PER TON	TOTAL VALUE PER TON of Gold & Silver	PERCENTAGE		REMARKS
	Ozs.	Tenths		Ozs.	100ths			COPPER	LEAD	
#1	4.0		\$5.00	.04	\$1.40					14.04 per cent
#2	.7		\$.87	.02	\$.70					Assayed by C. H. Smith
#3	33.6		\$42.00	.40	\$14.00			0.30	8.80	
#4	.4		\$.50	.02	\$.70					Buried at well

REGISTERED ASSAYER
CERTIFICATE EXPIRES
JACK E. A.
STONE

Charges \$ 19.50 PAID

ANDY CHUKA, PRINT

Assayer.

~~JACK STONE REG. NO. 5479~~

PATENTS

1/11/66

Seeds of Mines Cockin Co.

Lincoln Park Millsite - Virginia Chief Mining & Milling Co.
 S.L.O. # 22730 Apr 5, 1893 34-385 5117
 1601955 BB 385-387

Selma Chief Vir Chief M & M Co.
 S.L.O. # 22736 Apr 5 1893 34-378 5114
 Min Cert 494 378-380

State of Iowa Lode Vir Chief M & M Co.
 496 & Mill site claim Apr 5 1893 34-383 5116
 #22737 383-385

State of Missouri Lode Vir Chief M & M Co.
 497 & mill site Apr 5 1893 34-387 5118
 #22738 387-390

Virginia Vir Chief M & M Co.
 495 June 20 1893 34-381 5115
 23140 381-383

LEASED

1/11/66

Record of Mines

Bk - Page

Apache	72-236
Patent	72-121
Mountain View	72-196
Half Way	72-238
San Francisco	72-239

Camp Bonito	73-469
Apache No 1 Lode	73-358
- 2	73-359
- 3	73-360
- 4	73-361
- 5	73-362
- 15	73-372

Jack Stone
815 N. FIRST ST.
Phoenix Arizona

1. White Quartz	4 ⁰⁰	0 ⁰⁴ oz 4 ⁰⁰ oz Gold, silver, lead
2. Apache 3 Adit	4 ⁰⁰	0 ⁰² oz 0 ⁰² oz Gold, silver
3. Concentrate	7 ⁵⁰	0 ⁴⁰ oz 33 ⁶⁰ oz 0 ³⁰ % 88 ⁰⁰ % Gold, silver, copper & lead
4. Dump at well	4 ⁰⁰ <hr/> 19 ⁵⁰	0 ⁰² oz 0 ⁰⁴ oz Gold, silver

We will pick up samples at the time we
pick up the test results.

W. P. CRAWFORD
2525 E. INDIAN SCHOOL RD.
PHOENIX, ARIZONA 85016

LABORATORY WORK SHEET

19004-70 13/24/66

Client Crawford

Lab. No. _____

Address _____

Job. No. _____

Project _____

TESTS REQ'D:

Location _____

Source of Sample _____

AGGREGATE	SOIL	ASPHALT	OTHER
Crush _____	Sieve _____	Percent _____	Comp. _____
Sieve (Rec'd) <u>✓</u>	P.I. _____	Sieve _____	Dim. _____
Crushed _____	V.C. _____	Density _____	Unit wt. _____
P.I. _____	Proctor _____	Design _____	Moisture _____
Abrasion _____	Type _____	Stability _____	_____
Soundness _____	Moisture _____	_____	_____
Sp. Gr. _____	Hydro. _____	_____	_____
Absorp. _____	_____	_____	_____

Material Concentrate ^{#2} 3

Req'd By _____ Date 2-22-66

Sam'd By _____ Date _____

Sub'd By _____ Date _____

Sieve	Wt. Ret.	% Ret.	% Pass	Specs.
3				
2				
1 1/2				
1				
3/4				
1/2				
3/8				
1/4, 3				
#4			<u>100</u>	
Ret. #4		W B W (W) _____		
Pass W		W B W (D) _____		
#4 D		W A W <u>303</u>		
Total		Elut. _____		
8	<u>7</u>	<u>2</u>	<u>98</u>	
10	<u>9</u>	<u>3</u>	<u>95</u>	
16	<u>45</u>	<u>15</u>	<u>80</u>	
30	<u>109</u>	<u>36</u>	<u>44</u>	
40	<u>40</u>	<u>13</u>	<u>31</u>	
50	<u>43</u>	<u>14</u>	<u>17</u>	
100	<u>41</u>	<u>14</u>	<u>3</u>	
200	<u>7</u>	<u>2</u>	<u>1</u>	
Pass 200	<u>2</u>	<u>1</u>		
Total	<u>303</u>	<u>100</u>		

Liquid Limit

Taps	_____
Container	_____
Wet Wt. and Cont.	_____
Dry Wt. and Cont.	_____
Wt. Water	= _____
Dry Wt. and Cont.	_____
Wt. Cont.	_____
Wt. Dry Soil	= _____
$\frac{\text{Wt. Water} \times 100}{\text{Wt. Dry Soil}}$	= _____
Plastic Limit:	
Container	_____
Wet Wt. and Cont.	_____
Dry Wt. and Cont.	_____
Wt. Water	= _____
Dry Wt. and Cont.	_____
Wt. Cont.	_____
Wt. Dry Soil	= _____
$\frac{\text{Wt. Water} \times 100}{\text{Wt. Dry Soil}}$	= _____

L.L. — P.L. = P.I. _____
 Classification = P.R.A. _____
 Moisture Content, % _____ F.M. _____
 Sp. Gr. _____ Absorption (%) _____
 Unit Wt. _____ Dry Rodded _____
 _____ Loose _____
 L. A. Abrasion (% of Wear) _____
 Grading _____ Rev. _____
 Soundness (% Loss) _____ Organic Imp. _____
 Bit. Binder Req'd. (%) _____ Type _____
 Bit. Content (% of) Dry Aggregate _____ Total Sample _____

Engineers Testing Laboratories, Inc.

Buckeye Apache Mines Co.
c/o G. P. Berry & Co.
14 A. West Camelback Road
Phoenix Arizona 850

Attn: Jesse W. Angle, President

Herein submitted is a report on the properties
of the Buckeye ~~Mines~~ Apache Mines Co. ~~now~~ in
the Dos Cabezas Mountains, Cochise County
Arizona.

~~Upon your request~~
~~the report has been prepared from data prepared~~
~~from ^{all} ~~only~~ available sources and ^{from} observations~~
~~made during my visits to the property.~~

Upon your request, I have ~~reviewed the~~ ~~re-~~
visited the property and reviewed the workings
and ^{researched} ~~obtained~~ ^{all} data available ~~for review on~~
relating to past operations and reportings.

The results of my efforts ^{leading to} ~~and the~~ conclusions
and recommendations ~~based thereon~~ are
~~included herein.~~ regarding future development
of the property are included herein.

Resp sub,

WPC

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ASSAY MAP	
CLAIM MAP	
AERIAL MAP	

(1)

BUCKEYE APACHE MINES COMPANY

The property of the Buckeye Apache Mines Company is situated in the Tevis Mining District, Cochise County, Arizona, about twelve miles south-west of Bowie, in Buckeye Canyon at an elevation of about 5,600 feet. The region is very sparsely populated and the topography is extremely rugged with narrow ridges separated by deep and steep sided canyons subjected to flash floods during the rainy season.

The early history of mining in the Tevis District is obscure. The District was named for Captain James H. Tevis, a somewhat legendary character who ~~prospected~~ and operated a trading post ~~and~~ ^{prospected} in the Dos Cabezas Mountains in the vicinity of Buckeye Canyon prior to the Civil War. After serving in the Confederate Army he returned to Arizona Territory and homesteaded where the town of Bowie now stands. With Texas capital he formed and operated a mining company in 1880, locating fifty mining claims in Buckeye and Cement Canyons, erecting a stamp-mill on the present Campo Bonito claim, building a tramroad and pack-trails for the movement of men, supplies and ore. Mining and milling operations were seriously hindered by roving bands of renegade Apache Indians and all work ceased in 1883 due to Indian attacks, high operating costs and the loss of the Company funds. Tevis reorganized and resumed operations early in the nineties and work continued intermittently until his death in 1905.

The District was inactive and few data are available for the period 1905-1933. The increase in the price of gold in 1933 and 1934 aroused interest in the area resulting in claim relocation and staking by Thomas P. Bean and E. S. Anderson.

2

Anderson and Bean held twenty or more claims, purchasing seven patented claims at a Tax Sales in 1935 and staking the remainder. They mined a small tonnage of ore, working high grade stringers and sold their property in ~~1938~~ 1939 to the present owner, the Buckeye Apache Mines Company.

1939

The Buckeye Apache Mines Company established a camp on the ~~Camp~~ ^{created} Bonite Claim, ~~building~~ two large Quanset buildings as dormitories, a frame mess hall, a lighting plant, and sunk a well for domestic water. ^{constructed} Jeep roads were made from the camp to the principal workings. ~~but at present~~ The road from the Camp to the Buckeye Stope, a distance of about one and one-half miles ~~was~~ was completely destroyed by a flash flood in 1965. ~~Lessees~~ ~~erected a dry crushing and screening plant 10 tons capacity per eight hours at the Camp and ran test runs on ore from the Buckeye Stope, making~~

The Buckeye Apache Mines Company in 1947 owned thirty mining claims (patented and unpatented) in three ~~different~~ but contiguous groups; the Sunrise, the Buckeye and the Apache . Claims in the Sunrise group were relinquished and ^{17 claims} ~~at present~~ the Company owns sixteen claims ^{listed below:}

<u>Name</u>	<u>Locator</u>	<u>Date Located</u>	<u>Group</u> <u>Camp Site</u>	<u>Title</u>
Camp Barto	Buckeye Apache Mines Company	Oct. 12, 1935		U
Patent Petart	THAS P. Bean E. S. Anderson	April 1, 1935	Buckeye	U
Mountain View	Ditto	July 26, 1935	Ditto	U
Silver Chief	Virginia Chief Mining & Milling Co.	Receiver's Receipt Oct. 23, 1891	Ditto	P
Virginia Lode	Ditto	Receiver's Receipt Ditto	Ditto	P
State of Iowa	Ditto	Receiver's Receipt Ditto	Ditto	P
State of Missouri	Ditto	Receiver's Receipt Ditto	Ditto	P
Halfway	T. P. Bean	Nov. 4, 1935	Apache	U
Salt Francisco	E. S. Anderson	Nov. 4, 1935	✓	U
Apache	E. S. Anderson	Nov. 4, 1935	✓	U
Apache No. 1	E. S. Anderson	Dec. 13, 1938	✓	U
Apache No. 2	T. P. Bean and E. S. Anderson	Ditto	✓	U
Apache No. 3	Ditto	Ditto	✓	U
Apache No. 4	Ditto	Ditto	✓	U
Apache No. 5	Ditto	Ditto	✓	U
Apache No. 15	Ditto	Ditto	✓	U

U - unprotected
P - patented

(a)

PREVIOUS REPORTS

(4)

It has been previously noted that few authentic data are available on production or mining in the period 1880-1933.

Subsequent to 1933 the following reports were prepared:

Report and assays, on ^{the} Apache Group; Ralph L. Mott, Mining Engineer and Deputy Mineral Surveyor, Bisbee, Arizona; December 11, 1935

Report on Buckeye and Surprise Group; Leslie L. Mott, Mining Engineer, Bisbee, Arizona; February 29, 1936

Report on ^{the} Buckeye Group; E. P. Nelson, General Manager, Mexican Coal and Coke Company, Los Esperanzos, Coahuila, Mexico.
— 1938

Report on Apache and Buckeye Area (General) H. F. Williams.
March 11, 1949

Letter Report on Buckeye and Apache Donald P. McCortley Consulting Geologist, Mesa, Ariz., June 22, 1960.

The Buckeye Vein C. W.,
Gabrielson, Phoenix Arizona.
August 1960.

⑩

Various

~~In~~ addition to these reports,
the notes by Field Engineers of the
Arizona Department of Mineral
Resources and assay certificates
by various assayers, are available.

Copies of all the above noted data are in
possession of the writer.

⑪ Summary of report on floatation tests prepared by the College
of Mines & Metallurgy, El Paso Texas, January 31, 1936.

(6)

ANALYSIS

The mining claims of the Buckeye Apache Mines Company are on the steep sides and ridges ~~between~~ between Buckeye , Apache and Cement Creeks. Mine workings include the Buckeye Stope on the Patent Claim; two ~~minewshafts on the~~ minewshafts on the Halfway Claim and the Apache Shaft and the Apache Tunnel on the Apache Claim.

The principal geological formation on these claims is granite cut by numerous dikes of ~~granite and diorite~~ diorite and andesite. and by veins of quartz. Several of these veins are of considerable size , particularly the Apache vein system, the Buckeye and the Mountain View veins.

Apache Vein System:

This vein ~~outcrops~~ ^{outcropping} on the west side of Buckeye Canyon about four hundred feet above the floor of the canyon ~~has~~ has been prospected by the Halfway Shaft No. 1 and the Halfway Shaft No. 2. ^{in his report,} Motz stated the No. 1 Shaft was at least 85 feet deep, was sunk on the vein, dipping 35 degrees ^{and that}; the No. 2 Shaft ~~was~~ 55 feet deep was also sunk on the vein. ^{sampled by Motz for an} Motz sampled the bottom fifteen feet of Shaft No. 2. The average of the width sampled was 41 inches averaging 0.549 ounces gold and 12.61 ounces silver per ton. ^{Motz} He sampled the Halfway Shaft No. 1, beginning at a depth of 25 feet, at 5-foot intervals to the bottom. The average width of the sample channel was 48 inches and fifty feet averaged 0.36 ounce gold and 4.70 ounces silver.

The Apache Shaft, about 1,400 feet North-west of the Halfway No. 1 was sampled by Motz through a depth of 35 feet . The vein width averaged 36 inches and the average grade for the 35 feet was 0.747 ounce gold and 12.93 ounce silver.

^{The Apache} The Apache Tunnel, near the collar of the Apache Shaft, was sampled by Motz ^{yielding} ~~yielding~~ an average of 0.616 ounce gold ~~and~~ ^{and}

(7)

6.75 ounces silver with an average vein width of 54 inches and a length of fifteen feet.

Access to the Halfway and Apache workings was over several miles of rough pack trails. ~~Anderson and Bean performed~~ Very little development work was performed on these claims after ~~the~~ Motz report in December, 1935. A jeep road was bull-dozed to the Halfway shafts ~~the~~ during the ^{1950's} 1950's and several small truck loads of ore from surface ore piles hauled to the Campo Bonito. No underground work was undertaken and in February, 1966 neither of the shafts could be entered.

Buckeye Stope and Vein

The Buckeye Stope is on the east side of Buckeye Canyon about 350 feet above the floor of the Canyon and almost directly opposite the Halfway. The Buckeye vein is exposed on both sides of the Canyon; on the west side the vein is unprospected save for a few shallow pits and cuts; on the east side it has been developed by stoping and drifting. The vein is exposed for several hundred feet at the stope entrance where it has a westerly dip of twenty degrees and in the mined area has a thickness varying from four to ten feet. The stope ^{covering an} ~~about a~~ area of approximately 30,000 square feet stands open supported by several irregular pillars of ore. The stope walls and ore pillars were sampled and assayed by Ralph Motz who also prepared an assay map. The weighted average of sixty nine samples is \$10.58 in gold and silver; ~~and~~ copper, lead, zinc, iron and silica were not determined. The ore is quartz, in places heavily iron stained, with associated lead and copper minerals. The south end of the stope is developed by several hundred feet of drifting with notations on the assay map of ore in the walls and roof, and in the floor.

The Buckeye Stope is the locus ^{apparent} of intersection of the Buckeye and Mountain View veins; ^{but} flat veins which cross at low angles. Mining was performed by Captain Tevis in the 80's and 90's and ore processed in his stamp mill. Apparently nothing has been done since ~~Tevis~~ except for ~~Arthur, Samuel, and Frank~~ several small lots removed for milling tests.

Tevis ^{mined} ~~production~~ was about 10,000 tons which was moved over the surface tramroad to the stamp mill ~~on the approximately 6000 ft. level of which nothing remains except~~ which was on the present Campo Bonito claim. Although no figures are available on the ^{actual} production, the mined grade was probably \$10 - \$15 per ton.

The Buckeye Stope, during Tevis' time was reached by pack trails and ore was moved by pack animals. Buckeye ^{Apache} Mines Company ¹⁷ installed a double drum gasoline hoist and bucket line from the bottom of the Canyon to the stope entrance ^{during the 1940's.}; the hoist and part of the cable way still remain.

the 40's

Ore Reserves:

The ~~Buckeye Apache Mines Company~~ ^{known} does not have ore reserves on any of its claims. The definition of "ore" is "a natural aggregation of one or more minerals from which useful metals may be profitably extracted." The U.S. Bureau of Mines and the U.S. Geological Survey have agreed upon and defined the following terms to signify relative dependability of information:

" ' Measured ore' (positive ore) is ore for which tonnage is computed from dimensions revealed in outcrops, trenches, workings and drill holes and for which the grade is computed from the results of detailed sampling. The sites for inspection, sampling, and measurement are so closely spaced and the geological character is so well defined that the size, shape and mineral content are well established

" ' Indicated ore' (probable ore) is ore for which tonnage and grade are computed partly from specific measurements, samples or production data and partly from projection for a reasonable distance on geological evidence.

" ' Inferred ore ' (possible ore) is ore for which quantitative estimates are based largely on broad knowledge of the geologic character of the deposit and for which there are few, if any, samples or measurements. The estimates are based on an assumed continuity or repetition for which there is geologic evidence; this evidence may include comparison with deposits of similar type. ---- "

The definition of "ore" is " a natural aggregation of one or more minerals from which useful metals may be profitably extracted."

Using these definitions it is found that the Buckeye Apache Mines Company does not have any "measured" nor any "indicated ore" but has certain areas which ~~are~~ should be

explored to determine whether ore is present. Favorable areas for such investigation include:

1 The Buckeye Stope and Buckeye vein on the east side of the canyon.

2 The Halfway Shafts and vein outcrop on Halfway Claim. ^{Hrc}

3 Apache Shaft and Apache Tunnel and vein outcrop, including the ground between the Halfway and Apache Shafts.

4 Buckeye vein system on ^{Hrc} west side of Buckeye Canyon.

5 Old dumps and workings, ^{including} ~~including~~ the Sunrise Group and the four patented claims belonging to the Buckeye Apache Mines Company.

Recommendations:

~~THE BUCKEYE STOPS~~ Areas in order of ^{exploration} priority are:

- 1 - Buckeye Stope and outcrop - Clean out and repair stope openings and drifts for sampling. Drill ^{the} stope and drift walls, roof, and floor with either core drill or percussion drill or both. Put initial holes on wide spacing, filling in later as required. Length of holes to range from ten feet to one hundred feet. If possible, use EX or EW tools to keep cost down.
- 2 - Area around Halfway Shafts and at Apache Shaft and Tunnel. Estimate ^{the} cost of rehabilitating openings and check whether water level is seasonal. Investigate possibility of drilling sample holes from the surface
- 3 - Investigate surface outcrops
- 4 - Investigate outcrops and workings on patented claims owned by Company.
- 5 - Investigate Sunrise Group. to ascertain whether mining claims in this group should be picked up.

Concentrate efforts ~~in one or two areas~~ ^{at a time} to find ore and to obtain samples for metallurgical testing. Keep crew to a minimum. If possible, undertake exploration work before road work is done. Use equipment which can be handled on sleds and which will withstand rough treatment.

EQUIPMENT

Very little equipment is ^{now} available at the Buckeye Apache and must be rented or purchased. A few prices as of this date are:

Air compressor ; 315 cfm capacity, diesel, rotary air end, skid or wheel mounted \$350.00 per month.

Percussion rock drill, dry, for sampling, with ^{2 1/2} ~~2~~ Stc-1,

bits, and hoses and dust collector \$1,000 to \$1,500
Diamond core drilling, with EX or EW tools estimated ^{cost} at \$3 - \$4
per foot with moving, cementing and redrilling on hourly rate.
Aluminum pipe, 40-foot lengths, about \$1 per foot.
Air hoist, 2,000-lb capacity complete with cable, \$100 per
month (rental) Good, used hoist can be purchased for about
\$350 - \$400, when available.

Equipment for determining ^{at least} gold, silver,
copper, lead ^{and} zinc. This can be set up at
the Campo Bonito where LPG is available
for a hot plate. Rough estimated cost of
laboratory and assay equipment \$ 500 - \$1,000

A tractor preferably diesel powered,
rubber tired, with a front end
loader ^{bucket of} 1 1/2 - 2 cubic yard capacity
will be of great value in moving equipment
and building road.

METALLURGY

13

Ore from the Buckeye Stope mined by Tevis prior to 1900 was milled in a 5-stamp mill with amalgamation plates. It is not known definitely whether this mill contained equipment for gravity concentration. Neither is there any evidence that the tailings were treated although the ore is ^{reported} amenable to cyanidation.

Nelson in his report refers to ~~the~~ flotation tests made ^{on} ore from the Apache Shaft by the College of Mines and Metallurgy (now Texas Western) El Paso, Texas January 31, 1936. and quotes the summary. The summary reads: " Flotation Tests on Apache Shaft Ore. This is unusually good flotation ore, the high recoveries obtained being much better than can usually be expected."

" While the ore is hard, the values shatter out while the ore is still coarse, so that grinding costs will be about normal.

" The amount of reagents required is a minimum, both in quality and kinds, xanthate and pine oil being all that is necessary.

" The value of the ^(work) sample tested (heads) is Au. ^{0.32} ~~0.32~~ ozs., Ag. 5.64 ozs., Pb. 1.95

" The grade of concentrate shipped, assuming that the ore milled is represented by the sample tested, will be:

Au. - 3.98oz., Ag. 67.8 oz; Pb. 24.6%., Cu. 1.32%

" The recovery is:

Gold 98.7% Silver 96.1% Lead 99.0%

" The value of a ton of concentrate is \$192.67
Haulage, freight and smelter charges 14.00
Returns per ton of concentrate \$178.67
Return per ton of ore milled 13.85

Out of this will be paid mining and milling charges."

Insert

January 31, 1936, El Paso, Texas

" Thirteen tons concentrate into ore bins dividing haulage, freight and smelter charges and treatment by thirteen.

(144)

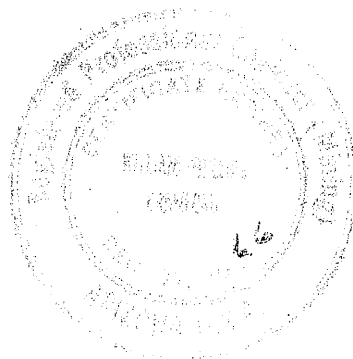
About 1956 Wallack and Riker, lessees, installed a mobile dry screening plant at the Campo Bonito and ran several truck loads of vein rock from the Buckeye Stope and Halfway dump, making an iron concentrate, an iron-silica middling and a clean silica tailing. A grab sample of the concentrate assayed on February 8, 1966 ~~returned~~!

Gold 0.40 oz; Silver 33.60 ozs; Copper 0.30%; Lead 8.80%

Wallack and Riker operated the screening plant for ^{only} a brief period ~~and~~
it is still on the Campo Bonito Claim.

William T. Crawford P.E.

Phoenix, Arizona
March 29, 1966



Assays in report by R. L. Motz, December 11, 1935.

15

	Sample No	Sample Width ft 170 tons	Pb oz per Ton	Ag oz per Ton
Apache shaft	1	33	0.36	5.7
✓	2	34	0.42	6.1
✓	3	15	1.68	15.2
✓	4	35	1.72	29.2
✓	5	36	0.49	8.4
✓	6	37	0.67	8.9
✓	7	38	0.28	5.2
✓	8	60	0.84	20.8
		<u>36</u>	<u>0.7466</u>	<u>12.93</u>
			\$26.13	\$16.48

Apache Tunnel	11	53	0.86	10.4
✓	12	54	0.32	2.3
✓	13	55	0.67	7.6
		<u>54</u>	<u>0.6158</u>	<u>6.75</u>
		<u>162</u>	<u>* 21.55</u>	

Half-Way Shaft No. 1	17	43	0.18	1.8
✓	18	44	0.16	3.4
✓	19	45	0.12	2.0
✓	20	46	0.21	2.4
✓	21	47	0.27	2.7
✓	22	48	0.48	6.9
✓	23	49	0.44	3.4
✓	24	50	0.42	2.8
✓	25	51	0.56	6.1
✓	26	52	0.37	5.2
✓	27	56	0.85	12.9
		<u>48.27</u>	<u>0.3606</u>	<u>4.70</u>
		<u>531</u>	<u>12.62</u>	<u>2496.00</u>

Motz Report - Continued.

16

	Sample No.	Sample Width in inches	Au, oz. per Ton.	Ag oz. per ton.
Highway strip	28	42	0.41	12.5
No. 2	29	41	0.72	13.7
	30	40	0.52	11.6
Average	41		0.549	12.61
	42		#19.22	1550.70

Motz cut 30 samples.

Conclusions &
Recommendations

After spending time in digesting the history and data available on the properties and reviewing the workings, it is my opinion that sufficient indication is prevalent to initiate an exploration program. Due to the fact that several possibilities of locating suitable quantity of ore to resume mining on today's market exists, exploration should be taken in stages. The foregoing statement is made assuming that it will be desired to begin mining operations as soon as a sufficient quantity ^{of quality} measured ore is established. However, if it is desired to ^{merely} develop ~~the ore measured~~ ore reserves for others to mine, the sequence of exploration does not hold such a matter of importance.

In my opinion ~~that~~ each of the following areas, in order of exploration priority, should be explored:

- 1
 - 2
 - 3
 - 4
-) ?

If sufficient ore is measured to begin a profitable mining operation in the Buckeye Stope the remaining areas can be explored as time and money permits. If exploration of the Buckeye Stope does not prove satisfactory, the next area should be explored and mining begun if the measured ore is proven to be satisfactory and the process continued until the property is developed or proven out.

~~If sufficient ore is measured to begin a profitable mining operation in the ~~one~~ Buckeye Stope, the ~~subsequent~~ ^{remaining} areas ~~to be explored~~ ^{can be} ~~explored~~ ^{explored} on money and time permits. If exploration of the Buckeye Stope does not prove satisfactory, then the next area should be explored and mining begun if ^{the} measured ~~ore~~ ^{is} ~~proven~~ ^{to be} satisfactory, ~~and the process continued as noted above~~ and ~~so on~~ ^{the process continues} until the property ~~proves itself one way or another~~ is ~~shown~~ out.~~

2 Building of roads and other expenditures should be kept to a minimum until during the exploration phase. Money should not be spent with the anticipation of resuming mining operations until sufficient ore has been blacked out. Efforts should be concentrated in finding ore ~~at~~ in one area at a time with a minimum crew and close supervision.

3 Most of ~~the~~ Equipment for exploration can be skidded to the sites with the use of a tractor, or flown in by helicopter or both. Drilling water can be obtained on the property but in some cases may have to be pumped to the drill site in stages.

The working crews can ~~find~~ lodge at Camp Boniato in ^{comparative} comfort. Again only a minimum of expenditure is required at the camp until during the exploration phase.

EXPENDITURE

Very little equipment is now available on the property and ^{will have to} ~~must~~ be rented or purchased. A few prices are given on equipment as of this date:

Air Compressor, 315 cfm capacity, diesel	
rotary air end, skid or wheel mounted	350.00
rental per month	350.00

Percussion rock drill for dry sampling, drill
steel, bits, hoses & dust collector

1,000 to 1,500

X Diamond core drilling, EX or EW size

per foot

4.00 to 5.00

Aluminum pipe, 40 ft lengths

per foot

1.25

Air hoist, 2000 lb. capacity with cable

rental per month

100.00

used, purchase

350.00 to 400.00

Assay equipment for determination of
Gold, silver, lead, & copper & zinc

purchase

800.00

Tractor

etc

Some of the equipment should be purchased with the idea of reselling when ^{it is} no longer needed. ~~then~~ In some instances it will no doubt be less expensive to rent in lieu of ~~the~~ buying.

~~exp.~~

A budget should be set for exploring each of the four areas. In each case ~~if the budget~~ after the money allowed in the budget has not been sufficient to develop adequate reserves, a hard look should be taken at the results before additional money is allocated. The following is an estimate of the amount of money ^{to be} believed ~~will~~ be necessary to adequately investigate each site:

1. ~~Mobilization of equipment to site~~ ^{and demobil equipment}
Revamp existing conditions
Complete drilling & sampling program
Assay and report findings
2. Mobil and demobil equipment
Revamp existing conditions
Complete drilling and sampling conditions
Assay and report findings

3.

SCOPE:

Analyse existing data provided -

Site Visitation & consequent analyses

On basis of above draw concl & recommend

include whether feasible to consider property
set line phases of ^{sufficient} approach to develop prop.

Establish condition of claims -

INVESTIGATION:

what Explain what was done - in your
work - cover everything

Conclusions:

Statement of opinion of property and
possibilities it holds -

Cost information based on certain assumptions
whether drilling, etc is warranted

Recommendations:

Include your suggested approach on deal of
property and approx costs -

Appendix:

Include all ^{supporting} maps & info gathered.

SCOPE:

Existing data -

Gabrielson's Report

A part of Motz report

Williams' Report

McCarthy's Report

Reviewed files Mineral Resources Division U.S.

Bureau of Mines

Arizona Bureau of Mines

On site scope, sampling, etc -

what recommendations & conclusions are expected...

Investigation: On site study - preliminary report -

For the purpose of reviewing old workings

Re-establish claim corners

Evaluate possibilities -

Observe mineralization apparent
surface & old workings

Sampling -

- Justify your action by authorizing all
work accomplished.

Study of work of others -

Conclusions: Outline facts established to date and give opinion -
Statements as to ^{the} possibilities - opinion of property
Outline ^{general} costs of mining & processing -
make whatever assumptions necessary
Statement as to what further steps may or may not be feasible...

Recommendations:
Outline recommended approach to development (or not)
Include approx costs

3/30/66 ①

Nelson report page 6 - bottom of page

T.R. Bear's estimate of tonnage of
Buckeye 349,228 tons @ \$8⁰⁰ / ton
\$2,953,824⁰⁰ gross value.

(No supporting figures or assays)

quotes Apache estimate in Mohr report.

R.L.

Mohr report - Dec. 11, 1935

Estimates are Apache Val-
es 125000 tons with factors:
1400 feet between Apache & Halfway
plus extension of 100 feet each both
striking 33 inches wide; 350 ft depth
and 12 cubic feet per ton.

$$1400' \text{ long} \times 2.75' \text{ wide} \times 350' \text{ deep} = 1,540,000 \text{ cu ft}$$

$$\frac{1,540,000}{12 \text{ cu ft}} = 128,333 \frac{1}{3} \text{ tons}$$

$$1500' \times 2.75 \times 350' = \frac{1,443,750}{12} = 120,312$$

Grab-nelson report

Page 3 Buckeye vein Extension to
west side of Cornsack Canyon (4000 feet) (No
figures to support this mine)

on west side of Buckeye Canyon disconformity on
Buckeye vein and branch vein. (Site for Adit)

(2)

Asphalt Vell. - exposed for hundreds of
feet 3 shafts in rich (?) ore

Leslie L. Mott. Feb. 29, 1936.

Surprise mine May be traced for
more than 2000 feet with width of 4 feet
Mentions 4 workings ① 2 inclined shafts

② Combination incline shaft and
tunnel.

③ Tunnel.

Surprise 3,000 Tons. \$ 8.52

Blackeye. 8,600 tons of ore @ \$ 9.37
\$ 5.68 Ag. and \$ 3.69 Ag. 9.37

2/8/66

Simon

Telephone Conversation with:

Sam Inallick

106 West Kindergarten Drive

Avondale, Arizona

Met partner Ralph Riker, now in
Mexico. Inallick is real estate in
Avondale. Leased Gabrielson property about

Assayed stone and Valves checked
old maps. ~~THINKS~~ Stone ore is there.
Checked Halfway and Lyndale. Did
~~not~~ find high grade although some
good ore.

Ore pass at Stone (Indiana) (?)

Inallick claims ownership of all
buildings and will through bill of
Sale from Tom Echols.

Gabrielson

Te and free gold. - Assayed (No free gold found
Simon Te)

No ore in small tunnel (Main 12 ft)

Not familiar with corner staking

Inallick

Investigated Sunrise group; found no
high grade

Bureau) Mineral Reserve)

①

Black Eye Apache - 1946 Larry Sanderford
1937

1956 - Axel L. Johnson } Field
4 patented claims } Estimation
3 " mill sites
16 unpatented claims

1957

Black Eye
Apache

4 surface claims } Patented
1 location claim }
4 mill sites } Patented
36 unpatented

2 flat areas dips 20° + 22° Dip west
ward and one strike N 30° W; one N 52° E
More or less at intersection of these
flat areas

1934 E.S. Anderson and T.P. Bacon
20 claims

1 shaft 10,000 tons mined out
4 shafts filled with water
Worked in early 80's No milling since
1900 year

①
Troughly broken or too small is 1930
by T.P. Bacon & E.S. Anderson. 7 patented
claims & 1 probable mill site

(2)

Max J. ... Feb 2, 1957

Travis & 188-101er } ore milled 1.2 million per month and
also at one other mill. Gravelly cone
with talc - Talc was 6% / ton in
lumps and were treated by C.V.

(A) Bean and Anderson operated 100,000
+ shipped to El Paso Canada 30. In
ton. Ore was selectively milled
high grade streaks. Bean reported they
just about broke even and closed
operations

Property purchased by C.V. Corporation
about 1944

Burns Appliance formed about 1945
operations 1946-1948

(a) Sink wall 75' deep

(b) Built 2 Quonset huts and a
mass hall.

(c) Built 5 miles of road.

(d) Searched mine workings and cleaned
out workings. Ran out of money.

14,000 lbs.

By Burns Appliance Co. tunnels
into mountain through one body. Tunnels
from 100-500 10-5 total feet 2,000.
Appliance 1 shaft (incl 30') 30'
deep tunnel 30' long and tunnel
50' long

Buckeye Apache 4-266

Angle 60,000 x 10 = 600,000

Gabrielson 100,000 x 10 = 1,000,000

1/2 option

300,000

500,000

800,000 @ 3

Market 4,000,000 @ 0.10 = 400,000

= 24,000

Pool 15% of 400,000 = 60,000 @ 0.10 = 60,000

Brokerage 15% = 60,000 @ 0.10 = 60,000

Sale of stock (proceeds) = 400,000 - 120,000 = 280,000

800,000

600,000

1,400,000 shares of 4 individuals (Gil, WPC, J. Eng. J.W.)

800,000 of 2 individuals (Jess = 300,000 + Gab = 500,000)

2,200,000 shares in block pool

6500 x 10 = 65,000,000

o.k. can't find
3,510,000 + 2,990,000

4,000,000

10,500,000

2,200,000 in pool

2,990,000 can't find



EL ZARIBAH TEMPLE

ANCIENT ARABIC ORDER NOBLES OF MYSTIC SHRINE

OASIS OF PHOENIX, ARIZONA



JESSE W. ANGLE
POTENTATE

GEORGE W. BEELER
CHIEF RABBAN

MAURICE R. RICHTER
ASSISTANT RABBAN

ELMER D. CLARK
HIGH PRIEST & PROPHET

JOHN G. CABLE
ORIENTAL GUIDE

ED A. MATTHEWS
TREASURER

JOHN W. HARMON
RECORDER

*to be one of the large scale production
and profit makers of Arizona. The
following step by step system of exploration,
followed by producing Gold & Silver on
the property, with smelting of residues
is suggested.*

*For exploration (Diamond drilling at ~~the~~
~~recommended~~ ~~strategic~~ locations, crosscut as outlined
and etc; With road work, ~~camp~~ rehabilitation of
Campo Bonito, engineers & consultation fees, etc*

\$100,000⁰⁰

*Reserve to install Flotation & Cyanidation
milling plant after exploration is completed*

150,000⁰⁰

Miscellaneous expense, re financing etc

50,000⁰⁰

Total financing suggested at present level *300,000⁰⁰*

Administrative expenses and commissions *400,000⁰⁰*

*Situated favorably as the property is within easy reach
of six smelters all of whom are "in the market" for the silica & sand
content of your ore; with all supplies, labor, transportation
and other conditions unusually favorable; with one of the largest
and most highly mineralized vein systems in the West, past prod-
uctions definitely assuring type and nature of ore that is known to
continue to tremendous depth, your Beehive Apache mine fully
justifies the above plan of exploration and financing as above outlined.*



EL ZARIBAH TEMPLE

ANCIENT ARABIC ORDER NOBLES OF MYSTIC SHRINE

OASIS OF PHOENIX, ARIZONA



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and etc; With road, work, ~~camp~~ rehabilitation of
Campo Bonito, engineers & Consultation Fees, etc*

\$100,000⁰⁰

*Reserve to install Flotation & Cyanidation
milling plant after exploration is completed*

150,000⁰⁰

Miscellaneous expense, re financing etc

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and other conditions unusually favorable; with one of the largest
and most highly mineralized vein systems in the West, just proved
beyond definitely assuring type and nature of ore that is known to
continue to tremendous depth, your Bureau Apache mine fully
justifies the above plan of exploration and financing as above outlined.*

79

$$12 \text{ mi} \times \frac{10}{7}$$

$$1.7 \text{ mi} \approx 2 \text{ mi}$$

Cat-Dozer for Roadwork

Buckeye Stages

$$10 \text{ days @ } 200 = 2000 \text{--}$$

$$\text{jackhammer} \quad 400$$

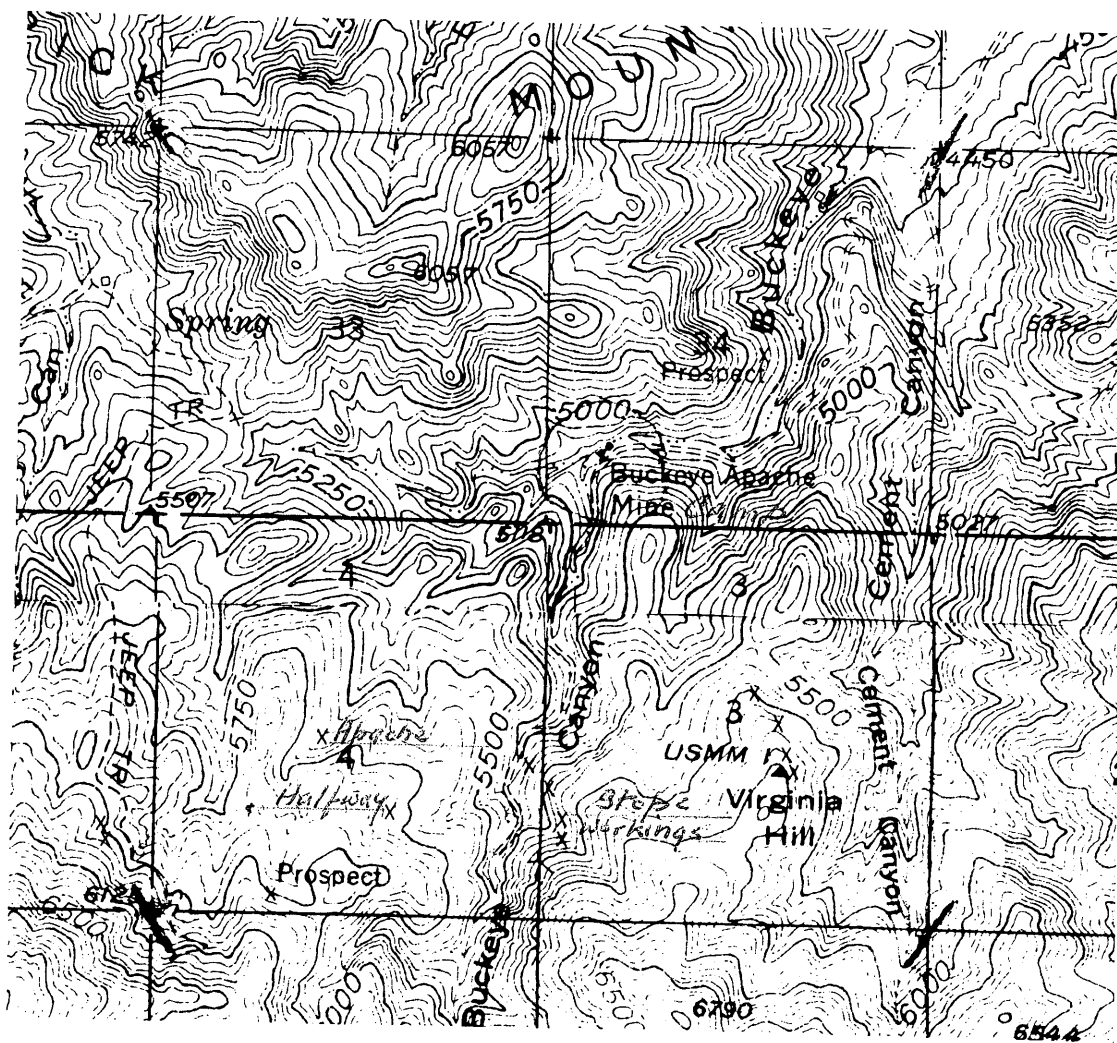
$$\text{powder} \quad 200 \text{--}$$

$$\text{Cont.} \quad 400$$

$$\underline{3000 \text{--}}$$

$$\text{Apache Shaft} \quad 3000 \text{--}$$

$$\text{Halfway} \quad 250 \text{--}$$



Buckeye Apache
from the desk of --- GIL BERRY

Past History
why some operation
why it could be profitable
to operate now -
FLEXIBILITY

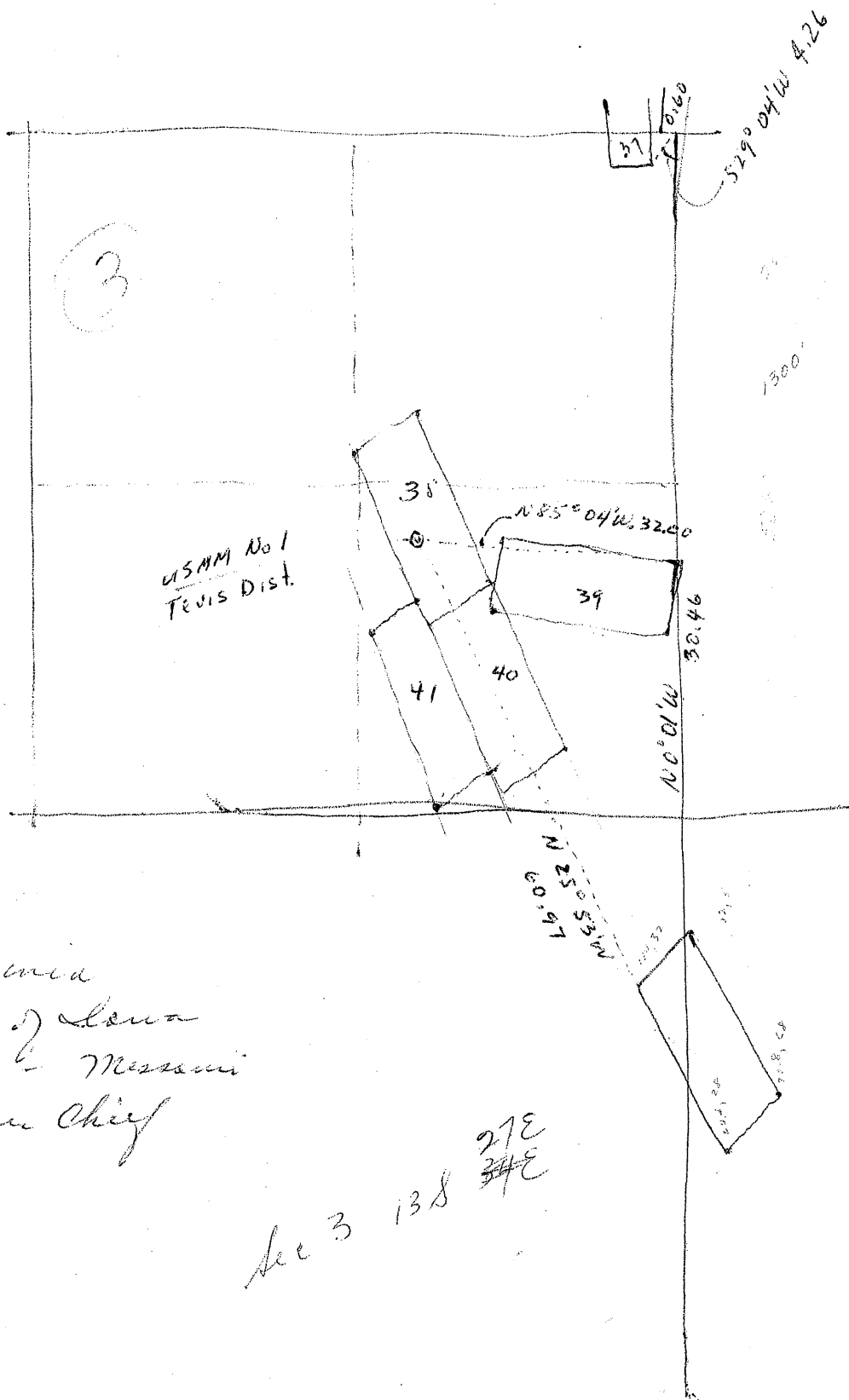
Aerial - Buckeye Apache

Western Knolls
Dunn Equip
Bureau Mines

Flotation + cyanidation mill

51st Ave
4800 W. Buckeye Rd.

A



38 Virginia
39 State of Iowa
40 " " Missouri
41 Simon Chief

Dec 3 138 27E
~~34E~~

11/134

Board of Directors

Buckeye Apache Mining Company

Phoenix, Arizona

Gentlemen:

In preparing a report on the Buckeye Apache mining property near Bowie, Arizona I made a thorough study of the reports previously written by Messrs Ralph L. Motz, Lesle L. Motz, E.D. Nelson, H.F. Williams, Donald P. McCarthy and C. W. Gabrielson. My investigation required three rather extended trips to the property during which I inspected ~~all of~~ the accessible mine openings and ~~was enabled to~~ checked statements contained in the reports cited above.

I made a special study of the reports written by Messrs Gabrielson and Ralph L. Motz. Factors in selecting these reports were ⁽¹⁾ Mr. Gabrielson's knowledge of the Dos Cabezas region acquired as a successful mine operator; ^{and (2)} Mr. Motz' reputation as an engineer. I knew Ralph Motz personally for many years and ^{had} the highest regard for his integrity and professional ability. In general I agree with their conclusions ^{contained in the reports written by these men.}

It is my opinion that

The exploitation of the Buckeye Apache should be made on a plan following the steps listed below:
step by step plan.

First 1. Explore and prove ore reserves for mining. Develop mining plan.

Second 2. Develop mining plan and place into operation. ~~Determine~~ 3. Produce gold and silver by cyanidation on the property.

Third 4. Ship base metal concentrate and silicious concentrate for smelting.

The development of the property will require financing and it is my considered opinion that the following amounts should be provided:
expenditures will approximate the amount of expenditures required to properly finance the plan suggested above.

Exploration and proving ore reserves :

\$100,000.00

Core and percussion drilling at strategic locations; underground development in the Buckeye and Apache vein areas; road construction; rehabilitation of Camp Bonito living quarters; ^{as necessary for the flotation} engineering and consultation fees.

\$100,000.00

Concentrator erection and equipment

\$150,000.00

^{construction of}
To provide flotation and cyanidation plant after exploration is completed and adequate ore reserves are ^{established} found

Miscellaneous expense

50,000.00

Administrative expense, financing, etc

Reserve

100,000.00

For additional mine and mill equipment, unforeseen expenses, etc. To be held until mine and ~~mill~~ concentrator are operating

Total financing suggested \$400,000.00

The Buckeye Apache mining property is situated favorably in relation to highway, railroad and smelters; an adequate labor supply ^{can} ~~could~~ be developed, ^{and} supply centers are within easy access. The vein systems are strong and it is my ~~considered~~ opinion that your Buckeye Apache mines fully justify the plan of exploration and financing as above outlined.

Very truly yours,

William P. Crawford E. E.M.

~~unclassified~~

CLAIM MAP
STOPE MAP ASSAY

In preparing the report on the Buckeye Apache Mining Company it was necessary and yet difficult for the writer to remain without bias. I believe this has been done but it makes ^{for} staid reading. My first visit to the property was in 1957 when I inspected the Buckeye Stope with Wallack and Riker. There was a fair ^{road} highway ~~up the~~ from Camp Bonito to the cable and hoist installation at the Buckeye Stope and Wallack and Riker had moved several truck loads of broken material to the dry screening plant at Camp Bonito. Access to the stope was over a steep trail, although they offered to hoist me in the ore bucket. The stope was thoroughly inspected and I cut several samples which were assayed for me by a mine assayer. The results were ^{given} Riker who at the time lived in Phoenix. As I recall it the assays were good and ^{correlated favorably} in accordance with Motz samples. Riker had sampled part of the stope and ^{also} found ~~that~~ the results to agree with Motz. The question was where to begin work and inasmuch as they ^{owned} ~~had~~ no mine ^{ing} equipment, ^{air} compressor, ^{or} rock drills and had expended a large part of their available capital on the dry screening plant and road work my recommendation was to discontinue work at the Buckeye Stope, ~~to proceed with a few~~ ^{to proceed with a few} except ~~for~~ exploratory drill holes. I believe they ceased work shortly afterwards, ^{without drilling and} leaving the dry screening plant ~~dirty and~~ set up at Camp Bonito.

Although I had ~~spent many years in mining and had seen~~

The size of the Buckeye Stope, excavated by hand steel, and the heavy mineralization

Although I have spent many years in mining and have seen and participated in large operations, the Buckeye Stope impressed me. The large quartz vein heavily mineralized in places by iron oxides, the competency of the ground allowing the stope to stand open for years with only a few pillars to support the back, the amount of work performed with hand steel and shovel by the early miners, the isolation because this area was at one time in the territory held by the Chiricahua Apaches... All of this is part of the romance of mining which ~~leaves~~ ^{leavens} and makes a hard occupation endurable.

When the area was visited in 1965 and 1966 with Messrs. Angle and Warne conditions were similar to those in 1957 except for ^{the} ravage of weather. The road in Buckeye Canyon above Camp Bonito was completely washed out, the ore platform below the Buckeye Stope was gone and the trails were rougher. We took grab samples from the dumps at the Halfway Shafts, the Apache Shaft and Tunnel and the Buckeye Stope. The assay returns were lower than Motz which is understandable, and have not been included in the report on the Buckeye Apache.

It is my belief that ore can be developed if a satisfactory exploration program is followed. I cannot believe Captain Tevis mined the Buckeye Stope unless he had ore and I have considerable respect for the old time miners. I also do not believe that the Buckeye Apache Mining Company which has spent a relatively large amount of money on the group would abandon the property even if the report was negative.

I recognize that it is fashionable and easy to reject a mine or an area with the statement -"There is nothing there." This can develop a syllogism which may be fatal. This was done by the large Arizona copper companies who said there was no ore in the area south of Tucson and left the country open to Banner, Pima, Anaconda and others. I cannot say there is ore at the Buckeye group but I think there is an excellent chance to find ore.

These notes cannot be embodied within a report but ^{may} ~~can~~ offer supplementary thinking and I shall be glad to work with you.

Buckeye Apache Mines Co.
% G. P. Berry & Co.
14 A. West Camelback Road
Phoenix Arizona 850

Attn: Jesse W. Angle, President

Herein submitted is a report on the properties
of the Buckeye ~~Mines~~ Apache Mines Co. ~~now~~ in
the Dos Cabezas Mountains, Cochise County
Arizona.

~~Upon your request~~
~~The report has been prepared from data procured~~
~~from ^{all} ~~only~~ available sources and ^{from} ~~observations~~~~
~~made during my visits to the property.~~

Upon your request, I have ~~reviewed the~~ ~~seen~~
visited the property and reviewed the workings
and ^{researched} ~~obtained~~ ^{all} data available ~~for review~~
relating to past operations and ~~reporting~~.

The results of my efforts ^{leading to} ~~and the~~ conclusions
and recommendations ~~based thereon~~ are
~~included herein~~. regarding future development
of the property are included herein.

Resp sub,

WPC

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(1)

BUCKEYE APACHE MINES COMPANY

The property of the Buckeye Apache Mines Company is situated in the Tevis Mining District, Cochise County, Arizona, about twelve miles south-west of Bowie, in Buckeye Canyon at an elevation of about 5,600 feet. The region is very sparsely populated and the topography is extremely rugged with narrow ridges separated by deep and steep sided canyons subjected to flash floods during the rainy season.

The early history of mining in the Tevis District is obscure. The District was named for Captain James H. Tevis, a somewhat legendary character who ~~prospected~~ and operated a trading post ~~and~~ ^{prospected} in the Dos Cabezas Mountains in the vicinity of Buckeye Canyon prior to the Civil War. After serving in the Confederate Army he returned to Arizona Territory and homesteaded where the town of Bowie now stands. With Texas capital he formed and operated a mining company in 1880, locating fifty mining claims in Buckeye and Cement Canyons, erecting a stamp-mill on the present Campo Bonito claim, building a tramroad and pack-trails for the movement of men, supplies and ore. Mining and milling operations were seriously hindered by roving bands of renegade Apache Indians and all work ceased in 1883 due to Indian attacks, high operating costs and the loss of the Company funds. Tevis reorganized and resumed operations early in the nineties and work continued intermittently until his death in 1905.

The District was inactive and few data are available for the period 1905-1933. The increase in the price of gold in 1933 and 1934 aroused interest in the area resulting in claim relocation and staking by Thomas P. Bean and E. S. Anderson.

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Anderson and Bean held twenty or more claims, purchasing seven patented claims at a Tax Sales in 1935 and staking the remainder. They mined a small tonnage of ore, working high grade stringers and sold their property in ~~1938~~ 1939 to the present owner, the Buckeye Apache Mines Company.

1939

The Buckeye Apache Mines Company established a camp on the Campo Bonite Claim, ~~erected~~ ^{erected} two large Quanset buildings as dormitories, a frame mess hall, a lighting plant and sunk a well for domestic water. Jeep roads were made from the camp to the principal workings. ~~but at present~~ The road from the Camp to the Buckeye Stope, a distance of about one and one-half miles ~~was~~ was completely destroyed by a flash flood in 1965. ~~Lessees ^{erected} erected a dry crushing and screening plant 10 tons capacity per eight hours at the Camp and ran test runs on ore from the Buckeye Stope, making~~

The Buckeye Apache Mines Company in 1947 owned thirty mining claims (patented and unpatented) in three ~~different~~ but contiguous groups; the Sunrise, the Buckeye and the Apache . Claims in the Sunrise group were relinquished and ~~at present~~ ^{17 claims} the Company owns sixteen claims ^{listed below:}

<u>Name</u>	<u>Locator</u>	<u>Date Located</u>	<u>Group</u>	<u>Title</u>
Camp Barito	Buckeye Apache Mines Company	Oct. 12, 1939	Camp Site	U
Patent Report	T. P. Bean E. S. Anderson	April 1, 1925	Buckeye	U
Mountain View	Ditto	July 24, 1935	Ditto	U
Silver Chief	Virginia Chief Mining & Milling Co.	Receiver's Receipt Oct. 23, 1891	Ditto	P
Virginia Lode	Ditto	Receiver's Receipt Ditto	Ditto	P
State of Iowa	Ditto	Receiver's Receipt Ditto	Ditto	P
State of Missouri	Ditto	Receiver's Receipt Ditto	Ditto	P
Halfway	T. P. Bean	Nov. 4, 1935	Apache	U
San Francisco	E. S. Anderson	Nov. 4, 1935	✓	U
Apache	E. S. Anderson	Nov. 4, 1935	✓	U
Apache No. 1	E. S. Anderson	Dec. 19, 1938	✓	U
Apache No. 2	T. P. Bean and E. S. Anderson	Ditto	✓	U
Apache No. 3	Ditto	Ditto	✓	U
Apache No. 4	Ditto	Ditto	✓	U
Apache No. 5	Ditto	Ditto	✓	U
Apache No. 15	Ditto	Ditto	✓	U

U - Unpatented

P - Patented

(a)

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PREVIOUS REPORTS

It has been previously noted that few authentic data are available on production or mining in the period 1880-1933.

Subsequent to 1933 the following reports were prepared:

Reports and assays, ^{the} Apache Group; Ralph L. Mott, Mining Engineer and Deputy Mineral Surveyor, Bisbee, Arizona; December 11, 1935

Report on Buckeye and Surprise Group; Leslie L. Mott, Mining Engineer, Bisbee, Arizona; February 29, 1936

Report on ^{the} Buckeye Group; E. D. Nelson, General Manager, Mexican Coal and Coke Company, Los Esmeraldas Coalfield, Mexico. — 1938

Report on Apache and Buckeye Area (General) H. F. Williams, March 11, 1949

Letter report on Buckeye and Apache Donald P. McCortley, Consulting Geologist, Mesa, Ariz., June 22, 1960.

The Buckeye Vein C. W.,
Gabrielson, Phoenix Arizona.
August 1960.

⑩

Various ~~in~~ addition to these reports,
the notes by Field Engineers of the
Arizona Department of Mineral
Resources and assay certificates
by various assayers, are available.

Copies of all the above noted data are in
possession of the writer.

⑪ Summary of report on floatation tests prepared by the College
of Mines & Metallurgy, El Paso Texas, January 31, 1936.

(6)

ANALYSIS

The mining claims of the Buckeye Apache Mines Company are on the steep sides and ridges ~~between~~ between Buckeye , Apache and Cement Creeks. Mine workings include the Buckeye Stope on the Patent Claim; two ~~mine shafts on the~~ Halfway Claim and the Apache Shaft and the Apache Tunnel on the Apache Claim.

The principal geological formation on these claims is granite cut by numerous dikes of ~~granite and diorite~~ diorite and andesite. and by veins of quartz. Several of these veins are of considerable size , particularly the Apache vein system, the Buckeye and the Mountain View veins.

Apache Vein System:

This vein ~~enters~~ ^{outcropping} on the west side of Buckeye Canyon about four hundred feet above the floor of the canyon ~~has~~ has been prospected by the Halfway Shaft No. 1 and the Halfway Shaft No. 2. ^{in his report,} Motz stated the No. 1 Shaft was at least 85 feet deep, was sunk on the vein, dipping 35 degrees ^{and flat}; the No. 2 Shaft ~~was~~ 55 feet deep was also sunk on the vein. Motz sampled the bottom fifteen feet of Shaft No. 2. ^{sampled by Motz} The average of the width sampled was 41 inches averaging 0.549 ounces gold and 12.61 ounces silver per ton. ^{Motz} He sampled the Halfway Shaft No. 1, beginning at a depth of 25 feet, at 5-foot intervals to the bottom. The average width of the sample channel was 48 inches and fifty feet averaged 0.36 ounce gold and 4.70 ounces silver.

The Apache Shaft, about 1,400 feet North-west of the Halfway No. 1 was sampled by Motz through a depth of 35 feet . The vein width averaged 36 inches and the average grade for the 35 feet was 0.747 ounce gold and 12.93 ounce silver.

^{The vein is} The Apache Tunnel, near the collar of the Apache Shaft, was sampled by Motz ^{yielding} ~~winning~~ an average of 0.616 ounce gold ^{and}

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6.75 ounces silver with an average vein width of 54 inches and a length of fifteen feet.

Access to the Halfway and Apache workings was over several miles of rough pack trails. ~~Anderson and Bean performed~~ Very little development work was performed on these claims after ~~the~~ Motz report in December, 1935. A jeep road was bull-dozed to the Halfway shafts ~~the~~ during the ^{1950's} 1950's and several small truck loads of ore from surface ore piles hauled to the Campo Bonito. No underground work was undertaken and in February, 1966 neither of the shafts could be entered.

Buckeye Stope and Vein

The Buckeye Stope is on the east side of Buckeye Canyon about 350 feet above the floor of the Canyon and almost directly opposite the Halfway. The Buckeye vein is exposed on both sides of the Canyon; on the west side the vein is unprospected save for a few shallow pits and cuts; on the east side it has been developed by stoping and drifting. The vein is exposed for several hundred feet at the stope entrance where it has a westerly dip of twenty degrees and in the mined area has a thickness varying from four to ten feet. The stope ^{covering an} ~~covered an~~ area of approximately 30,000 square feet stands open supported by several irregular pillars of ore. The stope walls and ore pillars were sampled and assayed by Ralph Motz who also prepared an assay map. The weighted average of sixty nine samples is \$10.58 in gold and silver; ~~and~~ copper, lead, zinc, iron and silica were not determined. The ore is quartz, in places heavily iron stained, with associated lead and copper minerals. The south end of the stope is developed by several hundred feet of drifting with notations on the assay map of ore in the walls and roof ^{as well as} and in the floor.

The Buckeye Stope is the locus of intersection of the Buckeye and Mountain View veins; ^{flat} flat veins which cross at low angles. Mining was performed by Captain Tevis in the 80's and 90's and ore processed in his stamp mill. Apparently nothing has been done since ~~1900~~ except for ~~several small lots~~ several small lots removed for milling tests.

Tevis ¹⁹¹⁹ ~~production~~ was about 10,000 tons which was moved over the surface tramroad to the stamp mill ~~on the present Camp Bonito claim of which nothing remains except~~ which was on the present Camp Bonito claim. Although no figures are available on ^{actual} the production, the mined grade was probably \$10 + \$15 per ton.

The Buckeye Stope, during Tevis' time was reached by pack trails and ore was moved by pack animals. Buckeye ^{Apache} Mines Company ¹⁹¹⁷ installed a double drum gasoline hoist and bucket line from the ^{the 40's} bottom of the Canyon to the stope entrance; ^{during the 1940's.} the hoist and part of the cable way still remain.

Ore Reserves:

The ~~Buckeye Apache Mines Company~~ ^{known} does not have ore reserves on any of its claims. The definition of "ore" is "a natural aggregation of one or more minerals from which useful metals may be profitably extracted." The U.S. Bureau of Mines and the U.S. Geological Survey have agreed upon and defined the following terms to signify relative dependability of information:

" ' Measured ore' (positive ore) is ore for which tonnage is computed from dimensions revealed in outcrops, trenches, workings and drill holes and for which the grade is computed from the results of detailed sampling. The sites for inspection, sampling, and measurement are so closely spaced and the geological character is so well defined that the size, shape and mineral content are well established

" ' Indicated ore' (probable ore) is ore for which tonnage and grade are computed partly from specific measurements, samples or production data and partly from projection for a reasonable distance on geological evidence.

" 'Inferred ore' (possible ore) is ore for which quantitative estimates are based largely on broad knowledge of the geologic character of the deposit and for which there are few, if any, samples or measurements. The estimates are based on an assumed continuity or repetition for which there is geologic evidence; this evidence may include comparison with deposits of similar type. ---- "

The definition of "ore" is " a natural aggregation of one or more minerals from which useful metals may be profitably extracted."

Using these definitions it is found that the Buckeye Apache Mines Company does not have any "measured" nor any "indicated ore" but has certain areas which ~~are~~ should be

explored to determine whether ore is present. Favorable areas for such investigation include:

1 The Buckeye Stope and Buckeye vein on the east side of the canyon.

2 The Halfway Shafts and vein outcrop on Halfway Claim.

3 Apache Shaft and Apache Tunnel and vein outcrop, including the ground between the Halfway and Apache Shafts.

4 Buckeye vein system on west side of Buckeye Canyon.

5 Old dumps and workings, ^{including} ~~including~~ the Sunrise Group and the four patented claims belonging to the Buckeye Apache Mines Company.

Recommendations.

~~THE BUCKEYE STOPE~~ Areas in order of ^{exploration} priority are:

- 1 - Buckeye Stope and outcrop - Clean out and repair stope openings and drifts for sampling. Drill ^{the} stope and drift walls, roof, and floor with either core drill or percussion drill or both. Put initial holes on wide spacing, filling in later. as required. Length of holes to range from ten feet to one hundred feet. If possible, use EX or EW tools to keep cost down.
- 2 - Area around Halfway Shafts and at Apache Shaft and Tunnel. Estimate ^{the} cost of rehabilitating openings and check whether water level is seasonal. Investigate possibility of drilling sample holes from the surface
- 3 - Investigate surface outcrops
- 4 - Investigate outcrops and workings on patented claims owned by Company.
- 5 - Investigate Sunrise Group. to ascertain whether mining claims in this group should be picked up.

Concentrate efforts ~~in one or two areas~~ ^{at a time} to find ore and to obtain samples for metallurgical testing. Keep crew to a minimum. If possible, undertake exploration work before road work is done. Use equipment which can be handled on sleds and which will withstand rough treatment.

EQUIPMENT

Very little equipment is ^{now} available at the Buckeye Apache and must be rented or purchased. A few prices as of this date are:

Air compressor ; 315 cfm capacity, diesel, rotary air end, skid or wheel mounted \$350.00 per month.

Percussion rock drill, dry, for sampling, with ^{2 1/2} ~~Stc~~ Stc-1

bits, and hoses and dust collector \$1,000 to \$1,500
Diamond core drilling, with EX or EW tools estimated at \$3 - \$4^{cost} per foot with moving, cementing and redrilling on hourly rate.
Aluminum pipe, 40-foot lengths, about \$1 per foot.
Air hoist, 2,000-lb capacity complete with cable, \$100 per month (rental) Good, used hoist can be purchased for about \$350 - \$400, when available.

Equipment for determining ^{at least} gold, silver, copper, lead ^{and} zinc. This can be set up at the Campo Bonito where LPG is available for a hot plate. Rough estimated cost of laboratory and assay equipment \$ 500 - \$1,000

A tractor preferably diesel-powered, rubber tired, with a front end loader ^{bucket of} 1 1/2 - 2 cubic yard capacity will be of great value in moving equipment and building road.

METALLURGY

Ore from the Buckeye Stope mined by Tevis prior to 1900 was milled in a 5-stamp mill with amalgamation plates. It is not known definitely whether this mill contained equipment for gravity concentration. Neither is there any evidence that the tailings were treated although the ore is ^{reported} amenable to cyanidation.

Nelson in his report refers to ~~the~~ flotation tests made ^{on} ore from the Apache Shaft by the College of Mines and Metallurgy (now Texas Western) El Paso, Texas January 31, 1936. and quotes the summary. The summary reads: " Flotation Tests on Apache Shaft Ore. This is unusually good flotation ore, the high recoveries obtained being much better than can usually be expected."

" While the ore is hard, the values shatter out while the ore is still coarse, so that grinding costs will be about normal.

" The amount of reagents required is a minimum, both in quality and kinds, xanthate and pine oil being all that is necessary.

" The value of the ^(sample) sample tested (-heads) is Au. ^{0.32} ~~0.32~~ ozs., Ag. 5.64 ozs., Pb. 1.95

" The grade of concentrate shipped, assuming that the ore milled is represented by the sample tested, will be:

Au. - 3.98ozs., Ag. 67.8 oz; Pb. 24.6%., Cu. 1.32%

" The recovery is:

Gold 98.7% Silver 96.1% Lead 99.0%

" The value of a ton of concentrate is \$192.67
Haulage, freight and smelter charges 14.00
Returns per ton of concentrate \$178.67
Return per ton of ore milled 13.85

Out of this will be paid mining and milling charges."

January 31, 1936, El Paso, Texas

Insert

" Thirteen tons concentrate into ore thus dividing haulage, freight and smelter charges and treatment by thirteen.

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About 1956 Wallack and Riker, lessees, installed a mobile dry screening plant at the Campo Bonito and ran several truck loads of vein rock from the Buckeye Stope and Halfway dump, making an iron concentrate, an iron-silica middling and a clean silica tailing. A grab sample of the concentrate assayed on February 8, 1966 returned!

Gold 0.40 oz; Silver 33.60 ozs; Copper 0.30%; Lead 8.80%

Wallack and Riker operated the screening plant for a ^{only} brief period ~~and~~
it is still on the Campo Bonito Claim.

William T. Crawford P. E.

Phoenix, Arizona

March 29, 1966



Assays in Port by R.L. Motz (December 11, 1935)

(15)

Sample No	Sample Width ft inches	Au oz per Ton	Ag oz per Ton
Apache Shaft 1	33	0.36	5.7
✓ 2	34	0.42	6.1
✓ 3	15	1.68	15.2
✓ 4	35	1.72	29.2
✓ 5	36	0.49	8.4
✓ 6	37	0.67	8.9
✓ 7	38	0.28	5.2
✓ 8	60	0.84	20.8
<u>36</u>		<u>0.7466^{oz}</u>	<u>12.93^{oz}</u>
		\$26.13	\$16.48

Apache Tunnel 11	53	0.86	10.4
✓ 12	54	0.32	2.3
✓ 13	55	0.67	7.6
<u>54</u>		<u>0.6158</u>	<u>6.75</u>
162		\$ 21.55	

Halfway Shaft No. 1 17	43	0.18	1.8
✓ 18	44	0.16	3.4
✓ 19	45	0.12	2.0
✓ 20	46	0.21	2.4
✓ 21	47	0.27	2.7
✓ 22	48	0.48	6.9
✓ 23	49	0.44	3.4
✓ 24	50	0.18	2.8
✓ 25	51	0.56	6.1
✓ 26	52	0.37	5.2
✓ <u>27</u>	<u>56</u>	<u>0.85</u>	<u>12.9</u>
<u>48.27</u>		<u>0.3606</u>	<u>4.70</u>
<u>531</u>		<u>12.67</u>	<u>2496.00</u>

Motz R-rvt - Continued.

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	Sample No	Sample width in inches	Au, oz. per ton.	Ag oz. per ton.
Halfway shot No. 2	28	42	0.41	12.5
	29	41	0.72	13.7
	30	40	0.52	11.6
Range		41	0.549	12.61
		40	#19.22	1550.70

Motz cut 30 samples.

Conclusions & Recommendations

In digesting the history and data available on the properties and reviewing the workings, it is my opinion that sufficient indication is prevalent to initiate an exploration program. Due to the fact that several possibilities of locating suitable quantity of ore to resume mining on today's market exists, exploration should be taken in stages. The foregoing statement is made assuming that it will be desired to begin mining operations as soon as a sufficient quantity ^{of quality} measured ore is established. However, if it is desired to ^{merely} develop ~~the measured~~ ore reserves for others to mine, the sequence of exploration does not hold such a matter of importance.

In my opinion ~~that~~ each of the following areas, in order of exploration priority, should be explored:

1

2

3

4

) ?

28
If sufficient ore is measured to begin
a profitable mining operation in the
Buckeye slope the remaining areas
can be explored as time and money
permits. If exploration of the Buckeye
slope does not prove satisfactory, the
next area should be explored and mining
began if the measured ore is proven to
be satisfactory and the process continued
until the property is developed or proven
out.

If sufficient ore is measured to begin a profitable mining operation in the ~~area~~ Buckeye slope, the ~~subsequent~~ ^{preparing} areas ~~of~~ ^{to be} ~~explored~~ can ~~be~~ ^{be} explored on money and time permits. If exploration of the Buckeye slope does not prove satisfactory, then the next area should be explored and mining begun if ^{the} measured ore ^{is} proven ^{to be} satisfactory, ~~and the process continues as noted above~~ and ~~as noted above~~ until the property ~~proves itself one way or another~~ is ~~proven out~~.

2 Building of roads and other expenditures should be kept to ~~an~~ a minimum until during the exploration phase. Money should not be spent with the anticipation of resuming mining operations until sufficient ore has been blocked out. Efforts should be concentrated in finding ore ~~at~~ in one area at a time with a minimum crew and close supervision.

3 Most of ~~the~~ Equipment for exploration can be skidded to the sites with the use of a tractor, or flown in by helicopter or both. Drilling water can be obtained on the property but in some cases may have to be pumped to the drill site in stages.

The working crews can ~~find~~ lodge at Camp Boniato in ^{comparative} comfort. Again only a minimum of expenditure is required at the camp until during the exploration phase.

EXPENDITURE

Very little equipment is now available on the property and ^{will have to} ~~must~~ be rented or purchased. A few prices are given on equipment as of this date:

Air Compressor, 315 cfm capacity, diesel	
rotary air end, skid or wheel mounted	350.00
rental per month	350.00

Percussion rock drill for dry sampling, drill
steel, bits, hoses & dust collector

1,000 to 1,500

X Diamond core drilling, EX or EW size

per foot

4.00 to 5.00

Aluminum pipe, 40 ft lengths

per foot

1.25

Air hoist, 2000 lb. capacity with cable

rental per month

100.00

used, purchase

350.00 to 400.00

Assay equipment for determination of

Gold, silver, lead, & copper & zinc

purchase

800.00

Tractor

etc

Some of the equipment should be purchased with the idea of reselling when ^{it is} no longer needed. ~~then~~ In some instances it will no doubt be less expensive to rent in lieu of ~~the~~ buying.

~~exp.~~

A budget should be set for exploring each of the four areas. In each case ~~if the budget~~ after if the money allowed in the budget has not been sufficient to develop adequate reserves, a hard look should be taken at the results before additional money is allocated. The following is an estimate of the amount of money ~~I believed~~ ^{to be} necessary to adequately investigate each site:

1. Mobilization ^{and demobil equipment} of equipment to site
Revamp existing conditions
Complete drilling & sampling program
Assay and report findings
2. Mobil and demobil equipment
Revamp existing conditions
Complete drilling and sampling conditions
Assay and report findings
- 3.