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04/01/98

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: GREAT AMERICAN MINE

ALTERNATE NAMES:
HENEY AND ALPINE TUNNELS
APACHE PROJECT

COCHISE COUNTY MILS NUMBER: 144

LOCATION: TOWNSHIP 20 S RANGE 27 E SECTION 1 QUARTER SE
LATITUDE: N 31DEG 43MIN 02SEC LONGITUDE: W 109DEG 32MIN 00SEC
TOPO MAP NAME: SWISSHELM MOUNTAIN - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:
LEAD
SILVER
GOLD LODE

BIBLIOGRAPHY:
KEITH, S.B., 1973, AZBM BULL. 187, P. 71
ADMMR GREAT AMERICAN MINE FILE
ADMMR GREAT AMERICAN MINE COLVO FILE

Great American (f)
Cochise

JABA Inc., APACHE PROJECT **COCHISE COUNTY, ARIZONA**

JABA's chairman John Guilbert has long been aware of potential Carlin-style mineralization at the northern end of the Swisshelm Mountains. Here, limestone host rocks are pervasively replaced by long and broad silica bodies called jasperoids along steep faults, flat faults, and bedding planes. The Great American Mine - active from 1898 to 1930 - is in one of the jasperoid lenses; re-sampling by JABA confirms 0.17 ounce per ton gold and 11 ounce per ton silver occurrences. To the north, 2 square miles of jasperoid outcrop may conceal large tracts of 0.03 ounce per ton gold with estimates of a potential gold resource up to 4 million ounces, open at depth and to the south. IP and CSAMT geophysics and multi-element geochemical surveys over most of the jasperoid field were strongly favorable and preceded Phase 1 drilling in the Great American portion, where 10 RC holes gave both high and low returns. Final geochem data for the larger targets to the north and west are being collected and compiled, after which a proposed Phase 2 drill program will be designed. JABA's land package totals over 19.5 square miles (12,464 acres) 100% controlled by JABA.

- Location — 120 km southeast of Tucson in Cochise County, Arizona, USA
- Infrastructure poor but accessible; highways, rail, power nearby.

Jaba Inc., Apache Project none received
March 23, 1998

NEWS RELEASE 97-1 **February 17, 1997**

UPDATE ON APACHE DRILL PROGRAM

JABA Inc. (ASE - **JBA**) announced today the results from the first phase of drilling at its wholly owned Apache project in southeast Arizona. Twelve RC holes averaging 360 feet deep were completed for a total of 4305 feet in the Great American Mine (GAM) area. The drill program cut 29 intervals of mineralized jasperoid in runs from 15 to 100 feet thick, as well as generally unmineralized host limestone. Although the highest grade 5-foot sample ran 5.6 ppm (0.2opt) Au and >100 ppm (3opt) Ag, grades of 1-2ppm Au are less common than anticipated. Preliminary evaluation indicates that the GAM is not a large tonnage, low grade auriferous deposit as originally speculated, tending more to lower tonnages of medium to high grade. Earlier JABA releases cited 112 assays taken at the GAM in 1980 that averaged 0.17 opt Au. JABA has confirmed these values with further underground sampling where 15 of 30 channel samples assayed >0.1 opt Au, with values up to 0.635 opt Au and 162 opt Ag. The GAM clearly has high grade areas, but, as is common in drilling bonanza-type epithermal systems, they are under-represented at the points of penetration by JABA's drilling.

The Apache project, in the north end of the Swisshelm Mountains of southeastern Arizona, is in two parts; the Great American Mine and the North Swisshelm jasperoid field. JABA has leased the Great American and has acquired minerals rights to over 19 square miles covering other jasperoid outcrops. Initial geochem sampling has revealed broad areas of anomalous mineralization, generally coincident with jasperoid silicification. Phase 2 drilling will proceed when geochemical results and the results of Phase 1 drilling are compiled.

The Apache project is part of an epithermal jasperoid/silver-gold metallotect running from north of the Commonwealth Mine (11 million ounces silver - 150,000 ounces gold produced, 8 million tons of 0.03 opt gold reserves) 50 miles southeastward to the Mexican border, with more than twenty prospective targets in between. With this trend, minable reserves occur in the adjacent Dos Cabesas, Dragoon, and Chiracahua Mountains, and at Mexican Hat. JABA remains confident that significant new discoveries will be made at Apache and along the Apache trend. JABA's winter drilling program has now moved to the Silver Bell copper target, where an 11,000 foot drill program commenced in early January. Following Silver Bell, the drill rig will move to JABA's copper prospects at Yardley, Arizona and Maggie's Creek, Arizona. As well, JABA's 90% owned subsidiary, Compania Minera JABA S.A. de C.V., will commence a 5,000 foot drill program at its copper-gold skarn target at Seri in Sonora, Mexico by mid March.

Donald A. Sharpe,
President

Great American Mine (?)
Cochise

NEWS RELEASE 98-28 **December 7, 1998**

JABA COMPLETES FIRST STAGE OF MAPPING AND EVALUATION OF APACHE GOLD AND SILVER PROSPECT

In JABA's News Release dated June 22, 1998, we described commencement of a mapping- and geochem-based evaluation of its Apache gold and silver prospect in the Northern Swisshelm Mountains of Cochise County, Arizona, to be conducted by specialists Dr. M.L. Silberman and Dr. A.K. Armstrong. The initial stage of this study has been completed.

The results of this 'scoping' study are very positive and suggest that the upper level of a wide bonanza gold-silver vein more than 3 kilometers (1.8 miles) long is exposed at the surface and deserves drill testing.

The text of their executive summary follows:

Report on Mapping and Evaluation of the Apache prospect for JABA (US) Inc. undertaken by Dr. M.L.Silberman and Dr. A.K. Armstrong. Drs. M.L. Silberman and A.K. Armstrong have completed a first round of mapping and evaluation of the Apache gold and silver prospect in the northern Swisshelm Mountains, Cochise County, Arizona. Field mapping has indicated that the previously identified three kilometer square blanket jasperoid outcrop area consists of a series of silicified breccias of karst cave and regolith origin enclosed in unaltered Pennsylvanian and Permian Horquilla Limestone. The breccias developed on an erosion surface and in caves and sink holes in Early- to Mid-Tertiary time just prior to or perhaps overlapping volcanic activity.

The mapping delineated a strong north-south fault zone to the west of the blanket jasperoid that can be traced for more than three kilometers. This fault zone is characterized by jasperoid breccia that differs from the blanket breccia in having well developed hydrothermal features such as chalcedonic quartz veins, crackle breccia, quartz-veined clasts, exploded clasts, and hydrothermal micro-breccia veins. Both the blanket and fault breccias are moderately to heavily iron-oxide stained. About half way through its mapped exposure, the fault splays into two strands that diverge to the north and north-northwest. Where the north-trending fault is intersected by east-west faults the jasperoid widens. Near its southern end, a wide zone of jasperoid, or "blow-out", is exposed where several east-west and northwest trending faults intersect the main structure. This blowout is about three hundred meters across.

The north-south fault zone is interpreted to be a main hydrothermal fluid conduit. Fluids welled upwards along this structure and encountered impermeable volcanic rocks that covered the limestone and regolith/cave/sinkhole erosional surface. The fluids then flowed laterally to the east down a gradient through the permeable regolith/cave breccia beneath the volcanic aquaclude and silicified those breccias. Strong As *(arsenic)*, Sb *(antimony)* and Hg *(mercury)* anomalies in the blanket jasperoid, along with low level and spotty Au *(gold)* contents, represent distal geochemical signatures of the more westerly upwelling system.

Eighteen rock chip samples were collected along the north-south jasperoid structure. Of these, sixteen had detectable (>5 PPB) Au *(greater than 5 parts per billion gold)*, thirteen had more than 15 PPB *(15 parts per billion)*, and seven had greater than 100 PPB *(100 parts per billion)*. The highest and most consistent Au *(gold)* contents came from the jasperoid "blowout", where all samples, except one, had greater than 100 PPB, with 175, 120, 215, and 560 PPB respectively. The highest Au content, 680 PPB, came from a sample taken from one of the splays near the north end of the structure. Arsenic, Sb *(antimony)*, and Hg *(mercury)* contents were moderately high (up to 425, 80 and 3000 PPB, respectively) and correlated with Au content.

The main fault zone can be traced discontinuously south of the "blowout" where it contains Ag*(silver)*-base metal veins, pipes and mantos hosted in carbonate rocks. This base-metal zone has been identified as a

stratigraphic level about three thousand feet low[illegible]than that hosting the blanket and fault-jasperoid to the north. On this [illegible]is, we suggest that the main north-south fault zone at the blowout and to the north is an upper, shallow level of a significantly mineralized Au-Ag *(gold-silver)* potential bonanza vein system that could extend to great depth before it zones down to Ag-base metals. Low but consistent Cu *(copper)*, Pb *(lead)* and Zn *(zinc)* contents of the jasperoid corroborate this suggestion.

Dr. Miles L. Silberman

November 22, 1998

Based upon this report, JABA will undertake further exploratory examination of the property and is now seeking a joint venture partner to join JABA in an extensive drilling program to further evaluate the Apache prospect.

On behalf of the Board of Directors,

James A. Briscoe
Chief Executive Officer

The Alberta Stock Exchange has neither approved nor disapproved the information contained herein

Great American Mine (file) Cochise Co.

JABA Inc.
Mining Exploration

JABA

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NEWS RELEASE 99-1 February 5, 1999

During the past several months, JABA has been working diligently on a variety of projects and joint venture proposals to other companies.

In Mexico, several companies have been actively evaluating our Niko polymetallic limestone replacement (silver, zinc, lead, copper, gold, molybdenum, & tungsten) project. Approximately 200 additional surface geochem samples as well as proprietary geophysics has been run over the surface. Positive comments have been received but JABA has yet to receive the data. Niko is located approximately 24 kilometers (15 miles) northeast of the producing Naica polymetallic mine, whose production and reserves amount to approximately $5 to $8 billion in gross metal value. Niko is also approximately 65 kilometers (40 miles) southwest of the famous Santa Eulalia mining camp, a polymetallic limestone replacement deposit also. Santa Eulalia has produced for more than 100 years, and is still producing from the San Antonio mine whose surface characteristics, i.e., an abundance of manganese veins and manganese filled breccias, are very similar to the surface expressions of Naica and Niko. Just south and contiguous with Santa Eulalia is the Advanced Projects Limited target developed by Dr. Peter Megaw, in which CSAMT geophysical survey lines suggest continuation of the Santa Eulalia type mineralization as well as a target for deeply buried skarn under the volcanics. This project, the Guigui (pronounced Gee-Gee), suggests strong similarities to JABA's Niko project and the success of CSAMT geophysics which has not yet been done at Niko - a much shallower target, is intriguing to JABA.

Other examinations have been made of the Centauro, Opata, and Seri projects. Some geophysics has been performed on these. Positive pronouncements on the projects have been received, but the low price of copper as well as gold is hindering progress. A major is considering one of these projects, and JABA is optimistic that a joint venture with drilling will result.

Over the last three months, 30 years of data has been compiled on JABA's Hay Mountain project using a computer geographic information system (GIS) data base. Those who follow JABA's news releases will remember that JABA had a joint venture with Phelps Dodge on this project, however, Phelps Dodge dropped out upon their corporate decision to drastically curtail almost all exploration within the US and Canada. JABA retained all the property and data generated on the project. Compilation of this data, as well as new aeromagnetic data purchased by JABA indicates that older aeromagnetic anomalies were mis-located, prompting the mis-targeting of all subsequent work. JABA has found that: 1. There is a substantial aeromag high approximately 3.5 miles long, probably representing a porphyry copper-gold style intrusive at relatively shallow depth; 2. This hidden body is surrounded by a distal, sub-micron gold halo, symmetrically arranged around the magnetic high (values as high as approximately 1.5 ounces have been obtained from silicified zones at the surface in the limestone host rock); 3. A circular structural anomaly is apparent on rectified color photo mosaics surrounding both the mag high and the gold zone (this appears to be a structural feature related to the intrusive activity); and 4. Significant soil anomalies in gold, arsenic, and mercury are also present in the distal zone. Jim Briscoe has prepared a comprehensive Power Point slide presentation on the Hay Mountain project encompassing the geologic, geochemical, and geophysical aspects of the property. During the last week in January, in conjunction with the Cambridge House Investment Conference and the Cordilleran Round Up in Vancouver, Jim presented this information to a variety of major and intermediate companies. The information was well received, and JABA expects to be conducting field visits this spring.

The attitude of participants at the conferences in Vancouver was optimistic. There were few that had not experienced a very grim 1998, but there seemed to be signs of an upturn in the new year.

Presentations have also been made or are underway for our projects at: 1. East Silver Bell where a new porphyry copper center with thick leached capping indicating a potentially enriched chalcocite blanket at greater depth was penetrated by 4 RC holes this summer; 2. Yardley where a mag low 1.3 miles long by 0.5 miles wide surrounded by four large mag highs - the entire magnetic anomaly covering approximately 8 square miles - has been defined. This signature suggests a porphyry copper center surrounded by skarn. One RC hole has encountered copper-moly anomalous massive magnetite skarn alteration, confirming that the source of the magnetic highs are originating from skarn; 3. Tombstone-Walnut Creek where geochemical patterns suggest a porphyry copper center with skarn copper, gold, silver, zinc, lead replacement deposits; 4. Beatty, Nevada where a.) the Providence Project forms the east wall of the Barrick Montgomery open pit now dormant, and b.) the Tram Ridge property abuts Rayrock's Mother Lode mine property and lies on the extension of the Mother Lode fault - vein; and 5. At Randsburg, California where JABA claims abut the Glamis Gold Rand Project. 6. Apache, Arizona where Drs. Silberman & Armstrong have identified a several kilometers long gold bearing quartz vein that appears to be the feeder to previously mapped gold-bearing jasperoids. We will keep you advised as news of developments occur.

Approximately 100 surface geochem samples have been taken over extensions of mineralization at the Sullivan project. Metal anomalies have yet to be interpreted. Negotiations with the underlying property owner to allow additional metallurgical studies continue.

It is also heartening to note that Excellon, on whose Board of Directors Dr. Guilbert and Jim Briscoe served until 1997, appears, with their partner Apex Silver Mines, to have some positive developments on their Platosa project in Durango State, Mexico. The silver-lead-zinc gold project which is reported to be of substantial size, has been penetrated by four drill holes and assays should be available shortly. Excellon stock has moved from $.06 CDN to as high as $.71 CDN before falling back a bit to the low $.50 CDN range. This project lies 280 kilometers (170) miles south of JABA's Niko project along the central Mexico limestone silver - base metal replacement deposit trend. Congratulations to Excellon. JABA controls some 324,000 shares of Excellon Resources Inc.

JABA is pleased to announce that Dr. John Guilbert, Chairman of the Board, will be receiving his prestigious Penrose Gold Medal (News Release November 13, 1998) on March 2 in Denver at the annual meeting of the Society of Economic Geologists (SEG). In addition to the Penrose Medal, John has been selected as SEG International Exchange Lecturer and will be speaking to more than 20 international audiences comprised of professionals and academics in Brazil, Argentina, Chile, Peru, and Ecuador during March and April, focusing his lectures on porphyry copper deposit geology and exploration, which will bring international attention to JABA and JABA's portfolio of projects developed by John and Jim Briscoe.

On behalf of the Board of Directors

"James A. Briscoe"

James A. Briscoe, CEO

The Alberta Stock Exchange has neither approved or disapproved the information contained herein.

Gt at American Mine(f)

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NEWS RELEASE 98-28 **December 7, 1998**

JABA COMPLETES FIRST STAGE OF MAPPING AND EVALUATION OF APACHE GOLD AND SILVER PROSPECT

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Dr. Miles L. Silberman
November 22, 1998

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On behalf of the Board of Directors

"James A. Briscoe"

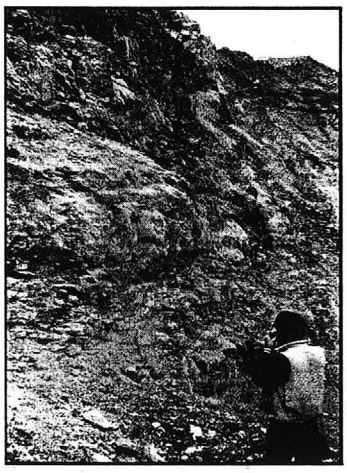
James A. Briscoe
Chief Executive Officer

The Alberta Stock Exchange has neither approved nor disapproved the information contained herein.

Great American Mine (f)
Cochise

APACHE PROSPECT, ARIZONA

The Carlin trend, which hosts the giant Barrick Gold fortune and the Miekel mine, contains large areas of silicification of Paleozoic sediments. The geology of the Apache prospect is similar to that of the Carlin trend, and is already known to host considerable epithermal precious metal and mesothermal mineralization. Current work is focussing on exploration for Carlin-type deeper-seated gold and base metal deposits, while land acquisition continues. Initial field samples suggest disseminated bulk tonnage deposits with multi-million ounce potential.

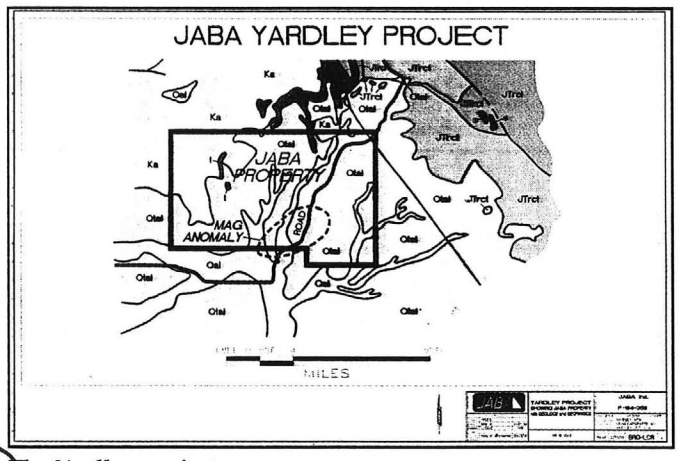


The Goldstrike mine, before discovery of Barrick Gold's Miekel mine.

YARDLEY PROSPECT, ARIZONA

A porphyry copper prospect of multi-billion pound potential has been identified at Yardley, from geophysical data recently released by the USGS. The Yardley prospect is a subsurface target that will be require solution mining, or some other non-disruptive technique. The viability and public acceptance of these techniques has been demonstrated by the US Bureau of Mines, as well as by ASARCO at its 1.5 billion ton, 1.3% copper Santa Cruz deposit.

The Yardley is covered by alluvium, and lies in an area of known deposits and existing production. It will be explored using volatile-element, enzyme-leach, and botanical geochem methods, further geophysical surveys, and, if warranted, by totally non-disruptive drilling. Initial field sampling and analysis is underway.



The Yardley project.

From JABA Annual Report 1996

Great American Mine (f)

NEWS RELEASE 97-1 **February 17, 1997** Cochise

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Donald A. Sharpe,
President

GREAT AMERICAN MINE COCHISE COUNTY

MG ORAL REPORT 8/11/81: John Faick, Century 21, has first lease on the Great American Property. Telephone 326-4333 for office and 325-2312 for home.

MG WR 1/22/82: Provided file information on the Great American Mine Cochise County and the Oceanic Mine, Pima County to David Rabb, consulting metallurgist. Both of these properties are owned by the University of Arizona.

MG WR 5/7/82: Mr. John Faick reports that he subleases the Great American Mine of Cochise County to Mr. Everett Gust, President/Owner, General Minerals Corp., Imperial Beach, California.

KAP WR 6/12/87: Dave Rabb reported that a firm known as Alhambra Mining (card) is exploring the Great American Mine (file) Cochise County. The property is currently owned by the University of Arizona.

MG WR 5/13/88: Mr. John Faick reports that the Great American Mine (file) Cochise County is now sub-leased to Bond Gold-Dallhold Resources (card. This firm has, within the past few months, drilled at lease three reverse ciruclation holes on the Great American Patented claim.

[redacted]

Reference:
See Report by John N. Faick,
Registered Geologist
December 20, 1967.

ABM Bull. 187, p. 18, 30

See: Eagle-Picher "G" Confidential files on
Great American

KAP WR 5/15/80: J.T. Stockdale, P.O. Box 33, Imperial Beach, California 92033, reported he plans to re-start the Great American Mine in the Swisshelm Mountains, Cochise County. He reported that he shipped gold-silver siliceous ore to the Phelps Dodge Smelter in Douglas, through Gilbert Construction Company in 1973. The mine is on patented ground and includes claims under the Mineral Survey Nos. 830 and 1262.

GWI WR 11/13/80: Joe Stockdale, Bisbee 432-4820, called regarding start up of and leaching operations at the Great American Mine.

MG WR 12/12/80: Went to the Great American Mine in Cochise County. Rotary (?) drilling is being done on this property.

MG WR 1/9/81: J.T. Stockdale (phone, son's home in Bisbee 432-4820) is trying to get an agreement allowing him to mine the Great American in Cochise County. In January 1973 he mined and shipped 682 tons of silver-bearing ore, to Phelps Dodge, from this property.

JHJ Memo 1/12/81: Joe T. Stockdale, Box 614, Elfrieda, Arizona 85610, was in the office January 12, 1981. He reported he is trying to operate the Great American Mine. He stated Phelps Dodge would take 450 TPM of ore.

CJH WR 1/16/81: Joe Stockdale, Box 375, Bisbee, Arizona, phone 432-4820, was in office. He has sub-leased the Great American Mine (Ag-Au 10-1 ratio) which was willed by owner to the U. of Arizona. The mine consists of four patented claims. The ore occurs in pods in silica adjoining a limestone - porphyry contact. The mine is located in Rucker Canyon, Swisshelm Mountains, Cochise County.

GREAT AMERICAN MINE COCHISE

Work at the Great American stopped and another company is reported to be taking a look. GWI AR 73-74

Mine visit at Great American mine; no one around and no signs of recent activity. GWI WR 11/26/74

Mine visit at Great American mine; no sign of recent work. Compressor still on property. GWI WR 3/19/75

Asarco continues to drill Horn's eight lode claims probably in ~~S. 20, T20S, R22E~~ sec 1, T20S R22E and sec 6 T20S R22E. A new hole was down 1800 feet. The area being drilled lies between Uncle Sam Hill and the Charleston Road. VBD WR 8/7/75

I drove to the Swisshelm Mts. and examined the Great American mine. There has been no recent activity in this area. VBD WR 1/27/76

Mine visit - Great American mine. GWI WR 10/8/76

Mr. John Faick in to report that he still leases the four claims comprising the Great American Mine in the Swisshelm mining district (Cochise Co., Az.) from the Univ. of Az. He has subleased to a small company in California; this company is drilling the silver-gold property now. MG WR 10/12/78 , 11/7/78 a.p.

GI/WR 3/21/79 - John Faick called and has interest still in the Great American and expects more drilling on the property in the near future. 4/26/79 a.p.

GREAT AMERICAN MINE COCHISE COUNTY

Mine visit to Great American Mine, Swisshelm Mountains. No activity. A bulldozer had made some roads since the last visit. GWI WR 1-7-68

Visited Great American Mine - no activity available. GWI WR 5-18-68

Mine visit. Signs of activity but no one around. GWI WR 11-16-68

Exploration work near the Great American Mine in the Swisshelms was in progress. Austral Oil has an agreement with Arizona Exploration and in addition have staked considerable ground. GWI QR 12-1968

Austral Oil has option on Great American - Tel. call from John Faick to GWI 1-11-69

The Austral Oil Co. had a lease on the Great American mine and staked a great many claims to the north and west. No other activity of consequence reported in the area. GWI QR 3-1969

The Austral Oil Co. maintained their option on the Great American mine and a large block of claims adjoining to the north and west. GWI QR 9-1969

Mine visit - Great American Mine - activity expected soon. GWI WR 12-5-70

Swisshelm: The Gilbert Construction Co. did some drilling on the Great American Mine to try to obtain some silica with a precious metal or copper content. At this moment the results have been disappointing. GWI QR 4-1-71

Austral Oil Company is active in the Las Guijas area near Arivaca. GWI QR 4-1-71

The Austral Oil Company continues drilling and exploration on their claims in the Las Guijas area. GWI QR 6-30-71

Mine visit. Great American Mine. No Activity. GWI WR 10/5/71

Mine visit. Great American mine. No new activity. GWI WR 9/14/72

Mine visit. Great American mine. Still down, a California man has a lease and expects to start shipping to PD in the near future with Gilbert doing the crushing and hauling. GWI WR 12/13/72

As a follow up on previous day's inquiry relating to the ownership of the Great American Mine, I found in the files that S. Secrist was the owner, but his death last November caused it to be placed in the hands of the Ariz. Bank as executor, until a petition to the court is executed thereby giving it to the U. of A. according to Secrist's request in his will. I phoned this

(next page)

information to Mr. Everett's office in Phoenix, but they had learned that the mine was under lease to a Mr. Stockdale (?) prior to Mr. Secrist's death and that the lease is still valid. REL WR 9/25/73

Phone call from John Faick regarding status of Great American mine, reported that dumps had been shipped to PD at Douglas via Gilbert Construction Company, were planning on more work. That they were looking for someone else to look at the Ellsworth property. GWI WR 3/11/74

SPEED LETTER®

FROM G. W. I. TO F.P.Knight

SUBJECT

FOLD

MESSAGE DATE 6-7-67 19

What is the name of company interested in the Great American and of its engineer whom John Faick is working with? = John is interested in the Great American by himself to-date.

He is connected with the Ponderosa Development Co (Reg in Ariz). This is an operating concern.

He is also a director in Arizona Exploration Co. Registered as AREX. Mr. Filiatrault, vice-pres. J. Harry Feldman, ~~V.P.~~ Pres. Ben Bennett secry. Bennett is a mining engineer. John Faick is a director in this company. The mailing address is 2777 North Campbell 85719, Tel 327-6041 ~~after hours. 325-6162~~

SIGNED FPK

REPLY DATE 6-9-67 19

John may try to interest the Ponderosa outfit in the Great American.

Ben Bennett is no longer associated with Arizona Exploration Company as of August 1967. J.H.D. 10/9/67

FOLD

SIGNED G.D.

GrayLine "SNAP-A-WAY" FORM 44-902 3-PARTS RETAIN WHITE COPY, RETURN PINK COPY. TURN OVER FOR USE WITH WINDOW ENVELOPE.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine GREAT AMERICAN MINE Date 4/29/64

District SWISSHELM DISTRICT, COCHISE COUNTY Engineer LEWIS A. SMITH

Subject: MINE VISIT WITH STANLEY SECRIST (TUCSON) OWNER 4/29/64

REFERENCE IS MADE TO AXEL JOHNSON"S REPORT, OF SEPT. 19, 1963, that rather completely summarizes the fundamental data.

PRODUCTION: (1912, 1920-1921, 1925 and 1934-1935).
The reported shipments amounted to 687.771 tons of ore that averaged 0.293 ounces of gold and 28.62 ounces silver to the ton, and about 50 tons that averaged 11.10 ounces of silver to the ton, and about 24.8 per cent lead, a total of 738 tons. Of this about 419 tons showed about 0.07 per cent copper. All of this showed good silica content, some recent general samples assaying 79-85 per cent, along with variable gold-silver content. Numerous samples of certain better areas, where stoping occurred, indicate that good gold-silver areas did exist but mostly in lenses.

WORKINGS: Axel Johnson pretty well summarizes these except that the main curved adit was extended to 675 feet in total length, the middle portion of which is in relatively fresh limestone. Several cuts, winzes and short shafts are also present.

GEOLOGY: The general geology appears to consists of a wedge, or band, of limestone and quartzite (probably upper Paleozoic) that butts against, on a fault contact to the south, a large mass of rhyolite (some of which is porphyritic) a portion of which appears to be dacitic. Adjacent to the limestone and between it and the main mass of rhyolite is a narrow wedge of rhyolite that has been faulted downward from the main rhyolite mass. This narrow wedge, or "sliver" block, apexes in a small saddle at the head of a sharply incised steep canyon. The canyon is straight in course and follows the fault that forms the south border of the "sliver" wedge. This fault trends nearly EW. The fault that borders the north side of the "sliver" wedge trends N 60 deg. E. The limestone block to the north of this wedge also generally trends N 60 deg W. Due to variable silicification along transverse shear zones, that cross the limestone block, the block has an irregular crest, being high in relief where silicification of the limestone is most intense, with intervening areas of less relief where the silicification was comparatively less. Thus the limestone block from W to E is composed of alternate limestone and silicified zones, the limestone areas being much wider than the two upper silicified zones. The limestone block from top (SW) to bottom (NE) has a silicified zone that trends NW and that is 25-30' wide; then roughly 100 feet of relatively pure limestone; then a second silicified zone that may be up to 30 feet wide; then another 150-200 feet of limestone; then 500 or more feet of strongly sheared and relatively severely silicified limestone (most workings are in this zone). The total length of the limestone-silica band will approximate 1000 feet and its width would average between 100-125 feet. The limestone block is bordered on the northwest by a brown, more or less, uniformly-grained, igneous rock which, near the contact (this contact trends N 60 deg E, also) outcrops sparingly and intermittently, being exposed, mostly, next to the lower (northeastmost) silicified zone. C. L. Orem classed this as a porphyritic sill, but there is also some evidence that this rock may be a dike. Some brecciation occurs in a narrow belt along the contact, especially in the limestone. Due to the sparcity of exposures the function of this rock was not worked out, but its intrusion may have contributed to the severe shattering of much of the limestone near to the contact, prior to the silicification and metallization. The "dike" or "sill" rock was too badly altered to identify it. Its weathering pattern and texture suggest that it may be intermediate in composition. This lower (northeast) zone is intensely sheared particularly in a NW - SE direction.

The most intense silicification and limonite occurs along these shears but it also extends outward along favorable limestone beds. The entire zone mass probably varies greatly, from place to place in silica and limonite content. The spacing of the shears also varies, causing considerable local variation in the degree of silicification. The gold and silver are probably affiliated with higher iron areas. The fresher limestone between the silicified zones contains cherty masses, and lenses, that are part of the original rock. The limonite is mostly derived from pyrite. However the degree of silicification of the limestone on the whole looks to be adequate for silica flux material, although some less silicified portions may have to be identified and sorted out. Nevertheless a considerable amount of flux grade material is present in the lower (NE) zone. It was, therefore, suggested that a large general sample (a carload or more) be sent to the smelter for a trial run. Such a sample should cover all of the more silicified area, the object being to determine whether the deposit is amenable to open-pit mining. A few supplementaryy drill holes also would be advisable in order to determine the thickness and length of the silicification, even though the tunnels indicate a good length. The deposit borders are not well differentiated. Smelters prefer and assured tonnage over a long period, and, in order to meet this condition, a good reserve should be established before making contracts. The holes and the large carlot sample should also establish whether the gold-silver content is adequate since the mining of silica alone might be marginal. The truck haul would consist of 35 miles, of which about 12 or more miles would be on dirt road that, at present, would not be too good for large trucks. Since most replacement deposits, of this type, are erratic in shape and distribution, adequate sampling is almost a must. The two upper (SW) silicified zones are small and could be eliminated from consideration for the present.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Great American Date Sept. 19, 1963

District Swisshelm District, Cochise Co. Engineer Axel L. Johnson

Subject: Field Engineers Report. Information from Stanley Secrist, et. al. & personal visit.

References
(1) Report on Great American Mine by A. H. Gracey, dated Nov. 1, 1922.
(2) Report by C. L. Orem in the form of a letter to A. H. Gracey, dated Feb. 14, 1923.
(3) Report by C. L. Orem, accompanied by a letter to J. T. Stockdale, dated Dec. 22, 1935.
(4) Copies of Great American shipments to smelters --- 1912 to 1935 (with '35 report).
(5) Sketch by C. L. Orem, showing assays of samples in old workings (with '35 report).
(6) Plat of Great American Mining Co. claims --- Mineral Survey No. 1262 --- Dec. 6, 1897.

Location Sec. 1 - T 20 S - R 27 E and Sec. 6 - T 20 S - R 28 E.
In the Swisshelm Mts., about 30 miles N. of Douglas, & 18 miles E. of Elfrida.

Number of Claims 4 patented claims -- Horn Silver, Great American, Alice, & Sulphuretts.

Owner Stanley M. Secrist, 15 Calle Conquista, Tucson, Ariz.

Principal Minerals Gold, Silver, and a small amount of Lead.

Present Mining Activity None. Owner will sell or lease.

Geology and Mineralization

(1) From report by A. H. Gracey, dated Nov. 1, 1922: (Ref. (1))

"The outstanding feature is the intrusion of a dike of rhyolite porphyry into and through limestone. In the fractured and altered zone along the contact between these formations occurs the ore deposit.

"The mineralized area ------ is over 1,000 ft. long and from 50 to 100 ft. wide. It is well exposed by present workings for a length of 500 ft. and a width of 100 ft. The general strike of the deposit is NE - SW. The values contained are silver and gold, ----- accompanied with some iron pyrites and lead carbonates. The exposed ore is, almost entirely oxidized. A portion of the gold is free and some native silver is shown, but the latter occurs chiefly in the chloride form. High grade ore is irregularly distributed throughout the deposit."

(2) From report by C. L. Orem, dated Feb. 14, 1923: (Ref. (2))

"In the altered and fractured zones, along the contact of the porphyry and limestone, which composes the mineralized area of this deposit, the mineralizing solutions have replaced certain strata in the limestone more extensively than others and have followed the fractures and seams.

"The present workings do not determine the lateral extent of the ore body nor the distances along the strike. The mineralized area southwest beyond the present workings is well altered and silicified the full length of the property."

(3) From report by C. L. Orem, dated Dec. 22, 1935: (Ref. (3))

"The mineral area is composed of beds of limestone and quartzite underlain on the dip by a large porphyry sill which makes up into the sedimentary series in the form of tongues and dykes.

"The mineralization may extend thru a thickness of 200 feet or more of these beds, judging from surface exposures and the present workings. However, if it will hold up to a 100 ft. in thickness for a distance of k 1,000 ft., each 200 ft. on the dip it extends would make a tonnage of better than 1,500,000 tons."

(4) From sketch by C. L. Orem, showing assays of samples: (Ref. (5))

"Altered Limestone Beds dip about 20 degrees to North"

(5) Several quartzite outcrops are found on the Horn Silver claim. One such outcrop is about 40' wide x 120' long. Dip of limestone & quartzite beds are 20 deg. to N.

Great American Mine (continued) Sept. 19, 1963,

Swisshelm District, Cochise Co. Axel L. Johnson

Ore Values

(1) From report by A. H. Gracey --Nov. 1, 1922, pp. 4-6: (Ref. (1))

(a) NE end workings --- samples showing average of 14 ft. & a tonnage of 2,000 tons ----- $ 10.00 per ton of gold and silver based on 1922 prices.

(b) SE end workings --- samples showing average width of 11 ft. and a tonnage of 10,000 tons over a length of 150 ft. ---- $ 13.75 per ton gold & silver.

(c) Dumps ---- samples representing tonnage of 2,000 tons ---- $ 13.00 per ton.

Total of above ---- 14,000 tons with average of $ 13.10 per ton at 1922 prices.

(2) From report of C. L. Orem --- Feb. 14, 1923, pp 2-3: (Ref. (2))

(a) Drift samples -- 42 ft. in length x heigth of drift-- Gold -- 0.22 oz. Silver -- 16.0 oz.

(b) Across 12 ft. on side & 4 ft. on face of cross cut -- Gold -- 0.16 oz. Silver -- 6.9 oz.

(c) In open cut, above 105 ft. adit portal -- Gold -- 0.16 oz.; Silver - 5.5 oz.

(d) In open cut, below 105 ft. adit portal -- Gold -- 0.20 oz.; Silver -- 16.0 oz.

(3) Report of Dec. 22, 1935 lists 46 samples, the first 9 of these being copies of samples taken previous to the Feb. 14, 1923 report, described above; and the remaining 37 being samples taken Nov. 24, 1935. From these samples, C. L. Orem comes to the following conclusions: (Ref. (3))

(a) "6 to 15 feet thicknesses of these beds exposed 60 feet deep by the present workings will hold up to 15 oz. silver and $ 5.00 to $ 11.00 gold per ton.

"The average of the ore is highly silicious -----

"In regard to direct shipping ore it is conservatively estimated that 20,000 tons could be produced that would average 16 oz. silver and 0.20 oz gold, which would be $ 20.00 per ton present prices.

(4) Shipments to smelters from 1912 to 1935: (Ref. (4))

Average of 16 shipments show Gold -- 0.293 oz. & Silver -- 28.62 oz.

Average of 2 shipments of lead ore shows --- Lead-- 24.35 % -- Silver -- 11.10 oz.

Ore in Sight and Probable

(a) From report by A. H. Gracey -- Nov. 1, 1922, pp 4 - 6; (Ref. (1))

Mr. Gracey lists the available tonnage that can be milled as 14,000 tons (this includes 2,000 tons in the dumps), and adds "The inclusion of probable and possible ore would greatly increase the tonnage estimates."

(b) From report by C. L. Orem, dated Dec. 22, 1935: (Ref. (3))

Mr. Orem estimates the direct shipping ore to be 20,000 tons, averaging $ 20.00 per ton, as shown above under"Ore Values" ((3) - (a))

In regard to probable & possible ore, he states --- "The mineralized zone, where exposed on the surface, is prominent for 1,500 ft. and may be considerable longer under the surface. In places, it reaches a maximum width of from 200 to 300 feet."

He then suggests a possible tonnage of 1,500,000, as shown on page 1 under Geology and Mineralization, par. (3).

Milling & Marketing Facilities

Both Mr. Gracey and Orem, in their reports, recommend a mill. Both cyanidation and concentration-flotation methods were recommended. A mill, evidently, was built, as is shown by concrete footings still remaining and was operated for a short time, as is shown by a small tailings dump nearby. Mr. Dale Sherman, Elfrida, Ariz. informed the field engineer that he worked in the mine in 1937 putting up raises, that there was a mill there, the lower grade ore being milled and the higher grade trucked to El Paso smelter. He said Mr. Ben Heney (now deceased) was the superintendent. He said that flotation was used and that the mill operated about 6 months, capy. not known.

Great American Mine (continued) Sept. 19, 1963

Swisshelm District, Cochise Co. Axel L. Johnson

Past History

(1) Located Jan. 4, 1884. Approved for patent Dec. 6, 1897. Patent date -- 4/4/1899.
(2) Records show 2 shipments of 30.72 & 32.07 tons were made in Oct. & Dec. 1912.
(3) Clipping from Tombstone Epitaph on Aug. 3, 1920, citing a rich silver strike at the Great American Mine in Swisshelm Mts. owned by a Colorado corporation.
(4) Smelter records of 6 shipments by Great American Mining Co., Ben Heney, Manager, from Aug. 21, 1920 to Jan. 3, 1921.
(5) Smelter records of 5 shipments by Old Dominion Commercial Co., Globe, Ariz., being shipped from Webb, Ariz. from Oct. 15 to Oct. 24, 1925.
(6) Smelter records of 5 shipments by Four Horse Mining Co., Elfrida, Ariz. from Nov. 6, 1934 to Mar. 19, 1935.
(7) Clipping from Mining Journal under date of June 30, 1937, stating "The Great American Mining Company of Elfrida, Ariz. is operating steadily with a crew of 15 to 20 men employed."
(8) As reported by Dale Sherman, Elfrida, Ariz., who worked in the mine in 1937: The mine was operated about 6 months by 3 operators from Phoenix. A mill was built and operated a few months, using flotation, with Ben Heney, ~~Mine~~ Supt. The high grade ore was trucked to the El Paso smelter, and the lower grade ore was milled. At one time they worked 2 shifts, with 8 men on each shift at the mine and 2 men in the mill. The ore was mucked by hand from a large stope, and dropped to the bottom level, where it was trammed down a long drift and dumped into an ore bin, from where it was trucked to the mill, or to the El Paso smelter. Mr. Sherman states that the operators had to close down on account of going bankrupt. This, he said, was caused by poor management, and not due to lack of ore of sufficient grade for shipping and milling.

Production

(1) Before 1935 ----- Mr. Orem reports in 1935viz. "Better than 2,000 tons of ore have been shipped during the past from these old workings. Records of part of this tonnage are given below. The rest of the old records are not at hand, but probably could be obtained from the smelters". The records, included with his report, show shipments of 687.77 tons of gold-silver ore, aver. 0.293 oz. gold & 28.62 oz. silver, and shipments of 50.41 tons of lead-silver ore, aver 24.35 % lead & 11.10 oz. silver.
(2) After 1935 ----Writer has no definite figures on smelter shipments or ore production. The mine was evidently operated for about 6 months in 1937, at which time a mill was built, a 675 ft. adit completed and two raises driven to the upper levels. The mill may have operated about 4 months, with not over 50 tons per day milled, and some additional ore was trucked direct to the smelter. The large stope, which was worked, is about 10 ft. high and 80 ft. in diameter. Production of 4,000 to 5,000 tons is indicated from this operation.

Old Mine Workings

(1) On Horn Silver Claim
  (a) 1 vertical shaft --- 25'-30' deep with red, oxidized material last 15 ft.
  (b) 1 vertical shaft --- 15 ft. deep, with red oxidized material entire distance.
  There is a large quartzite outcrop, about 40 ft. wide, and 120 ft. long in the center of the claim. Limestone and quartzite beds appear to dip 15 to 20 degrees to the north.
(2) On Great American Claim, prior to 1935 (from report by A. H. Gracey & personal visit)
  (a) 4 open cuts, ranging from 15 to 50 ft. in diameter, with faces 10 to 20 ft. on the upper sides --- all in payable milling grade ore.
  (b) 6 adits, from 20 to 105 ft. in length, and totaling 325 ft. driven in limestone, low grade ore, and highly altered and highly siliceous gangue.
  (c) 1 winze -- 70+ ft. deep, with 130 ft. of drifts, and 1 -- 12 ft. cross cut.

Great American Mine (continued) Sept. 19, 1963

Swisshelm District, Cochise Co. Axel L. Johnson

Old Mine Workings (con't)

(3) On Great American Claim, subsequent to 1935 (from personal visit)

(a) One large stope, very irregular, but roughly 80 ft. in diameter by about 10 ft. in height, with 2 raises entering same from a lower adit. The ore excavated, from 4,000 to 5,000 tons, was dropped to the adit below through these raises.

(b) One main adit, about 675 ft. long and approximately 125 to 150 ft. below the large stope described above. This adit may have been started in 1935, since Mr. Orem on Dec. 22, 1935 writes "The lower tunnel we are driving ----". Mr. Dale Sherman, Elfrida, believes, however, that most of the long adit was driven by the 1937 operators. The adit is open for the entire distance, and no caving or sloughing has occurred. The adit is not timbered, except for 2 sets of timber at each ore chute.

Ore was exposed in the back and sides of this adit in several places in the last 350 ft., amounting to a linear distance of from 100 to 150 feet. No samples or measurements were taken, however.

From the adit, the following raises were put up:

1 inclined raise about 50 ft. high. Top of raise appears to be in ore.
1 -- two compartment raise, with chute and ladderway.
1 -- single compartment raise (ore chute)

(c) Higher up on the hillside there was 1 adit about 125 ft. long with a raise from same about 50 ft. in height which appears to be post 1935.

(d) Another adit, about 80 ft. long, mostly in ore, should probably also be incl.

Observations by the field engineer

(1) The field engineer covered only a small part of the 4 claims, his visit including a small area on the Horn Silver claim, and an area, including the old workings, about 300' x 400' on the Great American. The Alice and Sulphuretts claims were not visite

(2) During his visit, the field engineer noticed several places that looked favorable for open pit operations for mining of gold-silver-silica flux ore. The relatively narrow mineralized area will necessitate making rather narrow cuts. However, since the ground stands very well without caving or sloughing, banks with very steep slopes can be used.

(3) Regarding ore in sight ----

Mr. Gracey's estimate of 14,000 tons and Mr. Orem's estimate of 20,000 tons were based on proven and available ore in a small area opened up by the old workings, and to a depth of only 50 ft. on the Gracey estimate, and 60 ft. on the Orem estimate. A small amount of this has since been mined out by the 1937 operations.

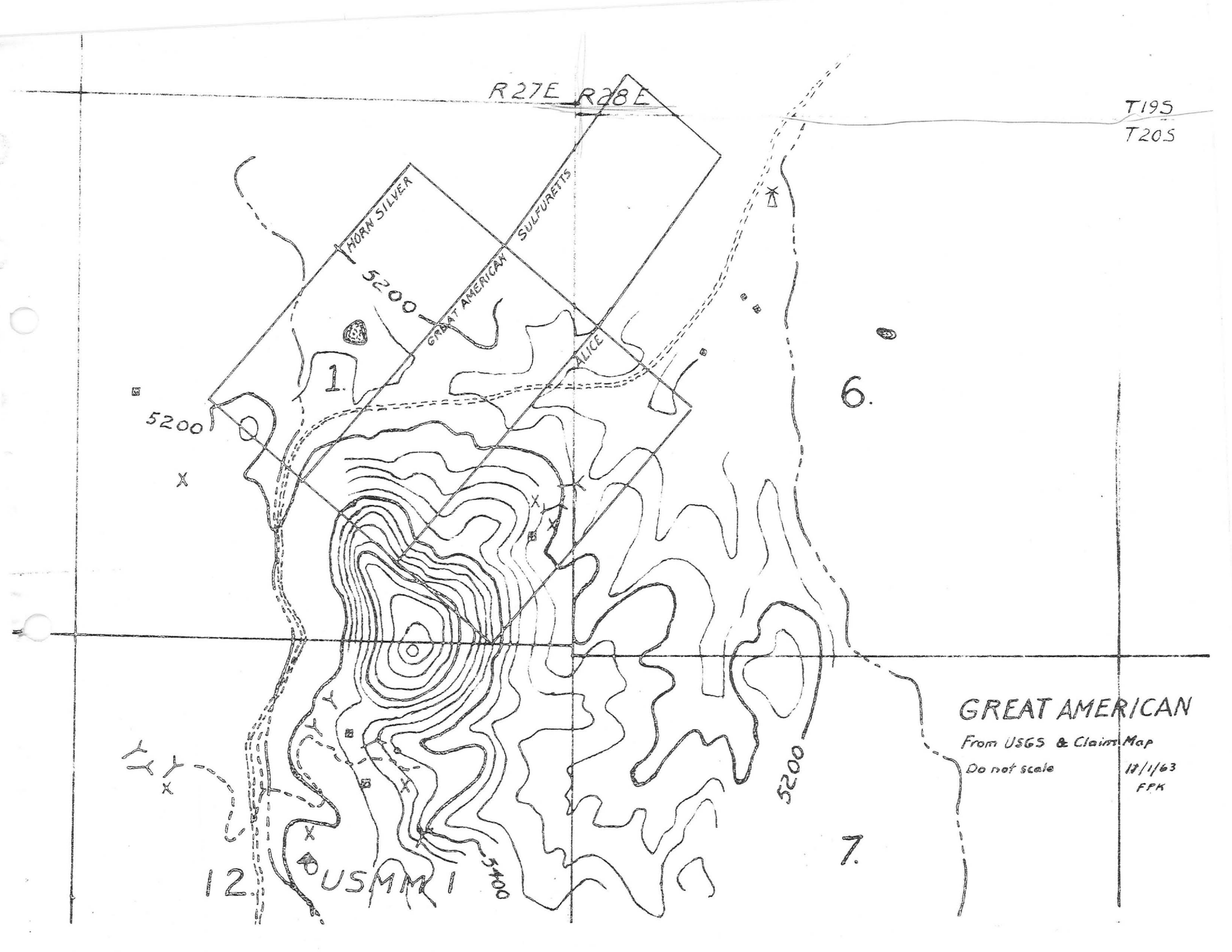
Since these estimates were made, the 675 ft. adit was driven about 125 to 150 ft. below the upper workings. This adit cut ore in several places, showing the continuation of the ore in depth. The continuation of the ore along the stike of the deposit (NE * SW) for a length of 1,500 ft. or more, can also be reasonably expected. Mr. Gracey states that the mineralized area is over 1,000 ft. long, and Mr. Orem, in his report, states that it extends the full length of the property.

(4) Regarding Ore Values ----

(a) The smelter returns, which averaged 0.293 oz. gold, and 28.62 oz. silver, were, no doubt, from ore selectively mined with pick and shovel, with some hand sorting.

(b) The ore values estimated by Gracey ($ 13.10 per ton in 1922), and by Orem ($ 20.00 per ton in 1935) were based on underground mining operations, where the higher grade ore lenses , 6 to 15 ft. in thickness, could be mined selectively.

(c) The different conditions encountered in open cut mining would, no doubt, result in considerably lower ore values, due principally to dilution with waste, but would also permit the mining of lower grade ore on the outer fringes of the ore deposit, resulting in a much larger tonnage. It is very difficult to estimate what the average ore values in an open pit operation would be. It would depend on several factors --- the area selected for mining, the equipment used, and the ability of the operator to mine selectively, separating a great deal of the waste from the ore.


R27E R28E
T19S
T20S
HORN SILVER
GREAT AMERICAN
SULFURETTS
ALICE
5200
5200
5200
5400
1.
6.
7.
12.
USMM 1
GREAT AMERICAN
From USGS & Claim Map
Do not scale
11/1/63
FPK

Properties believed to be owned by U of A - Source unknown

	NAME: PROPERTY	DISTRICT	COUNTY	LOCATION TWP - RGE - SECT	SIZE: ACRES	Total Limit Assessed $ *	MINERAL SURVEY NUMBER	Patented Claims / NOTES
U/A EXPERIMENTAL MINE, SAN XAVIER No. 6	1. DEMOCRAT 2. MARJORIE	PIMA	PIMA	17S 12E 3/10	20.661 16.560	$ 16,528 13,248	1758? 1759	11-4-76 5398-0134 Donor-ANAMAX 5393-0134 MAPS: UG & Surface
OLD AMADO or MONTOSA Mine 1 mile N of GLOVE	1. Black Diamond 2. Isabella	TYNDALL	SANTA CRUZ	20S 14E 29 NW 1/4	20.661 20.661	$ 7500 U/A part of 2 Claims	2966 - 1/2 UA, 1/2 MACKENZIE 2967 - 7/16 UA, 6/16 MACKENZIE, 3/16 LENNON	SPLIT OWNERS MAPS
	SUNSET	TOMBSTONE	COCHISE	20S 22E 14, 15 SW 1/4	12.27 Ac	$ 19,620	Docket 468 R109 LST 50	Patented 1880 2000 ton dump No Monuments
	ALBATROSS	ARIVACA	PIMA	21S 9E 12 NE 1/4	16.87 Ac	$ 12,653	355	Tunnel - SHAFT
	TOTAL WRECK *	EMPIRE	PIMA	18S 17E 3 E 1/2	17.153	$ m 6,800 Appd 12,800	235	Donor J. VAIL WILKINSON maps UG & Surface
ALLISON MINE (BABOQUIVARI)	1. SENATOR No. 1 2 SUNBEAM No. 1	FRESNAL	PIMA	18S 7E 28 29 30	20.621 20.522	$ 16,496 $ 16,416	4063	on INDIAN RESERVATION contiguous claims
MINNIE MINE No. 1	MINNIE MINE *	CABABI	PIMA	15S 5 1/2E 12	20.661	$ 6,818	4066	COMOBABI Mts 20155 Parcel No
MILL SITE	SANTO TOMAS *	CABABI	PIMA	15S 4E 36	5.0 Ac	$ 1650	Parcel 20163	Near Graveyard, Near Lincon and Ko Vaya
La Nueva Bonita Vista PLACERS	EDNA J.	Baboquivari	PIMA	19S 8E 31-32 20S 8E 6-7	LEASE 680 STATE LAND	Not on Tax Roles (NA)	UN-PAT'D PLACER	W. of Hwy 286 ALTAR VALLEY ON INDIAN LAND Believed to have been WITHDRAWN REVERTED 1978 for lack of activity an [illegible] gravels on pediment of granite
GREAT AMERICAN SULPHURETTE ALICE HORN SILVER	GREAT AMERICAN GROUP	SWISSHELM	COCHISE	20S 27E 1 E 1/2 20S 28E 6 N 1/2	76.05 Ac	$ 25,398 $ 11,823	830 {GA S A 1262 HS 4 Patented Claims	LESSEE: John Faick $200/mth To June 1992 4 open shafts and Stopes Sub-leased to ↓
MOUNTAIN QUEEN WHALE MAMMOTH xa: ELFRIDA GROUP	MOUNTAIN QUEEN GROUP	SWISSHELM	COCHISE	20S 27E 12	19.66 19.00 19.00	$ 26,232 Total	272 MQ 273 W 274 M	{ALHAMBRA MINES INC. {GENERAL MINERALS of AMERICA Renewed lease [illegible] Sparks, Nev
1-10 NUEZ No. 2 - No. 11 11-17 KAOLIN No. 1 - No. 7 18 OVERSITE 19-20 OVERSITE No. 1 & 2 20 unpat'd PLACER CLAIMS	MAMMOTH	MAMMOTH	PINAL	9S 17E 13, 24 9S 18E 17, 18 19, 20 29, 30	20 - 160 Ac ea. 3200 Ac Total	Not on Tax Roles (NA) 20K/ [illegible] $175/Ac Estd	20 each UN-PAT'D PLACER 160 Ac EACH (Non Metal)	LESSEE: GILBERT S MOTT, GRAHAM Y MOTT Need ASSESSMENT WK. EACH YEAR - Diatomaceous Earth Lease [illegible] Sale For WHITECLIFF INDUSTRIES INC $500/mo
1 CHRISTMAS 2 FORGET IT 3 DEMOCRAT 4 OCEANIC WEDGE 5 OCEANIC 6 CECIL 7 VICTORIA 1 8 VICTORIA 2 9 CROWN POINT 10 WHITE HILL 11 OVERSIGHT 12 CROWN WEDGE 13 CROWN POINT EXT. 14 WHITE HILL EXT. 15 COLUMBIA	OCEANIC aka ORCEANIC aka SAN LUIS	OCEANIC (Las Guijas)	PIMA	21S 9E 27, 34	15-claims 309.9 Ac	$ 231,726 Total $ 15,458 ea	MS 3685 OCEANIC GROUP MS 4159 "OVERSIGHT"	15 pat'd Claims FCV * Full Value (Surface, mine, Improvements) Sold: Senator - Yavapai Oct 83 Townsite 18.3 A [illegible]

* Up for Sale

DNC

THE GREAT AMERICAN MINE

Cochise County, Arizona

By

Miles M. Carpenter, E. M.

Oct 24 1936

From Tucson Office

FOREWORD

This report is made to condense and bring up to date a mass of information dating over fifty years back on the Great American Mine. It is based principally on a preliminary examination together with data from reports of A. H. Gracey and C. L. Orem, both of whom are mining engineers of recognized standing, personally known to the writer. Quotations from these reports will be properly credited.

1922

1935

PROPERTY and TITLES

The Great American Mine group comprises four contiguous patented mining claims, Great American, M.S. No 41, Horn Silver M.S. No 42, Sulphurette and Alice, No 1262, total area 76 acres.

SITUATION

The property is located on the north-east slope of the Swisshelm Mountains, Cochise County, Arizona. It is reached over 12 miles improved road leading off State High-way NO 81, now in process of being hard surfaced. This high-way extends from Douglas, the smelter town of the Phelps Dodge Corporation to Cochise, a station on the main line of the Southern Pacific railroad. The distance to Douglas is 38 miles, 12 miles over dirt road and 26 miles over high-way. The freight rate from Douglas to El Paso, location of the lead smelter of the A. S. & R. Co., is $2.00 per ton on ore valued $15.00 to $20.00 and $5.40 on ore or concentrate of $100.00 to $150.00 valuation. The smelter at Douglas is not handling lead ores at this time.

TOPOGRAPHY

A small hill rising a couple hundred feet above the lower tunnel level is the site of the mine. This hill has a medium slope to the east, where the country consists of low, rounded grass covered hills grading into a broad valley. On the west, the ground rises rather abruptly. The altitude is about 5,000 feet above sea level.

GEOLOGY

"The outstanding feature is the intrusion of a dike of rhyolite porphyry into and through limestone. In the fractured

and altered zone along the contact between these formations occurs the ore deposit. The mode of occurrance is characteristic of Southern Arizona mineral deposits. The ascending mineral bearing solutions have penetrated the fractures and seams along the contact and out into the limestone beds replacing large areas of the limestones with silica and depositing therewith valuable minerals. These solutions evidently had a bountiful source, estimated by the areas mineralized." - Gracey. (Report 1922)

" In the alteredand fractured zones, along the contact of the porphyry and limestone which composed the mineralized area of this deposit, the mineralized solutions have replaced certain strata in the limestone more extensively than others and has followed the fractures and seams. This is shown by the present tunnels. Those beds which have been more susceptible to replacement by reason of their favorable chemical composition can be cheaply developed by cross-cuts and inclined raises at right angles to the bedding planes. Some of these are extensively mineralized for considerable distances beyond the extent of the present workings. It is quite likely that similar bedswill be encountered with deeper work as geological sections of the district show several hundred feet of favorable Carboniferous beds below these levels." - Orem (Report 1923)

ORE DEPOSIT

The outcrop covers the apex of the small hill described in a preceding paragraph.

" The mineralized area, in the center of the property, is over 1,000 feet long and from 50 to 100 feet wide. It is well exposed by the present workings for a length of 500 feet and a width of 100 feet. The general strike of the deposit is NE-SW. The values contained are silver and gold, in the ratio of 3 ounces silver to .05 ounces gold, accompanied with some iron pyrite and lead carbonates. The exposed ore is almost entirely oxidized. A portion of the gold is free and some native silver is shown but the latter occurs chiefly in the chloride form. High grade ore is irregularily distributed throughout the depositand all former operations were confined to mining these, leaving the lower grades behind. All of the deposit carries some value. The gangue is much altered, highly silicious and hard and is variably colored from the effects of oxidation." - Gracey (Report 1922)

"The present workings do not determine the lateral extent of the ore body nor the distances along the strike. The mineralized area southwest beyond the present workings is well altered and silicified the full length of the property. The southwest drift, on the 40 foot level in the 60 foot winze, shows fair values over 13 feet and this should prove favorable ground for future development work along the strike. - Orem (Report 1923)

DEVELOPMENT

" The old workings are scattered covering a surface area 500 feet long and 100 feet wide. A large portion consists of open cuts, as mentioned, but several tunnels of varying length have been driven from them in a westerly direction. Beginning at the northeast end there is a large open cut 50 feet in diameter

with a face 10 to 20 feet high on the upper side. Two tunnels have been driven from this cut one 60 and the other 20 feet in length. These were both driven out into the limestone at right angles to the contact but are in mineralized material through out their length. Adjoining on the southwest and 20 feet hfgher is another large cut 100 feet long and from 25 to 40 feet wide with a short tunnel at the south west end. Southwest of this again there is a narrow cut 60 feet in length forming the entrance to a tunnel 105 feet in length. Above this 22 feet higher and 40 feet distant is a small cut with a 20 foot tunnel. Above this again 100 feet distant and 44 feet higher is another cut 15 feet in diameter and 10 feet deep. Directly south of this latter cut, on the same level and 220 feet distant, there is a short tunnel 25 feet in length at the face of which a winze has been sunk to a depth of 60 feet. This is the deepest work on the property. At a depth of 25 feet below the collar of the winze there is a drift northeast 84 feet in length and one to the southwest 45 feet in length. In the northeast drift, at a point 43 feet from the winze, there is a crosscut 12 feet to the east. Still further southwest from this latter work there is another tunnel 75 feet long with a winze near the portal.

All the work described, amounting to 825 feet of tunneling, 70 feet of sinking and 130 feet of drifting, has been done in the ore deposit and at manyppoints ore of payable milling grade is exposed." - Gracey (Report 1922)

The forgoing detailed account of the old workings made in 1922, is applicable today, as only about 450 tons of ore were gouged from the south-west end workings and shipped during the interum. New development was begun in the winter of 1935, when a tunnel was started to follow roughly the southerly contact, pass beneath the old workings and explore the deposit along the strike and the dip. Of course, it is planned to connect the old workings with this tunnel thru raises for ventilation and economical mining of the ore above. This tunnel is now in approximately 350 feet, with two miners workings in the face.

ORE TONNAGE and VALUE

At the present stage of development, it is difficult to figure with exactness either the tonnage or the average value. It is the type of deposit most generally underestimated by conservative engineers.

Following laborious measurements and sampling by Gracey, the maps of which are now missing, he concludes: "A conservative estimate, therefore, of the ore available for easy and cheap mining in this block of gound (south-west workings) down to an average depth of 50 feet below the surface is 10,000 tons, averaging in value $13.75 per ton. The reject dumps at these workings contain over 1,000 tons, estimate, three samples of which gave the following: $12.80, $9.50 and $17.60 per ton, or an average of #13.30 per ton."

" A summary of the exposed and available tonnage and the average value show the following:

North-east end workings	2,000	tons	at	$10.00	$20,000.00
South-west " "	10,000	tons	at	13.75	137,500.00
Dumps	2,000	tons	at	13.00	26,000.00
Total	14,000				$183,500.00"

"The inclusion of probale and possible ore would greatly increase the tonnage estimates. In fact it is my belief that at least double the amount of ore given above will be found to exist above the deepest point now developed while the possibilities for further development are very promising. Milling ores of the grade now shown, occuring in such satisfactory widths and continuing even to moderate depths, would add a long life and much profit to the undertaking." - Gracey (Report 1922)

The above figures are based on $20.00 per ounce for gold and $1.00 per ounce for silver. At present prices of $35.00 and $0.77 respectively, the valueis a few cents per ton higher.

Additional data on values were secured by Orem, employed by Gracey, early in 1923. The results of four large scale samples are given below with values figured at present prices.

#1 Seven 6 ft cuts from east drift of 40 ft level in 60 ft winze. Cuts are spaced 6 ft apart and extend from top to bottom of the drift. 65 lbs sample.
Gold 0.22 oz -$7.70, Silver 16.0 oz - $12.32, Total $20.02

#2 Cut across 12 ft on side and 4 ft face ofsouth cross-cut on 40 ft level in 60 ft winze. 25 lbs sample.
Gold 0.16 oz -$5.60, Silver 6.9 oz -$5.31, Total $10.91

#3 Cut across 14 ft above 105 ft tunnel portal. 25 lbs sample.
Gold o.16 oz -$5.60, Silver 5.5 oz - $4.24 Total $ 9.84

#4 Cut below the 14 ftwidth which constitutes #3
Gold 0.20 oz -$7.00 Silver 16.0 oz -$12.32 Total $19.32

In the 40 ft level stope of the south-west workings, which represented the principal part of the 10,000 tons of exposed ore, the originalsampling may be summarized as follows:

By Gracey	8 samples,	total width 69 ft,	average value $14.36
By Orem	2 samples,	total width 58 ft,	average value 17.85
	10 samples,	total width 127" ,	average value $15.31

Subsequent to the samplings by Gracey and Orem, the property was operated by leasers who shipped 453 tons of ore taken mainly from the south-west ore bodies that averaged Gold 0.2523 oz, Silver 26.6 oz, value in gold $8.83, silver $20.48, total $29.31.

Samples taken after the leasing operation, on the ore bodies as they now stand, by Orem, Johnson, Stockdale, Gemmil, Webster and Carpenter show:

No of Samples 15, Average width 8.5 ft, Average Value $14.31

These figures prove the character of this deposit. Leasers enterd the workings that showed a sampling value of $15.31 per ton, gutted out 453 tonsthat averaged $29.31 per ton and left no high grade faces. The same workings today show a sampling value of $14.34 per ton, and there is more tonnage insight that when the leasing operation begun.

The workingsdescribed above extends north-east from the 60 ft winze, a length of 105 ft and the same stope extends south-west 45 ft, proving this ore body for a length of 150 ft. The south-west stope at about 40 ft from thewinze contacts a dike or tongue of porphyry and two samples taken here assayed only $5.02 and $5.23 per ton. Six other ore faces in this stope show the following widths and values: 10 ft - $9.31, 1.3 ft-$19.52, 20 ft-$9.50, 20 ft-$20.17, 12 ft-$30.62. Average of eight samples, 93.3 ft $13.26 per ton.

On the opposite side of the porphyry dike exposed at the end of the south-west stope, 40 ft level, is an open cut 60 ft in length following the contact in the same direction.. Some shipping ore was taken from this working. A sample from near the center at ground level, 3 ft width showed Gold.02 oz $0.70, Silver 10.58 oz-$8.15, Total $8.85.

The winze extends about 30 ft below the 40 ft level into ore carrying lead carbonate. Eight samples from the winze and the short drifts leading from it are available, one a sample by Gracey at the bottom of the winze across 5 ft $10.36. Fivesamples average width 3.2 ft -$16.60. Three samples in which the lead content is shown are as follows: 4 ft-$7.57 (Lead 20.35%), 4 ft-$4.44 (Lead 15.57%), 8 ft-$4.70 (Lead 20.58%) Smelter records show two car loads that carried lead 19.8% and 27.2% respectively.

ORE TESTS and TREATMENT

"The ore under consideration, being oxidized, presents no difficult treatment problems. The plant required would be simple and of standard construction. Laboratory tests indicate that an extraction of 90%, or better, will result with concentration and cyanidation of the tailings. The concentrates resulting from the tests averaged $162.40 per ton and the ratio of concentration was 100 tons into 2-1/3 tons. The proportion of recovery was approximately 32% in the concentrates and 68% in the cyanide solutions."

"Sulphides will probably occur at depth but this combination treatment should still be effective."

"Leaching or percolation tests with 1/2 of one percent cyanide solution on the ore without concentration, ground to pass 48 mesh, gave an extraction of 85% of total values. This recovery would no doubt be higher in practice with agitation of the pulp so that direct cyanidation without concentration may prove the most economical treatment for the oxidized ores. Complete tests are now being made and the flow sheet and mill plans worked out." - Gracey (Report 1922)

The additional tests referred to were conducted by C. L. Orem in the metallurgical laboratories of the University of Arizona early in 1923. Thirtytests were run covering cyaniding by percolation, by agitation and in combination with table concentration. A few tests were made with flotation. Complete records of

these tests are on hand but herein are essential details of a few test that indicate practical treatment methods.

Test No 29, All Slime Agitation

Material	Weight	Assay Ag Oz	Assay Au Oz	Total Oz Silver	Total Oz Gold	Percent Extracted Silver	Percent Extracted Gold	Percent Extracted Total	
Heads	100.00	16.54	0.208	1654	20.80	--	--	--	Content
Sol 24 hrs	100.00	13.45	0.190	1345	19.00	81.4	91.4	85.0-	
Sol 48 hrs	88.89	13.97	0.190	1391	19.00	84.1	91.4	86.7-	
Sol 72 hrs	77.78	14.21	0.190	1410	19.00	85.2	91.4	87.5	
Tails	100.00	2.44	0.018	244	1.80	14.8	8.6	12.5	Residue

Cyanide strength 5# per ton solution, Consumption 1-1/4# per ton ore. Lime used 2# per ton. Solution 1:1 with ore, Temperature 14-21 deg Centigrade. Assays based on products.

This test indicates that 91.4% of the gold content goes into solution within 24 hours and that no additional extraction was obtained in 48 hours additional time, and 81.4% of the silver is dissolved in the first 24 hours which increases to 84.1% at the end of 48 hours. On a 50 ton plant this means an additional recovery of 23 oz. silver in the second 24 hours. The further recovery in the third 24 hour period is less than 10 ozs.

Test No 20-21 Table Concentration % Percolation

Material	Weight	Assay Ag Oz	Assay Au Oz	Ozs Extracted Silver	Ozs Extracted Gold	Percent Extracted Silver	Percent Extracted Gold	Percent Extracted Combined	
Heads	100.00	15.74	0.186	1584.6	18.65	--	--	--	Conten
Concentrates	2.73	148.22	1.220	404.6	3.33	25.5	17.9	22.9	Total
Sol 48 hrs	97.27	8.56	0.130	832.6	12.65	52.6	67.8	57.9	80.8%
Sol 72 hrs	91.79	9.26	0.140	64.3	.92	4.0	4.9	4.3	85.1%
Tails	97.27	2.91	0.018	283.1	1.75	17.9	9.4	14.9	100.0%

Ore crushed to -48 mesh, concentrated on a laboratory size table, Ratio of concentration 36.6 to 1. Table middlings, Sands and slime tailing percolated in a 1 to 1 solution, not built up, strength 5#, NaCN to ton of solution, consumption 1.9# per ton ore. Lime used 2# per ton ore, consumption 1-1/4 lbs per ton. Temperature 14-21 deg Centigrade.

This test indicates thatit will be possible to take off a table concentrate containing 20-25% of the gold and silver in a product with an assay value of about $150.00 per ton, a concentrate of medium high grade. About 70% of the metals remaining in the table tails are extracted by cyanide leaching in 48 hours of contact, which rises to 76% in 72 hours of contact.

Another metallurgical test of this ore was made in May of the current year by the Southwestern Engineering Company, Los Angeles. The ore was low grade, assaying: Gold 0.12 oz, Silver 10.9 oz per ton.

This test was quite a complete using flotation, gravity concentration and cyanidation, singly and in various combinations. Theresults are set forth in a lengthy report which is available for inspection, but here in are quoted only the salent points of the conclusions.

"It i concluded from the result f the testing conducted that 65 ~ 70% of the gold and silve. can be recovered by straight flotation. The rougher flotation concentrates produced varied from 1.24 oz gold and 111.85 oz silver per ton with a ratio of concentration of 14.58:1, to 264 oz gold and 245.85 oz silver per ton with a ratio of concentration of 33.33:1. In practice a ratio of concentration of approximately 30:1 can be expected and theconcentrate grade should assay approximately 2.6 oz gold and 240 oz silver per ton."

"By cyanide agitation of the flotation tailings for 24 hours, total flotation-cyanidation recovery of 84% of the gold and 76% of the silver can be obtained. With 48 hours agitation, the gold recovery would probably be increased to a total of 91%."

Direct cyanide agitation of the crude ore results in extractions of 83 to 91% of the gold and 76 to 78% of the silver."

Separation of the sands from flotation tailings followed by cyanideleaching does not yield sufficient additional recovery to justify the operations."

"Either direct cyanide agitation of the crude ore, or flotation followed by cyanide agitation of thetailings results in higher extraction than straight flotation. The capital investment would be much lower for a straight flotation plant than for a combination flotation-cyanide plant or an all-cyanide plant."

A detailed study of test results from both sources shows that cyanide-agitation makes a satisfactory extractionof the combined metals, Orem obtaining 86.7% and the Southwestern 82.4% on a 48 hour treatment. Thehigher percentage extraction in Orem's tests is doubtlessdue to using ahigher grade of ore. Orem extracted $15.28 from ore assaying $17.63 per ton; Southwestern extracted $10.37 from ore assaying $12.59 per ton.

The tests indicate that it will be difficult to reduce the average value of the tailing below $2.20 per ton, regardless of grade, since the lower limits of tailing assays were .01 to.015 oz gold and 2.3 oz silver. Hence theoverall extraction will probably drop below 80% on $10.00 ore and exceed 85% on $20.00 ore.

The Southwestern discouraged the use of cyanide leaching of sand, but their tests were not conclusive. Orem's tests show that percolation is feasible. He extracted 81.6% of the gold and 60.6% of the silver in 72 hours, which rose to 89.2% gold and 69% silver in 144 hours on ore that was crushed only to 10 mesh. He concludes, after a sizing test on -48 meshtailing: "No use crushing as fine as 48 mesh. Lengthof contact more important than fine crushing." However, medium crushing does shorten the time necessary to get a given extraction.

Before deciding upon a treatment method the following should be carefully tested: Crush in ball mill discharging onto a gravity table, taking off a highgrade concentrate and throwing middlings and sands to classifier set at about 30 mesh. Return oversize to ball mill and run undersize to leaching tanks of sufficient capacity to give three to four days contact.

The cost of such a plant will be little if any more than for a flotation plant andwill have the advantage of obtaining 70% to 75% of the recovered metals in form of bullion which will bring the full mint price. The extraction should approach that of a

ering a good percentageof the lead inthe table concentrates. This lead would be lost in a cyanide agitation plant. The recovered lead should go a long ways toward paying the marketing expense of the table concentrates.

On the basis of 50 tons daily capacity the plant cost should be $15.,000 to $20,000 for flotation or gravity concentration followed by cyanide leaching. It would require $25,000 to $30,000 for a worth while cyanide agitation plant.

WATER

A shaft on another property reported capable of furnishing 20,000 gallons per day is the source of water for the milling operation, requiring for delivery a 1-1/2 mile pipe line.

CONCLUSIONS and RECOMMENDATIONS

After two full days spent on the property and a trorouh study of the maps, assay records and reports, I am convinced that The Great American Mine is a valuable property based on ore autually in sight, and it is my opinion that further developemnt will increase this velue many time. Although the gross value of the ore already marketed plus the ore now exposed doubtless exceeds $300,000, the deposit is probably only scratched.

It is situated in an area where mines in the same general formation have gone to depth and produced millions in metals. The camps of Bisbee, Tombstone, Courtland, Gleason and Commonwealth suggest the possibilities, though I do not expect this mine to reach the magnitude of the mines named. However, conditions suggest the possibility of ore production from this property running into the millions.

Due to the large tonnage of ore exposed and the favorable working conditions, developemtnt can be continued with a negligible chance of loss. With economical and skillful handling, the only chance is how large the profits will be. It is inconceivable that the present ore exposurescould all failbefore enough profit was realized to cover the expenseof the small development and the plant.

Therefore, I recommend that the lower tunnelbe pushed forward and connections made with the surface openings. This tunnel at the time of my last visit (October 18) was being driven in a bed of silicified limestone, lightly mineralized. The upper workings prove that some of the limestone beds are practically barren, while other beds are good ore. The direction of this tunnel should be toward the old workings on the dip of the principal ore shoots, but it is an exploration tunnel and should be run in anore bearing horizon, which will be found by cross-cutting the limestone with its dip.

Meantime, larger scale ore tests should be made, the most suitable flow sheet decided upon and a mill designed. With

the ore already known, a 50-ton mill is justified, but a few hundred feet more developemt in the tunnel is likely to prove the need of more mill capacity.

The capital required is rougly estimated at 40,000. if no ore whatever is developed beyond the present tonnage. In thehighly probable event of opening additional ore, the capital requirements are hard to forsee. If ore of shipping grade is opened in quantity, then no further capital will be needed, but ifa large tonnage of mill grade ore is shown, then it would justify a larger and probably more expensive type mill and the required capital might reach $100,000.00

Respectfully submitted,

_____

Phoenix, Arizona
October 24, 1936.

Payment for the property is thru royalties on production. The fixed payments are $10,000 due September 1,1937; $40,000 due September 1, 1938. Ten percent (10%) of the gross production is applied to these payments. The balance of the purchase price is carried on royalty payments payable when and if produced.

The following tables indicate how the payments would accrue under operation of a 50-tons milling plant. The first figure of $150,000 gross recovery is based on the minimum recoverable value estimated to be in sight, using 81.7% recovery. Subsequent figures assume $10.00 per ton recovery.

			Totals Pmts	Profits
Gross Recovery from 14,000 tons in sight		$150,000		
Deduct royalty payments @ 20%		30,000		
		120,000		
Less Operating Expense		50,000		
		70,000		
Less Investment		30,000		
		40,000		
Add wreckage value of equipment		6,000		
Operating Profit		$ 46,000	$30,000	$46,000
Gross Recovery from next 5,000 tons		$ 50,000		
Deduct royalty payments @ 20%		10,000		
		40,000		
Less Operating Expense	$17,500			
Less Development	5,000	22,500		
		17,500		
Less additional depreciation		1,000		
Operating Profit		$ 16,500	$40,000	$62,500
Gross Recovery from next 30,000 tons		$300,000		
Deduct royalty payments 15%		45,000		
		255,000		
Less Operating Expense	$105,000			
Less Development	30,000			
Less Repairs & Replacem'ts	15,000	150,000		
Operating Profit		$105,000	$85,000	$167,50
Gross Recovery from next 50,000 tons		$500,000		
Deduct royalty payment 5%		25,000		
		475,000		
Less Operating Expense	$175,000			
Less development	50,000			
Less Repairs & Replacm't	25,000	250,000		
Operating Profit		$225,000	$110,000	$392,5

ARIZONA DEPARTMENT OF MINERAL RESOURCES
Mineral Building, Fairgrounds
Phoenix, Arizona

1. Information from: Mine site visit on April 18, 1979.

   Address:

2. Mine: Great American 3. No. of Claims - Patented

   Unpatented

4. Location: Swisshelm Mountains, Cochise County, Arizona

5. Sec Tp Range 6. Mining District

7. Owner:

8. Address:

9. Operating Co.:

10. Address:

11. President: 12. Gen. Mgr.:

13. Principal Metals: 14. No. Employed:

15. Mill, Type & Capacity:

16. Present Operations: (a) Down ☐ (b) Assessment work ☐ (c) Exploration ☐
    (d) Production ☐ (e) Rate tpd.

17. New Work Planned:

18. Miscl. Notes: See previous reports.
    Mine tunnel is caved. Many roads and drill sites scattered over the property; all drilling appears to be rotary and deepest holes appear to be 175 to 200 feet deep.
    New claims, dated March 8, 1979, are staked adjacent to the property; claims are named KING.
    No other current activity.

Date: May 16, 1979

(Signature)

Michael N. Greeley
(Field Engineer)

DEPARTMENT OF MINERAL RESOURCES
State of Arizona
MINE OWNER'S REPORT

Date March 27 1975

1. Mine: Great American

2. Location: Sec. 1 Twp. 20 S. Range 27E Nearest Town ELFRIDA Distance 21 MILES By ROAD
   Direction WESTERLY Nearest R.R. DOUGLAS, ARIZONA Distance 36 MILES ROAD
   Road Conditions 3 MILES IN CANYON POOR 23 MILES DIRT ROAD 10 MILES GOOD PAVED

3. Mining District and County: SWISSHELM COCHISE

4. Former Name of Mine: GREAT AMERICAN

5. Owner:

   Address:

6. Operator: J. T. STOCKDALE

   Address:

7. Principal Minerals:

8. Number of Claims: Lode 4 Patented ø 4 Unpatented

   Placer Patented Unpatented

9. Type of Surrounding Terrain:

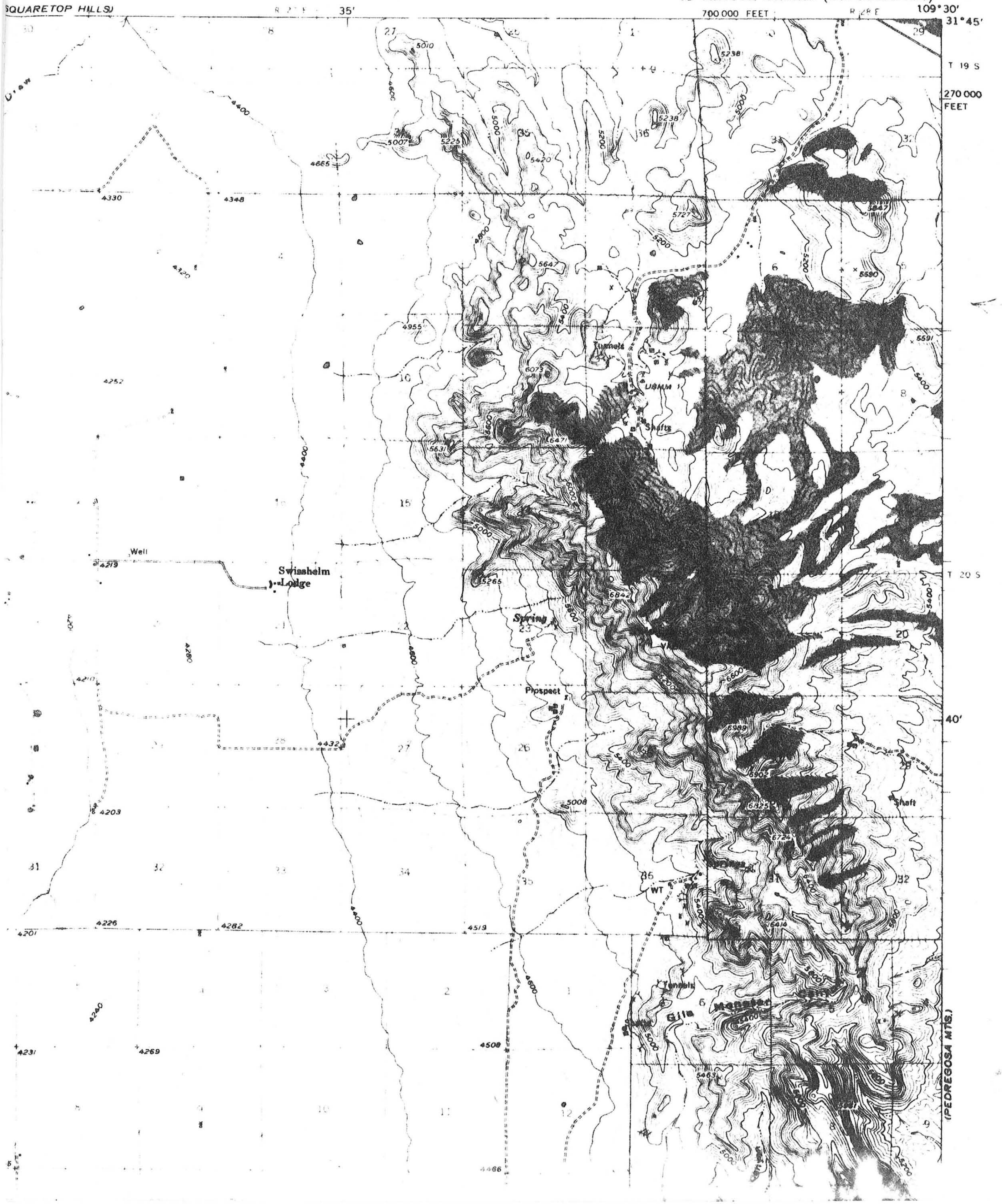
10. Geology and Mineralization:

11. Dimension and Value of Ore Body:

Please give as complete information as possible and attach copies of engineer's reports, shipment returns, maps, etc. if you wish to have them available in this Department's files for inspection by prospective leasors or buyers.

(over)

SWISSHELM MTN. QUADRANGLE
ARIZONA—COCHISE CO.
15 MINUTE SERIES (TOPOGRAPHIC)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5463
6414

Costs

Calif Div Mines – Barite – Oct 1963

Mined from pits – usually 2 or 3 men

Royalty 50¢ – 1.00

"10% fair"

Mining – about $3 to $5 per ton

Transport roughly

± $5/T first 100 mi (w 5 to 20 mi of good hilly or not dirt road)

± $5/T for next 200 mi

Great American – LAS

Great outburst of Qtz spread in all directions into Carb. Ls. close to contact w granitic rocks. Numerous cuts, tunnels & pits. Considerable Ag ore shipped. Idle in 1899 a/c to Col. Wm Herring, $15-20,000 of ore shipped up to 1899. Some DD done – results unknown.
– from Rept. to Gov. of Ariz. 1899. p115.

A.H. Gracey 1922
Rhyolite PP dike into Ls
Min. area 50–150 ft wide + 1M' long
Well exposed 100' w x 500' L strike NE–SW
Values Ag + Au – some Pb CO_3
some free Au. Ag chiefly as

C.L. Orem 1923
Favorable beds min'd
SW of working – well altered + silicified to end of claims

Orem 1935
Beds of Ls + Qzt over PP sill + tongues + dikes up into beds
May be mined for 200' depth
Beds dip ± 20° N
Several Qzt crops on Lorn silver claim. One 40 x 120

Values – Gracey – 1922 prices
NE end Ave 14 ft (2000 T) $10 Au+Ag
SE " 11 (10 MT) 13.75
Dumps 2000 T $13 or 13.10 ?
Total 14000 T 13.10

Orem 1923
42 ft of drift x height – Au 0.22, Ag 160z
128 ton side + 4 ft in face of x-cut .16 6.9
Open cut above adit .14 5.5
" " below " .20 16.0

1935 rept.
46 samples – Orem concludes – 6–15 ft thickness of beds in vertical 60 ft of present wkgs 150z Ag .16–.35 Au
Ave ore is high SiO_2
Conservative est 20 MT .20 Au, 160z Ag
Smelter Rtns 1912–35
Ave of 16 = .293 Au, 28.62 Ag
" of 2 = 11.1 Ag, Pb 24.35%

Orem – possible tonnage 1.5 mil
Gracey + Orem recommend mill + one evidently built
Ben Henry, Supt. Reported flot. mill of 60 ± 6 mos

Wkgs
Horn Silver claim
1 shaft Vert. 25' Red ox mat last 15'
1 " " 15' " " " 15'

Great Am claim (prior to 1935)
4 open cuts 15–50' dia. mill grade
6 adits 20–105' total 325' in Ls L.G.
high SiO_2
1 winze ± 70' 130' drifts 12' x-c
After 1935
1 stope ± 10' high 80' dia 2 raises to it
4–5 MT mined
Main adit ± 675' ± 125–150' below stope – open
No tbrs. Ore along 100–150' of back in last 350 ft.
450' mid Roe plus 2 to stope. Back of 50' R is in ore
1 adit 125' w 50' R

Orel didn't visit Alice & Sulphurette claims
" saw several possible pits – could run sleeve sides.
U.G. ore may ave $20 Open cut muckles.

Mark Gemmill

1936-37 work — "as I remember" expected 15-20 oz Ag w trace of Pb but as mined turned out something under 10 oz. Quite a body of siliceous ore but "don't know the grade."

Great American Mine

From the mine —

① Requires construction of 1 to 2 miles of road on property

② About 4 miles of rough narrow canyon road to graveled county road.

③ About ~~13~~ 13 miles of gravel road to Hwy #666

④ Hwy #666 (paved) for dist. about 31 miles.

Total

4 mi of rough mine road
13 mi of gravel road
31 mi paved road

48

9 * 4.32 est
7½ 3.60 min.

Jou

① Do as on page 1

② Do as on page 1

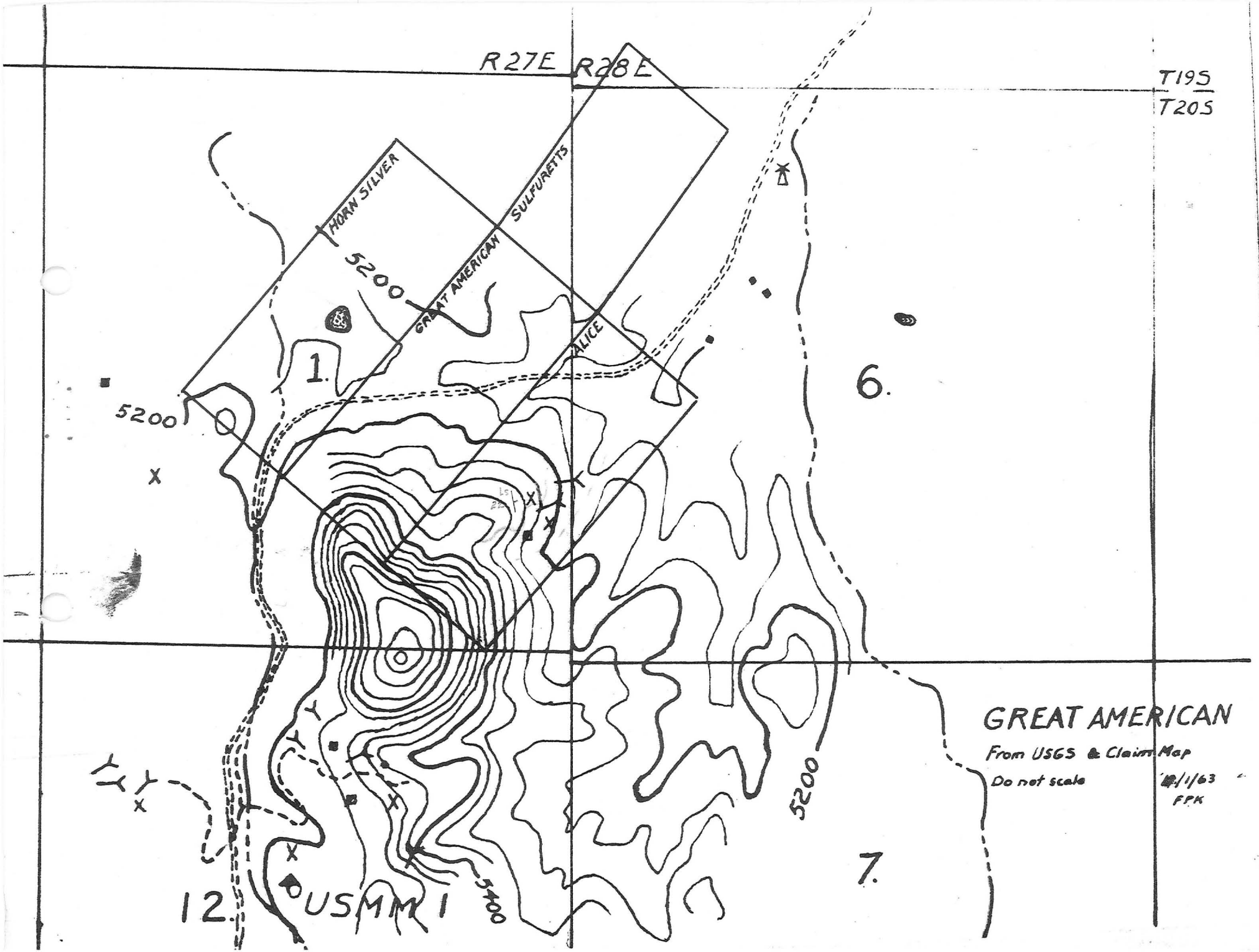
③ 34 miles of graveled road to Douglas —

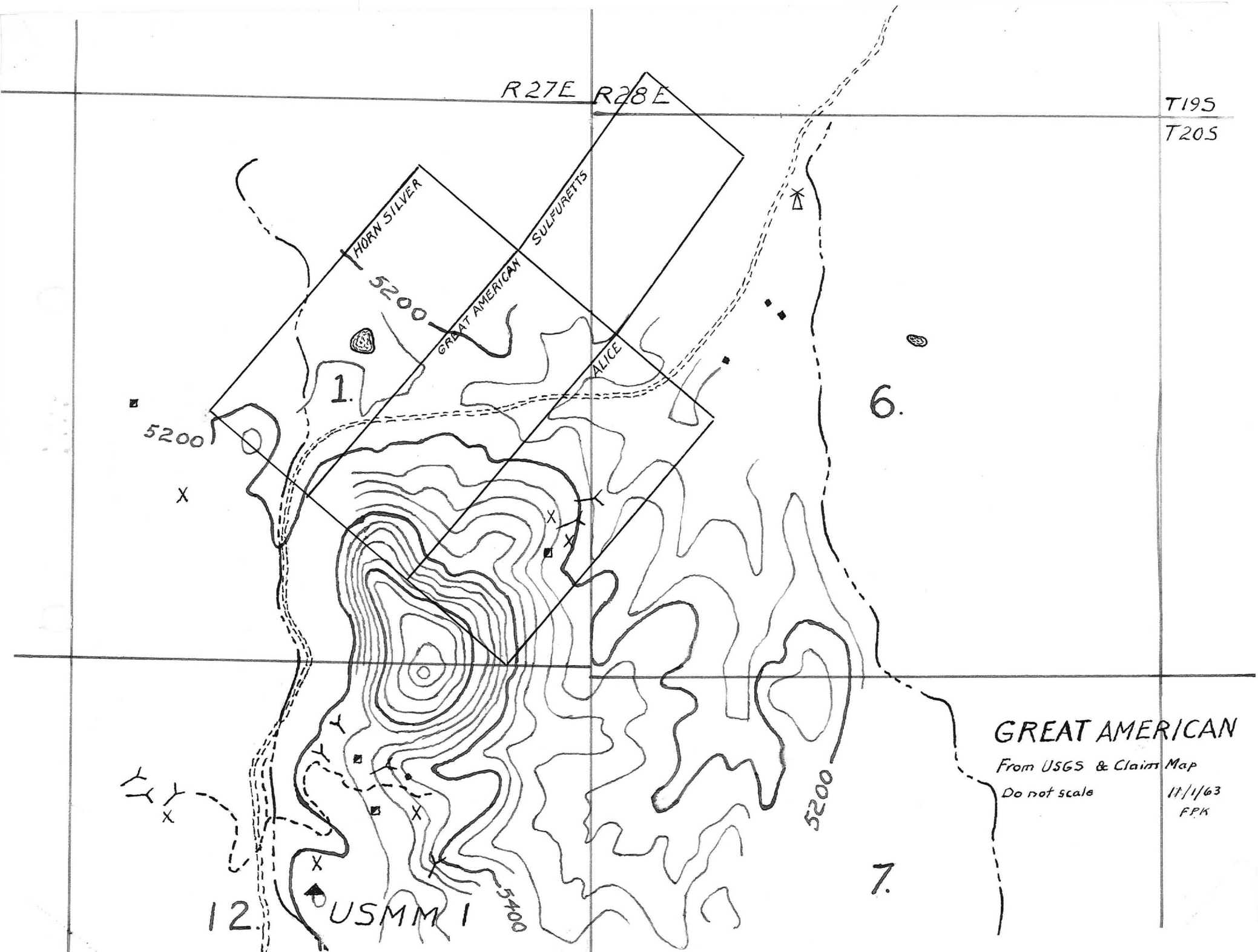
④ ~~2~~ miles of paved road to smelter

Total

4 mi rough mine road
34 mi of graveled road
2 mi of paved road.

40


R27E
R28E
T19S
T20S
THORN SILVER
GREAT AMERICAN
SULFURETTS
ALICE
5200
1.
6.
7.
12.
USMM 1
5400
GREAT AMERICAN
From USGS & Claim Map
Do not scale
8/1/63
FPK


R27E
R28E
T19S
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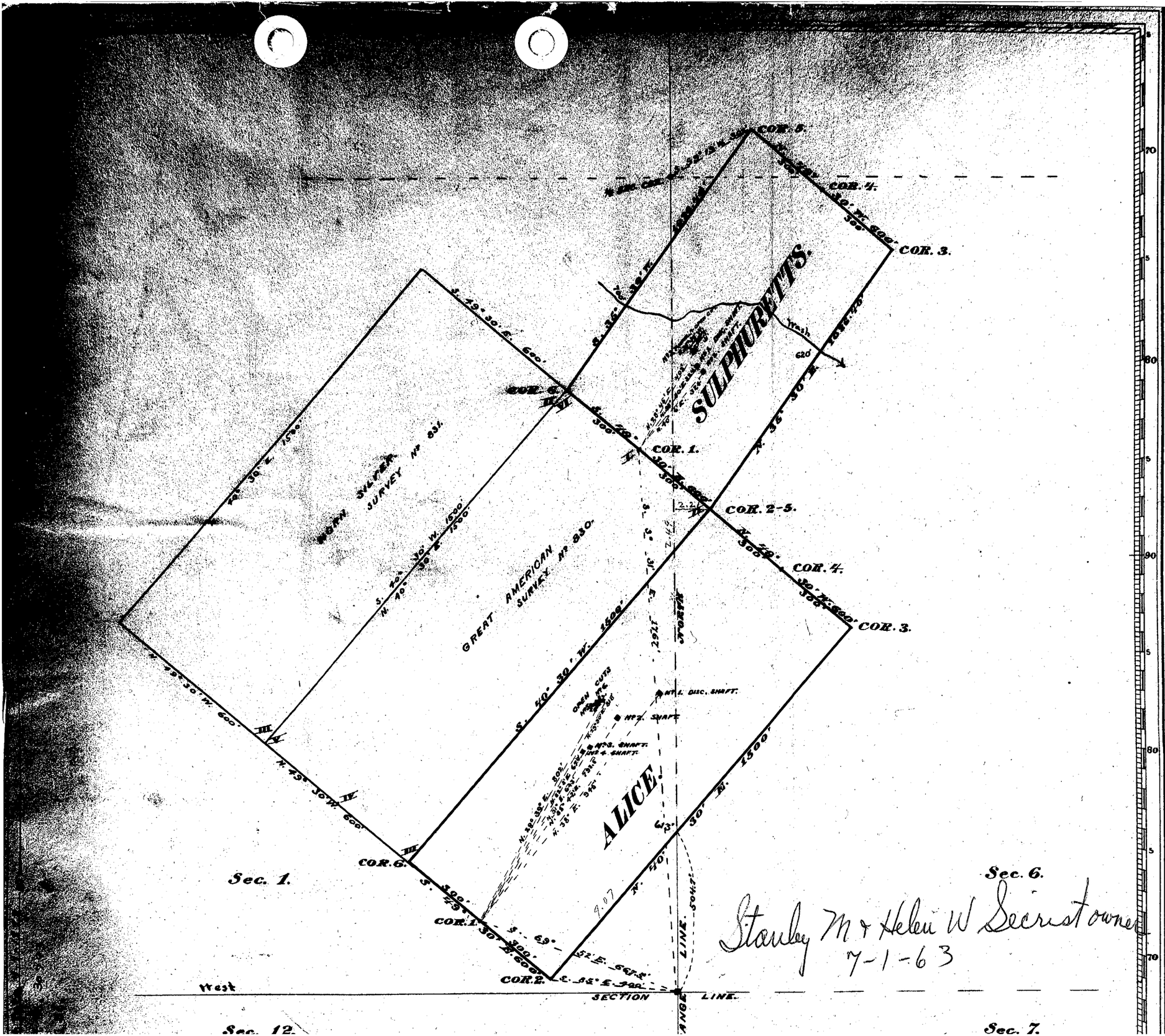
FPK



Stanley M & Helen W Secrist owners
7-1-63

Claim Located January 4, 1884.

Mineral Survey No. 1262. 125

LOT No.

Gila Land District.

PLAT

OF THE CLAIM OF

The Great American Mining Co.

KNOWN AS THE

Sulphuretts & Alice Lodes.

IN Swisshelm MINING DISTRICT,

Cochise COUNTY, Arizona.

Containing an Area of {"SULPHURETTS", 14.07 Ac. / "ALICE", 20.66 "} TOTAL 34.73 Acres.

Scale of 300 Feet to the inch.

Variation 11° 15' E.

SURVEYED Aug. 4-7, 1897 BY

Henry G. Howe,

U.S. Deputy Mineral Surveyor,

The Original Field Notes of the Survey of the Mining Claim of The Great American Mining Co. known as the

Sulphuretts & Alice Lodes.

from which this plat has been made under my direction, 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 or permanent monuments as will perpetuate and fix the locus thereof.

I further certify that Five Hundred Dollars worth of labor has been expended or improvements made upon said Mining Claim by claimant or its grantors, and that said improvements consist of 6 Shafts, 1 Tunnel and 3 Open Cuts.

that the location of said improvements is correctly shown upon this plat, and that no portion of said labor or improvements has been included in the estimate of expenditures upon any other claim.

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, and the same is hereby approved.

U.S. Surveyor General's Office. George Christ

Tucson, Ariz. U.S. Surveyor General for

Great American Mine shipments listed in file.

	Tons	Gold Assay oz	Gold Factor	Silver oz	Silver Assay Factor	Copper Assay %	Copper Factor	Lead Assay %
1. 10/29/-2,	32.074	0.29	9.3015	26.4	846.75			
12/12/12	30.720	0.38	11.6736	35.9	1102.85			
8/21/20	15.998	—		7.3	111.99			19.8
"	19.3545	0.25	4.8386	35.4	685.15			
9/13/20	37.439	0.31	11.6061	40.9	1531.26			
10/7/20	44.005	0.393	17.6870	36.54	1644.48			
11/24/20	51.034	0.370	18.8826	28.97	1478.46			
1/2/21	54.292	0.313	16.9934	22.83	1239.49			
10/15/25	54.905	0.185	10.1574	19.23	1055.82	0.09	4.941	
"	67.043	0.17	11.3973	16.34	1095.48	0.09	6.034	
10/19/25	44.481	0.18	8.0066	19.10	849.59	0.08	3.558	
10/24/25	58.36	0.17	9.9212	17.86	1042.31	0.07	4.085	
"	50.312	0.14	7.0437	15.90	799.96	0.09	4.528	
11/6/24	30.937	0.39	12.0654	29.6	915.74	0.07	2.166	
2/19/25	41.9365	0.305	12.7906	45.4	1903.92	0.02	1.258	
3/9/25	34.4135	0.125		13.0	447.38	0.06		27.2
5/24/34	38.105	0.37	14.0989	41.0	1562.31	0.05	1.905	
7/25/34	32.779	0.754	24.7154	59.0	1933.96	0.05	1.639	
silica	687.771	0.293	201.1793	28.62	19,687.53			
iron	418.8585					0.072	30.114	
lead	50.415			11.10	559.37			24.85
	738.1885							

316,760
936,047
1252,807

Calculated by F.F.K.
7/10/63

Jerome, Arizona
September 23, 1963

Mr. Axel L. Johnson
Box 5047
Tucson, Arizona

Dear Axel:

I just returned from about a month away which wound up in Los Angeles to attend the Mining Congress. Mrs. G. and I were in Idaho and Montana visiting the parks there and then went to Lake Louise. A very nice trip.

With regard to the Great American Mine: A group in Phoenix headed by a Mr. Walker were operating the property along about 1936-37. I think they called their company "Great American Mining Co." Mr. Walker died several years ago and I did not know any of the rest of them very well so I dont know of anyone from whom you could get more detailed information than I can give you..

My connection with the outfit was to design and build a mill using some machinery they already had other items which were bought at the time, all of which was second hand. C. L. Orem was their engineer at the time. Shortly after the mill was completed and operating I left, so I dont know about all that happened from then on. I dont think that it ran over a year. The grade of the ore did not stand up to the reported value. As I remember it they expected about a 15 to 20 oz. silver ore with a trace of lead. I believe the grade as mined turned out to be something under 10 oz.

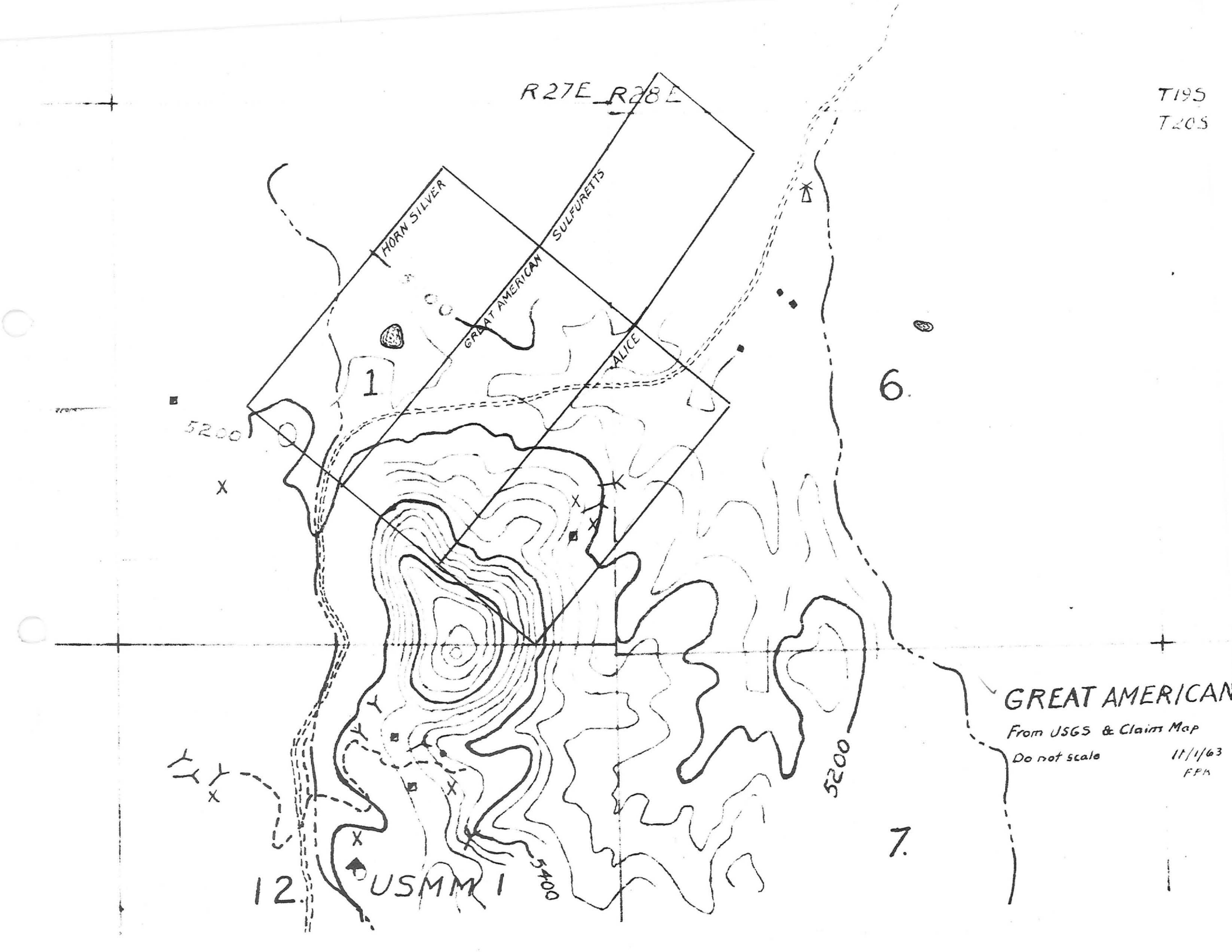
There is quite a body of siliceous ore there but I dont know the grade. I am sorry I cant give you more information on the property and I dont know where you might get it. I remember a Mr. Snow was in charge when I left, and he is dead too.

Give my regards to Mr. Secrist. I will look forward to seeing you both at the AIME meeting in December.

Yours very truly

Mark Gemmill

Mark Gemmill


R27E
R28E
T19S
T20S
HORN SILVER
GREAT AMERICAN
SULFURETTS
ALICE
1
6
7
12
5200
5400
USMM 1
GREAT AMERICAN
From USGS & Claim Map
Do not scale
11/1/63
FPM

— Surface Contour - Longitudinal Section - Plane of Workings —

12' Across Collar
20' Winze.
Au. = 0.17 ozs.
Ag. = 5.5 ozs.

13' Across Back of Drift
Au. = 0.06 ozs. Ag. = 4.0 ozs

12' Across Back of Drift 9/d + cut.
Au. = 0.20 ozs.
Ag. = 17.1 ozs.

+ Cut 20' Level
Collar 20'
Winze.

Cut Across 12' Side 9/d 4' face - 25 lb. Sample
Au. = 0.16 ozs. Ag. = 6.9 ozs.

6' Across Back of Drift
Au. = 0.19 ozs. Ag. = 15.2 ozs.
6' in 2 cuts
Au. 0.14 ozs Ag. 13.0 ozs.

Sample showing Little Iron Sulfide
Au. = 0.18 ozs. Ag. = 30.4 ozs.

4' + cut
Au. = 0.13 ozs.
Ag. = 9.6 ozs.

ORE SHIPPED

4' face
Au. = 0.16 ozs.
Ag. = 13.6 ozs.
Pb = 12.0 %

40' Level
Collar 50' Winze

12' + cut South

7 - 6' cuts

65 lb Sample. Cuts Spaced 6' Apart
Au. = 0.22 ozs. Ag. = 16 ozs.

Iron Sulfide Sample
Au. = 0.40 ozs.
Ag. = 49.7 ozs.

6' Across Face
Au. = 0.16 ozs.
Ag. = 21.2 ozs.

8' Across Ore
Au. = 0.18 ozs.
Ag. = 11.4 ozs.

55' Level

15" Roof
Au. = 0.32 ozs.
Ag. = 10.8 ozs.

Sample of Lead Ore
Au. = 0.20 ozs.
Ag. = 19.0 ozs.
Pb. = 42.0 %.

70 Level

12' Across Back 9/d + cut.
Au. = 0.17 ozs. Ag. = 12.7 ozs.

7' Across
South Side
Au. = 0.11 ozs.
Ag. = 10.4 ozs.

10' Across South Side
Au. = 0.09 ozs.
Ag. = 8.0 ozs.

5' Across Side
Au. = 0.10 ozs.
Ag. = 8.9 ozs.

Altered Limestone Beds Dip
About 20° To North.

Shaft or Winze Dips About
75° To South

Sketch Showing Assays 20-60 ft. Winzes

Scale 1 inch = 20 ft

C.L. OREM.

A S S A Y S

#1. 7 six ft. cuts from east drift of 40 ft. level in 60 ft. winze. Cuts are spaced 6 ft. apart and extend from top to bottom of the drift,- 65 lb. sample
Gold 0.22 ozs. Silver 16.0 ozs.

#2. Cut across 12 ft. on side and 4 ft. face of south crosscut on 40 ft. level in 60 ft winze,- 25 lb. sample.
Gold 0.16 ozs. Silver 6.9 oz .

#3. Cut across 14 ft. above a 105 ft. tunnel portal,- 25 lb. sample.
Gold 0.16 ozs. Silver 5.5 ozs.

#4. Cut below the 14 ft. which constitutes no. 3.
Gold 0.20 ozs. Silver 16.0 oz .

#5. Lead ore on upper dump.
Gold 0.20 ozs. Silver 19.0 ozs.

#6. Sample showing little iron sulfide from 40 ft. level in 60 ft. winze,- northeast face.
Gold 0.18 oz . Silver 30.4 ozs.

#7. Sample of oxidized ore on surface above 105 ft. tunnel portal.
Gold 0.76 ozs. Silver 4.2 ozs.

#8. Sample showing iron sulfides from 40 ft. level.
Gold 0.40 ozs. Silver 49.7 oz .

A S S A Y S

#1. 12 ft. across collar of 20 ft. winze opposite station 1.
Gold 0.17 ozs. Silver 5.5 ozs.

#2. 7 ft. across south side at bottom of 20 ft. winze.
Gold 0.11 ozs. Silver 10.4 ozs.

#3. Altered country rock.
Gold 0.02 ozs. Silver 1.2 ozs.

#4. 13 ft. across back of drift 25 ft. southwest of 50 ft. winze.
Gold 0.06 ozs. Silver 4.0 ozs.

#5. 10. across southside 50 ft. winze at depth of 35 ft.
Gold 0.09 ozs. Silver 8.0 ozs.

#6. 6 ft. across back of drift 17 ft from northeast.
Gold 0.19 0zs. Silver 15.2 ozs.

#7. 12 ft. across back of drift and short crosscut west, 25 ft. from winze.
Gold 0.20 ozs. Silver 17.10 ozs.

#8. 12 ft. along east crosscut 43 ft. from winze.
Gold o.17 ozs Silver 12.7 ozs.

#9. 6 ft. in two cuts east side of drift 25 ft. from winze.
Gold o.14 ozs. Silver 13.0 ozs.

#10. 4 ft. small crosscut near face of drift.
Gold o.13 oz . Silver 9.60 ozs.

#11. 6 ft. across face of northeast drift 84 ft. from winze.
Gold 0.16 ozs. Silver 21.2 ozs.

#12. 8 ft. in opencut near station 3. This cut evidently an offshoot from main ore body .
Gold 0.06 ozs. Silver 3.4 ozs.

#13. 9 ft. at each side portal little tunnel near station 4.
Gold 0.11 Silver 2.5 ozs.

#14. 5. ft. in two cuts 10 and 20 ft. in from portal tunnel station 5. Alterd limestone
Gold 0.08 oz . Silver 2.1 ozs.

#15. 8 ft. in two cuts at portal same tunnel. Tunnel passed thru ore zone into altered limestone represented by sample 14.
Gold 0.10 ozs. Silver 5.6 ozs.

#16. 6 ft. up from top of tunnel being continuation upwards of sample 15.
Gold 0.175 oz Silver 10.7 ozs.

#17. 13 ft. across surface gossan, altered rock west side of

Page 282

ore zone. Ore in bottom of cut below this sample.
Gold 0.06 ozs. Silver 2.5 ozs.

#18. 15 ft. being continuation of sample 17.
Gold 0.04 ozs. Silver 2.2 ozs.

#19. 7 ft. across bench of ore between cuts.
Gold 0.15 ozs. Silver 6.0 ozs.

#20. 5 ft. across bottom of 50 ft. winze.
Gold 0.10 ozs. Silver 8.9 ozs.

#21. 1,000 tons, or over, of reject and dump material from workings stations 1 and 2.

A - Gold o.11 ozs. Silver 10.0 ozs.
B - Gold 0.12 ozs. Silver 7.1 ozs.
C - Gold 0.19 ozs. Silver 13.8 oz .

#22. 1000 tons reject and dump stations 5 and 6.

A - Gold o.26 ozs. Silver 23.8 ozs.
B - Gold 0.15 ozs. Silver 10.2 ozs.
C - Gold 0.19 ozs. Silver 12.5 0zs.

American Smelting and Refining Co.
El Paso Smelting Works
ORE SETTLEMENT

bought of Four Horse Mining Co. El Paso, Texas 7-25-34
address Elfrida, Ariz shipping point Douglas, Ariz.
classification ORE smelter lot 1232

Car No.	Int.	Net Wt.	Moist. %	Dry Wt.	NY. QUOTATIONS	
					settlement date	7-12-34
36185	SP	66220	1.0	65558	silver	.64125¢ per oz.
					copper	8550¢ per lb.

PAYMENTS FOR METALS

elements	assay per ton	%	rate	amt. per ton	net pd. for	VALUE TOTAL
gold	o.754		3231025	24.37		
silver	59.0	95	62625	35.10	56.05	
copper	.05					
TOTAL PAYMENTS FOR METALS						59.47
copper deficiency 3% - 1#-=7# @ .0615				DEBITS	CREDITS	
				6.70		
				.43		
TOTAL DEDUCTIONS				7.13		7.13
NET VALUE PER TON						52.34

	DEBITS	CREDITS
total value on 32.779 dry tons @ 52.34 per ton		1715.65
less freight on 33.110 wet tons @ 3.80 per ton	125.82	
switching	2.25	
less umpires	3.12	
Amount withheld pending silver affidavit	325.17	
BALANCE DUE SHIPPER	1259.29	
	1715.65	1715.65

MADE BY CHECKED CORRECT APPROVED

ORE SETTLEMENT
PHELPS DODGE CORPORATION
Copper Queen Branch
Reduction Works, Douglas, Ariz. Oct. 24, 1925

bought of Old Dominion Commercial Co. shipped from Webb
address Globe, Arizona. material American Mine

date received	10/10/25	N.Y quotations	10/14/25
smelter lot No.	4282	silver	71.12
shipper's lot No.	11	copper	14.28
date sampled	10/17/25	deductions	2.75

CAR INT.	NO.	WET	MOISTURE	DRY
ep 7sw	11356	117900	1.0	116720

PER TON OF LBS.	assay	pay for	PAYMENTS	AMOUNTS per ton	TOTAL
gold	.17		@ 19.00	3.23	
silver	17.86 oz	.95	@ 71.12	12.07	
copper	.07% =	1.4 lbs.			
			total payments		15.30

	% anal	Dct.	chg for treatment	charges		
SILICA	79.2 %		3.00 &.01	3.01		
alumina	3.9 %					
	83.1					
Cu	1.4	8.0	6.6	@ 11.53 per unit	.76	
					3.77	
						3.77
						11.53

gross proceeds 58.36 dry tons @		11.53	672.89
less freight from Webb On 58.95 gross ton @		.60	35.37
Balance Due..Old Dominion Commercial Co.....			637.52

Correct .JB/.B.....
Checked .....
Approved .G.M.Dowell.....

(12)

Copy

ORE SETTLEMENT
PHELPS DODGE CORPORATION
Copper Queen Branch
Reduction Works, Douglas, Ariz. Oct. 24, 1925.

bought of Old Dominion Commercial Co. shipped from Webb
address Globe, Arizona material Americian Mine

---

date received 10/16/25
smelter lot No. 4341
shipper's lot No. 12
date sampled 10/20/25

N.Y. quotations 10/14/25
silver 71.12
copper 14.28
deductions 2.75

CAR INT.	CAR NO.	WET	MOISTURE	DRY
EP & SW	11396	101640	1.0	100624

PER TON OF LBS.	assay	pay for	PAYMENTS per ton	AMOUNTS TOTAL
gold	.14 ozs.	oz. @ 19.00	2.66	
silver	15.90 ozs.	95 % @ 71.12	19.74	
copper	.09% =1.8 lbs			
total payments				13.40

	anal.	det.	chg. for treatment base	charges		
silica	79.0 %				3.00	
alumina	3.0 %					
	81.0					
Cu	1.8 %	8.0	6.2	% @ 11.53 per unit	.71	
					3.71	3.71
						9.69

gross proceeds 50.312 Dry tons @	9.69	487.52
less freight from Webb On 50.82 gross tons @	.60	30.49
Balance due Old Dominion Commercial Co.....	.....	457.03

****

Correct — Checked — Approved

JG/B..... ..... .G.M.Dovell.....
Ivn. Clerk — Manager

(13)

Copy

ORE SETTLEMENT

PHELPS DODGE CORPORATION
Copper Queen Branch
Reduction Works, Douglas, Ariz. Oct. 15, 1925

bought of Old Dominion Commercial Co. shipped from Webb
address Globe, Arizona material Americian Mine

date received 10/5/25
smelter lot No. 4185
shipper's lot No. 9
date sampled 10/10/25

N.Y. quotations 10/7/25
silver 70.94
copper 14.18
deducations 2.75

INT.	CAR NO	WET	MOISTURE	DRY
EP&SW	7362	135440	1.0	134086

per ton of lbs. payments amounts

	assay	pay for	per ton	TOTAL
gold	.17	@19.00	3.23	
silver	16.34	95 @70.94	11.01	
copper	.09% = 1.8 lbs.			
			8	14.24

anal.	deduct	chg. for	charges	
silica	82.9 %		3.00	
alumina	2.3 %			
	85.2 %			
cu.	1.8 %	8.0 6.2	% @11.43 per unit .71	
		total treatment	3.71	3.71
				10.53

gross proceeds 67.043	dry tons @	10.53	705.96
less freight from Webb On 67.72	gross tons @	.60	40.63
Balance Due: Old Dominion Co.			665.33

Correct ..... Ivn Clerk

Checked .....

Approved G. M Dowell ..... Manager

(1)

COPPER QUEEN CONSOLIDATED MINING COMPANY
REDUCTION WORKS

Douglas, Ariz. Oct. 29, 1912 6

bought of J. V. Fryer
address Caliente, Ariz.

N.Y. quotations
date 10/23/12
silver 63.35
copper

Numbers
invoice No. 1310
smelter lot No. 2524
shipper's lot No. 1

Date sampled 10/25

CAR INT.	NO.	WEIGHT NET	MOIST.	DRY	VALUES PER TON	TOTAL
S W	208	64796	1.0	64148		
Weight sax		104				
PAYMENTS						
gold .29 ozs. @ $19.00					5.51	
silver 26.4 ozs. 95% @ 6035.cts					15.89	
TOTAL PAYMENTS						21.40
TOTAL DEDUCTIONS						2.50
Price per ton						18.90
ANALYSIS						
Si0 [illegible]						
Gross proceeds 32.074 tons @ 18.90						606.20
Less freight from Caliente @ .75¢						24.34
BALANCE DUE						581.86

Correct ..... Checked ..... Approved .....

Copy

ORE SETTLEMENT
PHELPS DODGE CORPORATION
Copper Queen Branch

Reduction works, Douglas, Ariz. Oct. 15, 1925

bought of Old Dominion Commercial Co.
address Globe, Arizona shipped from Webb
material American Mine

date received 10/1/25
smelter lot No. 4119
shipper's lot No. 8
date sampled 10/5/25

N.Y. quotations 9/30/25
silver 71.17
copper 14.18
deductions 2.75

	assay	lbs	pay for	payments per ton	TOTAL	
gold	.185oz.		@19.00	3.51		
silver	19.23		71.17	13.00		
copper	.09% =	1.8				
					16.51	
	analysis	DEDUCT	chg. for	chgs.		
silica	80.4 %		3.00	1.08	3.08	
alumina	2.3 %		11.43	.71		
	82.7 %					
cu	1.8 %	8.0	6.2	2.79	3.79	
					12.72	

gross proceeds 54.205 dry tons @ 12.72 per ton 698.39

less freight from Webb On 55.46 gross tons @ .60 per ton 33.28

Balance due: Old Dominion Co. 665.11

CAR int.	No.	WET	MOISTURE	DRY
EP&SW	7557	110920	1.0	109810

Correct JG/B Checked Approved

Inv. Clerk

G. M. Dowell
Manager

(9)

SETTLEMENT SHEET

Copy

CALUMET AND ARIZONA MINING COMPANY

N.Y. quotations: IN FAVOR OF numbers:
Date 9/29/20 Ben Henery, Acct. Great American Date sampled 10/5/20
silver 99.625 cts. Smelter lot 5873
copper Shipper lot 1

SILICIOUS ORE.

CAR no.	int	wet wt. LBS	dry wt. lbs	ag.oz.	au.	slo %	ozs. silver	ozs. gold
73693	UP	88900	88010	36554	.393	77.0	1607.9	17.29

SETTLEMENT

PAYMENTS:				
Silver contents as per	1607.9 ozs.			
Assay Value less Smelting Loss	160.8 ozs.			
	1447.1 Ozs.	at	99.625	1441.67
Gold contents as per Assay Value less Smelting Loss; 5% of contents	17.29 ozs.			
	.86			
	16.43 ozs.	at	$20.00	328.60
TOTAL VALUE				1770.27
DEDUCATIONS:				
TREATMENT $3.75 per dry ton				
MOISTURE $ per dry ton	165.02			
FREIGHT AND WAR TAX	73.25			238.27
BALANCE DUE				$1532.00

Made by Checked by Approved

Douglas, Arizona. 10/28/20

copy

SETTLEMENT SHEET
CALUMET AND ARIZONA MINING COMPANY

N.Y. quotations:
date 11/17/20
silver 99.625 cts.
copper

IN FAVOR OF
Great American Mine-Ben Heney Mgr.
Tucson, Arizona

numbers:
date sampled 11/24/2
smelter lot 6814
shipper lot 2

SILICIOUS ORE

**

no.	CAR int	wet wt. lbs.	dry wt. lbs	ag oz.	au.	sio %	ozs. silver	ozs. gold
85755	SP	103100	102068	28.97	.370	68.2	1478.5	18.88
Total								

SETTLEMENT

PAYMENTS:

Silver contents as per Assay Value less smelting loss; 10% of contents.	1478.5 ozs. 147.9 ozs. 1330.6 ozs.	at 99.625		1325.61
Gold contents as per Assay Value less smelting loss; 5% of contents.	18.88 ozs. .94 ozs. 17.94 ozs.	at 20.00		358.80
Total Value				1684.41

DEDUCATIONS:

Treatment	$4.50 per dry ton	229.65	
Moisture	$ per dry ton	------	
Freight & war tax & demur.		95.95	325.60
BALANCE DUE			$1358.81

Made By Checked By Approved

Douglas, Arizona, 12/3/20

7

Copy

SETTLEMENT SHEET
CALUMET AND ARIZONA MINING COMPANY

N.Y. quotations: IN FAVOR OF numbers:
date12/29/20 Great American Mine, Ben Heney, Mgr. date sampled1/3/21
silver 99.625 cts. smelter lot 43
copper Tucson, Arizona. shipper lot 1

No	CAR int	wet wt. lbs.	dry wt. lbs.	ag ozs.	au.	%lo.	ozs. silver	ozs. gold
30954	CoTM	109680	108564	22.83	.313	75.0	1239.5	16.99

SETTLEMENT

PAYMENTS:

Silver contents as per Assay Value	1239.5 ozs.		
less smelting loss; 10% of contents.	124.0 ozs.		
	1115.5 ozs	at 99.625	$1111.32
Gold contents as per Assay Value	16.99 ozs.		
less smelting loss; 5% of contents	.85 ozs.		
	16.14 ozs.	at $20.00	322.80
TOTAL VALUE			1434.12

DEDUCATIONS:

Treatment $4.50 per dry ton	244.31	
Moisture $ perdry ton		
Freight and war tax	33.89	278.20
BALANCE DUE		$1155.92

Made By W. Checked by D. Approved

Douglas, Arizona, 1/10/20

(9)

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THE CONSOLIDATED KANSAS CITY SMELTING & REFINING CO.
EL PASO SMELTING WORKS PLANT
El Paso, Texas Aug 21, 1920

bought of Great American Mining Co. smelter lot 2284
shipping point Webb,Ariz.
classification Ore shipper's lot 2

N.Y. quotations
date 8/14/20
silver 99 5/8 cts per ozs.

CAR MONT.	CAR INT	NET WEIGHT	MOIST	DRY WEIGHT
101221	Q	39100	1.	38709

Silver purchased under Pittman Act 651 ozs.
10% Silver value with held. $65.10

PAYMENTS FOR METALS

elements	assay per ton	percent pd. for	net pd. for	rate	per ton	TOTAL
gold	.25			20.00	5.00	
silver	35.4	95	33.63	99 5/8	33.50	
TOTAL PAYMENTS FOR METALS						38.50

	DEBITS	CREDITS	
Treatment charge F.O.B. El Paso smelting works.	6.00		
	anal.	net	rate			
insoluble	84.9		@ .12 ¢	10.19		
iron	5.6					
		7.2	@ .08 ¢		.58	
lime	1.6					
TOTAL DEDUCTIONS				16.19	.58	15.61
NET VALUE PER TON						22.89

	DEBITS	CREDITS
Total value on 19.3545 dry tons @ 22.89 per ton		443.02
Less freight on 19.550 wet tons @ 2.80 per ton	54.74	
Less war tax	1.64	
Less switching	1.03	
BALANCE DUE SHIPPER	385.61	
	443.02	443.02

Correct Checked Approved

..P..... ....

(4)

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THE CONSOLIDATED KANSAS CITY SMELTING & REFINING CO.
EL PASO SMELTING WORKS PLANT

El Paso Aug. 21, 1920

bought of Creat Arerican Mining Co.
shipping point Webb Ariz. smelter lot No 2283
classification 30 fines shipper's lot No.

N.Y. quotations
date 8/14/20
silver 99 5/8 cts. per ozs.
lead 9.00 per 100 lbs.

CAR INT.	CAR NO.	NET WEIGHT	MOIST	DRY WEIGHT
CB&R	701221	32320	1.	31997

Silver purchased under Pittman Act. 109 ozs.
10% Silver value with held. $10.90

PAYMENTS FOR METALS

elements	assay	% dct.	net assay	equiv lbs	% pd. for	net pd for	rate	PER TON	TOTAL
gold									
silver	7.3	.5	6.8			6.8	99 5/8	6.77	
lead	19.8	2.	17.8	356	90	320.4	.75	24.03	
copper									
TOTAL PAYMENTS FOR METALS									30.80

	DEBITS	CREDITS
Treatment charge F.O.B. El Paso smelting works	4.70	
Bricking charge	1.50	

	ANAL	NET	RATE	DEBITS	CREDITS
insoluble	56.5		@ .12 cts	6.78	
iron	8.2	9.1	@ .08 cts		
lime	.9				.73
TOTAL DEDUCTIONS				12.98	.73
NET VALUE PRE TON					12.255 18.55

	DEBITS	CREDITS
Total value on 15.9985 dry tons @ 18.55 per ton		296.77
Less freight on 16.160 wet tons @ 2.80 per ton	45.25	
Less war tax	1.36	
Less switching	1.03	
BALANCE DUE SHIPPER	249.13	
	296.77	296.77

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COPPER QUEEN CONSOLIDATED MINING COMPANY

REDUCTION WORKS

Douglas, Ariz. Dec. 24, 1912

bought of Sheerer & Hansen address Douglas, Arizona

N.Y. quotations
Avg. E.&M. Journal
Date 12/18/12
Silver 6365 per oz.
Copper

Numbers

Invoice No. 1573
Smelter lot No. 3100
Shipper's lot No. 1

Date sampled 12/20/12

Car No.	Int.	Wet	Moist	Dry	Bulk Ore	PER TON	TOTAL
					payments		
SN	212	62060	1.0	61440			
					G. 0.38 @ 19.00	7.22	
					S. 35.9 95% @ 63.65	21.71	
					total payments $		28.93
ASSAY							
gold	silver	wet copper			Deductions		
0.38	35.9				Treatment	8.59	
					total deductions		8.59
6					price per ton		20.34
Gross proceeds 30.720 Tons @						20.34	624.84
Less freight from Caliente @						.75	23.27
					$		
BALANCE DUE							601.57

Correct JH/H — Checked — Approved

LBC — GMC — GHD

Inv. clerk — Asst. Manager

THE CONSOLIDATED KANSAS CITY SMELTING & REFINING CO
EL PASO SMELTING WORKS

El Paso, Texas, Sept 13, 1920

bought of Great American Mining Co
shipping point Webb, Ariz. smelter lot 2536
classification Ore shipper's lot 2

N.Y. quotations
date 9/6/20
silver 99 5/8 cts. per ozs.

CAR NO.	INT.	NET WEIGHT	MOIST	DRY WEIGHT
87483	SP	76720	2.4	74879

Silver purchased under Pittman Act. 1455 ozs.
10% Silver value withheld. $145.50.

PAYMENTS FOR METALS

elements	ASSay	percent	net pd.	rate	per ton	TOTAL
gold	.31			20.00	6.20	
silver	40.9	95	38.855	99 5/8	38.71	
TOTAL PAYMENTS FOR METALS						44.91

	anal	net	Rate	DEBITS	CREDITS
Treatment charge F.O.B. El Paso smelting works.				6.00	
insoluble	83.1		@ .12 cts	9.97	
iron	4.4				
		7.2	@ .08 cts		.58
lime	2.8				
TOTAL DEDUCTIONS				15.97	.58
NET VALUE PER TON					29.52

	DEBITS	CREDITS
Total value on 37.439 dry tons @ 29.52 per ton		1105.21
Less freight on 58.360 wet tons @ 550 per ton	134.26	
Less war tax	4.03	
Less swiching	2.58	
BALANCE DUE SHIPPER	964.34	
	1105.21	1105.21

Checked Made By W. Correct Approved

(5)

AMERICAN SMELTING & REFINING CO.
EL PASO SMELTIN WORKS
ORE SETTLEMENT

bought of Four Horse Mining Co. El Paso, Texas, Nov6, 1934

address Elfrida, Ariz. shipping point Douglas, Ariz. smelter lot 202

classification Ore shippers lot

CAR no.	initial	net weight	moisture %	dry weight	N.Y. metal quotations 10-25-34 settlement date
31696	SP	63460	2.5	61874	silver 64125
					foreign-silver 53642
		Provisional Settlement			lead
					E.&M.J. copper 8650
		B/L 10-23-34			

PAYMENTS FOR METALS

elemenents	assay per ton	equivalent in lbs.	% pd. for	net pd. for	rate	amt. per ton
gold	.39				32.31825	12.60
silver	29.6		95	28.12	.62625	17.61
lead						
copper	.07	1.4				

TOTAL PAYMENTS FOR METALS 30.21

DEDUCTIONS		Debits	Credits
basing charge F.O.B. El Paso	3.70	4.22	
handling sacks	.52		
Copper Deficeincy 8# - 1.4# = 6.6# @ .0615		.41	

Analysis		net	rate
insoluble	77.2		
silica			
alumina	6.8		
zink	.5		
sulphur	.5		
As Sb			
Bi			
iron	7.9		
lime			

TOTAL DEDUCATIONS	4.63	4.63
NET VALUE PER TON		25.58

	debits	credits
total value on 30.937 dry tons @ 25.58		791.37
less freight on 31.730 wet tons @ 2.60	82.50	
less freight on sack returned		
less demurrage		
less umpires	2.25	
less duties and brokage	96.52	
Amount withheld pending receipt of silver affidavit	610.10	
Balance Due Shipper	791.37	791.37

AMERICIAN SMELTING & REFINING CO.
EL PASO SMELTING WORKS
ORE SETTLEMENT

bought of Four Horse Mining Co El Paso, Texas, Mar. 19,1935

address Elfrida, Ariz. shipping point Douglas Ariz. smelter lot 488

classification Ore shippers lot

CAR no.	initial	net weight	moist %	dry weight	N.Y. metal quotations	
15267	SP	71920	4.3	68827	settlement date	3-11-35
					silver	64125
		B/L Date 3-6-35			foreign silver	58813
					lead	3.55

PAYMENTS FOR METALS

elements 66	assay per ton	deducted	net assy. in	equiv. lbs	%pd for	net pd for	rate	amt. per ton	total amt
gold	.125				125	32.81	25	4.10	
silver	13.0				95	12.35	.626	7.73	
lead	27.2	1.5	25.7	514	95	488.3	.0215	10.50	
copper	0.06								
TOTAL PAYMENTS FOR METALS									22.33

DEDUCATIONS					DEBITS	CREDITS
Base Charge: F.O.B. El Paso, for Metal Payments, not exceeding $25.00 per ton.					3.70	
analysis	deduction	net	rate			
insolubl	42.8	20.0	22.8	5¢	1.14	
silica						
alumina	.8					
zink	1.1					
sulphur	.3					
As Sb						
Bi						
iron	11.2					
lime						
TOTAL DEDUCATIONS					4.84	4.84
NET VALUE PER TON					debits	17.49
total value on	34.4135	Dry tons@ 17.49 per ton				601.89
Less freight on	35.9600	wet tons@ 2.30 per ton			82.71	
		switching			2.25	
Amount withheld pending receipt of silver affidavit					22.37	
BALANCE DUE SHIPPER					494.56	
					601.89	601.89

(16)

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AMERICAN SMELTING & REFINING CO.
EL PASO SETTLEMENT WORKS
ORE SETTLEMENT

bought of Four Horse Mining Co. El Paso, Texas 2/19/35
Frank R. Rickard
address Elfrida, Ariz. shipping point Douglas Ariz.
Classification Ore smelter lot 238

CAR NO	INT	NET WEIGHT	MOIST	DRY WEIGHT
81427	SP	84720	1.0	83873

N.Y. quotations
B/L date 2/2/35
date 2/4/35
silver 64125 ¢ per oz.
F. silver 53854
copper 08650 ¢ per lb.

PAYMENTS FOR METALS	assay lbs	equiv. lbs.	% pd for	net pd. for	rate	PER TON	VALUE TOTAL
elements							
gold	.305			.305	32.31825	9.86	
silver	45.4		95	43.15	.62625	27.01	
copper	0.03	0.6					
TOTAL PAYMENTS FOR METALS							36.87

DEDUCTIONS	DEBITS	CREDITS
Base charge: F.O.B. El Paso for metal payments, not exceeding $30.00 per ton	4.20	
10% of 6.37 excess over $30.00 P ton	.69	
copper deficiency 8#-0.6#=7.4# @ .06150	.46	
TOTAL DEDUCTIONS	5.35	5.35
NET VALUE PER TON		31.52

analysis	
insoluble	85.0
alumina	0.8
zink	0.2
sulphur	0.3
iron	5.4

	DEBITS	CREDITS
Total value on 41.9365 dry tons @ 31.52 per ton		1321.84
Less freight on 42.3600 wet tons @ 2.90 per ton	122.84	
Switching	2.25	
Less umpires	3.12	
Amount withheld pending receipt of silver affidavit	185.78	
BALANCE DUE SHIPPER	1007.85	
	1321.84	132184

Made By ..... Checked ..... Correct ..... Approved .....

(15)

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ORE SETTLEMENT
PHELPS DODGE CORPORATION
Copper Queen Branch
Reduction Works, Douglas, Ariz. Oct. 19,1925

bought of Old Dominion Commercial Co. shipped from Webb
address Globe, Arizona material Americian Mine

date received	Oct. 8	N.Y. quotations	10/7/25
smelter lot No.	4219	silver	70.94
shipper's lot No.	10	copper	14.18
date sampled	10/13/25	deductions	2.75

CAR INT.	NO.	WET	MOISTURE	DRY
SP	53464	89860	1.0	88962

PER TON OF LBS.	assay	pay for	PAYMENTS	per ton	AMOUNTS TOTAL
gold	.18 Oz		@ 19.00	3.42	
silver	19.10 Ozs.	95	@ 70.94	12.87	
copper	.08 %				
	8	chg.			16.29
	anal.	Dct. for treatment	charges base		
silica	83.6 %		3.00+.06=	3.06	
alumina	3.2 %				
	86.8				
cu	1.6#	8.0# 6.4#	% @ 11.43 per unit	.73	
				3.79	
					3.79
					12.50
gross proceeds 44.481 Dry tons @				12.50	556.01
less freight from Webb On 44.93 gross tons @				0.60	26.96
Balnce Due					529.05

Correct GN/W — Ivn. Clerk

Checked

Approved G.M.Dowell — Manager

(11)

SHIPMENTS

1 Oct. 29, 1912. 32.074 dry tons - Gold 0.29 ozs. - Silver 26.4 ozs.

2 Dec. 24, 1912. 30.780 dry tons - Gold 0.36 ozs. - Silver 55.9 ozs.

3 Aug. 21, 1920. 15.998 dry tons - Gold Silver 7,3 Ozs.
Lead 19.6 %

4 Aug. 21, 1920. 19.3545 dry tons - Gold 0.25 ozs. - Silver 53.4 ozs.

5 Sept. 13, 1920. 37.439 dry tons - Gold 0.31 ozs. - Silver 40.9 ozs.

6 Oct 5, 1920. 44.006 dry tons - Gold 0.395 ozs. - Silver 56.54 ozs.

7 Nov. 24, 1920. 51.054 dry tons - Gold 0.370 ozs. - Silver 30.97 ozs.

8 Jan. 3, 1921. 54.338 dry tons - Gold 0.313 ozs. - Silver 20.85 ozs.

9 Oct. 15, 1925. 54.995 dry tons - Gold 0.165 ozs. - Silver 19.34 ozs.
Copper .09%

10 Oct. 15, 1925. 37.048 dry tons- Gold 0.17 ozs. - Silver 16.34 ozs.
Copper .09%

11 Oct. 19, 1925. 44.481 dry tons - Gold 0.10 ozs. - Silver 19.10 ozs.
Copper .08%

12 Oct 24, 1925. 58.56 dry tons- Gold 0.17 ozs. - Silver 17.68 ozs.
Copper .07%

13 Oct. 24, 1925. 50.513 dry tons - Gold 0.14 ozs. - Silver 15.90 ozs.
Copper .09%

14 Nov. 6, 1954. 50.937 dry tons - Gold 0.59 ozs. - Silver 29.6 ozs.
Copper .07%

15 Feb. 19, 1935. 41.9585 dry tons - Gold 0.308 ozs. - Silver 45.4 ozs.
Copper .08%

16 Mar. 19, 1955. 54.4155 dry tons- Gold 0.125 ozs. - Silver 15.0 ozs.
Copper .06% Lead 27.2 %

17 May 24, 1954. 59.105 dry tons- Gold 0.37 ozs. - Silver 41.0 ozs.
Copper .05%

18 Jul.25, 1954. 38.778 dry tons - Gold 0.754 ozs. - Silver 39.0 ozs.
Copper .05%

Mr. J. T. Stockdale
P. O. Box 1584
Phoenix, Arizona

P. O. Box, 1451
Phoenix, Arizona
Dec. 22nd, 1935

Dear Sir:

Enclosed find a copy of the reports. The results cited in Mr. Gracey's report are based on my tests, of the ore. The values in the 1923 reports are on $20.00 per oz. gold and $1.00 per oz. silver. Copies of the same assays are attached below the reports, calculated at present prices, i.e. $35.00 per oz. gold and $0.77 per oz silver.

The ore bodies sampled and estimated by Mr. Gracey in 1923 averaged $1.00 gold to each three ounces or $3.00 silver, under present prices will average about $2.00 gold to $3.00 silver.

Of course Mr. Gracey's report in 1923 was based on a product for a 50 ton plant. My 1935 description considers the entire mineral area and a much lower grade product for a very large plant.

As stated in Gracey's report the amount of opencut work in relation to the drifts, crosscuts, and raises, is large and considerable development work has been done since Mr. Gracey's report was made as well as considerable shipping.

The old R. R. thru Webb has been removed long ago and improvements and shortening of roads makes it only 26 miles north of Douglas now to where we turn off to the mine. This highway has been greatly improved, widened and is now being paved (oiled).

When you go into the matter thoroughly you will find my present claims for ore of $20.00 grade under present prices is very conservative. The lower tunnel we are driving will cut the ore zone from 50 to 350 feet on the dip of the ore beds and will average about 200 feet of backs for 1000 feet. A 16 inch width of ore of $20.00 value or better for that distance will make 20,000 tons. Widths of 8 to 10 feet and more have actually been mined of higher grade ore in this area and many small fissures and lenses are scattered thru this large deposit that are wider than 16 inches. Actual shipments from the property have assayed 2 or 3 times the value of what I say we can mine. Gracey's estimates considered the ore only to the bottom of the old workings, a distance of 60 feet. Additional assays and panning indicate there are probably 50 places where ore higher than $20.00 per ton can be mined over a length of 1000 feet of the surface and through 350 feet on the dip of these beds as exposed by erosion of the hillside.

Our present idea is to drift lengthwise of the deposit in the lowest tunnel and crosscut the ore zone at 100 feet intervals to put car and track in this tunnel and an ore bin for the shipping ore on the dump. We will stock pile the mill ore. We intend to raise and connect with the old workings as these workings extend under them. This will permit of mining the shipping ore or grades of mill ore we desire as they are encountered, by glory-hole or underground stoping methods. The ground stands very well and large opencuts or stopes are practical.

Very truly yours,

C. L. Orem

ARIZONA GOLD AND SILVER PROPERTY

The property is known as the Great American mine and consists of four patented claims situated in Cochise County, Arizona, eleven miles east of the Douglas-Pierce highway from a point 26 miles north of Douglas. Lying at the base of the northern end of the Swisshelm mountains, the property is accessible by good roads.

The mineral area is composed of beds of limestone and quartzite underlain on the dip by a large porphyry sill which makes up into the sedimentary series in the form of tongues or dykes.

The mineral area apparently dips approximately 20 degrees to the north and the most prominently exposed portion of it occupies the crest of a rounded gently sloping ridge pointing eastward. The mineralized zone where exposed on the surface is prominent for 1500 feet and may be considerably longer under the surface. In places it reaches a maximum width of from 200 to 300 feet. In it there are approximately 2000 feet of old scattered surface workings composed of opencuts, crosscuts, drifts, winzes and raises. Better than 2000 tons of ore have been shipped during the past from these old workings.

Records of part of this tonnage are given below. The rest of the old records are not at hand but probably could be obtained from the smelters. Shipments made over 50 years ago are estimated to total from $25,000.00 to $50,000.00 from these old workings. A list of samples taken in 1923 are also appended.

The mineralization may extend thry a thickness of 200 feet or more of these beds, judging from surface exposures and the present workings. However, if it will hold up to a 100 feet in thickness for a distance of 1000 feet, each 200 feet on the dip it extends would make a tonnage of better than 1,500,000 tons.

This area can be clearly tunneled under all on ore for at least 200 feet on the dip and raises and crosscuts driven at intervals would adequately block out the ore.

Should this development prove up this area, the ore could be handled from the hillside by power shovel at a cost for mining of not over 50¢ per ton. On the basis of a 1000 ton mill, the milling should not be over $1.50 per ton. The work will open up additional large areas of high grade ore that could be shipped and even if the continuity of the larger area was disproved by this work, sufficient ore of higher grade would be developed and could be selectively stoned to justify a smaller mill from the higher grade sections of this area.

6 to 15 feet thicknesses of these beds exposed 60 feet deep by present workings will hold up to 15 ounces silver and $5.00 to $11.00 gold per ton.

Considerable ore testing work prove the ore can be successfully treated with a high recovery by cyanidation. However, the presence of a little copper and lead in the ore and the late improvements in floatation process may make a combination concentration-floatation plant the most economical. The average of the ore is highly silicious and the concentration ratio would be very high.

In regard to direct shipping ore it is extimated conservatively

A S S A Y S

GOLD AT $35.00 PER OZ. SILVER AT $0.77 PER OZ.

		GOLD OZS.	$ PER TON	SILVER OZS.	$ PER TON	TOTAL
#1.	12 ft. across collar of 20 ft. winze opposite station 1.	0.17	$ 5.95	5.5	$ 4.24	$10.19
#2.	7 ft. across southside at bottom 20 ft. winze.	0.11	$ 3.85	10.4	$ 8.01	$11.86
#3.	Altered country rock.	0.02	$ 0.70	1.2	$ 0.92	$ 1.62
#4.	13 ft. across back of drift 25 ft. southwest of 50 ft. winze.	0.06	$ 2.15	4.0	$ 3.08	$ 5.23
#5.	10 ft. across southside 50 ft. winze at depth of 35 ft.	0.09	$ 3.15	8.0	$ 6.16	$ 9.31
#6.	6 ft. across back of drift 17 ft. from northeast.	0.19	$ 6.65	15.2	$11.70	$18.35
#7.	12 ft across back of drift and short crosscut west, 25 ft from winze.	0.20	$ 7.00	17.10	$13.17	$20.17
#8.	12 ft. along east crosscut 43 ft. from winze.	0.17	$ 5.95	12.7	$ 9.78	$15.73
#9.	6 ft. in two cuts east side of drift 25 ft. from winze.	0.14	$ 4.90	13.0	$10.01	$14.91
#10.	4 ft. small crosscut near face of drift.	0.13	$ 4.20	9.60	$ 7.39	$11.59
#11.	6 ft. across face of northeast drift 84 ft. from winze.	0.16	$ 5.60	21.2	$16.32	$21.92
#12.	8 ft. in opencut near station 3. This cut evidently am offshoot from main ore body	0.06	$ 2.10	3.4	$ 2.62	$ 4.72
#13.	9 ft. at each side portal little tunnel near station 4.	0.11	$ 3.85	2.5	$ 1.93	$ 5.78
#14.	5 ft. in two cuts 10 and 20 ft. in from portal tunnel station 5. Altered limestone.	0.08	$ 2.80	2.1	$ 1.62	$ 4.42

A S S A Y S

Assays in above report figured at present prices

GOLD AT $35.00 PER OZ. SILVER AT $0.77 PER OZ.

	GOLD OZS.	$ PER TON	SILVER OZS.	$ PER TON	TOTAL
#1.	Seven 6 ft. cuts from east drift of 40 ft. level in 60 ft. winze. Cuts are spaced 6 ft. apart and extend from top to bottom of the drift, 65 lb. sample.				
	0.22	$ 7.70	16.0	$12.32	$20.02
#2.	Cut across 12 ft. on side and 4 ft. face of south crosscut on 40 ft. level in 60 ft. winze, 25 lb. sample.				
	0.16	$ 5.60	6.9	$ 5.32	$10.91
#3.	Cut across 14 ft. above 105 ft. tunnel portal. 25. lb sample				
	0.16	$ 5.60	5.5	$ 4.24	$ 9.94
#4.	Cut below the 14 ft. which constitutes #3.				
	0.20	$ 7.00	16.0	$12.32	$19.32
#5.	Lead ore on upper dump.				
	0.20	$ 7.00	19.0	$14.63	$21.63
#6.	Samples showing little iron sulfide from 40 ft. level in 60 ft. winze - northeast face.				
	0.18	$ 6.32	30.4	$23.41	$29.71
#7.	Sample of oxidized ore on surface above 105 ft. tunnel portal.				
	0.76	$26.60	4.2	$ 3.23	$29.83
#8.	Samples showing iron sulfides from 40 ft. level.				
	0.40	$14.00	49.7	$38.27	$52.27
#9.	Another from 40 ft. level showing iron sulfides.				
	0.48	$16.80	52.9	$40.73	$57.53

SAMPLES TAKEN NOV.24, 1935.

		GOLD OZS.	$ PER TON	SILVER OZS.	$ PER TON	TOTAL
1-B	Intersection two lenses on north wall top 60 ft. winze, 2 ft.	0.25	$ 8.75	8.2	$ 6.31	$15.06
2-B	West opencut east face 2 ft.	0.60	$21.00	20.8	$16.02	$37.02
3-B	2 ft. roof 20 ft. east 60 ft. winze on level with collar.	0.59	$20.65	22.5	$17.33	$37.98
4-B	6" to 1 ft. upper workings on surface.	0.43	$15.05	9.6	$ 7.39	$22.44
5-B	Best vuggy ore workings just below 4-B.	0.38	$13.30	33.5	$25.80	$39.10
6-B	2 ft. right or north side bottom opencut workings below 5-B.	0.45	$15.75	4.3	$ 3.31	$19.06

GOLD AT $35.00 PER OZ. SILVER AT $0.77 PER OZ.

ARTHUR H. GRACEY
Mining Engineer

Tucson, Arizona
Feb. 20th, 1923.

The following is a brief outline of my experience as a mining engineer and operator -

After passing the matriculation examination for Queen's University Kingston, Ontario, I went to Arizona and entered the employ of the Phoenix Mining Company, Cave Creek, Arizona, as a mill man. This was in 1888. From 1889 I was employed in various capacities in mines and mills in Amador County, California, and operated a custom mill for a time. In 1896 was assistant superintendent for the Southwestern Mining Company at El Dorado Canyon, Lincoln Co., Nevada, where silver-gold ores were mined and milled. In 1897 and 1898 I attended the School of Mines at Queen's University, Kingston, Ontario, taking third and fourth year work and was employed by the Ontario Government to examine and report on mineral areas in various parts of the province. In 1899 I was sent to British Columbia as engineer and manager for the London and B, C. Goldfields Development and Exploration Company and the Oro Mining and Milling Company of which companies Sir George E. Foster, the Finance Ministerof Canada, was the head. I remained in British Columbia for 16 years during which time I acted as engineer, manager or president and manager for various companies among them being the Silver Queen Mining Company, The Imperial Development Syndicate, The Eva Gold Mines, Ltd., The Athabasca-Venus Ltd., The Dundee Mines Ltd., and the Nugget Gold Mines, Ltd., Since 1915 I have been examining properties for myself and others in California, Nevada, Arizona, Sonora and Sinaloa, Mexico.

(Signed) A. H. Gracey

THE UNIVERSITY OF ARIZONA

TUCSON

(COPY)

THE COLLEGE OF MINES AND ENGINEERING

Office of the Dean and Director

Feb.16th, 1923.

TO WHOM IT MAY CONCERN:

I take great pleasure in certifying herewith that Mr. C. L. Orem graduated from the University of Arizona in 1920 with the degree of Bachelor of Science in Mining Engineering and Metallurgy. He was an exceptionally earnest and proficient student and gave great promise before graduation that he would make a success of his chosen profession, which promise has been abundantly realized since graduation.

His experience since leaving school has been varied and of such a nature to enable him to obtain a practical knowledge of many phases of his profession. I know him to be absolutely honest, a gentleman in every sense of the word, and a unusually competent young engineer. I believe that any statements he may make may be accepted on their face value and his experience is such that great weight should be attached to any opinions expressed by him.

Very sincerely,

(Signed) G. M. Butler

1 of 3
2/14/23

Tucson, Arizona
Feb. 14th, 1923

Mr. A. H. Gracey, Pres.
Swisshelm Mining and Development Co.,
Tucson, Arizona.

Dear Sir:

Pursuant to your request I have examined the property known as the Great American Mine and cut the necessary samples for concentration and cyanidation test and submit the following preliminary report and list of assays for the ore testing work.

The description, location and accessibility of the property and topography and geology of the district have been adequately and accurately described in your report and that of Mr. H. B. Bassac and the water and fuel questions clearly stated.

In the altered and fractured zones, along the contact of the porphyry and limestone which composes the mineralized area of this deposit, the mineralizing solution have replaced certain strata in the limestone more extensively than others and have followed the fractures and seams. This is shown by the present tunnels. Those beds which have been more susceptible to replacement by reason of their favorable chemical composition can be cheaply developed by crosscuts and inclined raises at right angles to the bedding planes. Some of these are extensively mineralized for considerable distances beyond the extent of the present workings. It is quite likely that similar beds will be encountered with deeper work as geological sections of the district show several hundred feet of favorable carboniferous beds below these levels.

The present workings do not determine the lateral extent of the ore body nor the distances along the strike. The mineralized area southwest beyond the present workings is well altered and silicified the full length of the property. The southwest drift on the 40 foot level in the 60 foot winze, shows fair values over 13 feet and this should prove favorable ground for future development work along the strike. I find your estimate of present ore tonnage available

2 of 3
2/14/23

(14,000 tons of $13.00 ore) very conservative. It takes in only the ore on dumps actually mined and that developed by present surface workings. This supply amply justifies the installation of the mill you recommend and as you state, does not include the probable and possible ore that can be developed.

Preliminary tests show a high recovery of the values by cyanidation and compared to the average mining venture the risk is negligible making it comparable to a manufacturing process with known value and cost of production; with an exceptionally good opportunity to develop many times the present tonnage of high grade and milling ore.

Samples carrying a little iron sulfides in the northeast face of the 40 foot level in the 60 foot winze and a few other assays taken over the workings as indicated in my list below show the presence of several high grade ore lenses. All previous work on the property has been done on the basis of high grade ore alone. This method was wasteful and costly. The installation of a cyanide plant will enable you to work the milling grade ore at a very good profit and will undoubtedly result in the development also of larger tonnages of high grade ore than has been previously mined. Former development in milling ore was dead work but future development in milling ore will yield a profit.

My assays are listed below with data in regard to width, location etc. These samples for the ore tests were cut down coarse, in large amounts and constitute an independent check on previous sampling.

ASSAY VALUE OF SAMPLES FOR ORE TESTING WORK

Nol. 7 cuts, each 6 ft. in length, from east drift of 40 ft. level in 60 ft. winze. Cuts are spaced 6 ft. apart and extend from top to bottom of the drift.

Gold	$4.40	Silver	16.0 ozs.	Total	$20.40

393
2/14/23

No. 2- Cut across 12 ft. on side and 4 ft. at face of south crosscut on 40 ft. level. Total

Gold $ 3.20 Silver 6.9 ozs. $10.10

No 3. Cut across 14 ft. above 105 ft. tunnel portal.

Gold $ 3.20 Silver 5.5 ozs. $ 8.70

No. 4- Cut below the 14 ft. which constitutes No. 3.

Gold $ 4.00 Silver 16.0 ozs. $20.00

OTHER SAMPLES

No. 5- Lead ore on upper dump.

Gold $ 4.00 Silver 19.0 ozs. $23.00

No. 6- Samples showing iron sulfides from 40 ft. level, northeast face.

Gold $ 3.60 Silver 30.4 ozs. $34.00

No. 7- Sample of oxidized ore on surface above 105 ft. tunnel portal.

Gold $15.20 Silver 4.2 ozs. $19.40

No. 8- Sample showing iron sulfices from 40 ft. level.

Gold $ 8.00 Silver 49.7 ozs. $57.70

No. 9- Another from 40 ft. level showing iron sulfides.

Gold $ 9.60 Silver 52.9 ozs. $62.50

As soon as the work is completed I will submit my report on the metallurgical test and flow sheet for the plant.

Respectfully,

(Signed) C. L. Orem

1078
11/1/22

REPORT
ON
GREAT AMERICAN MINE

PROPERTY AND TITLES

The Great American Mine comprises a group of four contiguous patented mineral claims (76 acres) known as Great American, mineral survey No. 41; Horn Silver, survey No. 42; Sulphurette and Alice, survey No. 1262.

SITUATION AND ACCESSIBILITY

The mine is situated in the foothills of the Swisshelm Mountains, Cochise County, Arizona, twelve miles east of Webb, a station on a branch of the El Paso and Southwestern R. R., 35 miles north of Douglas. Two good roads connect the mine with Webb and all outside points.

TOPOGRAPHY

The surrounding country consists of low, rounded, grass covered hills forming the lower northeastern slope of the Swisshelm mountains. The altitude above sea level is approximately 5000 feet. The main drainage follows a ravine of gentle slope to Whitewater Draw, a part of the Sulphur Spring Valley, 2-½ miles below the mine.

GEOLOGY

The outstanding feature is the intrusion of a dike of rhyolite porphyry into and through limestone. In the fractured and altered zone along the contact between these formations occurs the ore deposit. The mode of occurance is characteristic of Southern Arizona mineral deposit. The ascending mineral bearing solutions have penetrated the fractures and seams along the contact and made out into the limeston bedsreplacing large areas of limestone with silica and depositing therewith valuable minerals. These solutions evidently

2098
11/1/22

had a bountiful source, estimated by the area mineralized, and were of deep seated origin.

DISTRICT

Cochise County comprises one of the most productive mineral bearing regions of Arizona. The Great American Mine occupies a central position in this region. The famous mining camp of Tombstone, with a production of over $50,000,000 in gold and silver, lies 32 miles due west. Bisbee, the great copper camp, lies 26 miles southwest. The Commonwealth mine at Pierce, with a production of $18,000,000 in gold and silver, lies 18 miles northwest. Dos Cabezas, another gold and silver camp, lies 32 miles north. Courtland and Gleason, both copper camps, lie 18 miles to the west. Douglas, where the large smelter plants of the Phelps-Dodge Corporation and Calumet and Arizona Company are situated, is 28 miles south.

ORE DEPOSIT

The mineralized area, in the center of the property, is over 1000 feet long and from 50 to 100 feet wide. It is well exposed by present workings for a length of 500 feet and a width of 100 feet. The general strike of the deposit is northeast and southwest. The values contained are silver and gold, in the ratio of 3 ounces silver to $1.00 gold, accompanied with some iron pyrites and lead carbonates. The exposed ore is almost entirely oxid ized. A portion of the gold is free and some native silver is shown but the latter occurs chiefly in the chloride form. High grade ore is irregularly distributed throughout the deposit and all former operations were confined to mining these leaving the lower grades behind. The latter constitute a large tonnage and are chiefly dealt with in this report. There had evidently been considerable difficulty and expense attached to the mining of the high grade ores owing to their irregular

deposition throughout the deposit which necessitated the removal of a large amount of material and careful sorting. There are four large opencuts, or quarries, from 15 to 50 feet in diameter, with faces 10 and 20 feet high on the upper sides, large portions of which constitute ore of payable milling grade. All of the deposit carries some value. The gangue is much altered, highly silicious and hard and is variably colored from the effects of oxidation.

DEVELOPMENT

The old workings are scattered, covering a surface area 500 feet long and 100 feet wide. A large portion consists of open-cuts, as mentioned, but several tunnels of varying length have been driven fromthem in a westerly direction. Beginning at the northeast end there is a large opencut 50 feet in diameter with a face 10 and 20 feet high on the upper side. Two tunnels have been driven from this cut one 60 andthe other 20 feet in length. These were both driven out into the limestone at right angles to the contact but are in mineralized material throughout, their length. Adjoining on the southwest and 20 feet higher is another large cut 100 feet long and from 25 to 40 feet wide with a short tunnel at the southwest end. Sothwest of this again there is a narrow cut 60 feet in length forming the entrance to a tunnel 105 feet in length. Above this 22 feet higher and 40 feet distant is a small cut with a 20 foot tunnel. Above this again 100 feet distant and 44 feet higher is another cut 15 feet in diameter and 10 feet deep. Directly south of this latter cut on the same level and 220 feet distant, there is a short tunnel 25 feet in length atthe face of which a winze has been sunk to a depth of 60 feet. This is the deepest work on the property. At a depth of 25 feet below the collar of the winze there is a drift northeast 84 feet in length and one to the southwest 45 feet in length. In the northeast drift, at a point 43

4078
11/9/22

feet from the winze, there is a crosscut 12 feet to the east. Still further southwest from this latter work is another tunnel 75 feet long with a winze near the portal.

All the work described, amounting to 325 feet of tunneling, 70 feet of sinking and 130 feet of drifting has been done in the ore deposit and at many points ore of payable milling grade is exposed.

ORE TONNAGE AND VALUE

On the attached sketch plan of the workings are noted the location, number, width and assay value of the samples taken. Some of the samples represent sections, only, of continuous payable width. For instance in thedeep cut near station 5 two sectional samples were taken, Nos. 15 and 16, representing a total width of 14 feet. The average value of this 14 feet is $10.00 per ton. Above this entrance of the tunnel opposite station 7 a width of 7 feet carries $9.00 per ton, assay No. 19. It was not possible to take continuous and regular samples of this wide band of ore owing to the irregularity of the workings and debris lying on the floors. Assay Nos. 17 and 18 are of samples taken across the upper face of the big cut above the pay ore which had been stripped down to the floor level. A very conservative estimate ofthe ore which can be quarried or glory-holed from these two exposures, without allowance for continuations in the length or depth, is 2000 tons averaging in value $10.00 per ton. That several times this amount exists there is no doubt. Located here also are two large dumps composed of reject after sorting out of the high grade from the material broken down in these cuts. A sample of the upper portion of the dump at station 5, estimated to represent 500 tons, assayed $29.00 per ton. Another sample representing a larger lower part of the dump assayed $13.20 per ton. Near station 7 there is a dump of from 75 to 100 tons

598
11/1/22

of sorted ore averaging $35.00 per ton. The reject and dump at this point, which is low grade material from the tunnel, is estimated to contain 100 tons averaging $6.50. This being already mined will yield a milling profit.

Between station 3 and the southwest end workings there is an unexplored gap of 120 feet. The surface appearance here, however, is equally promising with any other portion of the deposit and the same may be said of the southwest continuations of the outcrop to the confines of the property.

Opposite station one and two the deepest work has been done and the highest and more regular values are found. This underground work is described under development heading. A careful sampling of these drifts and crosscuts, at an approximate depth of 35 feet below the surface, show an average value of $13.75 per ton over an average sampled width of11 feet for a length of 150 feet. As the faces, sides and bottoms of these drifts, and crosscuts are still in good ore the full width, length or depth of this ore body is not determined. For instance assays Nos. 7 ans 8 represent a width of 24 feet averaging $18.60 per ton and the face of the crosscut, represented by assay No 8, $16.10 per ton, is still in ore. It will be noted also that face of the northeast drift, represented by samples Nos 10 and 11, averages $19.64 per ton over a width of 10 feet and southwest end of the 20 foot winze, in the same ore body 150 feet distant, carries $12.60 per ton over a width of 7 feet. At neither of these points is the full width of the ore exposed.

A conservative estimate, therefore, of the ore available for easy and cheap mining in this block of ground down to an average depth of 50 feet below the surface, is 10,000 tons averaging in value $13.75 per ton. The reject and dumps at these workings are

B 98
11/1/22

estimated to contain over 1000 tons three samples of which gave the following
$12.80, $ 9.50 and $17.60 per ton or an average of $13.30 per ton.

A summary of the exposed and available tonnage and the average value show the following:-

Northeast end workings	2,000	tons at	$10.00 -	$ 20,000
Southeast end workings	10,000	" "	13.75 -	137,500
Dumps	2,000		13.00	26,000
Total	14,000			183,500

WATER AND FUEL

There is no developed water at the property but it has been encountered at moderate depths in the neighborhood and it seems certain an ample supply will result from the drilling of a well. There are several shallow wells within a half a mile of the mine belonging to a cattleman which provide all his needs. These are all in the gravel of the main drainage ravine below the mine and the water stand within 15 feet of the surface. South of the mine, about 1-¼ mile , is an old shaft over 100 feet deep which tapped a large flow. With a total lift of from 150 to 200 feet at this shaftwater would flow by gravity to the Great American mill site. There are therefore two possible sources for water supply; one to drill a well at the mine and the other to arrange for water at the shaft and pipe it to the mine.

There is ample wood for domestic purposes consisting of oak, juniper, and pinion pine. For power purposes crude oil burning engines will be the most economical.

PLANT AND TREATMENT

The ore under consideration, being oxidized, presents no difficult treatment problem. The plant required would be simple and of standared construction. Laboratory tests indicate that an extraction of 90% or better, will result with concentration and cyanidation of the tailings. The concentration resulting from the test averaged

798
11/1/22

$162.40 per ton and the ratio of the concentration was 100 tons into 2-1/ 3 tons. The proportion of recovery was approximately 32% in the concentrates and 68% in the cyanide solutions. Sulfides will probably occur at depth but this combination treatment should still be effective.

Leaching or percolation tests, with ½ of one percent cyanide solution on the ore without concentration, ground to pass 48 mesh, gave an extraction of 85% of total values. This recovery would no doubt br higher in practice with agitation of the pulp so that cyanidation without concentration may prove the most economical. treatment for the oxidizedores. Complete tests are now being made and the flow sheet and mill plans worked out.

The amount of captial required to purchase andinstall the plant, develop or secure water to handle from 35 to 50 tons per day will be approximately $25,000.

CONSLUSIONS

Based on the results of my examination herein before given and with the suggested plant installed the following estimates are believed to be conservative :-

GROSS VALUE 14,000 tons at	$13.10	$183,500
Less 10% loss in tails	1.30	18,350
NET RECOVERY VALUE	11.80	165,150
Less 10% royalty (which applies On purchase proce)	1.18	16,515
	10.62	148,635
LESS COST MINING, MILLING	4.00	56,000
NET PROFIT PER TON	$ 6.62 Total	$ 92,635

Owing to the fact that the high gradeore has been extracted or "gouged" in the present workings, the values found by sampling of present exposures, as given represent low grade material only. It may, therefore, be reasonably expected that extensions of the ore bodies to be opened by further development will show higher average

898
11/1/22

value as the high grade ore will ne included. This probably is strengthened by the fact that the values contained in the reject dumps, left after high grade has been sorted out, checkes closely with the average values exposed in the workings.

The inclusion of probable and possible ore would greatly increasethe tonnage estimates. In fact it is my belief that at least double the amount of ore above given will be found to exist above the deepest point now developed while the possibilities with further development are very promising. Milling ores of the grade now shown occuring in such satisfactory widths, and continuing to even moderate depths, would add long life and much profit to the undertaking.

(Signed) A. H. Gracey

Tucson, Arizona
November 1st, 1922.

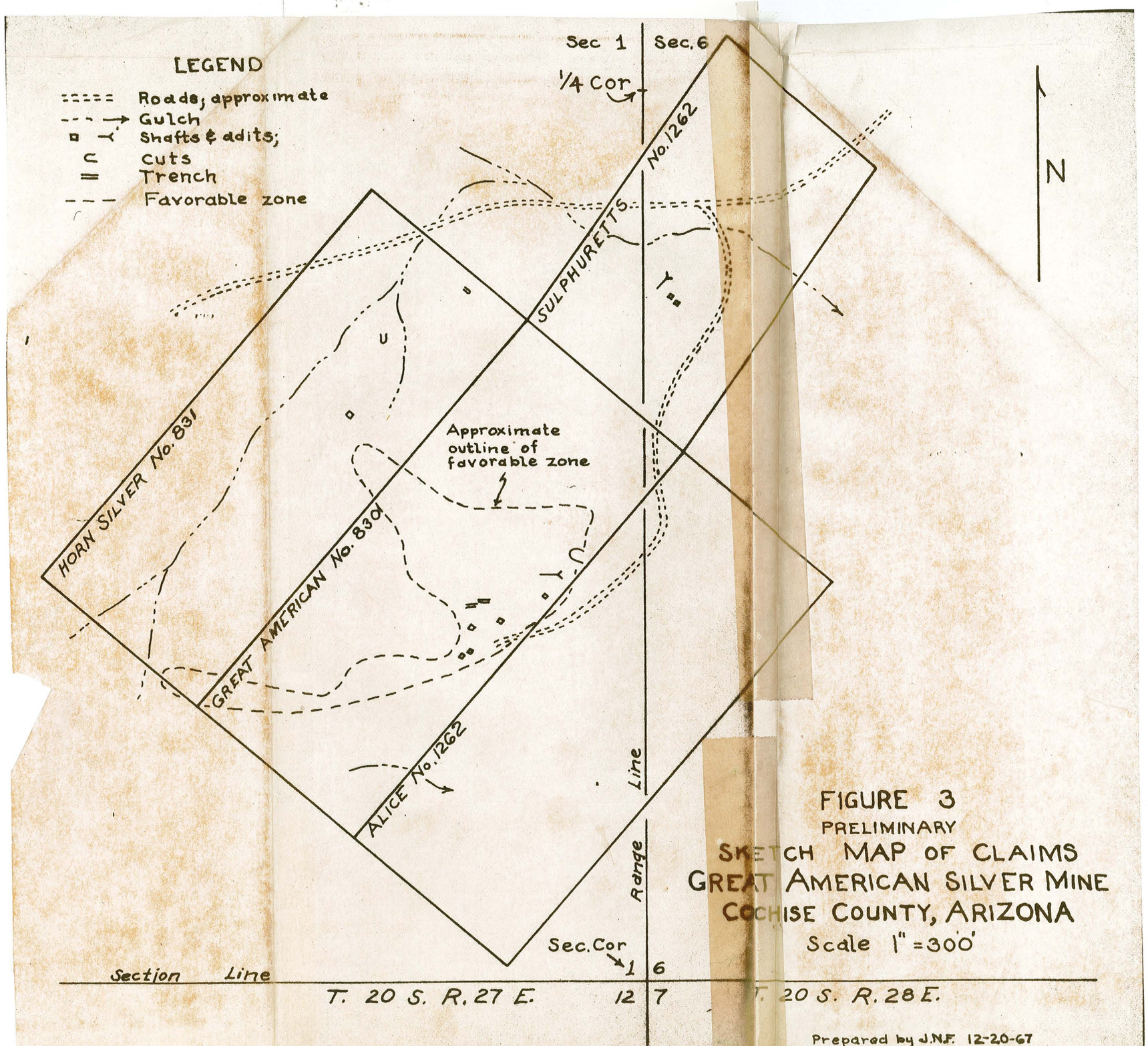

FIGURE 3
PRELIMINARY
SKETCH MAP OF CLAIMS
GREAT AMERICAN SILVER MINE
COCHISE COUNTY, ARIZONA
Scale 1" = 300'

Prepared by J.N.F. 12-20-67

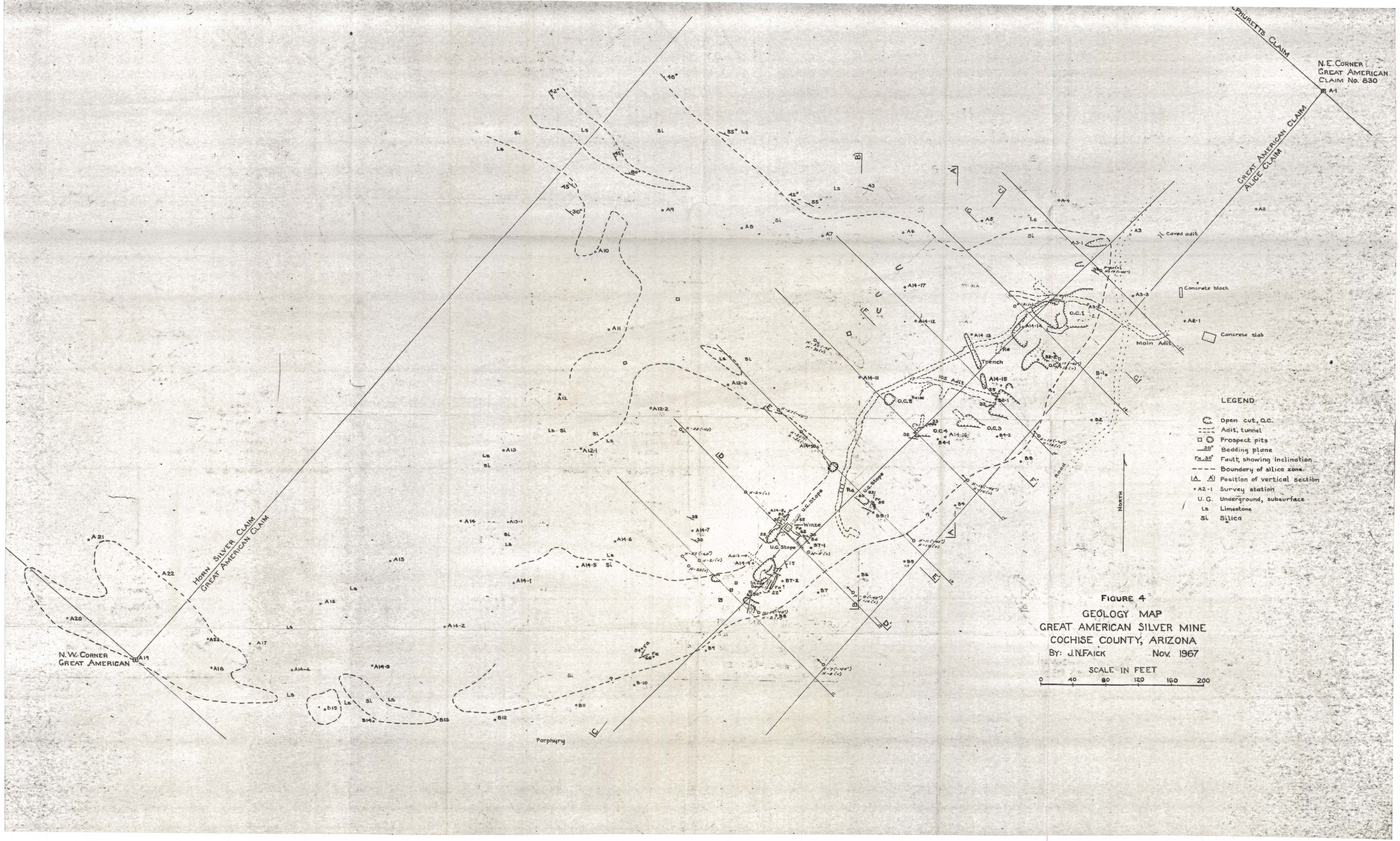

FIGURE 4

GEOLOGY MAP

GREAT AMERICAN SILVER MINE

COCHISE COUNTY, ARIZONA

By: J.N. FAICK Nov. 1967