CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
1520 West Adams St.
Phoenix, AZ 85007
602-771-1601
http://www.azgs.az.gov
inquiries@azgs.az.gov

The following file is part of the

Arizona Department of Mines and Mineral Resources Mining Collection

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ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: ALVARADO

ALTERNATE NAMES:
PLANET SATURN
LIBERTY HILLS GOLD

YAVAPAI COUNTY MILS NUMBER: 427

LOCATION: TOWNSHIP 10 N RANGE 5 W SECTION 21 QUARTER S2
LATITUDE: N 34DEG 11MIN 51SEC LONGITUDE: W 112DEG 46MIN 32SEC
TOPO MAP NAME: CONGRESS - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:
GOLD
SILVER

BIBLIOGRAPHY:
USGS CONGRESS QUAD
BLM MINING DISTRICT SHEET 302
WILSON, E.D. ETAL. AZ LODE GOLD MINES AZBM
BULL 137 1934 P 68
ADMMR EAGLE-PICHER GEOLOGY FILE
ADMMR ALVARADO MINE FILE
CLAIMS ALSO IN SEC. 21
METZGHER, O.H. GOLD MINING AND MILLING IN THE
WICKENBURG AREA USGM IC 6991 P 43

ALVARADO MINE

YAVAPAI COUNTY
WEAVER DISTRICT
T10N R5W Sec. 21

IC 6991, p. 43

ABM Bull. 137, p. 68

Mining Journal May 30, 1940 p. 3

Production to 1942 $889,800 -
major metal gold - J.W. Still figures
(correspondence file)

See Eagle-Picher Geology File

See: A map of Black Rock District, and a map of Wickenburg showing points of interest, filed in Wickenburg general file. 11-23-77 bh

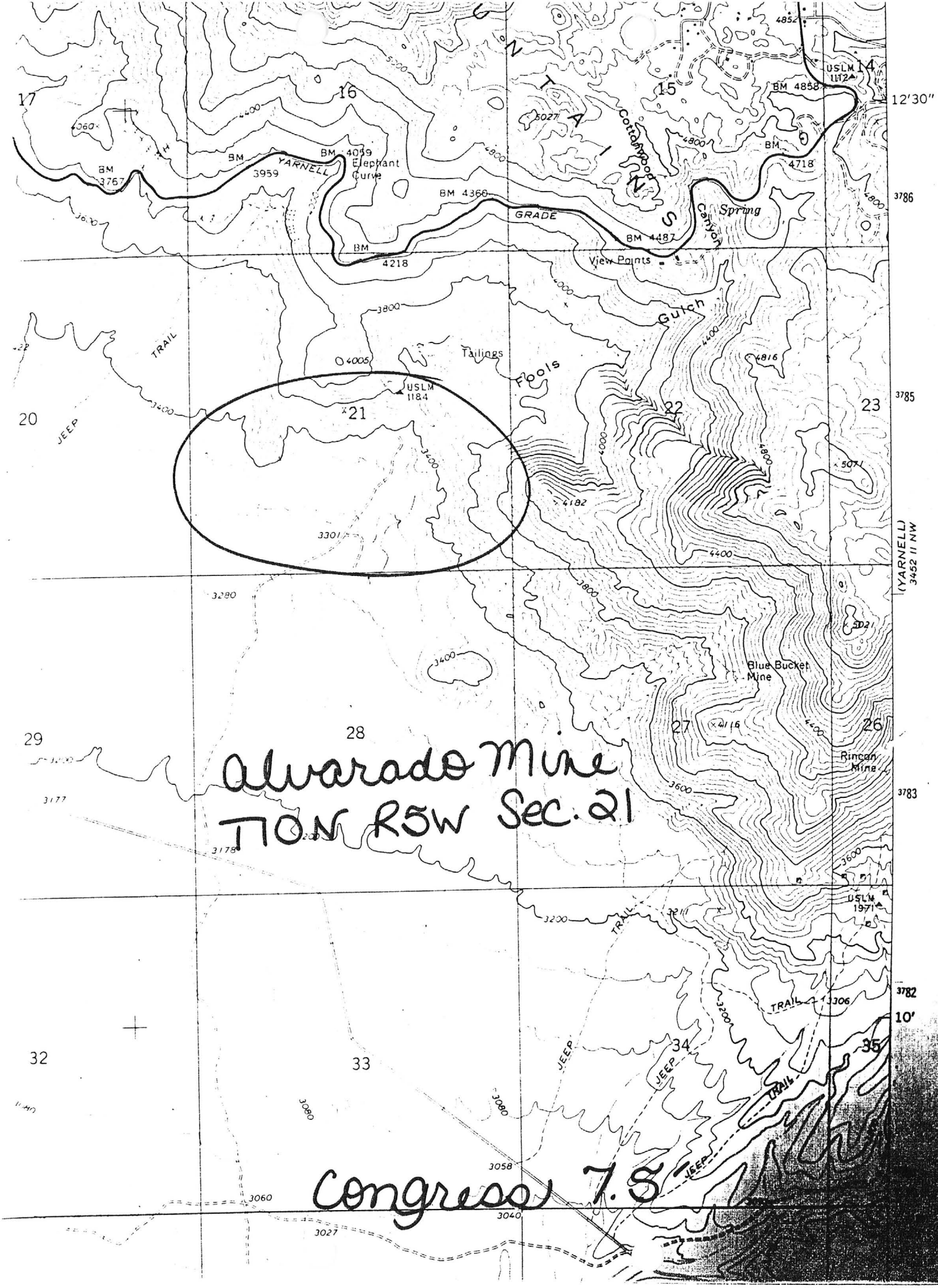
See: "Arizona's RICH HILL, The West's Most Amazing Gold Strike", By John D. Wilburn, Page 11, JHJ's Office, 1980

Yavapai County MILS Index #427

AKA: Planet Saturn, Liberty Hills Gold

Congress 7.5' Topo (included in file)

BLM Mining District Sheet #302


Alvarado Mine
T10N R5W Sec. 21
Congress 7.5
YARNELL
GRADE
Elephant Curve
Cottonwood Canyon
Spring
Gulch
Fools
Tailings
View Points
Blue Bucket Mine
Rincon Mine
JEEP TRAIL
USLM 1184
USLM 1971
USLM 1112
BM 3767
BM 3959
BM 4059
BM 4360
BM 4218
BM 4487
BM 4718
BM 4858
(YARNELL) 3452 II NW
12'30"
10'
3786
3785
3783
3782
17
16
15
14
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35

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

INFORMATION FROM MINE CARDS IN MUSEUM

ARIZONA

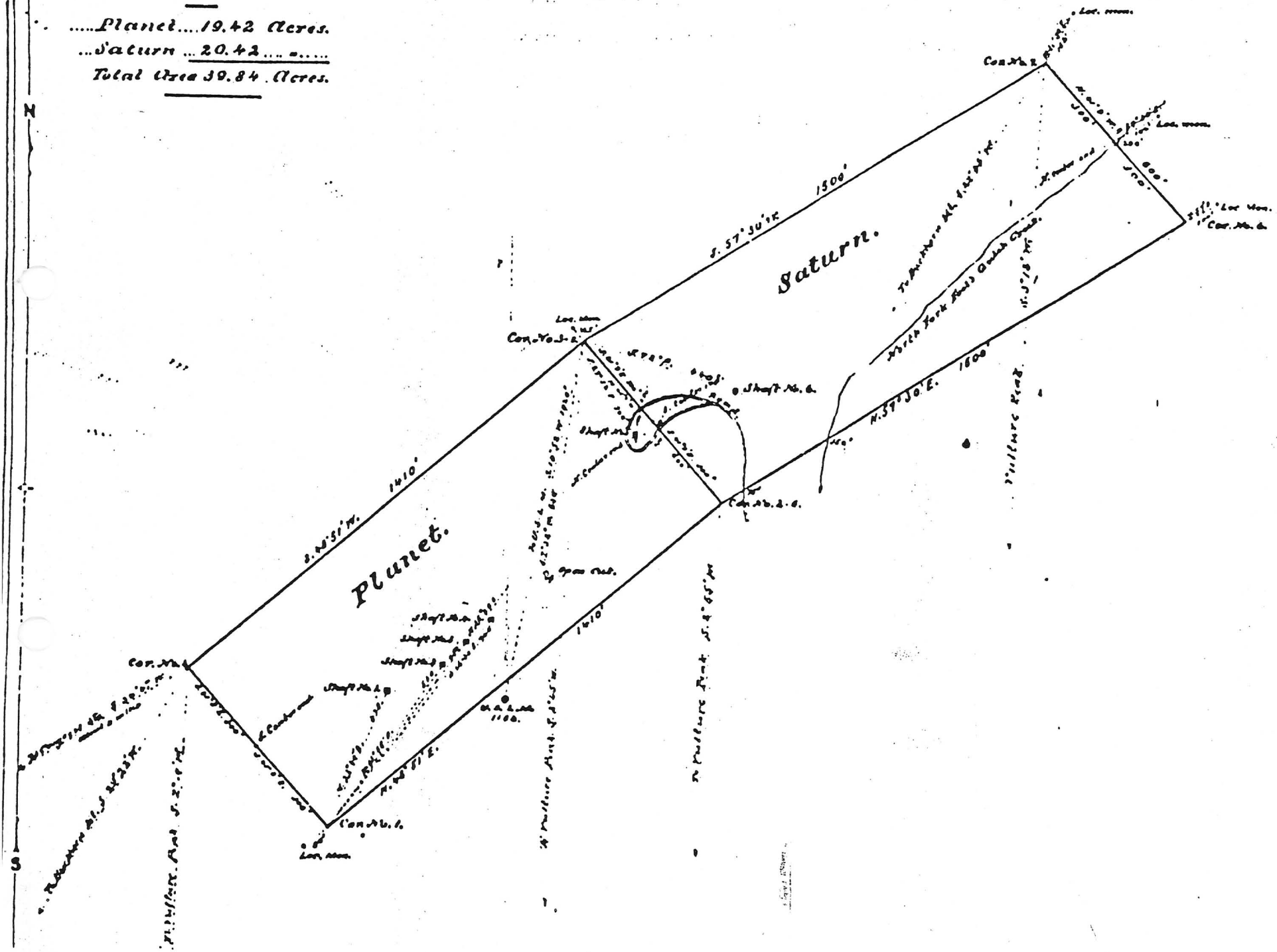
MM-K148 Gold Ore

Yavapai Co.
5 mi. NE of Congree
Weaver Dist.
Alvorado Group

MILS # 427
2-AKA's
ALVORADO MINE (fe 2)

Areas.

Planet ... 19.42 Acres.
Saturn ... 20.42 ...
Total Area 39.84 Acres.



ALVARADO (F)

I.D. 14414

HAMM

MCO MINE SERVICE
MINING CONTRACTORS

STATE MINE INSPECTOR
SEP 15 1989

September 12, 1989

Arizona State Mine Inspector
~~1624 West Adams, Room 208~~
Phoenix, Arizona 85007

Gentlemen:

This is to notify you that MCO Mine Services has commenced pumping and sampling operations at the Alvarado Mine, near Congress, Arizona.

The mine is located at the foot of Yarnall Hill, behind the new dairy facility, on the Stanton-Octave Road.

Sincerely,

Frank J. Montonati

Frank J. Montonati, CEO

FJM:ek

RT. 7, BOX 6041 PRESCOTT, AZ 86301 (602) 445-6804 (602) 778-9734

Arizona Corporation Commission
State of Arizona Public Access System

07/16/2009 1:13 PM

Jump To...

Scanned Documents

Corporate Inquiry	
File Number: R-1330028-8	Check Corporate Status
Corp. Name: ALVARADO HOLDINGS, LLC	

Domestic Address

% RUSSELL JAFFE
11620 E SAHUARO DR #1010
SCOTTSDALE, AZ 85259

Foreign Address

5190 NEIL RD #430
RENO, NV 89502

Statutory Agent Information

Agent Name: RUSSELL JAFFE

Agent Mailing/Physical Address:
11620 E SAHUARO DR #1010
SCOTTSDALE, AZ 85259

Agent Status: APPOINTED 12/11/2006
Agent Last Updated: 12/15/2006

Additional Corporate Information

Corporation Type: FOREIGN L.L.C.	**Business Type:**
Incorporation Date: 12/11/2006	**Corporate Life Period:**
Domicile: NEVADA	**County:** MARICOPA
Approval Date: 12/15/2006	**Original Publish Date:**

Member Information

MARY JO BRADY MANAGER 11620 E SAHUARO DR #1010 SCOTTSDALE,AZ 85259 **Date of Taking Office:** 12/11/2006 **Last Updated:** 12/15/2006	RUSSELL JAFFE MANAGER 11620 E SAHUARO DR #1010 SCOTTSDALE,AZ 85259 **Date of Taking Office:** 12/11/2006 **Last Updated:** 12/15/2006

Scanned Documents

(Click on gray button to view document - will open in a new window)

Document Number	Description	Date Received
01827163	APPLICATION FOR REGISTRATION	12/11/2006

Back To Top

- **Corporate Name Search Instructions**
- **General Web Site Usage Instructions**
- **Return to STARPAS Main Menu**
- **Return to A.C.C. Corporations Division Main Page**
- **Return to Arizona Corporation Commission Home Page**

Yavapai County, AZ-Parcel summary

Printed: 7/14/2009

Map Scale = 1:31824

Parcel ID
201-19-004

Owner
ALVARADO HOLDINGS LLC

Mailing Address
15225 N 100TH ST #1208

City	State	Zip
SCOTTSDALE	AZ	85260

Secondary owner
N/A

Recorded Date	Last Transfer Doc Docket	Last Transfer Doc Page
7/1/2008	4606	446

Physical Address
.

Incorporated Area
N/A

DOR Acres	Calculated Acres	Subdivsion	Subdivision Type
115.49	119.863		N/A

School District
CONGRESS SD #17

Fire District
N/A

Improvements (1)

Model Type	Total Floor Area	Effective\Construction Yr
COMM'L MISC YARD IMPROVEMENTS	1	1990

2010 Full Cash Value
$165,040

2009 Full Cash Value
$165,033

2010 Limited Value
$121,176

2009 Limited Value
$106,554

2010 Assessment Ratio
16

2009 Assessment Ratio
16

2010 Legal Class
AG/Vacant Land/Non-Profit-Real Property & Improvements

2009 Legal Class
AG/Vacant Land/Non-Profit-Real Property & Improvements

2010 Net Assessed Full Cash Value
$26,406

2009 Net Assessed Full Cash Value
$26,405

2010 Net Assessed Limited Value
$19,388

2009 Net Assessed Limited Value
$17,048

Tax Area Code
1700

2008 Taxes Billed
$1,257

Recent Sale Date
12/1/2007

Sale Amount
$1,010,000

Deed Type	Sale Docket	Sale Page
	4606	446

Disclaimer: Map and parcel information is believed to be accurate but accuracy is not guaranteed. **No portion of the information should be considered to be, or used as, a legal document.** The information is provided

subject to the express condition that the user knowingly waives any and all claims for damages against Yavapai County that may arise from the use of this data.

YAVAPAI COUNTY GOVERNMENT *Arizona*

Property Tax Inquiry

Notice: All taxes for 2007 and prior must be paid by cashiers check.

Tax Search | Search Results | Owner/Legal | Tax Summary | View Detail | Pay Online | General Info | 2008 Tax I

Parcel: 201-19-00

Parcel: 201-19-004 6 **Area:** 01700 Tax Distribution View Map (GIS)

Owner Name: ALVARADO HOLDINGS LLC

Address: 15225 N 100TH ST #1208
SCOTTSDALE, AZ 85260

Legal Description: WEAVER DIST PLANET 19.42AC; SATURN 20.42AC; GOLDEN BOWL 18.36AC; ORO FINO 12.56AC; ORO VILLA 11.63AC; COTTONWOOD PLACER 15.95AC; MESA 17.15AC SEC 21 10 5W WAS OLD ALVARADO MINE CONT 115.49AC

Information updated 07/13/2009

© 2009 Yavapai County Government Prescott Arizona 86305. All rig

iCRIS Detail Page

Instrument Number:	4246866	**Receipt #:**	345711
Document Code:	QUIT CLAIM DEED	**Recording Fee:**	$5.00
Recording Date:	07/01/2008	**Surcharge:**	$8.00
Recording Time:	04:25P	**Postage:**	$0.00
Number of Pages:	2	**Book:**	4606
Document Date:	07/01/2008	**Page:**	446

Client:
Yavapai County, Arizona
Title:
Ana Wayman-Trujillo, Recorder
Connected As:
Robert Hannan

Grantor	Grantee
SONORAH HOLDINGS LLC	ALVARADO HOLDINGS LLC

Legal Description
WEAVER MINING DISTRICT PLANET MS #1184 PT ETC SATURN MS #1184 PT ETC

Misc
-

Notes	Return Address	Related
-	ERECORDED IN YAVAPAI COUNTY AZ	4246866

Back

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Privacy Policy

BK 4606 PG 446 Doc Id: 4246866 Doc Code: QCD
eRecorded in Yavapai County, AZ. Page: 1 of 2
Ana Wayman-Trujillo, Recorder 07/01/2008 04:25PM
CAPITAL TITLE AGENCY Rec Fee: $13.00

UNOFFICIAL COPY

when recorded mail to:

ALVARADO HOLDINGS, LLC
ATTN: RUSS JAFFE
15225 NORTH 100TH STREET
UNIT 1208
SCOTTSDALE, AZ 85260

Tax Parcel No. 201-19-004-6

QUIT CLAIM DEED

(Corporation)

For the consideration of Ten Dollars, and other valuable considerations

SONORAN HOLDINGS, LLC, a Nevada Limited Liability Company

does hereby convey to

ALVARADO HOLDINGS, LLC., an Arizona Limited Liability Company

the following real property situated in Yavapai County, Arizona:

PLANET, MS 1184 PATENT NO. 27871, SATURN MS 1184 PATENT NO. 27871, COTTONWOOD MS 1185 PATENT NO. 27872, MESA MS 1185, PATENT NO. 27872, ORO FINO MS 1185 PATENT NO. 27872, OROVILLE MS 1185 PATENT NO. 27872, GOLDEN BOWL MS 1185 PATENT NO. 27872, all in the Weaver Mining District, recorded in Book 41 of Deeds, Pages 51-63, records of Yavapai County, Arizona.

EXEMPT FROM FILING AFFIDAVIT OF VALUE PURSUANT TO A.R.S. 11-1134 A7

SUBJECT TO: Current taxes and other assessments, reservations in patents and all easements, rights of way, encumbrances, liens, covenants, conditions, restrictions, obligations, and liabilities as may appear of record.

The undersigned hereby warrants the title against all persons whomsoever, subject to the matters set forth.

IN WITNESS THEREOF, said Corporation has caused these presents to be signed by its duly authorized officer(s), this July 1, 2008.

SONORAH HOLDINGS, LLC.

BY: RUSSELL JAFFE, Managing Member

WDcorp 2 06/07

UNOFFICIAL COPY

Warranty Deed
57070440-LMS

STATE OF ARIZONA }
County of Yavapai } ss

This Deed was acknowledged before me, this 1 day of JULY , 2008 by RUSSELL JAFFE, who acknowledged himself to be the Managing Member of SONORAN HOLDINGS, LLC. a Nevada Limited Liability Company , and being authorized so to do, did execute the foregoing on behalf of said LLC

Lisa M. Swaim
Notary Public

My Commission Expires: 2/9/2010

OFFICIAL SEAL
LISA M. SWAIM
Notary Public - State of Arizona
YAVAPAI COUNTY
My Comm. Expires Feb. 9, 2010

SEAL

WDcorp 2 06/07

ALVARADO (H) YAVAPAI CO.

ALVARADO YAVAPAI COUNTY

HMC 11/21/96: NJN received a call from Bill Rosewarren (702) 359-3666 asking about the 1907 Niels Map on the Mine. I called him back and told him that he needed to talk to Ralph Roberts of Conquistadore Mining or Frank Montonati since Frank was the last one to work on the property. I gave him Franks and Ralph's phone numbers from my data base. I doubt that Dr. Roberts still has the same number. They are apparently doing an evaluation on the property as Bill said that all of the old maps had been entered into the computer. I also told them that there had been about 100,000 tons of material mined from the property after the Niels mapping and sampling program by the Liberty Hills Mining Company in the period 1938-1942. Mr. Rosewarren is currently working for John Golden, a well known gold mining geologist in Reno, Nevada.

ALVARADO YAVAPAI COUNTY

NJN WR 5/6/88: Dan Maxwell (card) visited and reported he may try to organize an exploration program at the Alvarado (file) Yavapai County if reasonable lease terms can be negotiated. He recently did some sampling there above the water tables and reports the narrowest vein widths seen were 4 - 5 feet. He believes the property would make an excellent flux producer.

ALVARADO MINE YAVAPAI COUNTY

RRB WR 8/3/84: Stan Scarth, Scarth Petroleum, 901 S. Polk St., Amarillo, Texas 79101, ph: (806) 373-6932 is contacting the copper smelters for the possible sale of fluxing ore from the Alvarado Mine, Yavapai County. He reports that they would like to sell or lease the mine but that they may operate it if unable to do so. He said that they got the property back from Norquest and that they have made money on it by leasing it even though no profitable operation has resulted.

KAP WR 8/24/84: Frank Montonati reported he is doing assessment work on the Alvarado Mine (file) for Robert W. Scarth under direction from H. Mason Coggin. Mr. Montonati explained that he understood Tim Callahan of Sunrise Mining Company is no longer involved in the property. The assessment work is all surface work related to sampling.

NJN WR 12/7/84: Mason Coggin (c) reported that the Alvarado Mine (f) Yavapai County is back on the market. The price is $350,000. Inquiries should be made to Pope Mining, P O Box 15125, Amarillo, Texas 79105.

NJN WR 11/23/84: It was reported that Phelps Dodge had evaluated the Alvarado Mine (f) Yavapai County and decided it was too narrow and the grade too low for them to be able to mine it.

MG WR 5/3/85: The Alvarado mine (Yavapai Co) is reportedly for sale at an asking price of $175,000.

NJN WR 2/5/88: Dan Muchow, an attorney with Evans, Kitchell & Jenkes, 2600 N. Central, Phoenix, arizona 85004, 234-8873 reported that Dig More Mining (card) is trying to lease the surface of the Alvarado Mine (file) Yavapai County for the production of decorative boulders to be marketed in the Phoenix area.

NJN WR 3/11/88: Graham Sutton (card) of Digmore Mining, reports they did not receive a release to mine boulders at the Alvarado (file) Yavapai County. They are mining them from the Lilian and Upton Placers (file) Yavapai County.

ALVARADO MINE YAVAPAI COUNTY

KAP WR 10/29/82: Nor-Quest is continuing their exploration program at the Alvarado Mine, Rich Hill District, Yavapai County. They are also evaluating mill tailings from the previous cyanide plant operation.

NJN WR 12/16/83: Mason Coggin reported that Pope Mining of Texas has the Alvarado Mine, Yavapai County for sale. The reported asking price is $300,000.

NJN WR 1/27/84: Tim Callahan/Sunrise Mining Co., 1675 Road Delta, Co. called and reported Scarth (sp) Oil of Texas wants $300,000 for the Alvarado Mine, Yavapai Co. He summarized the property had produced over 100,000 tons between 1907-1942, mostly below the 1000' level with much development during 1938-42. Past leases have not allowed surface material to be touched. He hopes to visit and sample the dumps soon. Would like to find large tonnage of .1 oz Au/ton material for a heap leach operation. If it exists he will be interested in the property.

NJN WR 3/23/84: Tim Callahan (c) reported that Sunrise Mining (c) has reached agreement with Scarth Petroleum (c) for purchase of the Alvarado Mine, Yavapai Co.

KAP WR 5/4/84: The Department has received the 1983 Statement of Material Facts filed with the Vancouver Stock Exchange by Nor Quest Resources Ltd. (file). This statment contains reference to Nor Quest activities at the Alvarado Mine (file), Weaver District, Yavapai County and lease between Nor Quest and Pope Mining Inc, 205 Paramount Plaza, Amarillo, Texas. Pope Mining is reportedly controlled by Robert W. Scarth. Further the Statement mentions that additional funding for any future Nor Quest work at the Alvardo is to be supplied by J. F. Driscoll Investment Corp ("Driscoll") 8 King Street East, Suite 410, Toronto, Ontario.

NJN WR 7/27/84: Jim Coffey, 723 Black Dr., Prescott, Az. 86301, reported he was going to establish a pilot cyanide batch leach (5 ton) just west of the Alvarado Mine (f) Yavapai County.

ALVARADO MINE YAVAPAI

Went to the Alvarado Au mine owned by Mr. Muntz, a mining engineer from Nome, Alaska, where he has a 2½ cuft. bucket-line Au dredge which he expects to put into operations next month. He spends the winters at the Alvarado cutting and polishing jade which he sends down from Alaska. A 3 foot diameter table top sells for about $100. GW WR 4/17/7

Mr. Carlson said he had heard the Alvarado Gold mine of William Muntz had been sold. The gate to the property was locked. GW WR 10/6/76

5/80 Mine purchased by Scarth Petroleum Incorporated, Box 14049 Petroleum Bldg. Amarillo, Texas 79101 (806) 373-6932 in March 1980. Robert W. Scarth is President. Charles Moores, P.O. Box 978, Wickenburg, Arizona 85360, phone: 427-3718 is person in charge at mine. a.t.

RRB WR 8/8/80: Noticed activity at the Alvarado, Yavapai County, from the viewpoint on Yarnell Hill. There are half a dozen trailers and some equipment on the property. Regretably I did not go to the property but I could hear either a compressor or a power plant operating.

MG WR 12/19/80: Mr. John Chronic of Scarth Oil & Gas Co., 205 Paramount Plaza, Amarillo, Texas 79101, (phone 806-323-6932), reported his company has the Alvarado Mine (also known as the Planet and the Saturn) west of Octave, Arizona in Yavapai County. There are 6 or 7 patented claims. The company has dewatered the mine down to about the 500 foot level and has a caretaker on the property. Mr. Chronic was investigating costs of a small mine operation.

Telephone call to Mr. Jett 10/5/82: Chuck Bentzen reported that Nor-Quest Corporation has leased the Alvarado and are planning underground and open pit operations. A Mr. Bill Moss is in charge. Telephone number is 427-3718.

NJN WR 9/10/82: Jack Pierce reported that Nor-Quest Resources LTD. of Canada is active at the Alvarado Mine, Yavapai County. They are reported to be mapping, trenching and sampling. W. R. "Bill" Moss is their project manager. Nor-Quest's current Arizona address is Nor-Quest Arizona Inc., Box 464, Congress, AZ. Phone - 427-3718.

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

VERBAL INFORMATION SUMMARY

1. Mine File: Alvarado

2. Mine name(s) if different form above:

3. County: Yavapai

4. Information from: Frank Montonati

   Company: MCO

   Address: Rt. 7 Box 6041

   Prescott, Az. 86301

   Phone: 602-445-6804

5. Summary of information received, comments etc.:

Mr. Montonati reports that he along with partners Ralph Robertson and Raul Madrid purchased the Alvarado from Pope Mining (Scarth Petroleum). Since the shut down of the underground sampling program they have submitted the property to several major mining companies. A few have expressed interest in the Alvarado but the other partners wanted the companies to lease it along with some other properties that they hold. The exploration companies were not interested in the package of properties. Mr. Montonati then decided to sell his interest in the mine to the other two partners. They now hold the property in the name Conquistador Mining, address 1700 Guinda St., P. O. Box 1649, Palo Alta, Ca. 94301 phone - 415-321-4979.

The underground sampling/dewatering program reached the 800′ level where the old timers had begun to pull 8′ thick stopes in shoots 60-80′ wide. Mr. Montonati believes similar mining widths occurred on the 900 and 1,000 levels but these levels were not observed. The deepest point reached was 70′ below the 8th level where the use of stulls was required and they took a lot of weight. They backed up a ways to let things settle but one night the back came in. A decision was made to let things flood. The power and water lines were cut and the pumps were left behind. Conquistador Mining should be contacted for the sample data obtained to this point.

Nyal J. Niemuth, Mining Engineer · August 3, 1990

Arizona Department of Mines and Mineral Resources

FIELD VISIT REPORT

May be Reproduced

1. Information from: Field visit and tour with Frank Montonati & Frank Scholey

2. Mine: Alvarado 3. ADMMR Mine File Same

4. County: Yavapai 5. District

6. Township Range Sec(s)

7. Location:

8. No. of Claims - Patended Unpatented

9. Owner (if different from above)

10. Address:

11. Operating Company:

12. Pertinent People and/or Firm:

13. Commodities: Gold, landscape boulders

14. Operational Status: Pumping water and sampling

15. Summary of information received, comments, etc.:

Currently pumping out old working at 200 gpm, mine making 55 gpm. All is probable water being provided to Parker Dairy. Submersible electric pump at 8th level, two air booster pumps staged to raise water to the surface. Six man crew, 2 per shift slabbing and timbereing large slabs. Pay roll approrimately $30,000/month. Plans are to install 600 gpm pumps to reach 16th level in 3-4 months. Channel sampling vein and wall rocks in all levels accessible. Over 500 samples so far. Additional trenching and sampling of vein outcrop planned. Portal of the C-shaft has been mucked out and timbered 42′ for access.

Quartz vein 4-6′ wide associated with altered rhyolite ? dike of unknown age primarily in the footwall. Vein dips 20 deg north. Vein often as two distinct portion separated by porphrytic granite county rock. Vein minerals are quartz, pyrite, and reported free gold. Gold: Silver =1:1. Occasional rare occurences of galena. Pyrite content varies from nil to 10 % of vein, typically less than 5%. Alteration extends into foot and hanging walls- quartz,

sericite, clay alteration. Some post mineral faulting evidenced by shearing and shattering of vein material. Recent sampling indicates .0x values in wall rock. Underground samples typically 0.2 - 0.3 tr. oz. Au/ton by fire assay at Iron King.
With recent exploration activities, immediately to the "north" (Asarco @ the Yarnell Mine) plans are to continue/extend surface sampling and possibly drilling to investigate open pit potential. Congress mill considered likely place to ship underground ore if mined.

Frank Montonati (MCO) with two other partners control the property under lease purchase from Scarth Petroleum. Some property payments have been made.

Possible mining methods are open stope with fan drilling and slushing to raises, then slush to skips in existing shaft.

Date: February 1990 Ken A. Phillips

H. Mason Coggin, PE & LS

Mining Engineering and Land Surveying

317 East Griswold
Phoenix, AZ 85020
(602) 944-3763

May 8, 1986

RECEIVED
MAY 13 1986
DEPT. OF MINES & MINERAL RESOURCES

John H. Jett, Director
Department of Mineral Resources
Mineral Building
Fairgrounds
Phoenix, AZ 85007

Dear John:

This newsletter is to tell you that I am back in business as an Independent Consulting Engineer offering services to the mineral industries.

The mining industry is very slow and it is apparent that if any thing is going to happen it will have to be initiated. Toward this end I have given a speech, published a paper and acquired several properties for exploration or resale. "Why Placer?" was given at the RMS Ross Seminar in Vancouver and was published in the North American Gold Mining Industry News, April 11 and 18.

I have acquired rights to the following properties:

Alvarado Mine, Yavapai County, Arizona. This property may have a developed reserve of 140,000 tons at 0.26 ounces per ton in gold across an average width of 3.5 feet. The potential is for a small (100 TPD) underground mine. The mine needs to be dewatered, resampled and reassayed to varify the reserves. They are based on a 1907 sample map and there was mining in the late 30's. This was stopped by the 1942 closing order. Only one map of this operation is available. It shows that the lower workings were extended and possibly more reserves developed but, does not show any mining in the 1907 reserves. Three levels of the mine are above the water level and do not show any mining beyond the 1907 map. I have a1982 report on this property if you are interested.

I have also acquired options on four wild prospects near the Utah, Nevada border.

The LC and Saturday Night Lode Claims, Lucin Mining District of Box Elder County, Utah, cover all of section 4, T7N; R19E. They cover a quartz

Uvarado

DATE: January 18, 1985

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

FROM: J. A. Waegli, Geologist

SUBJECT: Arizona Department of Mineral Resources
List of Flux Properties

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

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

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

Taking a composite of various reports, it appears that siliceous material from the mine can be expected to run less than 0.1 O/T Au, less than 1.0 O/T Ag, and +1.0% Cu. These grades, combined with an average vein width of 5 feet, and shallow dip, make the property unattractive at current metal prices. Further work does not appear warranted.

2. ALVARADO MINE (Figure 1): Yavapai County, T.10N., R.5W., Sec. 21, AZ 244N

This shallow-dipping, gold-quartz vein was sampled by M. R. Pawlowski, Morenci Branch geologist, in July, 1984. Because of low precious metal values, he concluded that the property is not of interest to the Small Mines Division.

3. CONGRESS MINE (Figure 1): Yavapai County, T.10N., R.6W., Sec. 23, AZ 244

The Congress Mine has exploited several shallow-dipping, gold-quartz veins that are typical of structures in the Congress and Octave districts.

The mine was examined by M. R. Pawlowski, Morenci Branch Geologist, in September, 1983 (see memo dated September 14, 1983). After reviewing drilling data generated by Magic Circle Energy Corporation (property owner), Mr. Pawlowski concluded that probable reserves in the New Niagra ore shoot are 210,000 tons grading 0.416 O/T Au. An exploration/mine development proposal was also formulated (see report dated December 5, 1983), which estimated that $1.7 million would be required for mine development by a 15% decline and 325-foot ventilation borehole.

Negotiations with Magic Circle proceeded into 1984, but the venture was deemed to be marginal on the basis of known reserves. Meanwhile, Magic Circle was negotiating with other companies and signed a joint venture agreement with Echo Bay Mines of Alberta, Canada in June, 1984. According to Engineering and Mining Journal (August, 1984), Echo Bay planned to spend $250,000 on drilling by the end of 1984. Additional expenditures of up to $7.2 million may be made by 1988 for Echo Bay to earn a 51% interest in the property.

Because of the current joint venture agreement between Magic Circle and Echo Bay, the property is not currently available for acquisition.

4. BISHOP (Figure 2): Yavapai County, T.9N., R.4W., Sec. 4, AZ 245

The Bishop is thought to be an eastern extension of the Octave vein. It strikes approximately east-west and dips 25°-35°N. The property has produced a small amount of gold ore.

SCARTH OIL & GAS CO.

901 SOUTH POLK • AMARILLO, TEXAS 79101
(806) 373-6932

Robert W. Scarth
President

January 28, 1985

Mr. W. J. Hacht
P. O. Box 1209
Scottsdale, AZ 85252

Re: Pope Mining, Inc.
Alvarado Mine,
Congress, Arizona

Dear Mr. Hacht:

Pursuant to your request, enclosed is data which documents the proven and potential mineral value of the referenced property. This data consists of the following:

1. Neill's 1907 Detailed Underground Sampling Plat. (Figure 4)

2. Neill's 1907 Distribution of Higher Assay Values. (Figure 7)

3. Moore's 1980 Distribution of Underground Gold Values. (Figure 8)

4. 2 Claim Survey Plats.

5. Coggin's April 20, 1982, Mining Feasibility Report.

By relating Neill's and Moore's sampling work (some 70 years apart) with Coggin's Report, one can identify 200 to 300 thousand tons of prospective ore at shallow depths with values grading up to .25 ounces of gold per ton. Also based on Coggin's Report there is approximately 80,000 tons of material available for heap leaching.

The Congress Mine, four miles southwest of the Alvarado, and the Octave Mine, seven miles East, were mined to depths of 4,000 and 2,200 feet respectively. At these mines, lode deposits are on veins that have comparable strike and dip.

Recent core drilling has confirmed additional deep gold reserves on the Congress property. The performance of these sister mines would imply that the Alvarado holds additional reserves below the 1,300 foot level.

The Alvarado, when evaluated from a real estate or a mining viewpoint, has many positive features.

1. Fee ownership of 116 acres of patented claims plus 158.25 acres of state and federal claims.

2. Three-phase electricity.

3. Telephone.

4. Abundance of both potable and industrial water.

5. Approximately 70 miles northwest of Phoenix and three miles off the main highway.

6. The property is well situated for security isolation if desired.

The real estate and precious metal potential of the Alvarado has and should continue to appreciate. The property is currently being offered subject to prior sale for $750,000. Should you have an interest in further discussion of the mine, please contact us at the letterhead phone number.

Yours truly,

Stan Scarth

Enclosures

SCARTH OIL & GAS CO.

901 SOUTH POLK • AMARILLO, TEXAS 79101
(806) 373-6932

Robert W. Scarth
President

March 27, 1985

Mr. W. J. Hacht
P. O. Box 1209
Scottsdale, AZ 85252

Re: Your offer to purchase the Alvarado Mine dated March 20, 1985

Dear Bill:

We appreciate your interest in our mining property; yet the referenced offer is significantly less than our asking price of $350,000 cash. As we discussed by phone on this date, we are willing to take a certain amount of risk along with you and your client company in a drilling option arrangement; however, we will expect to be adequately compensated for doing so.

You have indicated both in your written offer and by phone that you are interested in a purchase option that can be exercised upon obtaining results from a core drilling program. Obviously we run the risk that this program will show negative results which will hurt the value of our property. We are unwilling to accept $25,000 for this risk. On the other hand, the drilling program could be very positive and increase the value of the property several fold. We are unwilling to forgo all of the upside potential while absorbing all of the downside risk. Therefore, please consider the following as a trade which we would be willing to enter into.

1. $50,000 upon closing for a 2-month testing period and option to purchase. Copies of all information acquired by drilling will be supplied to Scarth.

2. $50,000 at 60 days from closing to extend testing period and option to purchase for an additional 4 months.

3. $150,000 at the end of the testing period as first installment on purchase of property.

4. Final installment of $150,000 at 6 months from the first installment.

5. Scarth will retain a royalty interest of 5% of net smelter interest in the property.

6. Dumps and tails cannot be processed until property is free and clear.

We feel that this trade will adequately compensate us for the risks to be taken in an option to purchase. Please consider this proposal which is subject to prior sale and withdrawal without notice beyond April 12, 1985.

Yours truly,

Stan Scarth

SS:gm

WILLIAM A. EVANS (1907-1978)
JOS. S. JENKES, JR. (1908-1970)

JAMES M. BUSH
STEPHEN W. POGSON
WILLIAM H. JUDY
FRED E. FERGUSON, JR.
GARY H. FOX
LEON D. BESS
LEE J. SMITH
JAMES G. SPEER
JOSEPH F. HENTON
KENNETH W. FEELEY III
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ALVIN H. SHRADE
JOHN W. MAINE, JR.
DON L. MINER
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BARBARA M. TORREY
LOUIE A. DOHERTY
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LINDA L. HUDSON
ROSS M. COOPER
J. STANTON CURRY
JAMES A. CRAFT
JULIE J. STOCKWELL
JAMES M. BELIN
M. SULLIVAN BUNCH
STEPHEN D. FREUDER
LOUISE A. WERNO
EDWARD C. LeBEAU
NEWMAN P. PORTER
ROBERT R. MILLS (1944-1984)
JERRY W. LAWSON
JERRY L. HAGGARD
F. PENDLETON GAINES III
ROBERT J. HACKETT
ARNE M. ROVICK
WILLIAM L. KURTZ
AMY R. COX
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JOHN T. MOSHIER
DAVID F. GADNA
WILLIAM M. SHATTUCK
KATHERINE M. HARMENER
CYNTHIA Y. MCCOY
BARBARA L. HULS
MICHAEL B. WOOD
TIMOTHY W. HOLT
CORINNE E. GIAGNORIO
JAY S. KRAMER

LAW OFFICES

Evans, Kitchel & Jenkes, P.C.

2600 NORTH CENTRAL AVENUE
PHOENIX, ARIZONA 85004-3099
602 234-2600

DENISON KITCHEL
JOHN F. BELANS, JR.
OF COUNSEL

TELECOPIER 602-234-8515

SCOTTSDALE OFFICE
SUITE B-111
6991 EAST CAMELBACK ROAD
SCOTTSDALE, ARIZONA 85251-7467

April 5, 1985

Mr. Robert W. Scarth, President
Pope Mining, Inc.
205 Paramount Plaza
Amarillo, Texas 79101

Re: Title Opinion for the Planet and Saturn Patented Lode Mining Claims, the Cottonwood, Mesa, Oro Fino, Oroville and Golden Bowl Patented Placer Mining Claims, the North Star #1-A Unpatented Lode Mining Claim and State of Arizona Prospecting Permit No. 08-88373 all Situated in Township 10 North, Range 5 West, G&SRB&M, Yavapai County, Arizona

Dear Mr. Scarth:

At your request we have examined the title to the patented lode and placer mining claims and the unpatented lode mining claim listed on Schedule "A" attached hereto. The basis for our examination is:

1. Title Opinion Letter Dated October 6, 1982 to Robert W. Scarth from Jerry L. Haggard covering the captioned patented and unpatented mining claims, sometimes hereinafter referred to as the "Subject Mining Claims". The October 6, 1982 title opinion was based upon our examination of all recording indexes maintained by the Yavapai County Recorder (the "Recorder") for the time periods of January 1, 1979 through January 31, 1979, October 10, 1980 through February 11, 1981 and August 1, 1982 through August 31, 1982 and a computer search conducted by personnel of the Recorder's office of all recording indexes maintained by the Recorder for the dates of January 1, 1980 through October 9, 1980 and February 12, 1981 through July 31, 1982.

2. An examination of the grantor and grantee indexes maintained by the Recorder from August 1, 1982 through December 31, 1984 and a computer search conducted by personnel of the Recorder of all recordings made with the Recorder from January 1, 1985 through March 27, 1985 at 5:00 o'clock p.m. on March 29, 1985.

3. Examination of the master title plat and historical indexes to Township 10 North, Range 5 West, Sections 21 and 22 maintained by the Arizona State Office of the Bureau of Land Management ("BLM") on March 28, 1985.

4. An examination of appropriate mining claim case files maintained by the BLM for unpatented mining claims situated in Section 21, Township 10 North, Range 5 West.

5. An examination of the appropriate land status records maintained by the Arizona State Land Department for Section 22, Township 10 North, Range 5 West on March 28, 1985.

6. Transamerica Title Insurance Company's Preliminary title report No. 88002710 dated January 14, 1984.

All references herein to book and page of recorded documents are to the records maintained in the office of the County Recorder of Yavapai County, Arizona.

I. <u>Ownership of the Subject Mining Claims</u>.

Based upon the aforesaid examination, it is our opinion that, as of March 27, 1985, record title to the subject patented mining claims and record possessory title to the subject unpatented mining claim is vested in Pope Mining, Inc., a Texas corporation, by virtue of that certain special warranty deed dated January 1, 1982 and recorded August 23, 1982 in Book 1480 at page 860 and that certain quit claim deed dated March 16, 1984 and recorded June 25, 1984 in book 1641 at page 78, as to the subject patented mining claims and by virtue of that certain special warranty deed dated January 1, 1982, described above, and that certain Notice of Relocation dated October 20, 1982 and recorded October 28, 1982 in Book 1494 at page 554, as to the North Star #1-A unpatented mining claim.

The record title reported herein is subject to the following:

1. Effect of that certain Deed of Trust, Security Agreement, and Assignment of Production dated April 6, 1984 and recorded June 4, 1984 in Book 1635 at page 503 by and between Pope Mining, Inc., a Texas corporation, grantor and Commonwealth Title Agency, Inc., an Arizona corporation, trustee, to secure the indebtedness of that certain Promissory Note dated April 2, 1984 in the principal amount of $250,000, such Promissory Note being executed by Scarth Oil and Gas Company, payable to the order of The First National Bank of Amarillo.

Comment No. 1:

The Deed of Trust, Security Agreement and Assignment of Production referred to above encumbers all of the subject property. However, the Deed of Trust evidences that the Promissory Note was due and payable on or before June 30, 1984.

Requirement No. 1:

Secure a Deed of Release and Reconveyance from The First National Bank of Amarillo releasing the Deed of Trust, Security Agreement and Assignment of Production described in Item 1 above and reconveying the subject property to Pope Mining, Inc. The Deed of Release and Reconveyance must be recorded with the Recorder and filed with the Arizona State Land Department in Case File No. 08-88373 (formerly 08-852302).

2. Effect of Financing Statement recorded May 11, 1984 in Book 1629 at page 138 evidencing a debt by and between Pope Mining, Inc., debtor, and The First National Bank of Amarillo, secured party. The Financing Statement encumbers all of the subject property and the personal property thereon and in particular, those items described in Exhibit "B" attached thereto.

3. The rights granted to the Mountain States Telephone & Telegraph Company, a Colorado corporation, by virtue of that certain 10 foot Right of Way Easement dated December 8, 1981 and recorded December 24, 1981 in Book 1432 at page 866 (affects only the Golden Bowl patented mining claim).

4. The terms and conditions of that certain Easement and rights incident thereto for a power transmission line evidenced by instrument dated March 23, 1984 and recorded March 23, 1984 in Book 160 at page 133.

The possessory title to the North Star #1-A unpatented claim, reported herein, is subject to the matters set forth in Part II below and to the following:

1. Paramount Title of the United States of America.

2. Bureau of Land Management's Surface Management Regulations. 43 C.F.R. Part 3009.

II. Compliance with Federal and State Law - Unpatented Mining Claim.

A. Availability of Federal Lands for Mineral Entry.

Based upon our examination of the BLM's master title plat, historical indexes, geographic index of unpatented mining claims located in Section 21, Township 10 North, Range 5 West, dated January 15, 1985 and appropriate mining claim case files maintained by the BLM, the subject unpatented mining claim appears to have been located on land, which at the time of location was open to mineral location under the federal Mining Law.

B. Bureau of Land Management Surface Management Regulation.

Mining claims located on federal lands are subject to the surface management regulations of the Bureau of Land Management (BLM). 43 C.F.R. Part 3809. No notice to, or approval by, the BLM is required for "casual use" mining operations. "Casual use" means activities ordinarily resulting in only negligible disturbance of the federal lands. Activities are considered "casual use" if they do not involve the use ofmechanized earth-moving equipment, explosives or motorized vehicles in areas that are closed to the us of such vehicles.

All claim owners conducting operations on unpatented mining claims, including access across federal lands to the mining claims, which operations cause a cumulative surface disturbance of 5 acres or less during any calendar year, must notify the appropriate district office of the BLM. Prior to conducting additional operations under a subsequent notice, the operator must have completed reclamation of operations which were conducted under any previous notice. Notification of such activities by the operator must be made by a written notice or letter at least

15 calendar days before commencing operations. Approval of a notice by the BLM is not required.

An approved plan of operations is required prior to commencing operations which disturb 5 acres or more. The plan of operations must be filed with the appropriate district office of the BLM.

C. Initiation of Possessory Title.

Possessory title to the subject unpatented mining claim was initiated pursuant to the General Mining Law and the location laws of the State of Arizona.

1. State Requirements.

The location notice recorded with the Recorder for the subject unpatented mining claim appears to be in substantial compliance with the applicable state statutes in effect at the time the claim was located. The location notice was recorded with the Recorder's office within the 90 day period after the date of location as required by A.R.S. § 27-202. In addition, a claim map was recorded with the location notice. The map is in substantial compliance with the map requirement set forth in A.R.S. § 27-203.

2. Federal Requirements.

The recorded location notice for the subject unpatented mining claim on file with the BLM substantially complies with the General Mining Law and the Federal Land and Policy Management Act of 1976 ("FLPMA") 43 U.S.C. § 1744.

Under Section 314 of FLPMA and the implementing regulations, the owner of an unpatented mining claim located after October 21, 1976, must, within 90 days after the date of location, file with the BLM a copy of the notice of location recorded in the Office of the County Recorder under state law. 43 U.S.C. § 1744(b); 43 C.F.R. § 3833.1-2. Failure to comply with this filing requirement will result in the mining claim being conclusively deemed abandoned and void as a matter of federal law. 43 U.S.C. § 1744(c); 43 C.F.R. § 3833.4(a). Our examination indicates substantial compliance with the requirements of Section 314 of FLPMA and the implementing regulations.

D. Affidavits of Labor.

1. State Requirements.

An Affidavit of Annual Labor Performed for the subject unpatented mining claim was recorded for each year subsequent to the year in which the claim was located in a form which substantially complies with the requirements of A.R.S. § 27-208.

2. Federal Requirements.

Section 314 of FLPMA requires that an affidavit evidencing performance of annual assessment work performed during the preceding assessment year or a notice of intention to hold must be recorded with the county recorder and filed with the BLM on or before December 30 of each calendar year following the calendar year in which the mining claim is located. 43 U.S.C. § 1744(a); 43 C.F.R. § 3833.2 Failure to comply with this filing requirement will result in the mining claim being conclusively deemed abandoned and void as a mattr of federal law. 43 U.S.C. § 1744(c); 43 C.F.R. § 3833.4(a). Our examination indicates substantial compliance 314 of FLPMA and the implementing regulations.

E. Conflicting Claims.

Our examination of the BLM's geographic index dated January 15, 1985 revealed that the Lenore #8 Lode and Texona #1 placer mining claims are situated in the same quarter section of Section 21, Township 10 North, Range 5 West as the North Star #1-A lode claim.

As you are aware, Pope Mining, Inc., obtained a quit claim deed from Texona Mining Company, owner of the Lenore #8 Lode claim, of the area of conflict between the North Star #1-A and Lenore #8 Lode claims. The quit claim deed, dated September 29, 1982, was recorded on October 1, 1982 in Book 1489 at pages 256 and 257.

The Texona #1 placer claim was located September 24, 1981 and included all of the ground open to location in the northeast quarter of Section 21. However, this placer location did not acquire any rights in or to the ground already appropriated by the Lenore #8 Lode mining claim. A portion of such ground within the Lenore claim was subsequently quit claimed to Pope Mining, Inc. as described above.

It appears the the Texona #1 placer mining claim is no longer a valid claim. There is no evidence of a recorded or filed assessment affidavit or notice of intention to hold with Recorder or BLM subsequent to the date of location of the claim. Therefore, the Texona #1 placer claim is deemed abandoned and void as a matter of federal law as of December 31, 1982.

III. State Land - Prospecting Permit

State Prospect Permit No. 08-88373 granted to Pope Mining, Inc. the right to prospect and explore for minerals within the lots 1, 3 and 4 and the southeast quarter of the northwest quarter of Section 22, Township 10 North, Range 5 West. The prospecting permit was issued as of March 7, 1984 and expires March 6, 1989 and must be renewed on or before March 6 of each year subsequent to 1984. Our examination of the Arizona State Land Department's records concerning this prospecting permit revealed that the prospecting permit is in good standing and has been renewed as of March 7, 1985 for the time period ending March 6, 1986.

IV. Taxes

Property taxes for the subject patented mining claims for the first half of 1984 were due November 1, 1984 and are currently delinquent. The taxes and interest for the first half of 1984, as of March 27, 1985, amount to $116.68. Taxes for the second half of 1984 are due and payable May 1, 1985. Taxes for the second half of 1984 amount to $109.39. Interest on the delinquent taxes is calculated at the rate of 1.333% per day on the unpaid balance.

V. Qualification of Opinion.

This letter is further subject to any unrecorded, established and existing roads, licenses, easements and rights of way; and the effect of any facts which a correct survey and inspection of the property would disclose.

No examination has been made by us to determine whether there are parties in possession of the subject claims and no opinion is expressed as to the rights of any such parties.

This opinion does not cover and does not express an opinion concerning:

(a) Compliance with the physical acts of location (including the existence of a mineral discovery on each claim); actual performance of annual assessment work (including the adequacy or appropriateness of the work); the physical acts required to prepare course and distance ties or other requirements for mapping purposes, as required by state and federal laws;

(b) the rights of third parties claimed under independent mining locations, existing in the past or present, which conflict with the Subject Mining Claims;

(c) Extralateral rights of independent mining locations, whether the mining locations are within or without the boundaries of the Subject Mining Claims;

(d) Any action of a government agency for the purpose of regulating occupancy or use of the Subject Mining Claims or any buildings or structures thereon;

(e) Water rights, if any; and

(f) Compliance with the BLM's surface management regulations, 43 C.F.R. Part 3809.

The conclusions expressed herein are intended for the sole use and benefit of Pope Mining, Inc. and those persons to whom Evans, Kitchel & Jenckes, P.C. expressly in writing authorizes its release. No one other Pope Mining, Inc. shall have a right to rely on this letter. This opinion is not to be released, quoted in whole or in part, or filed with any government agency or other person without the prior written consent of Evans, Kitchel & Jenckes, P.C.

Very truly yours,

Jerry L. Haggard

Jerry L. Haggard
For EVANS, KITCHEL & JENCKES, P.C.

JLH/lh

SCHEDULE "A"

Unpatented Claims

Claim Name	Date Located	RECORDED Book	Page	Date	BLM Serial No.	Locator
North Star #1 One	1-22-80	1274	106	1-22-80	AMC 102054	Robert W. Scarth
North Star #1 (reloc.)	2-12-80	1442	983	2-12-80	AMC 160226	Same
North Star #1-A	10-20-82	1494	554	10-28-82	AMC 187619	Pope Mining, Inc.

Patented Claims

Claim Name	Date Patented	Patent No.	Patentee
Planet	2-26-1897	27871	Planet Saturn Mining Co.
Saturn	same	27871	same
Oro Fino	same	27872	same
Oroville	same	27872	same
Golden Bowl	same	27872	same
Mesa	same	27872	same
Cottonwood	same	27872	same

SCHEDULE "B"

CONFLICTING CLAIMS

Claim Name	Date Located	RECORDED Book	Page	Date	BLM Serial No.	Locator
Lenore #8 Lode	8-07-81				AMC 142197	Texona Mining Co.
Texona #1	9-24-81	1417	195	10-13-81	AMC 142185	Michael Hall et al.

WILLIAM A. EVANS (1907-1978)
JOE S. JENCKES, JR. (1908-1970)

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NEWMAN R. PORTER
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DON J. MINER
GREGORY L. MAST
RANDALL S. YAVITZ
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KENNETH W. REEVES III
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STANTON A. SHAFER
DAVID J. DUIMETTE
M. DOUGLAS PETROFF-TOBLER
DANIEL J. LATHROPE
BARBARA M. TORREZ
DANIEL L. MUCHOW
JULIE A. DOHERTY
JOHN J. FRIES

LAW OFFICES

Evans, Kitchel & Jenckes, P.C.

2600 NORTH CENTRAL AVENUE
PHOENIX, ARIZONA 85004-3099
(602) 234-2600

DENISON KITCHEL
RALPH J. LESTER
OF COUNSEL

TELECOPIER 602-234-8856

SCOTTSDALE OFFICE
SUITE B-111
6991 EAST CAMELBACK ROAD
SCOTTSDALE, ARIZONA 85251

October 6, 1982

Mr. Robert W. Scarth, President
Pope Mining, Inc.
205 Paramount Plaza
Amarillo, Texas 79101

Re: Land and Claim Status Report to the Planet and Saturn patented lode mining claims and Cottonwood, Mesa, Oro Fino, Oroville and Golden Bowl patented placer mining claims and North Star #1 and Eclipse unpatented lode mining claims situate in Township 10 North, Range 5 West, G&SRB&M, Yavapai County, Arizona.

Dear Mr. Scarth:

At your request we have examined the title to the patented lode and placer mining claims and unpatented lode mining claims listed on Schedule A attached hereto. The basis for our examination is:

1. Title opinion letter dated February 7, 1980 to Mr. Robert W. Scarth from Jerry L. Haggard covering the Planet, Saturn, Cottonwood, Mesa, Oro Fino, Oroville and Golden Bowl patented mining claims. This title opinion was based upon an examination of the records of the Yavapai County Recorder's Office commencing on August 17, 1864 through November 19, 1979 and included a search of the following indices:

Deeds (Grantor and Grantee)
Mortgages
Release of Mortgages
Articles of Incorporation

2. Preliminary title report by Transamerica Title Company, dated December 12, 1979.

3. An examination of the grantor and grantee indexes maintained by the Yavapai County Recorder's office from October, 1979 through September 1, 1982. (Recordings made with the Yavapai County Recorder's office after September 1, 1982 have not yet been indexed).

All references herein to book and page of recorded documents are to the records maintained in the office of the County Recorder of Yavapai County, Arizona unless otherwise noted.

A. Ownership of Planet and Saturn patented lode mining claims, Cottonwood, Mesa, Oro Fino, Oroville and Golden Bowl patented placer mining claims and North Star #1 and Eclipse unpatented lode mining claims.

Based upon the aforesaid examination, it is our opinion that, as of September 1, 1982, record title to the above captioned patented lode and placer mining claims and record possessory title to the above captioned unpatented lode mining claims is vested in Pope Mining, Inc. by virtue of a special warranty deed dated January 1, 1982 and recorded in Book 1480 at page 860, subject to the comments hereinafter made and the following:

1. Terms of that certain deed of trust, dated January 25, 1980 and recorded March 4, 1980 in Book 1282 at page 742, applying to the subject seven patented mining claims, executed by Robert W. Scarth, Trustor, for the use and benefit of William Munz, Beneficiary, and the indebtedesss evidenced thereby.

2. Terms of that certain deed of trust dated January 1, 1982 and recorded August 23, 1982 in Book 1480 at page 861, applying to the subject seven patented mining claims and the aforesaid two unpatented mining claims, executed by Pope Mining, Inc., a Texas corporation, Trustor, for the use and benefit of Robert W. Scarth, Beneficiary, and the indebtedness evidenced thereby.

3. Terms of that certain easement and rights incident thereto for a power transmission line as reflected by instrument dated March 23, 1934 and recorded March 23, 1934 in Book 160, page 133.

4. Mineral Lease Agreement as evidenced by Memorandum of Mineral Lease Agreement dated April 1, 1982 and recorded April 6, 1982 in Book 1453 at pages 267-271 between Pope Mining, Inc., a Texas corporation, lessor and Nor-Quest Arizona, Inc., an Arizona corporation, lessee. Said lease agreement includes all of the

subject patented and unpatented mining claims and runs for a term of five years commencing at the date thereof and so long thereafter as production is maintained or substantial, bona fide and useful work toward developing and mining minerals from the mining properties is continuing and all other provisions of said agreement are being complied with, or for so long as shut in payments are made pursuant to said agreement.

5. Paramount title of the United States to ground covered by the unpatented mining claims.

B. Availability of land for Mineral Entry - Unpatented Claims

According to the records of the Bureau of Land Management maintained at Phoenix, Arizona, as of 8:00 a.m., September 23, 1982, the surface and minerals covered by the subject unpatented mining claims in Sections 15 and 21, Township 10 North, Range 5 West have been at all times relevant hereto in federal ownership and open to mineral entry and location under the mining laws of the United States. The land covered by the subject unpatented mining claims in Section 22, Township 10 North, Range 5 West was certified to the State of Arizona on March 25, 1936 (see Land Status Report). The transfer of title to Section 22 to the State of Arizona withdrew such land from the public domain and said section is not available for disposal under the public land laws or location under the general mining laws of the United States.

C. Initiation of Possessory Title

Possessory title to the North Star #1 and Eclipse unpatented lode mining claims was initiated pursuant to the general mining laws which require the recording of a notice of location. The recorded location notices for the subject unpatented mining claims indicates that the location monument to the two unpatented claims are located on appropriated (state) land. The federal mining location laws apply only to those lands which are held for disposal under the public land laws (public domain). Oklahoma v. Texas, 258 U.S. 574 (1922). The point of discovery must be upon vacant and unappropriated public domain. Brown v. Gurney, 201 U.S. 184 (1906). If the point of discovery is not upon vacant and unappropriated public domain, the entire claim is void even if a portion of the claim not containing the discovery is on open ground. Swanson v. Sears, 224 U.S. 180 (1912) and Tram v. Church, 340 P.2d 1116 (Utah 1959). However, it should be noted, that

although the point of discovery must be on open ground, the location notice, if not required to be posted at the point of discovery, may be posted upon appropriated land. Upton v. Santa Rita Min. Co., 89 P. 275, (N.M. 1907). Arizona does not require the location notice to be posted at the point of discovery A.R.S. § 27-202.

Comment

If the discovery point for the North Star #1 and Eclipse unpatented lode mining claims are upon appropriated ground, then such claims are void in their entirety for reasons stated hereinabove. If, however, the discovery point is on unappropriated public domain, it is immaterial that other portions of the claim boundaries fall upon appropriated ground. The portion of the claim located on ground which was open to mineral entry is valid. Del Monte Min. & Mill. Co. v. Last Chance Min. & Mill. Co. Id.

Requirement

Determine whether the discovery points for the subject unpatented claims are on unappropriated ground. If it cannot be definitely established that they are, then relocate said claims providing for a discovery point upon vacant and unappropriated public domain.

Note

On September 23, 1982, we filed with the Arizona State Land Department on behalf of Pope Mining, Inc. a prospecting permit application for the NW/4 of Section 22, T. 10 N., R. 5 W. pursuant to A.R.S. § 27-251. A decision whether to approve the prospecting permit application will be rendered by the State Land Department within 30-45 days from the date of filing. If the permit is approved, there may be a bond requirement and a rental fee of $2.00 per acre must be paid within fifteen days after receiving notice for payment of same.

D. Maintenance of Unpatented Claims

(a) Federal Requirements.

Section 314 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. § 1744) ("FLPMA") imposes federal filing

requirements on mining claimants and strict penalties for non-compliance with such requirements. Under the regulations implementing FLPMA, a copy of the notice of location recorded in the office of the county recorder under Arizona law must be filed with the Bureau of Land Management ("BLM") within ninety (90) days after the date of the location for all mining claims located after October 21, 1976 (43 C.F.R. § 3833.1-2). In addition, an affidavit evidencing performance of annual assessment work performed during the preceding assessment year must be recorded with the county recorder's office and filed with the BLM on or before December 30 of each calendar year following the calendar year of recording the location notice for all mining claims located on public lands of the Untied States after October 21, 1976 (43 C.F.R.S. § 3833.2). Failure to comply with these filing requirements will result in the mining claim being conclusively deemed abandoned and void as a matter of federal law. (43 C.F.R. § 3833.4(a)). Our examination of the BLM claims files indicates substantial compliance with the minimum recordation requirements of Section 314 of FLPMA and the foregoing regulations, except that there is no record of an assessment work affidavit having been filed before December 30, 1981 for the Eclipse claim. It is recognized, however, that the Eclipse claim is invalid for having been located on land owned by the State of Arizona which is now held by the state prospecting permit application mentioned above.

(b) State Requirements.

The recorded location notices for each of the subject mining claims appear to be in compliance with the applicable state statutes in effect at the time the claims were located. The location notices were recorded with the Yavapai County Recorder's office within the 90 day period after the date of location of such claims, as required by A.R.S. § 27-203. A claim map, substantially complying with the requirements of A.R.S. § 27-203B, was recorded with each location notice.

An affidavit of performance of annual labor on the North Star #1 mining claim was properly recorded with the Yavapai County Recorder's office in accordance with A.R.S. § 27-208 and filed with the BLM on or before December 30, 1981, for the assessment year ending September 1, 1981.

E. Conflicting Claims

Portions of the Lenore #'s 5 through 8 unpatented lode mining claims appear to overlap the Saturn and Mesa patented mining

claims and the ground contained in the North Star #1 claim situate in Section 21, T 10 N., R 5 W. The Lenore claim, located August 7, 1981, is a junior location to the North Star #1 claim, located January 20, 1980. As for the Lenore claims overlapping the Saturn and Mesa patented claims, a junior lode locator may lay his boundary lines over appropriated and patented ground to maintain the shape of a parallelogram and obtain extralateral rights subject, however, to the ownership rights in the patented ground. Del Monte Min. & Mill. Co. v. Last Chance Min. & Mill. Co., 171 U.S. 55 (1898) and Hidee Gold Mining Co., 30 L.D. 420 (1901). Because, as discussed above, there is some uncertainty as to the validity of the North Star #1 claim, we have obtained a quit claim deed from the owner of the Lenore #8 claim to the area in confict with the North Star #1.

F. Qualification of Opinion

(a) No examination has been made by us to determine whether there are parties in possession of the subject claims and no opinion is expressed as to the rights of any such parties or as to any matters which would be disclosed by a correct survey of the properties or a visual inspection thereof.

(b) This opinion does not cover, and we do not express an opinion concerning: (i) compliance with the physical acts of location or actual performance of annual assessment work (including the adequacy or appropriateness of the work) as required by state and federal laws; (ii) the rights of third parties claimed under independent mining locations conflicting with the subject property except insofar as said conflicts are disclosed by the abstracts or BLM's geographical index dated June 22, 1982; (iii) extralateral rights of conflicting independent mining locations, whether the mining locations are within or without boundaries of the subject property; (iv) any action by a governmental agency for the purpose of regulating occupancy or use of the subject property or any building or structure thereon; (v) compliance with the Federal Land Policy and Management Act of 1976, except

insofar as disclosed by our search of the records maintained by the BLM on September 23, 1982; (vi) water rights, if any; and (vii) compliance with the BLM's Surface Management Regulations, 43 C.F.R. Part 3809.

Very truly yours,

Jerry L. Haggard

Jerry L. Haggard
For EVANS, KITCHEL & JENCKES, P.C.

JLH:lar

Enclosures

Schedule A

Patented Mining Claims

Claim Name	Date Patented	Patent No.	Patentee
Planet	2/26/1897	27871	Planet Saturn Mining Co.
Saturn	Same	27871	Same
Oro Fino	"	27872	"
Oroville	"	27872	"
Golden Bowl	"	27872	"
Mesa	"	27872	"
Cottonwood	"	27872	"

Unpatented Claims

Claim Name	Date Located	RECORDED Book	Page	Date	BLM Serial No.	Locator
North Star #1 One	1/22/80	1274	106	1/22/80	AMC 102054	Robert W. Scar
North Star #1	2/12/82	1442	983	2/12/82	AMC 160226	Same
Eclipse	9/1/81	1414	77	9/29/81	AMC 142935	"
Eclipse	2/12/82	1442	981	2/12/82	AMC 160225	"

EXHIBIT I

Land Status Report

Township 10 North, Range 5 West

We have examined the status of the lands covered by the area of interest in Township 10 North, Range 5 West as shown by the master title plat, supplemental plats and historical indices in the office of the Bureau of Land Management, Phoenix, Arizona as of 8:00 a.m., September 23, 1982, as to the Lot #2 and SW/4 SW/4 of Section 15, Lot 1 of Section 21 and Lots 1, 2 and 4 and the SE/4 NW/4 of Section 22, Township 10 North, Range 5 West, G&SRB&M. A copy of the master title plat is attached hereto. Our examination discloses the following:

Section 15, Lot 2 and SW/4 SW/4

MINERAL ENTRY PATENT NO. 1024673, dated March 20, 1929. Said patent covers a small portion of the SE/4 of Lot 2.

STOCK RAISING HOMESTEAD ENTRY PATENT NO. 1082889, dated May 4, 1936. Said patent covers all of Lot 2 and the SW/4 SW/4, among other lands, of Section 15. Ditches and canals and all minerals were reserved to the U.S. Government.

Surface rights of Lot 2 and the SW/4 SW/4 of Section 15 are in private ownership. Mineral rights of Lot 2 and the SW/4 SW/4 of Section 15 are in federal ownership, except portion of Lot 2 contained within Mineral Entry Patent No. 1024673, described above, subject to prior appropriations.

Section 21, Lot 1

MINERAL ENTRY PATENT NO. 27871 and 27872, dated February 26, 1897. Said patents cover a large portion of the NE/4 of Section 21.

RIGHT OF WAY NO. A4364 FOR HIGHWAY AND DRAINAGE EASEMENTS, dated November 24, 1969. Said right of way covers a portion of the north boundary of Lot 1.

All surface and mineral rights of Lot 1 of Section 21 are in federal ownership, except for patented ground to the south of Lot 1, and are open to entry, subject to prior appropriations.

Section 22, Lot 1, 2 and 4 and SE/4 NW/4

MINERAL ENTRY PATENT NO. 27871, dated February 26, 1897. Said patent covers a portion of Lot 1 of Section 22.

MINERAL ENTRY PATENT NO. 27872, dated February 26, 1897. Said patent covers a portion of Lot 2 of Section 22.

STATE OF ARIZONA IN LIEU SELECTION NO. 150, dated March 25, 1936. The State of Arizona selected all of Section 22, except prior patented lands, as indemnity for school sections not available to the State pursuant to the State's enabling act.

GRAZING LEASE NO. 84431, issued by the State of Arizona to William W. Grantham on May 21, 1982. The grazing lease expires on March 6, 1986.

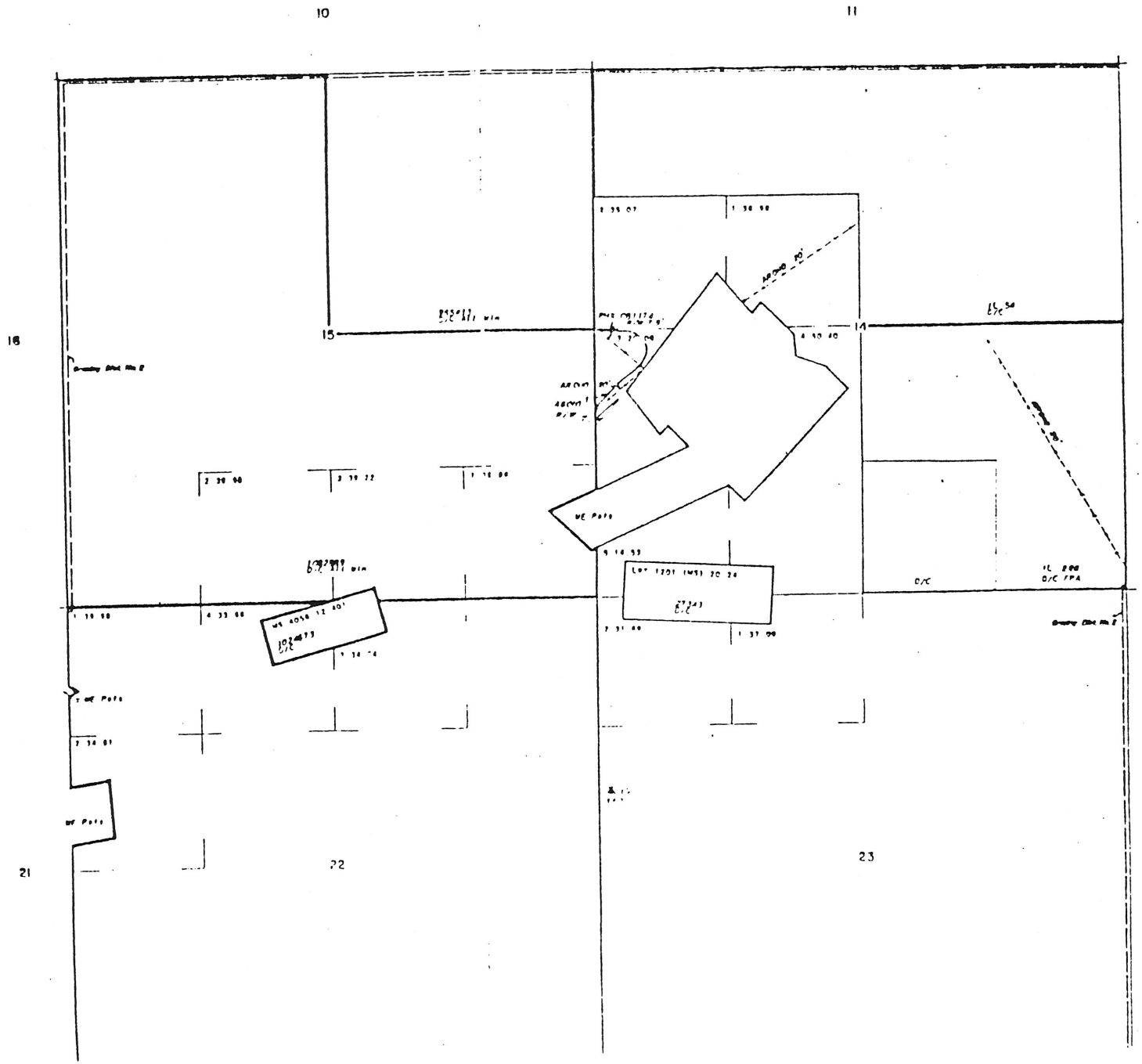
OIL AND GAS LEASE NO. 63159, issued by the State of Arizona to Anschutz Corporation on April 26, 1978. Said lease expires on April 25, 1983.

All surface and mineral rights of Section 22, except for patented ground described above, are in state ownership and are available for mineral prospecting.

TOWNSHIP 10 NORTH RANGE 5 WEST OF THE GILA AND SALT RIVER MERIDIAN, ARIZONA

STATUS OF PUBLIC DOMAIN
LAND AND MINERAL TITLES

MTP
SUPPL. Sec 14,15,22,23

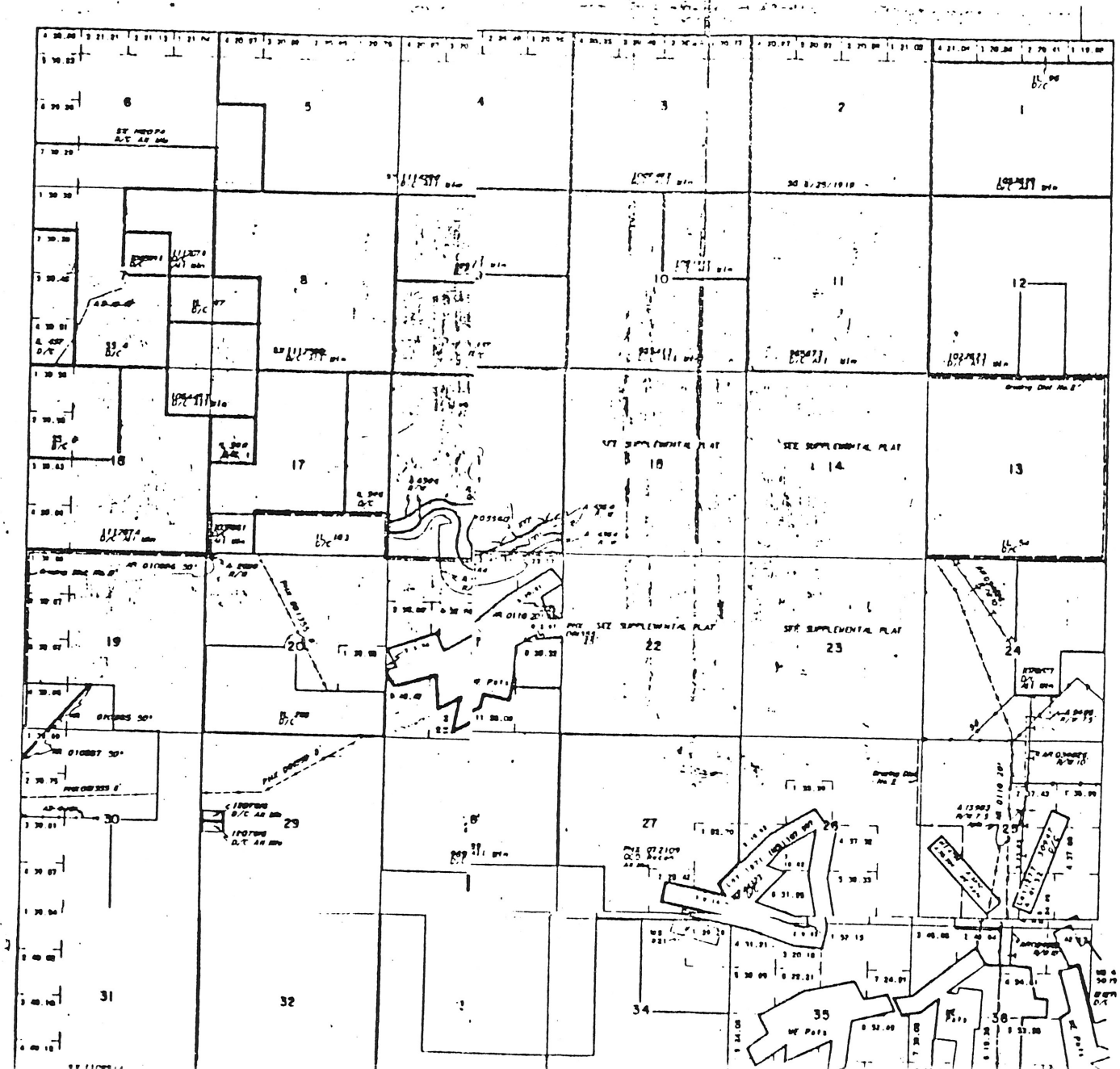


INDEX TO SEGREGATED TRACTS				
PRESURVEY	ORIGINAL SURVEY			
TRACT NO	T	R	SEC	SUBDIVISION

FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERALS, WATER AND/OR OTHER PUBLIC PURPOSES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS.

DIST NO 2

TOWNSHIP 10 NORTH RANGE 5 WEST OF THE GILA AND SALT RIVER MERIDIAN, ARIZONA



STATUS OF PUBLIC DOMAIN
LAND AND MINERAL TITLES

INDEX TO DISCREPANCY TRACTS				
DISCREPANCY	OFFICIAL SURVEY			
TRACT NO	T	S	RGE	SUBDIVISION

FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION MINERALS, WATER AND/OR OTHER PUBLIC PURPOSES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS

DIST NO

CHANGE TO	BY

ECONOMIC POTENTIAL

of the

ALVARADO GOLD MINE
YAVAPAI COUNTY, ARIZONA

by

H. MASON COGGIN, PE & LS

APRIL 20, 1982

prepared for

NORQUEST ARIZONA, INC.

5-1-82

H. MASON COGGIN, PE & LS
CONSULTING MINING ENGINEER AND LAND SURVEYOR
317 EAST GRISWOLD
PHOENIX, ARIZONA 85020
(602) 944-3763

NOTE TO READER:

The Tables and Figures referred to in the appendix of Mr. Coggin's Report have been deleted from the printed material because this material is not yet relevant until the Partners receive the consultant's report after completion of the Initial Program.

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Registered Professional Engineer (Mining)
CERTIFICATE NO. 7931
HORACE MASON COGGIN
Date Signed.....
ARIZONA, U.S.A.
5-1-82

INTRODUCTION

The Alvarado Gold Mine, located about 65 miles northwest of Phoenix, Arizona has a unique potential for economic development as a moderately sized gold producer.

This report will outline the potential economics and risks of reentering and operating the property either as an underground gold mine and/or a surface heap leaching operation.

The property, it's location, geology and workings have been previously described by John Chronic a Geologist for Scarth Petroleum in March of 1981. This report will not attempt to duplicate that work but is intended as a companion thereto.

CONCLUSIONS AND RECOMMENDATIONS

Exploring and developing this property has two chances for a successful venture at present metal prices and under existing technology.

The first opportunity is for a small underground mining operation employing rubber tired equipment and sand fill for ground support. It will feed a 100 ton per day mill. This operation would provide annual cash flows averaging $461,691 for a period of well over 10 years. This is especially attractive for Norquest due to their reportedly large inventory of suitable equipment.

The second possibility is a heap leach producing $1.128 MM in before tax cash flows over a 12 month period. The initial investment would be less than $300,000.

As with any mining venture there is risk. The risks involve the amount and availability of the estimated reserve, the grade of material to be mined and the applicability of the proposed mining method to the deposit. The previous operators have eliminated most of the risks usually associated with an exploration program. They had an acceptable recovery method. They recovered gold in paying quantities. The mine is developed. Had it not been for the Gold Mine Closing order of 1942 they would have continued operations until the reserves were exhausted.

What is needed to eliminate or quantify the risks is an initial investment of $500,000. These funds would be used to dewater the existing shaft, verify the old assays, determine how much of the reported reserves are available for mining, evaluate the proposed mining method and analyze the various surface heap leaching potentials.

The property is a sleeper. It is sitting between two current producers with similar histories and similar geology. It would have been developed along with its neighbors but for litigation and underfinancing.

Two neighboring mines, the Congress and the Octave have produced over 600,000 ounces of gold from depths up to 4,000 feet. The Alvarado has been explored only to about 1300 feet. Both of these old producers are currently being reactivated. The dumps of the Congress have been heap leached by D. W. Jaquay and are considered as the model of this type of operation in Arizona. Plans are being made for heap leaching of the Octave dumps and this operation should be initiated this summer.

There are several other small produces in the Weaver district all within a short haul distance of the Alavarado. If a milling operation can be initiated a this site these other properties have potential to provide additional mill feed. These properties include The Golden Wave, Herskowitz, Golden Key, Hartman, Yarnell, Blue Bucket, Welcome, Beehive and Jackson. A location map is attached with these properties shown. (See Appendix C)

Little information is available from the last operator of the Alvarado. They worked the property from about 1934 to 1941 when it was closed by the Gold Mine Closing Order of 1941. The mine was apparently a profitable producer at that time. The operators were able to pay off two government loans of $500,000 within a short period of time. The U. S. Government at that time was passing out loans primarily to strengthen a struggling economy.

The biggest question in evaluation of this property is determining what effect the 1940 operation may have had on the reserves which were projected before they commenced operations. Although it may be assumed that some mining was done the shaft was deepened and there was considerable new drifting along the vein.

The only known map of the underground operations after 1907 is a 1938 map prepared by the U. S. Bureau of mines. It shows that the main shaft was deepened to the 13th level. Each level was developed, but no new stoping was shown. This work was obviously a well organized effort of exploration and development. Whether or not they had actually stoped out any of the developed reserves can be determined by dewatering the shaft and sampling the new levels.

The lowest level of risk would be about $250,000 and would occure if it is determined that the shaft is caved beyond repair or that the viable reserves have been mined and no new reserves have been developed.

Upon favorable evaluation of the information returned from this program an additional investment of $1.310 MM will be

required to construct a 100 ton per day mill and initiate the mining operation.

The shaft has recently been dewatered to the 8th level without any stoping of the vein being found. The check sampling done at that time checked well with the 1907 Neill results.

The heap leach potential of the surface mine dumps and the shallow open-pittable outcrops has not been determined. Test work to determine the best way to operate the heap leach potential will be developed in the initial program.

The property is highly developed. Electrical power is established. There is an adequate water supply for a small milling operation and there is an abundance of labor in the district.

This program could be initiated with local contractors who have the special equipment required for this work. One in particular, M Company of Prescott, has on hand the ventilation equipment, an assortment of pipes and fittings, and rubber tired as well as rail equipment.

This writer is familiar with M company and its long experience in reopening and sampling old mines. Frank Montonati th owner of the company is well acquainted with federal and state safety regulations. Conversations with Frank Montonati has confired that he would be interested in doing this work. He will have a crew available early this summer. In previous programs of this type he has worked well under a time and materials contract with minimal supervision.

RESERVE CALCULATIONS

The 1907 Neill map is the basis of the reserve calculation in Appendix A. The map consists of a sampling and mapping program that was performed for the owners about 1906. It included all of the vein that was exposed at the time of Neill's examination.

In this recent recalculation each sample was given an area of influence according to its width, the distance to the next sample and the distance to the next level above or below. The volume thus obtained was divided by a tonnage factor of 12.5 cubic feet per ton. This tonnage was then multiplied by the assay for each sample and the individual results were weighted to provide weighted average of grades and widths.

The resulting total of this estimate was 143,438 tons at 0.26 ounces of gold per ton. The average width was 3.57 feet.

This reserve estimate included all of the areas sampeled from the 1907 map. There is no way to determine how much of this reserve may have been mined. It can be assured however that at least those reserves above the 800 level are still intact. Charles Moore, a employee of Scarth reported no mining above that level from his 1980 dewatering to that level. He did not dewater below that level due to lack of funding. It is also known that the 1940 operations extended the shaft and developed several levels below the 9th level. Exactly how far this work was continued is unknown. The surface expression of the vein also goes beyond the limits of the developed workings. If these areas are explored there is a considerable chance of expanding reserves.

The entire sampled area, which probably represents all of the exposed vein in the workings, was used for estimating reserves to reflect the proposed mining method which will be a rapid mining system without selectivity.

The proposed system will mine the entire vein to an average width of six feet. Diluting the calculated reserve to this width yield the following results:

Fully diluted reserves:
241,000 tons at 0.18 ounces of gold per ton.

PROPOSED MINING METHODS

Because of the low grade nature of the fully diluted reserves the proposed mining method is designed for high efficiency low cost production. It is a method of overhand stoping on sandfill with rubber tired load haul dump equipment. The LHD's will store the mined materials in a muck bay and dump directly into a single skip for hoisting.

Each round blasted will be six feet wide, eight feet long and will extend eight feet up the vein. One round will contain approximately 30 tons. To maintain a mill feed rate of 100 tons per day on the basis of a seven day week the mine will have to produce 140 tons of ore per day on a five day per week basis. An additional capacity of 40 tons per day should be provided to allow exploratory drifting and handling of occasional waste.

Drilling and Blasting: Six rounds per day will be required to sustain the tonnage. Two drillers and two helpers will be necessary. Drilling will be with jacklegs and stopers. Blasting will be with prill and conventional electrical caps. The cost for this is estimated at $800 per day or about $4.40 per ton.

Mucking: All materials will be handled from the face to the muck bay with small rubber tired loaders with a bucket capacity of one ton. The average load haul dump time with a one way tram of 100 feet will be about 5.5 minutes. The mucking efficiency with this equipment is then 11 tons per hour. For an eight hour efficiency this equates to about 50 tons per shift. The balance of the shift will be involved in loading skips and moving the machines. With four LHD operators the cost of mucking is estimated at $800 per day or $4.40 per ton.

Sandfilling: Back filling a stope with sand fill will require at least two days in preparation. Preparation involves building a bulkhead to contain the sandfill, hanging the fill line and connecting the system. For a stope length of 200 feet the average lift will require 800 tons of sand fill. This can be delivered in one day if 800 tons of sand fill storage are available. The state of the art in sand filling requires that the mill tailings be deslimed through a cyclone, agitated mechanically and delivered to the stope through a schedule 80 steel pipe. The sands are transported to the workings at 50% solids. This will add about 100 gallons per minute to the mine pumping requirements. The last foot of sand fill normally receives about one sack of type II portland cement per yard. This provides a firm footing for the LHD's. The filled sections are filled to within a foot or two of the back. This provides an additional free face for blasting operations. The cost of sand filling is estimated at $2.00 per ton.

Dilution: the calculated dilution for the above described method is 61%. Thus the grade of 0.26 ounces per ton will be diluted with wall rock to and overall grade of 0.18.

Hoisting: One hoistman and a toplander will be required to hoist ore, men, materials and maintain the pumps, compressors and other equipment. The hoist should have the capacity to hoist a maximum load of 10 tons at a maximum rope speed of 900 feet per minute. The federal mine inspectors (MSHA) have arbitrarily started to enforce the 100 times rope diameter ratio for all mine hoists and sheaves. This will no doubt deplete the used equipment market of all large diameter hoisting equipment. A search for suitable equipment should be started as soon as the project receives its initial funding to insure that this equipment will be available. The hoisting skip should have a 3 ton capacity and designed so that it is self dumping and can be loaded by the LHD's.

Cycle time for hoisting is estimated as follows:

loading	1.00 min
hoisting	2.00
dumping	0.10
return and spotting	2.00
total trip time----------	5.10---------
hoisting time for 200 tons	5.67 hours
hoisting costs will be about	$2.00 per ton

Ventilation: To control fumes an estimated 50 cubic feet per second is required for each horsepower of diesel powered equipment operating in the mine. At 35 horsepower for each LHD this calculates to 7000 cfm of fresh air. A single stationary fiberglass ventilation pipe with tee's at each station and auxiliary fans should satisfy this requirement. Head loss for the system is estimated at a total of 8 inches of water gauge.

Working Places: The operating cycle for each stope is estimated as follows:

per 800 ton lift	
drilling and blasting	6.67 days
mucking	3.37
sandfilling	8.00
smoke time	3.37
Total ----------	21.41days -------

To sustain 180 tpd in production 5 stopes are required. This is equivalent to 3 levels being operated at the same time.

Required Tonnage: The required tonnage to support the 100 ton per day mill which has been proposed for this operation is summarized as follows:

Mill tonnage	100 tons per day
Mill schedule	36500 tons per year
Mine schedule	5 days per week
Mine tonnage	150 tons per day

Supervision: The staff for the entire operation is estimated as follows:

1 General superintendent
1 Staff Engineer with capabilities in geology and metalurgy
1 Bookeeper,warehouseman, safety engineer and medic
1 secretary

Annual cost of keeping this staff will be about $200,000 per year or about $0.28 per ton on the mining cost and a like amount on the milling cost.

MILLING OPERATIONS

The mill will work 24 hours per day on a 365 day per year basis. At least two men should be on shift at all times. To meet this requirement 5 mill operators and five mill labors will be rotated through a five day per week schedule through holidays and vacations. The mill operation will be continuous stoping only for breakdowns and scheduled maintenance. The electrician and mechanic will be assigned to the mill although they will have mine responsibilities as well as the mill. Major repairs to the equipment will be farmed out to shops and facilities in Phoenix. The size of the operation will not support the shop facilities necessary to replace engines or reline ball mills. .

The previous operators of the property apparently operated a counter current decantation mill on the property. The old tailings dump represents material which has been scraped away from a rotary filter. This type of filter was commonly used in counter current decantation to recover the last bit of pregnant solution from the pulp. The resulting tailings were too dry to move through a slurry line and were apparently moved from the filter by a slusher.

This type of operation has been replaced today by the carbon in pulp system. It is more economical to construct and operate that the CCD and has a higher recovery.

At this time there has not been sufficient work on the Alvarado materials to determine the optimum flow sheet for milling. This work will be undertaken as part of the initial investment. The costs used in the attached estimates are intended to represent general costs and are not intended to be a detailed estimate.

CAPITAL COSTS

Capital costs can not be estimated at this time. Lack of information that can only be acquired through the dewatering and sampling program is needed to design and specify the required equipment. Capital costs which have been used in the attached economic analysis are best guess estimates based on similar operations in the authors experience.

Another function of the capital costs which cannot be estimated at this time is Norquest's inventory of milling equipment and the amount of this equipment that can be used on this project. The use of Norquest mining and milling equipment will greatly reduce the capital requirements of the project.

ECONOMIC ANALYSIS UNDERGROUND POTENTIAL

The following analysis of the underground economic potential is intended to show the possible cash flows of the project under varying conditions of gold prices and operating costs.

The first sets of tables and charts show the base case economics at $400 gold and a $48 operating cost. Since metal price and operating costs are the most likely values to change radically over the life of the project. Several different scenarios have been used to represent ranges in metal price from $300 to $600 per ounce and from $30 to $70 per ton in operating costs.

Tables 2 through 11 and figures 1 through 10 show these results in relation to the base case. In each case the other variables are held constant at the base case and only the variable being examined is allowed to change.

The figures which are presented as a graphic representation of the effects of each variable show only the cash flow line of each case. Both the annual cash flows and the accumulated cash flows are shown. The sensitivity of the project to each variable can easily be examined in each figure.

Table 12 shows a summary of the projected cash flows from the sensitivity analysis.

The following is a summary of the heap leaching potential:

Estimate of materials:

	tons	ounces per ton
old mine dumps	50,000	0.05 gold
surface outcrops	30,000	0.20

Capital Requirements for the first pad.

site prep.	$12,000
liners	30,000
recovery plant	30,000
crushing & placing	30,000
chemicals	25,000
mining	30,000
30 days of operating	30,000
contingencies	15,000
Total for the first pad	$202,000

for the next two pads

mining	$30,000
crushing & placing	30,000
chemicals	25,000
operating	30,000
contingencies	25,000
total for the 2nd & 3rd pads	140,000

for the last five pads

crushing & placing	$30,000
chemicals	25,000
operating	30,000
contingencies	25,000
total for pads 6 to 10	$110,000

The costs of mining, crushing and agglomerating can be controlled by contracting this work out to local contractors who are both equiped and qualified for this job.

Table 13 shows the proforma of the heap leaching potential.

HEAP LEACHING

It is estimated that as much as 50,000 tons of old dump materials and 30,000 tons of surface outcrop may contain sufficient values to be heap leached at a profit. Preliminary sampling of these materials indicates that the grades are high enough to make this an attractive target. More sampling and some test work will be required to refine an estimate of this potential.

Heap leaching, especially in relatively frost free areas such as this, is an economical method of treating some low grade ores with low risk, low cost and quick returns.

The process consist of circulating a cyanide solution through a dump which has been placed on an impervious pad and winning the leached values from the solution either by zinc precipitation or carbon adsorption.

Recoveries are greatly enhanced by crushing the materials and agglomerating the fines. Even under optimum conditions the best recovery that can be expected is about 60% although recoveries as high as 90% have been reported. In the following economic forecast 60% recovery has been used.

The method of treatment considered for this study consist of preparing one 10,000 ton pad which will be leached and moved within one month. This pad will then be reloaded and cycled for the next month. Initially the materials will be mined from the outcropping veins, crushed to about minus one half inch and the fines agglomerated.

The pad will be located in or near the old tailings so that these materials can be used in pad construction. The initial would cover an area approximately 100 by 200 feet with a slope of about one percent so that the solution will return to a pregnant solution pond at the bottom of the pad. A fresh water pond and a barren solution pond will be constructed to facilitate the operation of the heap. The pad and pond liner will be a 20 mil PVC material to contain the solutions. This material is available from Water Saver of Denver, Colorado.

The recovery system should be a carbon adsorption plant which is either constructed or purchased locally. The writer is presently involved in Bimetals Recovery Systems, Inc. a very young manufacturing company which manufactures a portable carbon adsorption plant. The unit is trailer mounted and contains the necessary equipment to adsorb the values, strip the carbon and electrowin on steel wool. A copy of the brochure on this equipment is attached (see appendix B).

Geology.

The general formation of the surrounding country is granite. The vein lies between two flows of porphyry which are very distinct from the granite and cut thru it. Usually white quartz-porphyry forms the foot-wall, and a black or green diorite-porphyry the hanging-wall. The general course of the vein is S. 50 - 55 W. and the dip averages close to 24 N.W. into the hill.

What the origin of the vein is, or how it became mineralized is not of commercial interest, excepting to question as to the extent and permanency of the mineralization, or the "habit" of the vein, and of the district. I visited the surface of the celebrated Congress Mine, some four miles West of the Alvarado, and found the surface conditions the same as at the Alvarado, the strike and dip so far as observable the same, and the ore also entirely similar. The granite surrounding both properties, shows "bedding planes" parallel to the vein, and the Rincon and Octave mines South of the Alvarado, are also parallel openings. This would seem to establish the "habit." At the Congress the values are said to have persisted to a depth of 4000 feet, and they are now mining at 2000 feet, and have mined over a length of vein equal to three mining claims. The mine has been producing, to my knowledge, for sixteen years, and has a record of many millions. By consulting the map it will be seen that the Congress is direct-west of the Alvarado; this is not absolutely in line of the strike of the Alvarado so far as developed, but a very szight bend would bring the vein thru the Congress and the absolute simility of strike, dip, ore, and wall rock would justify one in presuming that the two mines are on the same fissure or mineral opening.

At the Octave, five miles South, they are mining ore at a depth of 2000 feet, and at the Rincon at a depth of 1000 feet.

My samples from the croppings of the Alvarado vein cover a total length of about 1800 feet, and show values the whole

distance. From these facts it is safe to assume that the mineralization in the district is a very profound one. The Alvarado vein is a quartz vein, varying from two ti over seven feet in thickness. Near the surface it shows little or no sulphides, nor is the quartz much honeycombed, with increased depth the amount of sulphides increases, both lead and iron sulphide, and in some spots a little copper stain.

These sulphides are deposited in streaks or layers parallel to the wall of the vein and usually near one ore the other or near a band of porphyry in the vein; and in bunches, ore disseminated thru the hard and glassy quartz. The quartz is iften split into several seams by bands of red porphyry, and from this cause is in places not commercially minable. The hanging wall is usually hard and stands very well, near some of the breaks or faults this is not so; but on the average very little timbering is necessary, the waste broken with the ore providing filling for the stopes.

The quartz is usually under considerable stress due to the post-mineral faulting, it should break well in the mine and crush well in the mill. there are a number of small faults or breaks in the formation, all have throw to the south as we go West, (left hand throw) they distort the vein, and the workings, (see map) but do not seem to influence the values, unless indeed to increase them owing to later infiltration.

Similarly a series of fissures striking N. 20 E. crosses the vein in many places and seems to have increased the amount of sulphides in the ore; this must be studied as it may lead to determining the trend and boundaries of the ore shoots.

On the lower levels of the mine, from the 600 down, the vein is much more evenly mineralized and the percentage of sulphides is greater and with these the values. In the West End of the 1300 level the red porphyry has entirely taken the place of

the quartz, but the values persist, in fact are better. I think the quartz will come in here again.

The vein is also thicker in the lower levels. This increase in thickness and values seems to have taken place on the West side, higher up than on the East, as "B" shaft at 300 is better than "C" shaft at 600. Everything about the physical appearance of the lower levels is favorable, and the values as shown by assays are higher, therefore I can predict well for greater depth. According to the information furnished me, about 2400 tons was run thru the mill, from the various stopes of the mine, this yielded 4.1 0/0 of concentrates and these carried about $90. in values. My samples show on an ore carrying $5. in gold only 0.13 in silver.

Water.

This is usually a serious item in Arizona. At the Alvarado there is at present a fair supply of good water and probably enough for a small milling tonnage.

The mine is now making about 15. gals. per minute, most of it coming in on the 900 level, and this will probably increase with added depth. This water is likely to be acid, and must be sampled and tested before use in the cyanide process. There is at present about 15 gals. flowing from Fool's Gulch, and no doubt as much or more below the surface. There is a well on the Cottonwood Claim, in which the water stands four or five feet above the surface of a little gulch near it, this well is said to be 60 feet deep, and to have a cross at the bottom 80 feet long, also it is said to afford 185 gallons per minute for ten hours, the water going down about ten feet and filling up again by the next morning. My effort to pump this well for a test was fruitless, as a tube blew out in the boiler. We rigged up a syphon, of one-inch pipe,

and this drew off eight gallons per minute, lowering the water two feet in ten hours and then it remained stationary. From a spring up Fool's Gulch a pipe line brings water to the 40,000 gal. tank on the hill behind "B" shaft, and yields about 15 gal. per minute. There is another well down the gulch opposite the mess house, this aslso carries good water above the surrounding ground, there is a large pump drowned in the well, and it is said to give as much water as the upper one. From all of these sources during, during present seasons, which have been fairly wet, sufficient water for the demands of the mine will probably be provided.

Martinez Creek near the railroad three miles from the mine always carries water, and from this the Congress gets its supply, It would be advisable to purchase ground on this Creek, to insure the future, and also for location of a power plant from which to send electric power to the mine. I have marked the approximate location on the general map with red.

Fuel, Timber, Labor, Supplies.

Coal costs in car lots $5.65 and about $1.50 per ton for hauling to the mine. Oil will cost about $1.35 per bbl. equal to one-third ton, and cost about as much for hauling, but is the better fuel, saving much in wages. Timber can be obtained in the shape of stulls from Williams, at about 6 - 8 cts. per running foot according ti size; this is cheap. Other supplies are readily obtainable owing to the proximity of Prescott.

Labor-

the Congress mine is now paying for miners (machine men) $3.50 per day, eight hours, other laboters, mostly Mexicans, get from $2. to $2.50, they are good workers, and their labor is really cheap. There are no unions in the district.

Surface Improvements.

Several Photographs show these. There is a very comfortable camp established on the town site. A good cook and mess house, several comfortable cabins, and office and living house for officials, assay office, barn, etc., all in seeming good repair and well cared for. Water from the tank above "B" shaft is piped thru the town, and is under pressure from 275 feet head. The old mill was first built for a roast cyanide plant in imitation of the Congress; later the rolls and furnace were abandoned and a ten-stamp mill with Frue vanning machines placed. These only saved the sulphides, consequently the tailings are said to run $3.60 and to amount to 2500 tons. The mill is at present not in shape to operate. There is much good material in it, the engine, boiler, stamps, crusher, rolls, ore bin, etc., and the location with its massive retaining walls and foundations will be easily adapttable to a new plant. At the "C" shaft there is a 35 H.P. boiler, and a 50 H.P. boiler, a 35 H.P. hoist, good pump in mine and roomy and well fitted blacksmith and carpenter shops, sufficient in everyway for immediate commencement of active development. Tanks at mine and mill of a total capacity of nearly 100,000 gals., all in good shape.

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Maps.

The large scale map of the workings, plan map, and longitudinal section on the vein were made by us from compass and tape tape surveys, aided by sketch maps furnished us.

It is not pretended that these are accurate to an inch, but they show all accessible workings and serve to plot assays and figure blocks of ore.

Development.

he maps show that there are at present opened 1785 feet of shafts, the deepest being 1100 feet, and in all 3550 feet of drifting, nearly all of which is in the vein.

From the end of the most easterly to the most westerly opening is nearly 1500 feet, so that the block of ground which has been thus opened up is 1100 feet deep by 1500 feet long.

The shafts are all inclines and only one compartment. "C" shaft is the main shaft and is the only one equipped with hoisting machinery and pumps. Unfortunately this shaft is not driven on the vein all of the way, but leaves it just above the 100 level and does not cut into it again till below the 700.

The drifts have also in many places left the vein quite undeveloped, leaving much of the quartz in the hanging wall, and thus failing entirely of their purpose in developing the mine. Thus on the 200 level West there is much good quartz above the level, and possibly a block of pay ore here.

the stoping done and shown on the map has furnished the ore run thru the mill, less what is now on the dump, which amounts to about 1000 tons and is rather low grade. ($3.50), some of it having been sorted over.

Sampling.

the samples were taken under my personal supervision. Usually at intervals of five or ten feet, snd on opposite sides of the openings if possible. In the lower levels where the heat was almost unbearable, "C" shaft, or the water waist deep, "B" shaft, these intervals were longer, also where obstacles interfered but an examination of the map will show that the ground was very thoroly covered by thr 503 samples taken. The procedure was as follows: we cut with hammer and moil a gouge or trough across the face of ore at right angles to the dip, catching the broken materia

in a candle box; this was then transferred to a sack, and carried to the surface at "C" shaft. Here there is a large surface of steel plates, and on this the quartz was broken up with hammers in rings, to a size of peas, then placed on a large canvas, thoroly rolled and quartered down to about two lbs., this then palced in cnavas sacks for shipment to assayer. This work on the surface was also under the supervision of one of my assistants, who did al of the rolling and sacking. Another assistant took half of the samples, one of the miners took the other half, I noted the differe damples and find that they compare well. At each sample the vei was measured andcondytions noted so that allowance could be made for waste in the vein or for breaking of hanging which would lower the values when actually mining. All of the rejected portions of the samples was placed in one pile and this was later samples down, as a check; it was then sacked for shipment for testing purposes. This weighed 7160 lbs., came from 495 samples or about 14 lbs. of rock per samples, and as 2 lbs. were shipped to the assayer, it figures on an average of three feet in the ore, at a little over five lbs. of rock per foot of vein. This looks ample.

300 of the samples were sent to R. H. Officer in Salt La and about 200 to Mr. John Lynch at Los Angeles. I am not acquaint with the latter office, but sent a number of his pulps to Salt Lake, and Mr. Officer checked the results very closely, on the aver age of the whole. Mr. Lynch's assays covered the lower and richer pportions of the mine.

Calculations of Averages for Blocks.

The averages have been calculated in each case by taking all assays and measurements in the blocks in question, multiplying the values of each assay by the width of vein at that point, then adding all of these totals, called "assay-feet" to get the

the total measurements into the total assay-feet, which gives us the average assay, thendividing the total measurements by the number of assays, which gives us the average width.

Where an opening, such as a level or shaft, pertains to two blocks, I have used the assays on it in figuring b oth blocks.

Where I found a freak assay, that is to say $25. or 40. between say two of $1.40 each I have not figured it into the average as it would not be possible to mine the ore in such spots, and the freak would destroy the average.

I have calculated on "positive ore" in blocks developed on three or more sides; (only one block figured with less, that between 800 and 900, where the stoping is quite close to the boundary line); On "probable ore", which is developed on two sides only or possibly on one side, or where the workings are considerable distance apart, as between "B" and "C" shagts. "Possible ore is ahat beyond the working faces, and below the openings, but which from the conditions can be reasonably expected. On the longitudinal section map herewith, I have outlined the "positive " ore in solid orange lines; the "probable ore" in dot and dash orange lines; and have marked in each block the dimensions and tonnage estimated.

Block A.

This is opened and sampled on three sides, but the assays down "D" shaft and along the 100 level, as gar as the stope, show no pay values. Commencing at the top of the stope and thence west to the face there is some very good ore, tho the vein is small. In the shaft as far as it can be sampled the ore is only fair. Beneath the point last sampled the shaft leaves the vein. I have figured on this block, the west half as outlined, leaving a pillar of 25. ft. along the shaft and 30 ft. along the surface.

100 X 50 X 2.6 ft. equals 1080 tond.

The actual average of the 18 assays and measurements in the block is $6.53 gold per ton. this gives a gross value of $7071.

Block B.

The assays on the 100 level East show no pay values to a point near the raise from the lower level. Here several samples give good assays, but this extends but a short distance (20 ft.) down the raise; the raise itself and the 200 level East show no pay values at all. I have figured the tonnage here, which is 6800, and the average value $1.97, which is not pay. Above the 100 level West there is one freak assay, but no minable ground, and I have left this block out.

Block C.

On the 100 level West of the shaft for about 75 ft. the assays give a value of $5.25 for a thickness of 2.5 ft., East of this the vein is badly broken and faulted; West of this the quartz is split up into numerous stringers and bands of red prophyry, and is not minable. The raise from the 200 is in the same condition most of the way, and the roof is bad, the fault cuts across the raise S.W., and has caused considerable caving Wes of the raise on the 100. There are several good assays around the raise both at top and bottom, but the conditions would not warrant mining or figuring on ore in sight. There is ore in the roof along the level and some crosscut raises should be driven.

200 Level East of the Raise.

The 200 level east from the raise shows for the first 100 feet bands of quartz and porphyry, and is not minable, beyond this to the shaft crosscut, the quartz is better but the distortion from the fault is most acute here, see plan map.

200 Level West of the Raise.

This block from the 200 to the surface. From the raise West the top of the little stope shows some assays but no average, the ore is badly split up. From a point 150 ft. East of the face

the average of 16 samples gives a width of 2.15 ft., and a value of $4.96. There is a strong outcrop on the surface above this block, showing two seams of quartz, and several samples from three cuts each across this give good values, but it is 225 ft. to the 200 level, and I have figured this as probable ore.

"C" Shaft between 2nd and 3rd Levels.

The shaft does not show the vein here. The 200 level is not in pay. There is no pay ore on the 3rd level as far as sampled. This level on the old map shows much greater length West, a raise nearly thru to the 200, and a considerable stope from this; this is now caved and bulkheaded.

The fault which must pass thru in this section is no doubt responsible for this caving. It is probable that there was pay ore in this section, else they would not have done the stoping.

600 Level.

This level only extends west and only 80 feet of it is on the vein. The quartz here is very regular, looks well, the vein is wide and compact. the average of 13 samples gives $3.10 for 6.1 ft. of ore; I have not figured this as pay, but it is a very good prospect and I have no doubt will make pay ore by driving both East and West.

700 Level.

Only the stations are cut here, but the face in either direction is almost to the vein.

700 to 800.

The vein shows first in a little winze 25 ft down the shaft from the 700; below this the quartz gradually comes into the shaft, and was sampled where accessible. The vein looks well here, is compact, but the assays are low. They are of course from the hanging wall part.

800 Level.

The drifts both East and West are out only about 30 ft., both show a very fine vein of quartz, compact, nicely banded and showing some sulphides, looking like good pay but the average of the ten samples taken is only $2.59 for a thickness of 4.1 ft. This is not pay even if easily mined, but there can be no doubt the ore will develop by driving in either direction. I did not figure the block from this point to the 200 level even as "probable ore", as out assays were not high in the adjoining blocks, it is of course "possible ore".

Between 800 and 900.

This block has assyas on two sides only, viz. the shaft and the top of the stopes, but these come so near the lines that I have drawn for the block that I think it is safe to figure the ore as developed.

$$325 \text{ plus } 55 \text{ equals } \frac{187.5 \times 100 \times 3.45}{12} \text{ equals } 5390 \text{ tons}$$

Deducting 1/3 for stopes and we have 3490 tons. The average of 39 samples gave $8.72 per ton of $30,423 for the block gross value.

The pay values come into the shaft just below the 800 level and from here on are much more regular and of higher average. The top of the 900 stopes show some very good ore, which, however, is not different in its looks from that in faces of the 800. The ore is more compact, will break cleaner, and makes altogether a better mining proposition in these levels than in those above the 600.

Block E.

The 900 Level West shows fine ore all thru, the shaft practically the same thru. here it was not possible in all places to cut all of the vein. On the 1000 level West, for about 40 ft., back from the face the quartz has been entirely replaced by red porphyry, which carries considerable iron pyrites, and here represa

Block G.

This block is $\frac{225 \times 100 \times 3.0}{12}$ equals 5625 tons.

The average of 36 samples in the block is only $2.64, not pay. It must however be said that the assays are better as the drift gets away from the shaft, the last 100 ft. on the first level and the last 50 ft. on the second level being pay ore.

A drift should be run East from the middle of this block and I have no doubt that it would develop good ore, as the assays on the 200 West are good. This block is not figured.

Block H.

This block is $\frac{225 \times 200 \times 2.88 \text{ ft.}}{12}$ equals 10,800 tons.

The average of 42 samples gives a value of $3.62 for the block or a gross $35,830. Attention must be called to the fact that the assays in the stope away from the shaft are better than the shaft, and that the drift West is also better than the shaft. It would probably pay in mining the block to leave out some of the ore near the 100 level, and so get better actual average. (I have deducted 900 tons for stoping.).

~~We Appear~~ The appearance of the vein in the West 200 level here, the strength and high values of the croppings on the surface, and the fact that the ground is unbroken for a long distance ahead, gives great promise for this western ground.

Block I.

his is figured on all the ground above the 100 level of "A" and "B" shafts.

$\frac{250 \times 60 \times 2.75 \text{ ft.}}{12}$ equals 3430 tons,
430 deducted for stoping
3000 tons for the block.

he average of 37 samples underground and 7 on the surface is $5.67 for 2.75 ft. thick. This gives us a value of $17,010 gross for the block. Attention is called to some of the remarkable

The total tonnage of the blocks of "probable ore" as outlined on the map is 169,810 tons, using the same average a value $5.63. Total gross value of "probable ore" $955,33p. additional to "positive ore".

"Possible ore" can be figured at $2500. for every foot additional depth on the vein.

"Milling Process.

The qualities of ore samples lead both assayers to think that there is some free gold in the ore. I had some of the fine dust arising from the smashing of the samples, and rolling them on canvas, gathered up, screened and assayed. This carried $14. per ton. This shows that there are values in the ore, which will be lost by wind or weather if due care is not exercised in the mil

The records of the last run of the old mill do not state if there was any gold saved on the plates, places for which is provided. The very last run was msde without these, as is evident from the present spouting. At the Congress Mine they formerly roasted all ore previous to cyaniding it; this has been abandoned, and they are concentrating the crude ore, selling the concentrated to the smelters, and cyaniding the tailings. It is said that they save a high percentage, in a crude old fashioned mi and handling method.

Shipping concentrates to a custom smelter is a cause of considerable loss to the mine, as I figure that the charges for realizing on this material figuting its production as 4 0/0 of the ore, at from 50 to 60 cts. per ton of crude ore. The records of the old mill run show that the Alvarado concentrates assayed about $90. per ton, a shipment of slimes going as high as $660.

I believe that this charge can be avoided, and a very high saving of the metal values atained, by crushing the ore very fine, possibly by tube mills in the cyanide solution, settling, washing, (possibly filter pressing), decanting, etc. This is the latest method on the "Rand" and is said to give very high results at low cost. I would advise shipment of say ten tons of crude ore of average qualities to some testing plant, and have this and other methods properly tested.

The rejects from my samples would make good material for this purpose. The location of the present mill is well chosen, and this shoulf form the basis of a new plant, the retaining wall, foundations, and considerable of the old machinery forming a substantial nucleus for the new plant. It will, I think, represent a value of $40,000 or $50,000 toward the new installation. The losses in such an improved milling process should be reduced to 10 0/0, on an ore of an average value of $5.

It is not safe for the purpose of this examination to figure so close, and I shall therefore accept a loss of 15 0/0 from the gross value of the ore as figured in the blocks.

Costs of Mining and Milling.

I recently examined a going mine in Montana, where they were mining gold ore from a vein of about the size and general values of the Alvarado, only its pitch was steeper, but as the walls stood pretty well they mined on stulls, used very litle timber, and had air drills. Their fuel was wood, and rather expensive. They had 30 stamps, saved some gold on the plates, sluiced the tailings into a cyanide mill which was some distance from the stamps, and separately treated the sands and slimes. The cost sheet for six months then just passed was at hand and showed as follows:

Pasadena, Cal., Mar. 2nd., 1910.

D. A. Freeman, Esq.,

Boston, Mass.

Dear Sir:

Acting under your instructions I have recently made a visit to the mines under your charge at Congress Junction, and gone thru the recent developments, bringing my report made in 1907 up to date.

I am inclosing herewith a map of the workings with the record of the old sampling, and of the samples just taken in the newer workings.

There has been a great deal of work done at the mine both underground and overground, anf the conditions have been changwd very much for the better. The "B" shaft has been sunk to the 1000 level and connection between this and "C" shaft nearly completed. The drift only lacks about 85 ft. of being thru. Levels 500 and 600 NB" shaft are each about 100 ft. long, the 400 "C" shaft has been cleared out beyond the cave, and on the 700 and 600 considerable drifting done.

In the mill a practically new installation now exists consisting of 20 stamps, two tube mills, settlers, agitators, and filters capable of handling I should judge, 150 tons per day. This plant is exceedingly well built, will operate as automatically as is possible, and should make good saving at small cost.

The shafts "B" and "C" have each been equipped with head frames, and ore bins, sufficient for all present needs, trackage from them to the mill bins is installed, and in fact everything is in shape for the handling of ore.

The power plant in the mill is adequate for the operation of the mill but not for the mine; the price of coal has been advanced over that given me at the time of my examination, by

about $2.50 per ton; and it is now so high that it would seem better to await the completion of the electric power line, rather than attempt to operate with such high power costs, I did not see the contract offered by the power company, so cannot state its terms or the probable costs. I heard rumors in Prescott, that these contracts need careful reading, as they usually contain some "joker" that makes the payments of bills a different matter from the figured and expected costs. It would be well to have this contract translated by some expert.

Matters are in such shape in the mill and hoists that motors can be readily installed, and the operation would be immediately practicable.

You should have a good motor driven hoist on "B" shaft, so as to get some speed in hoisting; I think it might be possible to attach a motor to the present drum at "C" shaft and use this for the present; and electric power pumps in "C" shaft would complete the installation.

It will be necessary ti put thru a number of raises, between levels at not too great distances apart, so as to prepare for the breaking of ore a studied and special system, using shaking chutes in the stopes or possibly "go-devils", according to choice and working results.

With such openings and apparatus installed, I see no reason why the cost of mining should not be brought to a low figure, and the ore kept as clean as the samples indicate. The porphyry which oftens occurs in lenses in the quartzy ore, can be sorted out as its color defines it readily; in some cases this material will pay to mill after it is broken, I think. With connection between the two shafts completed, there will be fine ventilation thru the mine, and it will soon cool off to normal

temperatures, and enable the men to work in some comfort. At present the 1000 Level West drift is only penetrable after fresh air has been pumped into it after pumping.

"B" shaft now makes about as much water as "C" shaft, this comes in about at the 900 level, could be caught up and conveyed thru the 1000 level to "C" shaft and pumped there.

I sampled the new workings as shown on the map herewith the extentions to the other workings are shown attached but not connected.

I am at a loss to explain how I happened to overlook the 600 level of the "B" shaft which I did not sample; it was probabl owing to the pumping going on in "C" shaft, and the necessity of going tgere while the air was freah, leaving "B" shaft before completing the work.

The difference, amounting to probably eight or ten samples, would hardly have made any difference in the big block, but as the ore goes into the hanging of the shaft about at this point, and it is not possible to get any samples below, it would have helped the looks of the map, and the average on the West side.

I took one of the hammer drills, and attempted to drill into the roof of the shaft in several places below the 600 level, but in each case got practically all porphyry, Assaying about an even 0.80, so I did not place these assays on the map, they actual not being in the ore.

At a point 50 sets below the 600, there is a good showing of sulphide ore in the roof of the shaft; it is in the red felsitic porphyry such as carries high values in the 1000 level near the "C" shaft, and the assay of $55. here shows that there is a certainty of good values when stoping is commenced. The 1000 level from the old face "C" shaft westward carries the same

REFERENCE 1 F1 < USBM I.C. 6[illegible] : 43-46

REFERENCE 2 F2 < ABM BULL 137, p. [illegible]

REFERENCE 3 F3 < AZ DEPT. MIN. RESOURCES FILE DATA

REFERENCE 4 F4 < ABGMT CLIPPINGS FILE

F5 < USBM – ABGMT FILE DATA >

U.S. CRIB-SITE FORM

RECORD IDENTIFICATION

*RECORD NUMBER B10 <>

*RECORD TYPE B20 <X,1,M>

DEPOSIT NUMBER B40 <>

*REPORT DATE G1 <8,1,⊠,1,1> (YR MO.)

*INFORMATION SOURCE B30 <1,2,>

*FILE LINK IDENT. B50 < USBM-004 025 0111

*REPORTER(SUPERVISOR) G2 < ROTH, FRANCES A. (last, first, middle initial) (DEWITT, ED (last, first, middle initial)

*REPORTER AFFILIATION G5 < ABGMT >

*SITE NAME A10 < ALVARADO MINE

SYNONYMS A11 < PLANET SATURN ; LIBERTY HILLS GOLD

LOCATION

*MINING DISTRICT/AREA A30 < RICH HILL DISTRICT

*COUNTY A60 < YAVAPAI >

*STATE A50 <A,Z>

*COUNTRY A40 <U,S

*PHYSIOGRAPHIC PROV A63 <1,2,⊠,

*DRAINAGE AREA A62 <1,5,0,7,0,1,0,3,⊠, >

*LAND STATUS A64 <0,0,⊠,⊠,( )

*QUADRANGLE NAME A90 < CONGRESS ,(1,9,6,9,1) >

*QUADRANGLE SCALE A100 <2,4,0,0,0 >

SECOND QUAD NAME A92 < ( ) >

SECOND QUAD SCALE A91 <>

*ELEVATION A107 <3,6,4,0,⊠,F,T,>

UTM

*NORTHING A120 <3,7,8,5,1,0,0,>

*EASTING A130 <3,3,6,2,3,0,>

*ZONE NUMBER A110 <+,1,2,>

*ACCURACY

ACCURATE ACC (circle)

ESTIMATED EST <>

GEODETIC

*LATITUDE A70 < – – N

*LONGITUDE A80 < – – W

CADASTRAL

*TOWNSHIP(S) A77 <0,1,0,N,:,⊠, :,⊠, :,⊠, >

*RANGE(S) A78 <0,0,5,W,:,⊠, :,⊠, :,⊠, >

*SECTION(S) A79 < 21 ,:,⊠, ,:,⊠, ,:,⊠,

*SECTION FRACTION(S) A76 < SW OF SW OF NE

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

*POSITION FROM NEAREST PROMINENT LOCALITY A82 < 2.4 MILES SOUTHWEST OF YARNELL

*LOCATION COMMENTS A83 < TWO ADITS LOCATED SIDE BY SIDE ON HILL NEAR BENCH MARK

* ESSENTIAL INFORMATION

+ ESSENTIAL SOMETIMES OR HIGHLY RECOMMENDED

COMMODITY INFORMATION

COMMODITIES PRESENT C10 <A.U. ▼ A.G. ▼ Z.N. ▼ C.U. ▼ ▼ ▼ ▼ ▼ ▼>
ORE MINERALS C30 <AURIFEROUS PYRITE, GALENA, SPHALERITE, CHALCOPYRITE>
COMMODITY SUBTYPES C41 <>
GEN. ANALYTICAL DATA C43 <>
COM. INFO. COMMENTS C50 <>

SIGNIFICANCE

	PRODUCER	NON-PRODUCER
MAJOR PRODUCTS	MAJOR <A.U. ▼ ▼ ▼>	MAIN COMMODITIES PRESENT C11 <▼ ▼ ▼>
MINOR PRODUCTS	MINOR <A.G. ▼ ▼ ▼>	MINOR COMMODITIES PRESENT C12 <▼ ▼ ▼>
POTENTIAL PRODUCTS	POTEN <P.B. ▼ Z.N. ▼ C.U. ▼>	
OCCURRENCES	OCCUR <▼ ▼ ▼>	OCCURRENCES OCCUR <▼ ▼ ▼>

*PRODUCTION

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

EXPLORATION OR DEVELOPMENT

STATUS

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

DISCOVERER L20 <HENRY L. SCOTT>
YEAR OF DISCOVERY L10 <1905> *NATURE OF DISCOVERY L30 <B> *YEAR OF FIRST PRODUCTION L40 <1935> *YEAR OF LAST PRODUCTION L45 <1943>
PRESENT/LAST OWNER A12 <BILL MUNTZ (1975)>
PRESENT/LAST OPERATOR A13 <LIBERTY HILLS GOLD MINES (1960'S)>
EXPL./DEV. COMMENTS L110 <GROUP CONSISTS OF PATENTED CLAIMS PLANET, SATURN, COMET, AND JUPITER>

DESCRIPTION OF DEPOSIT

DEPOSIT TYPE(S) C40 <VEIN>
DEPOSIT FORM/SHAPE M10 <TABULAR>
DEPTH TO TOP M20 <> *UNITS M21 <> *MAXIMUM LENGTH M40 <4000> *UNITS M41 <FT>
DEPTH TO BOTTOM M30 <1300> *UNITS M31 <FT> *MAXIMUM WIDTH M50 <1300> *UNITS M51 <FT>
DEPOSIT SIZE M15 (SMALL) M15 <MEDIUM> M15 <LARGE> (circle one) *MAXIMUM THICKNESS M60 <4> *UNITS M61 <FT>
STRIKE M70 <N 30 E> *DIP M80 <25 NW TO 35 NW>
DIRECTION OF PLUNGE M100 <N 40 W> *PLUNGE M90 <20 TO 15 NW>
DEP. DESC. COMMENTS M110 <RHYOLITE AND DIORITE DIKES PARALLEL THE QUARTZ VEIN. DIORITE MINERALIZED AND CONSTITUTES ORE. VEIN CUT BY FAULT WHICH TRENDS N70W, DIPPING 80 N>

DESCRIPTION OF WORKINGS

*Workings are: SURFACE M120 UNDERGROUND M130 BOTH M140 (circle one) *OVERALL LENGTH M190 <600> *UNITS M191 <FT>
*DEPTH BELOW SURFACE M160 <1300> *UNITS M161 <FT> *OVERALL WIDTH M200 <15> *UNITS M201 <FT>
*LENGTH OF WORKINGS M170 <7000> *UNITS M171 <FT> *OVERALL AREA M210 <9000> *UNITS M211 <SQ FT>
DESC. OF WORK. COM. M220 <2 INCLINED SHAFTS, 800 AND 1300 FT DEEP. LEVELS ARE SPACED 100 FT APART>

GEOLOGY

AGE OF HOST ROCK(S) K1 <P.R.O.T. T.E.R.T. ▼ UNDATED, PROBABLY 1720 MILLION YEARS AND OLDER; UNDATED, PROBABLY MIOCENE>
HOST ROCK TYPE(S) K1A <GRANITE ; ANESITE, DIORITE, RHYOLITE>
AGE OF IGNEOUS ROCK(S) K2 <P.R.O.T. T.E.R.T. ▼ AS LINE K1>
IGNEOUS ROCK TYPE(S) K2A <AS LINE K1A>
AGE OF MINERALIZATION K3 <T.E.R.T. ▼ UNDATED, PROBABLY MIOCENE>
PERT. MINERALS (NOT ORE) K4 <QUARTZ>
ORE CONTROL/LOCUS K5 <FAULTING, SHEARING, IGNEOUS ACTIVITY>
MAJ. REG. TRENDS/STRUCT. N5 <FOLIATION IN PRECAMBRIAN METAMORPHIC ROCKS TRENDS N10E TO N25E; GRANITIC ROCKS UNFOLIATED>
TECTONIC SETTING N15 <>
SIGNIFICANT LOCAL STRUCT. N70 <VEINS PARALLEL MAFIC DIKES WHICH TREND NORTHEAST AND DIP AT LOW ANGLES, USUALLY LESS THAN 40 DEGREES>
SIGNIFICANT ALTERATION N75 <MINOR SERICITE ALONG VEIN WALLS>
PROCESS OF CONC./ENRICH. N80 <OXIDATION AT NEAR SURFACE>
FORMATION AGE N30 <▼>
FORMATION NAME N30A <>
SECOND FM AGE N35 <▼>
SECOND FM NAME N35A <>
IGNEOUS UNIT AGE N50 <P.R.O.T. ▼ UNDATED, PROBABLY 1710 MILLION YEARS OR OLDER>
IGNEOUS UNIT NAME N50A <UNNAMED GRANITIC ROCKS>
SECOND IG. UNIT AGE N55 <T.E.R.T. ▼ UNDATED, PROBABLY MIOCENE ; POSSIBLY OLDER TERTIARY>
SECOND IG. UNIT NAME N55A <UNNAMED ANDESITE AND DIORITE DIKES, RHYOLITE DIKE>
GEOLOGY COMMENTS N85 <DEPOSIT IS QUARTZ VEIN WHICH CUTS PRECAMBRIAN GRANITIC ROCKS. VEIN LOCALIZED ALONG SHALLOWLY-DIPPING ANDESITE AND DIORITE DIKES.>

GENERAL COMMENTS

GENERAL COMMENTS GEN <>

M. COMPANY
ENGINEERING
MINING
CONSTRUCTION

FRANK J. MONTONATI
MINING ENGINEER
Box 662
1036 Reese Street
Silverton, Colorado
81433
303-387-5734

Refer to:

STATE MINE INSPECTOR

AUG 21 1984

Mr. Dave Hamm
State Mine Inspector
705 W.Wing Capitol Building
Phoenix, Az.
85007

Dear Mr. Hamm,

Please be advised that MCO will commence operations at the Crown King Mine on or about 8/17/84. We plan to gain access to an old existing drift and perhaps extend it for sampling purposes. Estimated time for this job is approximately 3 weeks.

MCO will also commence operations on surface at the Alvarado Mine on or about 8/24/84. This work will entail surface sampling the vein outcrop with a backhoe. Estimated time, about 1 week.

MCO will be involved with some road and drill site R & R at the Cleopatra near Alamo Lake, starting on or about 8/24/84. Estimated time on site, approximately 3 weeks.

I would like to make arrangements with you to do an emmissions test on a loader at the Crown King Mine and a grounding test at the Gladiator Mine.

Please contact me so that we may set up a time that is convenient for you.

Sincerely,

Frank Montonati

Frank Montonati
MCO

Abstracted 8/19/80
MPW

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Alvarado

Date August 13, 1980

District Rich Hill (Octave, Weaver)

Engineer Clifford J. Hicks CJH

Subject: Field Visit

The Alvarado Mine is located on the south slope of the Weaver Mountains six miles northeast of Congress in Sec. 21, T10N, R5W, Yavapai County. It is being sampled by the Pope Mining Company, 205 Paramount Plaza, Amarillo, Texas 79101, which is a wholly owned subsidiary of Scarth Petroleum Inc., Box 14049 Petroleum Bldg., Amarillo, Texas 79101.

Mr. Charles Moores, an experienced miner, P.O. Box 407, Congress, Arizona 85332, ph. 427-3718, is in charge and is conducting an underground and surface sampling program. Mineralization is mainly gold. Very little silver. So far, assay returns on the outcrops have been marginal.

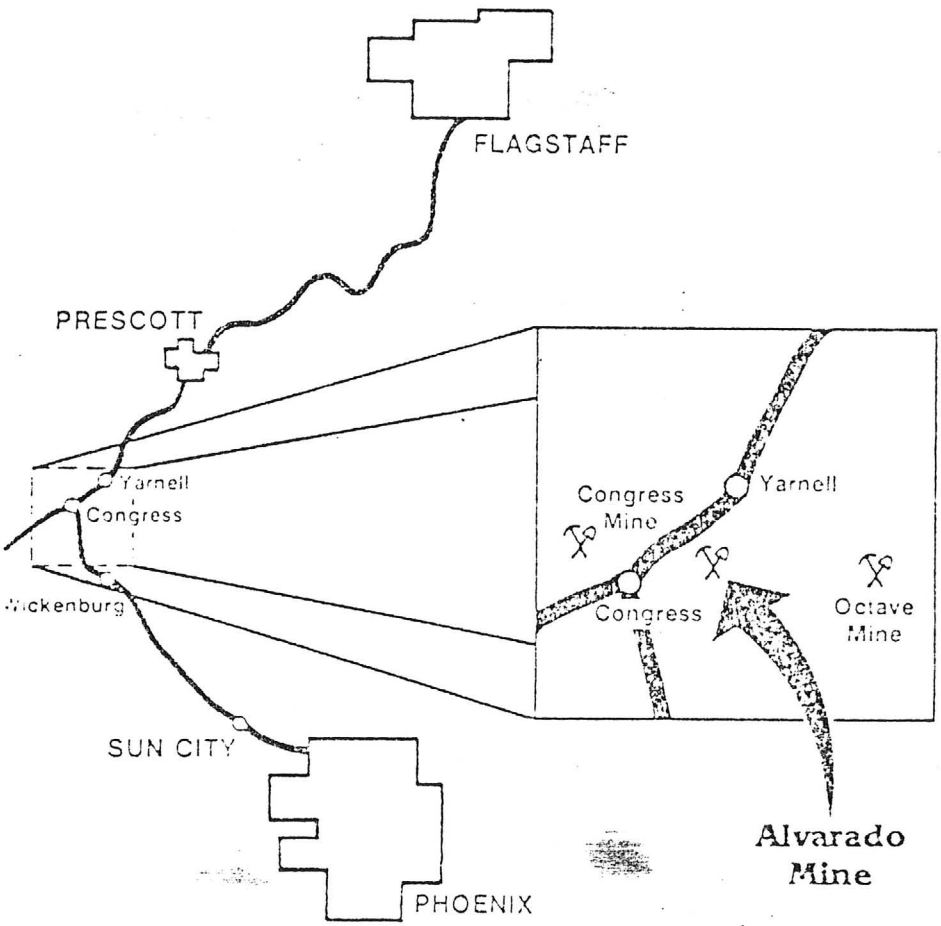
The flooded declined shafts (-30°) are on the property, one is 800 ft. and the other 1300 ft. These shaft lengths as given by Mr. Moores are different than those indicated in the mine file. He has pulled the water down 250 ft. in the deeper shaft and 300 ft. down in the shallower. Exposed quartz veins in the deeper shaft are reported to be from 2-5 ft. wide.

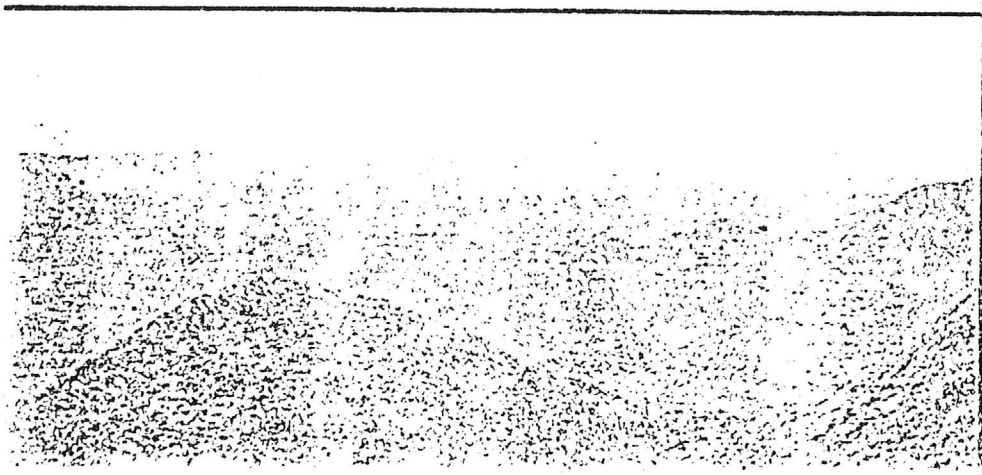
Seventy-five samples have been taken so far and seventy-five more will be taken. The results will determine what action will be taken. Samples are being assayed at the Iron King.

Alvarado

A sound investment in Arizona minerals and real estate

Offered by Nevada Land & Mining Co.





DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Area: Mine Rich Hill Gold Lode & Placer — Date December 20 & 21, 1973

District Rich Hill (Octave, Weaver, Stanton) Yavapai County — Engineer R. E. LEHNER

Subject: Visit to area See page 3 for Alvarado Mine

Location: Secs 29, 32, T10N R4W and Secs 25, 26, 36 T10N R5W (about 9 miles east of Congress, Yavapai County)

Owners: Many individuals

Resume of Activities: This gold placer and lode area is at the southwestern margin of the Weaver Mountains where Rich Hill is an isolated extension between the deeply eroded canyons at Antelope Creek on the west and Weaver Creek on the east. In the early 1880's loose nuggets were discovered on top of Rich Hill and this led to the finding of placers on Weaver & Antelope creeks. The loose gold beneath boulders and in crevices of rocks on Rich Hill was easily gathered, but more effort was required to work the bouldery gravels of Weaver & Antelope creeks by panning, jigging, tabling and sluicing. Along the washes and benches below Rich Hill, the placer material consists of iron-stained gravel and sand, up to 10 ft. or more in thickness, together with abundant subangular boulders that are 2 to 6 ft. in diameter. This placer material has been repeatedly worked and now that the price of gold is hoovering at $100/ounce, this area is very active again.

PLACERS:

Weaver Creek (East side of Rich Hill)

1) DEVIL'S NEST CLAIM GROUP - Mr. Vivian Hale owns 14 placer and lode claims in the headwaters of Weaver Creek on the east side of Rich Hill (approx. W1/2 Sec 29 T10N R4W). These claims include the coarse and fine conglomeration of detrital material that has accumulated outward from the base of Rich Hill as it eroded. This loose unconsolidated material has been incised by many tributary courses of Weaver Creek so that now the detrital material occurs as benches and terraces between drainages. Within the drainages, Precambrian bedrock of schist or granite is commonly exposed. The gold-bearing gravels are usually iron stained and contain fragments of hematite, limonite and quartz, derived from gold-bearing veins that dissect Rich Hill. Gray-colored gravel which does not bear free-gold indicates that it was derived from a different source area.

This property has been reworked many times from crude hand=built contraptions and technique to sophisticated jigs, rockers and hydraulic methods making use of a water well drilled on the property. At present one can still pick up a piece of limonite here and there up to the size of a walnut; crush it; pan it; and get some "color". The main interest on the property now is an exposed shear zone in the Precambrian schist which is capped by the red-colored detrital bouldery gravel. The owner says that this schist zone (40± ft. wide) carries values that average 3oz gold/ton; 11 oz platinum/ton; and 2oz palladium/ton. Mr. Hale's helper (Bruce Allen) states that he is a metallurgist and has worked for the Atomic Energy Commission and told that values in the schist are complex salts in a colloidal state which are difficult to extract. He says that a Dr. Fritz (Severtson) a physicist from Houston, is aquiring Hale's property through an option-to-purchase agreement and that he intends to mine this zone. I collected a channel sample across this zone in the schist for the Arizona Bureau of

Mines to assay and study. I feel that it is probable that any gold in the schist could be the very fine material that has washed down and accumulated in this zone.

2) SEEN PROPERTY - This property consists of two claims (lode & placer?) on the southwest corner of the Devil's Nest group and is owned by a Jim Sweeney, et al. Part of their activity is chiseling away at an inclined 4-inch wide quartz vein for a length of about 15 feet, hand-cobbing this oxidized sulfide portions, pulverizing the material, panning, and retrieving a penny-weight (0.05 oz) or two of gold. On another portion of their ground they were setting up an operation where they would use a small hydraulic dredge that would pump the gravel into a flume which ran down hill to a jig where the coarse material (+1/8") was removed; the finer material traveling down-hill in the flume to a table where the gold would settle out first and then black sand with the fine, lighter rejects going into a settling tank. The water was recycled. It was told to me that it is necessary to move 200 yds/day to make a go of it.

Sweeney & his partners were concerned about finding a market (smelter) who would accept the black sand saying that it was gold bearing. I understand that they have given samples of the same to Mr. Jett who in turn has asked the Arizona Bureau of Mines to analyze them.

3) Miscellaneous Ownerships - South of the Hale property a Mr. Fred Elliston owns two claims, and south of Elliston there are four claims owned by Lyons. To the east of Hale's property is State land and there are several claims being worked there. Amongst the several owners there seems to be some dissension about the fact that claim corners are not maintained and they don't know where property boundaries are, and the amount of property promotion that is going on.

An outfit called Unico from Utah had a placer operation down Weaver Creek several months ago. They used a trammel and sluice in their operations, and failed to be successful in their venture. At their point of operations, the gold would have to be very fine being so far away from its source. To retrieve such fine material, if it existed there, an amalgamation process perhaps would have to be used.

ANTELOPE CREEK (West Side of Rich Hill)

1) MacElony (sp?) property contained much gold placering machinery and equipment (approx. 10N R5W sec 25 east side of road) No one home.

2) Jack Devault's Hardscrabble Mine is located just south of MacEloney's but on west side of road. No activity but old equipment around. A new grizzly and jig had been built in yard near home. No one home.

3) Weese placer property (approx. N. part of Sec 36 T10N R15W). Owner had left for Ohio for holidays according to a Mr. Kirkpatrick (caretaker). He couldn't tell me much about the property except that a geodesic dome adjacent to Weese's house contained a chemical assay laboratory owned by someone from Phoenix.

4) The Rich HillMining Corp. holds Hackberry claims Nos. 2, 3, 4, 5, 6 & 7, in Sec. 1, T9N R5W. Mr. I.A. LaRue is principal owner. No activity was under way at the time of my visit but it appeared that new bull dozer work had been performed. No one on property.

MISCELLANEOUS:

Octave Mine: This mine (Sec. 6 T9N R4W) was the principal one in the area, being discovered in the 1860's, but not worked extensively until late 1890's and early 1900's when cyanide process was used. Between 1907 & 1918 there was little mining, but development work was carried on till 1922. Between 1928 and 1930 there was a 50-ton flotation plant which treated 9,100 tons of ore containing equal proportion of gold and silver by weight. In 1934 the mine was idle, and the workings which extended to a depth of 2,000 feet on the incline and included four shafts with several thousand feet of drifts and extensive stopes on three ore shoots were under water.

The main Octave vein occurred within a fault fissure that strikes N 70° E and dips 20° to 30° NW. The vein consists of quartz with irregular masses and disseminations of fine-grained pyrite, galena and sparse chalcopyrite. The gold is tied in with the sulphides, chiefly galena.

Alvarado Mine: Sec 26, T10N R5W. It was developed by two inclined shafts about 1905 and made a small production. Surface equipment was dismantled in 1920. At present, Mr. Bill Muntz has the property and is working his Alaskan jade there as a concession.

Congress Mine: Several months ago Homestake Mining sampled dumps and have never returned. They apparently have dropped their interest in it. The surface belongs to Jaquays of Phoenix and the underground is owned by Ben Williams of Cottonwood.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Alvarado

Date Sept. 20, 1954

District Weaver - Yavapai County

Engineer Mark Gemmill

Subject: Present Status

The property be came idle in 1942 due to the Gold Closing order and the added fact that pay ore was about exhausted. The owners have sold off all surface equipment but continue to hold the property. It is reported there is still a large tonnage of very low grade ore in the mine which would be profitable only if gold were much higher and present costs much lower

SURVEY OF OPERATING MINES

By A. C. Nebeker

DEPT. MINERAL RESOURCES
RECEIVED
JUN 8 1942
PHOENIX, ARIZONA

JUNE 5TH 1942

LIBERTY HILL GOLD MINES Ltd

Alvarado Mine
Yarnell, Arizona

R,P.M.Da vis Pres
L.L.Farnha m Gen Supt.

I went up to this mine from Congress Junction found about 40 men working, but there was no one there to give out any information, Mr Farnham was away for several days.

This is a gold producing mine and it is rumored that on the Ist of July this property will stop.

I saw Mr Farnham a couple of weeks ago at the Hackberry mine, he then told me they were moving out of Yarnell or Congress very soon.

They only boys that I were able to talk to said Farnham would be the only man that could give out information on the Salvage question.

A C Nebeker

G-10

File

MINERAL SPECIMEN FOR DEPARTMENT OF LIBRARY AND ARCHIVES

MM K148
6x4x5 cm
3.5 oz

(Do not write in this space)

Ore _____

Cabinet _____

No. _____

(Wrap each specimen separately, or place it in a substantial bag, by itself, with a number attached, identical with the number on this card.)

Specimen No. 1, collected by Carl G. Barth, Jr. Field Engineer

Name of ore: Gold Ore

Minerals contained: Gold, Silver, Galena, ~~Pyrite~~

Gangue: Quartz, Barite

Depth at which taken: 1200 level.

Approximate mineral content (in terms of average per ton): Mill average $ 9.00

Name of mine or claim: _____

Group: Alvorado

District: Weaver

Location (distance and direction by highway from what town: 5 miles NE Congress

Owner of property: Liberty Hill Gold Mines Ltd.

Operator: Liberty Hill Gold Mines Ltd.

Mine active or inactive: Active

If inactive, when operated: _____

Specimen presented by: L.L.Farnum

Date: March 1,1940

Notes (Any general information regarding the history of the property.)
Patented 1897

Operated by Planet Saturn Mining Co.

Idle 30 years

If more space is desired for notes, use other side.

This specimen is now in the ADMR Museum (see K number). MM K148

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Alvorado Date Jan. 1, 1940

District Weaver Engineer Carl G. Borth, Jr.

Subject: Liberty Hills Gold Mine Ltd.

Ask to see photo file

ASK TO
SEE PHOTO FILE

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Date October 10, 1939

Mine ALVORADO

Engineer

District Weaver

Location 5 miles northeast of Congress

Former name Planet-Saturn +

Owner Liberty Hill Gold Mines, Ltd.
R.P.M.Davis

Address

Operator Same

Address Congress, Arizona

President R.P.M.Davis

Gen. Mgr. L. L. Farnham

Mine Supt. A.L.Worcester

Mill Supt. Joseph Kline

Principal Metals Gold & Silver

Men Employed 36

Production Rate 90 tons daily

Mill: Type & Cap Continuous Decantation Cyanide Plant. Southwestern Engineering Co.

Power: Amt. & Type Purchased elecrric. Approx. 300HP

Operations: Present Mining and Developing 90 tons daily

ALVARADO

Au, Ag

Yavapai 13 - 7 T 10 N, R 5 W

R.P.M. Davis, Hollywood, Calif. '40

Operations Planned Continue as above

Number Claims, Title, etc. Two (2) patented lode claims along the strike of the vein.
Two side claims and three placer claims patented. Several unpatented.

Description: Topog. & Geog. Steep slopes and deep washes. In Desert country.
Elev. 3400'

Mine Workings: Amt. & Condition One shaft 1400 feet, with levels each 100 feet. One shaft 1000 feet deep connected at 600 level but undeveloped.

(over)

DEPARTMENT OF MINERAL RESOURCES

News Items

Date June 23, 1939

Mine Alvarado

Location 5 miles NE of Congress

Owner Liberty Hills Gold Mines, Ltd.

Address Congress

Operating Co. Liberty Hills G. Mines, Ltd.

Address Congress

Pres. R. P. M. Davis

Genl. Mgr. L. L. Farnham

Mine Supt. A. A. Worcester

Mill Supt. Joseph Kline

Principal Metals gold-silver

Men Employed 35

Production Rate 90 tons daily

Mill, Type & Capacity 90 tons

All Sliming Cyanide Mill

Power, Amt. & Type

purchased electric

Signed Carl G. Barth, Jr.

(Over)

DEPARTMENT OF MINERAL RESOURCES

News Items

Date 6/21 39 ?

Mine ALVARADO

Location WEAVER DIST. YAVAPAI.

Owner LIBERTY HILL GOLD MINING CO.

Address CONGRESS.

Operating Co. ORIGINAL MILL CAPACITY 50 TONS.

Address PRESENT CAPACITY 135 TONS

INCREASE DUE TO FINDING

Pres. COARSER GRINDING GAVE

Genl. Mgr. GOOD RECOVERY. -

Mine Supt. PLACED ROLLS AS SECONDARY

Mill Supt. CRUSHER - THEN SIMPLICITY

Principal Metals VIBRATING SCREEN ON

Men Employed 1/2 OF CLASSIFIER OVERFLOW

Production Rate OVERSIZE DIRECT TO BALL

Mill, Type & Capacity MILL FOR REGRIND

UNDERSIZE TO DEISTER TABLE -

Power, Amt. & Type TAILS TO CYANIDE

TANKS - WIDE CONC. CUT TO BALL

MILL FOR REGRIND.

Signed

(Over)

DEPARTMENT OF MINERAL RESOURCES

News Items

Date Aug. 15, 1939

Mine Alvarado

Location Congress

Owner

Address

Operating Co. Liberty Hill G.M. Inc

Address

Pres.

Genl. Mgr.

Mine Supt.

Mill Supt.

Principal Metals

Men Employed 35

Production Rate 93 tons

Mill, Type & Capacity New Dubb drum hoist

Power, Amt. & Type installed for tailings handling

Signed Barth

(Over)

Prese Operations

Stoping - drifting 600' level p--

preparing to sink winze 1400 level to

1500

New Work Planned

Miscl. Notes

Prese. Operations THUS CUT

CIRCULATING BALL MILL LOAD

& STEPPED UP CAPACITY -

USING OLD DUMPS - HAULED TO

New Work Planned CRUSHING PLANT BY

DRAG LINE - AS BACK LOG TO

KEEP UP MILL CAPACITY.

#

Miscl. Notes CHECK THIS ITEM

RUMORED THAT ALVARADO

HAS CLOSED DEAL TAKING

OVER RINCON MINE.

L.L. FARNHAM IN CALIF.

WAS UNABLE TO CHECK 6/21

(Over)

Presen. Operations

New Work Planned

Miscl. Notes

Gold

Alvorado Mine, Liberty Hill Mines Ltd. Farnham being absent I put in considerable time with the Mill Super Mr. Kline. Difficulties with filtering has been obviated by the use of 10 ounce duck, washed every other day with 50% Muriatic Acid. Small Filter takes the entire load. Thickeners and Agitators have been reduced in speed assisting somewhat in the filter problem and reducing power consumption. New development work has been started adding to the number of employees.

6-21-39

March 1916

On the Alvarado east of the Rincon, is also contemplated some active work. Several carloads of coal have been ordered for the purpose of operating the boilers and the pumps. This property is down over 1,100 feet, with numerous levels and large tonnage of ore blocked out. It also has a complete 20 stamp mill and all other equipment this property also met with vicissitudes through law suits, but now that these have been settled there is every possibility that it will be started in continuous operation.