**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

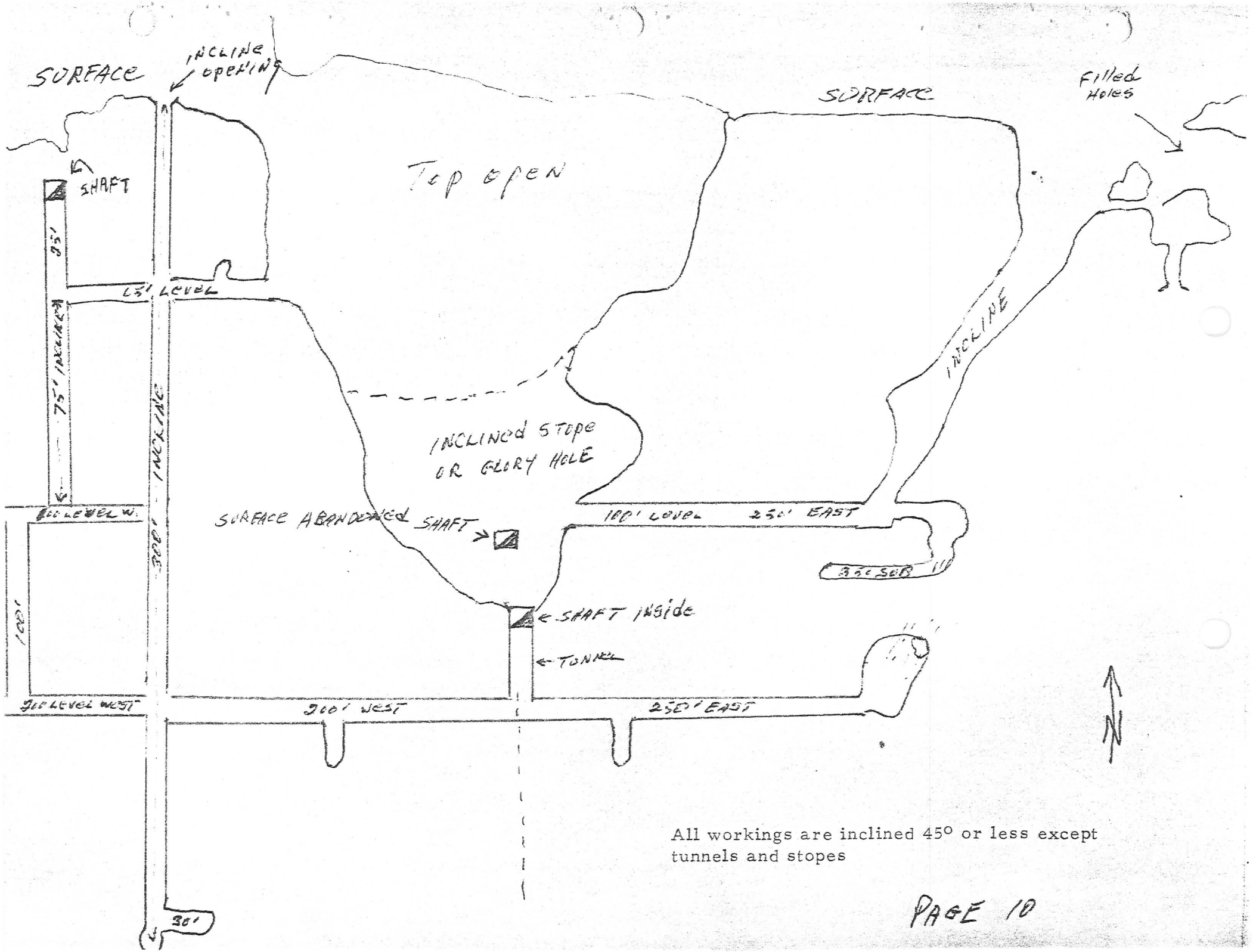
Old Yuma

C.J.S.
1930


Block from C. J. Searle 1930

| | AU. | AG | PB | MO03 | V205 |
|---|---|---|---|---|---|
| A | 0.10 | 0.16 | 2.7 | 0.53 | 0.38 |
| B | 0.085 | 0.54 | 2.4 | 0.31 | 0.54 |
| C | 0.06 | 0.63 | 2.9 | 0.34 | 0.58 |
| D | 0.12 | 1.52 | 7.61 | 1.22 | 0.36 |
| E | 0.066 | 0.29 | 2.3 | 0.41 | 0.41 |
| F | 0.079 | 0.65 | 4.05 | 0.80 | 0.47 |

6000
2700
10,000
2700
7860
6006




All workings are inclined 45° or less except tunnels and stopes

MAV

State of Arizona
County PIMA } ss

I hereby certify that the within instrument was filed and recorded

on DEC 27 1979 - 3 05 PM
in Docket 6183
at Page 959
at the request of Richard L. Jones

In witness whereof I have hereunto set my hand and seal.

JOE BEDARD
County Recorder
Stanford Buchanan
Deputy County Recorder

COUNTY RECORDER PIMA COUNTY ARIZONA

Fee No. 153758

Compared

Photostated

Fee 3.00

When recorded mail to:

# LOCATION NOTICE

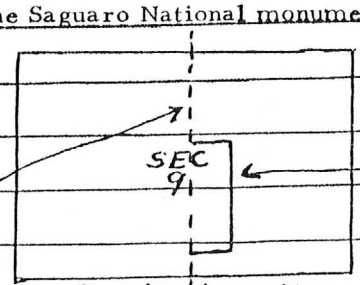
## Lode Mining Claim

This mining claim, the name of which is the COMET, FORMERLY YUMA MINE mining claim, was located by the undersigned Richard L and Helen Jones on the 27th day of December 19 79

This claim is 1500 feet long and 600 feet wide, and the point of discovery is 350 feet from the North end and 1150 feet from the South end of this claim.

The general course of this claim is from North to South

This claim is situated and located in the Amole Mining District, in Pima County, State of Arizona, about ~~½~~ one half mile in a southerly direction from Picture rocks retreat in the East center ½ of section 9, Township 13 South, Range 12 East abutting the boundary (east side) of the Saguaro National monument. OLD WORKINGS ON CLAIM




Dated and posted on the ground the day and year first above written.

? K. Richardson WITNESS

Richard L. Jones
Helen M. Jones
117 W 10th ST
CASA GRANDE, ARIZONA
85222

COPY

STATE OF ARIZONA, } ss.
County of PIMA

I hereby certify that the within instrument was filed and recorded AUG 28 1980 -4 35 PM, 19___, at ___M.
In Docket No. 6353, Page 1160-1161, at the request of Richard L. Jones

Witness my hand and official seal.
JOE BENARD PIMA COUNTY ARIZONA
County Recorder
By Karen for
Deputy Recorder

Fee No.: 091245

Fee: $ 3.00

When recorded mail to:
Richard L. Jones
117 West 10th Street
Casa Grande, Arizona

# NOTICE OF MINING CLAIM LOCATION

1. ☐ Location ☒ Amendment AMC94793 ☐ Relocation
2. ☐ Placer ☒ Lode ☐ Millsite ☐ Tunnelsite

Recorded to better locate the position of the claim.

3. The name and address of the Locator is

Richard L Jones or Helen M. Jones
Name

117 West 10th Street
Address

Casa Grande, Arizona 85222
City State Zip

4. The name of the claim is Comet, formerly Yuma Mine AMC # 94793
5. The date of the location is December 27, 1979
6. The claim is 1500 feet long and 600 feet wide. The distance from the Location monument to each end of the claim is 350 feet in a North direction and 1150 feet in a south direction.
7. The general course of the claim is from the North to the South.
8. The location of the claim is in Section 9, Township 13 South, Range 12 East G&SRB&M, Amole Mining District, Pima County, Arizona.
9. If amending or relocating, the previous claim name was same as above, Comet formerly Yuma Mine AMC# 94793. recorded in Docket 959, Book 6183, Amole Mining District, Pima County, Arizona.
10. The location of the claim with reference to a natural object or permanent monument is south, 3800 feet to the northeast corner of claim from Benchmarker # 2361 located on the north side of picture rocks road. The claim is further located in the Northwest ¼ of the Southeast ¼ of Section 9 and the Southwest ¼ of the Southeast ¼ of Section 9, Township 13 South, Range 12 East, G&SRB&M. Claim is also aligned with its west side against the East Side boundary of the Saguaro National Monument. Old workings on claim. two inclines, one stoped out pit. numerous levels and small openings.

COPY

Richard L. Jones
Helen M Jones
Signature

Date August 25, 1980

Witness Elizabeth R. Richardson

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# MAP OF MINING CLAIM LOCATION

1. The name of the claim is Comet, Formerly the Yuma Mine AMC# 94793

2. The Northeast corner of the claim is 3800 feet in a South direction from a survey monument or permanent natural object described as Benchmarker 2361 located on the north side of picture rocks road.

3. The type of location monument is 4" x 4" wood post and stone

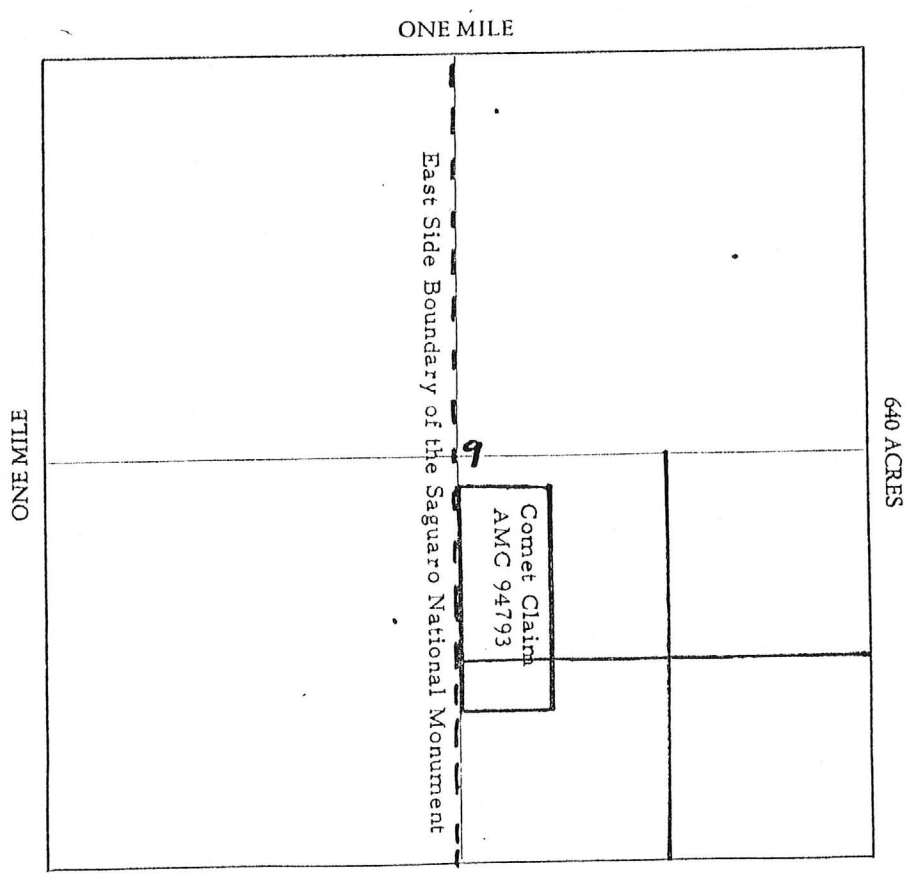
   The type of corner and end monuments are 4" x 4" wood post and stone.

4. The bearing and distance between the corners of the claim are beginning at the Northeast corner of the claim, 1500 feet in a south direction to the Southeast corner, then 600 feet in a west direction to the Southwest corner, then 1500 feet in a North direction to the Northwest corner, then 600 feet in a East direction to the point of beginning.

## MAP

One inch = One thousand feet

North Arrow




Section 9 Range 12 East Township 13 South, G&SRB&M

Date August 25, 1980

Richard K. Jones

Helen M Jones

Signature

COPY

6353 PAGE 1161

# United States Department of the Interior

BUREAU OF LAND MANAGEMENT
ARIZONA STATE OFFICE
2400 VALLEY BANK CENTER
PHOENIX, ARIZONA 85073


IN REPLY REFER TO
A MC 94793 (952)

July 1, 1980

Mr. Richard L. Jones
117 W. 10th Street
Casa Grande, Arizona 85222

Dear Mr. Jones:

This letter is to identify the serial number we have assigned to your mining claim location notice filed in this office on February 1, 1980.

| Serial Number | Name of Claim |
|---|---|
| A MC 94793 | Comet |

Please refer to the claim name and the serial number in any future correspondence.

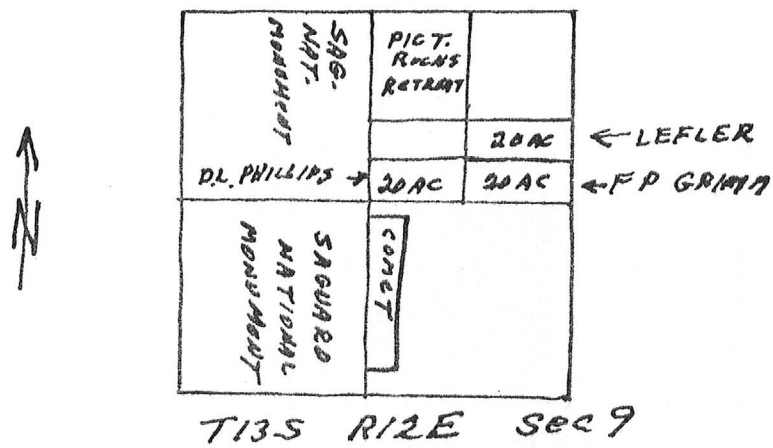
A photocopy of your recorded Affidavit of Labor Performed or Notice of Intent to Hold for the 1979-1980 assessment year should be filed in this office on or before December 30, 1980. To be acceptable, the affidavit must show the work done during the period noon September 1, 1979 to noon September 1, 1980. No fee is required.

Sincerely,

Robert L. Peterson
Chief, Branch of Records
and Data Management

Enclosure:
Regulations 43 CFR 3833

COPY




MAP Showing PRIVATE PROPERTY
AS OF Sept 1, 1980

AMOLE PEAK

Elevation 4683 feet
Spanish for "soap root"

This peak first appeared on the Roskruge map (1893) as Wasson Peak, named for John A. Wasson Born 1833 Died January 16, 1909 a newspaper man, who arrived in California in 1852, coming to Arizona at a later date which is not known. During the establishment of the Arizona public school system, Wasson was right hand man to Governor A. P. K. Safford. Wasson started the Arizona Citizen newspaper and was its editor and publisher for many years. Despite the fact that there are no more yucca plants ( from which soap is occasionally made) at this peak than elsewhere, the name was changed from Wasson Peak by eldred D. Wilson and his partner Jenkins when a prospector told them the name was Amole Peak.

This reference is printed under Pima County, Arizona in the 1960 edition of Arizona Place Names. AMOLE PEAK.

CONTZEN PASS
Elevation 3200 Feet
This pass located just northwest of the Old Yuma Mine was probably named for Fritz Contzen born in Germany February 27, 1831 Died May 2, 1909 who came to Arizona with the Boundary Survey party in 1856.

Reference: Arizona Place Names. Edition 1960.

Cortaro, Arizona
Nearest Town to the Old Yuma Mine.
This name is spanish which is Cortar, to cut as the trees, mesquite and ironwood were all cut off the original Cortaro Farms land which originally occupied this area. Post Office established July 16, 1920. Richard C. Hunter, Postmaster at the time of establishment.

# THE OLD YUMA MINE.



LOCATION:--14 miles northwesterly from Tucson. The route is over the Silverbell, a fine level, graded road for 11 miles, along the west bank of the Santa Cruz river, thence 2 3/4 miles to the mine. This last 3/4 mile is in the sandy bed of the canyon, all the balance is first-class for either heavy teaming or fast auto travel.

There is an abundance of wood for fuel--palo verde and iron wood, between the river and the mine. Water for camp use is now brought from a spring 3/4 mile away but indications are good for the development of a good supply near the mine.

FORMATION:--of this Amolo range, as given in goverment reports, is tertiary volcanics. the Old Yuma ore bodies occur in the contact of the porphyry and lime--the lime being so altered as to be scarcely recognizable. The Old Yuma has been twice visited by Frederick W. Horton, of the U. S. laboratory at Denver, who has made some very interesting and successful tests with the ores--by wet and dry concentration. The mineralization has evidently occured at several periods as the characteristic minerals--wulfenite, vanadinite and galena are often found seperately, filling fracture planes or replacing the lime stone. At one place in the stopes considerable copper appears but the bulk of the ore shows no copper whatever. Some 800 feet to the east of the main incline two shafts on parallel veins show some copper ore assaying over 20 %. est of the incline the croppings exposed by the grading for the road show quite a percent of galena. The vein extends east and west and the chain of hills, of which it forms the backbone, are stained black with the oxides of iron and manganese.

DEVELOPMENT:--The main incline has a depth of over 300feet, following the ore at a dip of about 45 degrees to the south. There is a good showing of ore to the 200 level, where the grade of the incline was lessened and the ore was probably passed over. A smooth slip, having the appearance of a wall, was left as a roof, but at one place where several feet caved down it is seen to be vein matter carrying the usual minerals. Levels are run on the 100, 200 and the 300, that on the 100 extending for several hundred feet to the east and having raises and stopes connected by a vertical shaft with the surface, furnishing perfect ventilation and an easy outlet for ore. The incline is well timbered with railroad ties and fitted with track, skip and ~~bucket and a gasoline hoist~~. bucket and a gasoline hoist.

The width and character of ore varries--in places it occurs as pure crystals filling seams several inches wide , the entire workings are in vein matter the richer yielding from 5 to 30 percent of the rare mineral concentrates.

There are a number of other shafts, the principal being about 500 feet to the east of the incline, and having a level extending about 100 feet in the direction of the incline and lacking but little of connecting with the stopes. This level shows good ore all the way, increasing in quantity and quality as it approaches the incline. A number of other prospect shafts are sunk on the vein to the east, all showing ore. The last exposure of ore to the east is some 3,000 feet away, the croppings being continous for that distance, and also to the west to the limits of the three full claims which are taken on the vein.

The property consists of five full claims, three on the vein and two adjoining on the side of the dip. A mill site is located on the spring, 3/4 mile away, of which a half interest is included with the property.

The nearest railroad station is Jaynes, on the main S. P. line, six miles away, but there is a siding two miles nearer. The power wires of the Tucson company extend to near Jaynes, as also the telephone,

[redacted]

[illegible]--The development of the Old Yuma mine was under-
[illegible] with the object of exploiting its gold, silver and lead values,
the rarer mineral not having, then their present value or importance.
While the [illegible] of the property have secured assays as high
in gold, ore [illegible] the stope giving over an ounce
other [illegible] results and while no doubt the gold and
silver [illegible] expenses these metals are con-
[illegible] devoted to the rare miner-
als--of vanadium and molybdenum. As but a few small shipments were
made to the smelter the main dump contains several thousand tons of
material, all from the vein but not all of which would pay to treat.
Of this dump is a pile of some 50 tons of screenings from ore from the
richer ore in the stopes. A sample consisting of 340 pounds of
this was used for a milling test over a Sutton & Steele dry jig.
This sample assayed:--
Gold, .75 oz; Silver, .4 oz; Lead, 18.1 %; Molybdenum trioxide 11.2 %; Vanadium pentoxide 1.7 %
90 pounds of concentrates produced assayed:--and had the following
approximate market value:--

| | | | |
|---|---|---|---|
| gold, | .96 ozs, | value | 19.20 |
| silver, | .6 ozs | " | .30 |
| Molybdenum oxide, | 24.9 %, | at 60 cents per lb, | 298.80 |
| Vanadium oxide, | 3.54 % | at 50 cts " | 354.00 |
| Lead, | 46 %, | at 2 cents, (2.5) | 27.60 |
| | | Value per ton, | 381.30 372 |

While this showed an extraction of but 33 % of the goldand 60 % of the rare minerals a repassing of the pulp over the same dry jig gave 82 lbs of a good middling product and the tails now showed scarcely any free mineral in the pan, showing the adaptability of this ore to dry concentration--- a medium grade ore of say 10 % mineral content would no doubt give clean separation the first time over the jig. It was designed to use the dry process at the mine simply to concentrate the values for transportation to the river where a good wet table would be used to make the highest grade product possible.

A sample of the leads treated in an amalgamated copper pan assayed but .15 oz in gold, showing an extraction by this method of 80 %. Cyanide tests were not made although it would seem that this process would be peculiarly adapted to recovering the gold and silver from the tails from the treatment for the rare metals.

No systematic sampling has been done, but from the large dump a general sample was taken and sorted into two grades. The selected or banding gave 8.5 % of concentrates, and the refuse 2. %. From the dump at the first staff to the east, a sample gave 3.5 % of concentrates. These tests, incomplete as they are, indicate good values in suffecient quantities and also the practicability of a good extraction by simple means into a marketable product.

PLANT PARTLY INSTALLED:--consists of a 14 inch Blake crusher, 2 sets of 14 x 24 McCullough disc pulverizers, 1 Sutton & Steele dry jig or concentrator; ore bin below the crusher, shafting, pulleys, etc. A screen and an elevator to return the oversize is on hand also a 2 H. P. gas engine and a 4 x 6 Dodge crusher. It was designed to install a 20 or 30 H. P. engine to run the plant. This plant is so placed near the dump that cars can run and discharge on a platform at the crusher.

As before stated the main incline is equipped with track, cable, skip, buckets and a gasoline hoist. There is also a large [illegible] covering, blacksmith shop, tools, etc.

A. L. Pellegrini

Tucson, Ariz, Nov. 20, 1914.

[redacted]

[illegible] YOU A MINE.

---

[illegible] taken from ore dump at main incline, southern end, 125 x 25 x [illegible] feet in average depth, containing about 1,000 tons:----

| | | | | | |
|---|---|---|---|---|---|
| Silver, | 1. oz, | .50, | Molibdic oxide, | 1.86 %, | |
| Gold, | [illegible] | 7.50 | @ 60 cts per pound, | | $ 22.30 |
| Lead, | 5.95 % | @ 2.40 | Vanadic oxide, | .21% @ 50 ¢ | 2.10 |
| Value in common metals, | | $ 10.10 | Value in rare metals, | | $ 24.40 |

---

A concentration test in the pan of the above yielded 5.355 percent of product----in round numbers 1 ton in 20---containing values of:---

| | | | | | |
|---|---|---|---|---|---|
| Silver, | 3.6 ozs, | $ 1.80, | Molibdic oxide, | 22.6 %, | |
| Gold, | 1.98 " | 39.60, | @ 60 ¢ per pound, | | $ 271.20 |
| Lead, | 39.9 %, @ 2, | 16. | Vanadic oxid, | 3.17 % @ 50, | 31.70 |
| Value in common metals, | | $ 57.40 | Value in rare metals, | | $ 302.90 |

| | |
|---|---|
| All above values, per ton, | $ 360.30 |
| Less hauling and freight, | 20. |
| | $ 340.30 |
| Molybdenum contents alone, | $ 271.20 |
| Less hauling and freight, | 20. |
| | $ 251.20 |
| Extraction of gold, $ 32. | |
| Less expense, 2. | 30.00 |
| | $ 281.20 |

---

Assuming the net value of a ton of concentrates to be $ 300., and 20 tons of ore to enter into one of concentrates, the recovery would be $ 15. per ton of ore; allowing an expense of $ 5. the net product is $ 10.
The ground ore or tailings still retain $ 5.20 in gold per ton, and assuming a recovery of $ 4. at an expense of $ 1.50, or $ 2. net, this makes a total net recovery of $ 12.50 per ton, for the 1000 tons--$ 12,500

The northern end of the dump apparently contains a larger tonnage of fully as good an average grade, an estimated total net value of ;- $ 25,000

---

The main incline has a depth of 300 feet, with levels on the 65, 100. 200 and 300. These levels have a lenght of from 100 to 200 feet, and the 100 both to east and west are connected with the surface by vertical shafts. All these workings down to the 200 are in ore of varrying grades no systematic sampling has been done but a careful examination seems to warrant an estimate of [illegible] in terms of a grade yielding 10 percent of concentrates:-----

2000 tons, ~~from the surface down to the 100 level~~
1000 tons from the 100 level to the 200 level,
2000 tons from the above workings and the east shaft; to the surface.
5000 tons, yielding 500 tons of concentrates, at $ 300. = $ 150.000
Gold recovery from tailings @ 2.50, 12.500
Total recovery from dump, ($25,000 TOTAL) $ 187.500.

---

Purchase price of mine, $ 50,000; 15 % of product for two years, then a payment of $ 20,000 less royalties;- $ 10,000 each year for 3 years

# PRELIMINARY TEST

## GOLD YUMA MINE.

Sampling by Blanchard, Sander and A. L. Pellegrin of southern end of ore dump, 12[illegible] x [illegible] x [illegible] feet, 1,000 tons:

| | | | | |
|---|---|---|---|---|
| Silver, | 1 oz, | .50 | Molybdenum oxide, 1.[illegible] %, at 60 cts pound, | $ 22.22 |
| Gold, | [illegible] " | 7.20 | Vanadium oxide, .21 % 50c | 2.10 |
| Lead, | 5.[illegible] % 2c | 3.10 | | |
| Value in common metals, | | ~~10.10~~ $ 10.10 | Val. in rare metals, | $ 24.42 |

The above concentrated in the pan yielded 5.3[illegible] % in round numbers, 20 into one, these concentrates having a value of:=

| | | | | |
|---|---|---|---|---|
| Silver, | 3.6 ozs, | $ 1.80. | Molybdic oxid, 32.6 % @ 60, | $ 271.20 |
| Gold, | 1.98 " | 39.60 | Vanadic " 3.17 % 50, | 31.70 |
| Lead, | 39.9 %, | 16.00 | | |
| Value common metals, | | $ 57.40. | Value rare metals, | $ 302.90 |

All values, per ton, ~~xxxxxxxx~~ $ 360.30, less freight, $ 15.==$ 345.30
Molybdenum contents alone, $271.20 = ~~302.90~~, " " " $ 15. 256.20

Assuming the recoverable values in a ton of concentrates to be $ 300. it would represent $ 15. to the ton of dump ore. Allowing an expense of $ 5. per ton, the net recovery would be $ 10. per ton. The ground ore after concentration retains $ 5.20 per ton in gold, assuming a recovery of $ 4. at an expense of $ ~~1.50~~, or $ 2.50 net, added to the $ 10. from concentrates makes $ 12.50 net recovery per ton. For the 1000 tons . . . $ 12,500.

The northern end of the same dump contains fully as large a tonnage of an apparently equally good grade, which should yield equal returns.

&&&

No sampling of the underground workings have been made but a careful preliminary examination seems to warrant an estimate of

2000 tons from the surface down to the 100level of a grade yielding 10 % of concentrates.-
1000 tons from the 100 level to the 200 level,
2000 tons between the above workings and the east shaft, to the 200 level
5000 tons, giving ~~000~~ 500 tons of concentrates, @ $ ~~15.00~~ ==
$ 300.=====$ 150,000

| | |
|---|---|
| Gold recovery from 5,000 tons @ 2.50, | 12,500 |
| Total recovery from 1000 tons dump, sampled, | 12,500 |
| Estimated yield of north end of dump, | 12,500 |
| Estimated returns from dump and developed ore in mine, | $ 187,500 |

The purchase price of the mine is $ 150,000, first payment of $ 20,000 in two years. From the shipments 15 % is to be paid, to apply as a credit on purchase price.

No estimate is made of ore below the 200 level. On the 200 level there is a good showing of ore but from that point down the incline was driven at a less grade and has lost the ore body.

Machinery now partly installed at the dump consists of 14" Blake crusher, two 14" rolls, Sutton & Steele dry concentrator, etc. To complete this plant, having a capacity of about 20 tons per 24 hours, including a second-hand Wilfley for recleaning the concentrates, would require $1,000 in cash--one third being paid on engines--and the labor and other expense of operation for six weeks, ample to produce one carload of concentrates $ 500.

2 payments on interest in lease, $ 300. surplus, $ 200. Total, $ 2,000.

A. L. Pellegrin

Tucson, Ariz, Nov. 20, 1914.

# Tests on Old Yuma Ore.

There is apparently some error in Table 1; The original ore must have assayed:----

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1A.- +1/2 mesh, | 10.29 % | x .15 Mo, | 1.5435 units Mo; | x 1.87 Pb, | 19.2423 |
| 1B. -1/2 " | 89.71 % | x .847 " | 75.98137 " | ; x 2.92 " | 261.9532 |
| | 100. | total Mo. | 77.52587 " | total Pb. | 281.1955 |

From which the assay of the ore according to the above is:---
Mo. .775 %; Pb. 2.811 %

* * * * * * * * * * *

In the series of tests the material thru 3/4 and on 1/2 (1A) was rejected. Why? It assays Mo. .15 %; Pb, 1.87 %, besides gold, and being already mined, crushed thru 3/4 and higher grade than 1D for example, it should be treated with the balance.

If the ore contains large crystals, it should at the start all be crushed thru 1/2, passed over a 20 mesh screen; the coarse jigged and the tailings recrushed thru 20 mesh and added to the first -20. If there are no large crystals in the particular lot being treated, the ore should all be crushed through the coarsest size screen that has been found to yield a considerable proportion of free crystals--say from 12 to 16 mesh. From now on the treatment should be as given in the Engineering Co.'s test: All the material sized into two sizes, (I believe a 40 would prove better than the 60 recommended), the coarse run over a Wilfley, the tails re-crushed to pass the screen used and combined with the other thru, and this separated into sands and slimes and treated on Wilfleys.

These tailings, all -60, should now be treated with cyanide for the recovery of the gold and silver either by decantation or by filter-pressing;

According to the tests referred to there still remained some 60 % of the lead, although the extraction of the molybdenum was practically perfect--a very strange condition. It should now be possible to recover the larger part of the remaining lead--1.97 % in the low grade sample under treatment--

* * * * * * * * * * *

According to the summary, on Page 2, there was saved 83.08 % of Mo.
add to this that contained in the "reject" 16.92
a complete extraction, proved by tailings being barren,

Of the lead there was saved . . . . 33.03 %
to which add similar proportion in "reject" 2.3
a very poor total saving of . . . . 35.33 %

As in the flotation test the final tails still contained 1.8 % out of the 2.81 % it would indicate no advantage in employing flot. I believe that some modification of the flotation would give result. employing perhaps the gas, H2S, or direct fumes from roasted pyrites some alteration in the mechanical treatment.

* * * * * * *

In the test the concentrates assayed: Mo. 2.03 %
Pb. 24.84
Insol. 29.41

Figuring the Mo to lead molybdate and the balance of the lead t
bonate, etc, and we have:---

| | |
|---|---|
| Lead Molybdate, about | 8. |
| " Carbonate, " | 22. |
| Insol reported, | 29. |
| balance not reported, | 38.7 |
| | 100. |

The unreported contents are probably mostly iron and manganese oxides.

Should the selective flotation be a success the possible result would in each ton of above concentrates treated:----
Floated: 36 % of iron oxides, 720 lbs per ton,
27 % of lead carb, 540 " " "
and this product would assay about 30 % in metallic lead, (balance mostly iron and marketable. No doubt with good gold values
The not floated would be: Lead molybdate, 8 % or 160 lbs per ton
Insoluble 29 % " 580 " " "

~~and this recalculation of concentrates:~~

and this recalculated to percentages would give:----

| | |
|---|---|
| Lead Molybdate, | 21.6 % |
| Insoluble, | 78.4 |

This would be marketable, but there should be no difficulty in removing a large part of the insoluble either by careful concentration on tables or by flotation.

Should it not be feasible to make a separation of the lead molybdate from the carbonate, etc, in the finer sizes, by "selective flotation" the old, well-known process of fusion in reverberatory furnaces with an alkali, the lead being reduced to metallic form by proper amount of carbon and carrying down with it the gold and silver, and the molybdenum and vanadium combining with the alkali as a slag, could be followed profitably. For an alkali the "salt cake" sodium sulfate, a refuse of powder works and also of the desert borax refineries would be the cheapest. It would be used in its proper combining proportion or else in excess and reused until saturated. This sodium molybdate would be dissolved in weak acid and precipitated as oxide or else by the addition of an iron oxide in a form suitable for the electric furnace----there are a number of methods for the treatment of the crude sodium molybdate. The silica, unless removed, would interfere with therecovery, but some methods have been devised for overcoming its bad effects.

As the molybdenum sulphide brings so much more in the market, it should be feasible to have the final product in this form at a cost giving a profit.

* * * * * *

Returning to Table 1, the sample is given as containing:--
Mo. .775 % which would require of lead, to form the molybdate, about 2.1 %, and as the contents in lead are given as 2.81 %, of which but 40 % is saved, or 1.12 % the figures do not agree, as all the molybdenum is saved. However calculating the recovery to be 2 % of lead molybdate, 1.5 % of lead, .5 oz in silver and .1 oz gold per ton of average ore treated, the values would be about as follows:------

| | | | |
|---|---|---|---|
| Lead molybdate, | 2 %, or 40 lbs, | @ 50 cts, | $ 20.00 |
| Lead, | 1.5 % " 30 " | @ 4 " | 1.20 |
| Gold, | .1 oz, | | 2.00 |
| Silver, | .5 " | | .30 |
| | | Per ton. | $ 23.50 |

These figures serve, at least, for comparison; average ore yielding 1 % molybdate and $ 1. in gold, would figure back to $10. per ton, and average ore yielding .6 of one percent molybdate and $0.65 in gold would return about $ 6.60 per ton, or still a small profit above proper working costs.

* * * * * * * *

According to the summary on Page 2, 100 tons of the sample yielded 3.75 tons of concentrates assaying:----

Mo. 2.03 %
Pb 24.84 %

transposing these to minerals we have:----
Mo. 2.03 %, or 3 % molybdate to which add 1.3 % due to useless"reject and we have 9.3 units of molybdate, or 186 lbs, @ 50 ¢ $ 93.00
Lead, 400 lbs, @ 4 ¢ 16.
$ 109.00 per t

for the 3.75 tons, $ 411. or perc ton of original ore, $4.11
Total recovery per ton original ore, $ 6.11

Such a recovery from the present tailings should yield a profit of at least one-half, and on ore from the mine of one-third, or $2. per ton net. The saving of the values in the form of concentrates requires but capable mill men: the turning of the concentrates into products commanding ready sale is the problem requiring careful working out of proceedure, cost and returns.

Sec. T13S R12E

*Old Yuma Mine Summary

The following figures have been compiled after careful study and estimation of this property during the authors association with the leasser now operating the mine. No attempt is made to give a detailed report at this time. The author has sufficient evidence that the claims made for tonnages present and values indicated are there, from past records, his own [illegible] les and measurments and smelter returns, are substan-

There are at present 5000 tons of ore on the dumps of the mine and 15,000 tons of ore actually blocked out in the mine. From figures available all of this ore will run at least 5% lead and $2.00 in gold. Actually the average is closer to 7% lead, $3.00 gold, $1.00 silver and $5.00 in combined molybdenum and vanadium. However, the ensuing calculations have been made on the basis of 5% lead and $2.00 gold to assure the minimum operating limit.

It is possible to concentrate this ore by gravity methods. With careful operation it should be possible to effect a recovery of 70% of the values. It is estimated that a concentration ratio of 6 to 1 could be maintained. The concentrate produced would run about 21% lead and 0.24 oz. gold. The following figures were comoiled by the American Smelting and Refining representative and can be taken as what the smelter will pay for concentrates of this nature.

COPY

Lead Concts.

| Assay | Au | Pb |
|---|---|---|
| Concts | 0.24 | 21.0 |

| | | | | |
|---|---|---|---|---|
| Payments | | | | 7.76 |
| Gold | 0.24 @ $32.31825 | | | |
| Lead | 21.0 | | | |
| | 1.5 | | | |
| | 19.5 -- | 390 lbs Pb | | |
| Less 10% | | 39 | | |
| Payable lead | | 351 " " | @ $0.0494 | 17.34 |
| Total | | | | 25.10 |

Deductions;

| | | |
|---|---|---|
| Base on $15.00------ | $3.50 | |
| Additional | 1.01 | |
| Total | 4.51 | 4.51 |
| | F. O. B. Smelter | 20.59 |

| | | |
|---|---|---|
| Freight, Tucson --- | 3.10 | |
| 10% $H_2O$ | 0.31 | |
| Switching | 0.08 | |
| TotalRR | 3.49 | 3.49 |
| Net before premium | | 17.10 |
| Premium; | | |
| 351 lbs @ 0.0275 | | 9.65 |
| Net return after smelting and frieght/ton conct. | | $26.75 |

# T E S T  O N  O L D  Y U M A  M I N E  O R E.

---

Sampling by Blanchard M. Snyder & A. L. Pellegrin of southern end of ore dump--1000 tons--

| | | | | | |
|---|---|---|---|---|---|
| Silver, | 1. oz, | .50 | Molyb. Ox, | 1.36% | |
| Gold, | .36 " | 7.20 | | @ 50 ct lb, | 18.60 |
| Lead, 5.95 % | at | 2. 2.40 | Vanad. O, | .21% | 2.10 |
| Value in comon metals. | | $ 10.10 | Rare metals . | | $ 20.70 |

---

The above by pan concentration gave 5.355 percent of product-in round numbers 20 into 1, these concentrates having a value of:---

| | | | | | | |
|---|---|---|---|---|---|---|
| Silver, | 3.6 ozs | 1.80 | Molybdic oxide | 22.6 % | 50 c | $ 226.00 |
| Gold, | 1.93 " | 39.80 | Vanadic " | 3.17 " | | 31.70 |
| Lead, 39.9 % | | 18.00 | | | | |
| Value comon metals | | $ 57.40 | Rare metals, .. .. .. | | | $ 257.70 |

Total market value per ton, $ 315.10
less freight, 15.
Net value $ 300.

1 ton concentrates, $ 300.
from 20 tons, per ton, $ 15.
1000 tons, $ 15,000. from concentrates.
Expense 5. per ton, $ 5,000, Net $ 10,000

---

Ground ore after concentration retains .26 oz gold, value $ 5.20
Recovery by cyanide, $ 4. at expense of $ 1.50, net, $ 2.50

---

| | |
|---|---|
| Recovery from 1,000 tons in concentrates, | $ 10,000 |
| " " " in cyaniding, | 2,500 |
| | $ 12,500 |

---

The northern end of the same ore dump contains as large tonnage of apparently as good a grade, and should produce as large returns.

No sampling of the mine workings have yet been made but a careful preliminary examination seems to warrant an estimate of
3,000 tons from surface down to the 100 level, yielding 10 % concentras
1,000 " " 100 level to the 200, "
2,000 " between above workings and east shaft, down to 200 level
5,000 tons giving returns in concentrates of 500 tons, $ 150,000
" in cyanide product, at [illegible], 12,500
$ 162,500
12,500
$ 175,000.

royalty of 15 % is due purchase price of mine

Returns from dump, $ 10,000 - $ 2,500

## Recommendations.

While the Engineering company making the test is in high standing, there are some statements or results in their report that should be verified--as the complete recovery of molybdenum while the other identical (physically) lead minerals show a low recovery.

Another general sample of the tailings dump should be taken, and also one from the higher grade ore in the various workings in the mine of which there is a quantity available. Of each of these the sample should consist of a ton, be crushed to 1/2 mesh and samples of 25 pounds cut out for laboratory tests. These tests should be on lines mentioned in comment on the Salt Lake report--first of all determining if jig treatment of 2, 4, or 8 mesh would not give results, as this coarse product would be best for selective sulphidizing separation. Then besides the ordinary concentration on tables comparative flotation and cyanide tests should be made to determine the best mode of recovery of the gold and silver.

These tests being successful, they should be repeated with the ton lots over carefully adjusted Wilfleys, etc, and if properly conducted should give identical results with the laboratory ones. The cyaniding or flotation should also be conducted---in fact a complete mill run on each sample.

This part of the problem should present no difficulty, the present mill equipment is of the proper kind, lacking a fine re-grinding roll, or Ball mill, or a grinding pan would answer. Tanks for the cyaniding would have to be provided but this would be a separate unit and not necessarily expensive.

* * * * *

The really difficult part of the problem is the recovery of the values from the concentrates. The mixing of all the ores from the mine has been inexcusible---the vanadium and molybdenum occurs generally separate and can be mined so, and there should be two bins at the top of the mill--a partition in the present bin would answer probably a short picking belt at the top of the bins would pay.

The various concentrating must necessarily make a product containing all of the lead minerals in the feed as the specific gravity is the same; some of the iron and manganese minerals will also be found in the coarser concentrates. It has been found that the molybdenum contents of these concentrates is very low and two methods can be employed. One is the chemical, fusion in reverberatory furnace with sodium or other alkali and carbon, which will reduce the lead to metal, collecting gold and silver in a lead bullion. The rare metals will be in a slag with the soda and are recovered by leaching and precipitation as oxides, and are marketable in that form or in a variety of other products.

The other method is by selective sulphidizing flotation and will probably only be practicable on the coarser sizes of product. This part of the problem requires careful study and experiments:---different sizing, choice of reagent, strength of solution, time, mechanical means of agitation, etc, then the designing of an apparatus that will carry on the treatment continously--say a belt in a tank, admitting water or air current from below the canvas with partitions at intervals to catch the different products as they raise, the final vanadium being discharged at lower end of belt.

Probably the best result would be secured by using several flotation machines so that strength of reagent and time could be adjusted in each step of operation, which could still be continous and automatic.

SOUTHWESTERN ORE WORKS
PLANT, 292-302 S. MAIN ST.
OFFICE, 37 S. STONE AVENUE
TUNGSTEN AND OTHER RARE METALS A SPECIALTY

TUCSON, ARIZONA, _____ 1914.

# MARKET CONDITIONS.

Mr. Horton, of the U. S. Laboratory, at Denver, informed the writer that a ton of choice, hand-sorted molybdenite was recently sold to an eastern chemical works for $ 3,000. Molybdenite contains 60 % of the element molybdenum as against 26 % in wulfenite, but its other component, sulphur, is more difficult to eliminate than the lead in the wulfenite. In the Advance Chapters on the production of metals in 1913, the government bulletin mentions a price of $1586. per long ton as paid in Queensland, and $ 12. per unit for 95 % ore-- $ 1040. per ton for molybdenite by a French firm. For wulfenite an eastern firm states that about $ 1. per pound of contained molybdenum would be paid, with smelters' price for the lead also, this for a 25 % ore. Actual sales of a carload of low grade mixed wulfenite has been made to an eastern firm at about 60 cents per pound for contained molybdic trioxide.

American firms do not usually pay for the vanadium contained in a molybdenum product, but European buyers do, and at the Yuma mine much of the vanadium mineral occurs by itself and can be mined and then milled seperately.

The seperation of the molybdenum and vanadium as salts of ammonium or sodium, or of their oxides in a commercially pure form, or their reduction in an electric furnace into ferro alloys, offers no great difficulty nor expense, and would result in a much more extended market and increased price.

[illegible] quality ore [illegible] dumps from the rich streaks [illegible] of which [illegible] regular [illegible] 4 tons to a [illegible] of concentrates. The rest of the dumps of several thousand tons — all from the [illegible] grades down to waste rock. At least one carload of 20 tons of concentrates can be made from the high grade ore on the dumps, when the richer parts would be selected as long as it was more profitable than to mine and raise new ore from the stopes — where one or two good miners would be kept stoping ore as a test of value and costs.

The first carload can be produced with the present dry machine alone by repassing product until up to grade. For future operations it would lessen costs to install an additional dry machine either below the one or alongside, with a belt elevator, to give one or double treatment, continuously. This can be done at less cost by using a bin over the table, with an elevator, and repassing the pulp into it. But a second table will double capacity of plant.

To produce the highest grade of product at least expense a [illegible] table should be used — its location depending on water [illegible] in conjunction with it a [illegible] plant to [illegible] lines, if it is found profitable after amalgam plate over the new table.

(B)

Upper roll should be moved, or the bin moved so a self feeder could supply the 1st Roll. The 2d roll should be moved as close under the 1st as practicable.

Below 2d roll a shaking or revolving screen should make 2 sizes — through 20 or 24, and 20 or 24 to ~~20~~ 10 — oversize (+10) being elevated to roll No 2. The 2 sizes of pulp should fall into separate bins and below should be two dry tables — the one handling coarse should have elevator to a bin above 2d roll (for regrinding by itself or with the regular ore.

~~From~~ Dry tables floor should be ample for storing quantity

Below dry floor, ~~two~~ agitators over 2 Willeys, from which tailings could flow to cyanide tanks (over amalgamated plates if desired). Amalgamation would also be practicable in the agitator.

Operation [illegible] days

| | | |
|---|---|---|
| [illegible] | 500 gal. @ [illegible] | 65.00 |
| [illegible] | [illegible] | 15.00 |
| [illegible] | Miscellaneous | 20.00 |
| [illegible] | 1 [illegible] 2 [illegible] 60 [illegible] | 600.00 |
| | | 700.00 |
| [illegible] | | 50. |
| | | 750. |
| [illegible] | | 500 |
| | [illegible] engine (80) | 250 |
| | | 15 000. |
| [illegible] | | [illegible] |
| | | 10. |
| | 10 ton Cyanide plant | 500 |
| | | $ 2500. |

Returns: —

| | | |
|---|---|---|
| 20 ton Concentrates, Mill 20 % = 400 lb @ 60, | | 240. |
| $V_2O_5$ 3 % = 60 lb @ 35 | | 21. |
| Cu | 1000 lb @ 2 | 20. |
| Ag | 50 @ 50 | 2.50 |
| Au | .5 @ 20. | 10 |
| | | $ 293.50 |
| Less Handling 6.50 freight 25 Soda 7.10 | | 43.50 |
| | | $ 250.00 |
| 20 tons @ | | $ 5000.00 |

| | |
|---|---|
| 15 % Royalty | 750.00 |
| Operation | 750.00 |
| Cost of Run | 1500. |

| | Gold | Silver | Lead | MoO3 | V2O5 | |
|---|---|---|---|---|---|---|
| Screening [illegible] | .45 | 2. | 17. | | | |
| Stope shipping [illegible] | .51 | 1.1 | | | | |
| Vein matter | .03 | .8 | | | | |
| Vein [illegible] | Tr | .5 | | | | |
| Copper Shaft [illegible] | .02 | .8 | | | | Copper 23.5 % |
| Over slip in incline 200' [illegible] | Tr | 1.2 | | [illegible] | [illegible] | |
| Mill Test, 500 lbs. Heads | .75 | .4 | 18.1 | Fe 8.8 Se .50 11.2 | 1.7 | |
| (3-4 = 1) Concentrate | .96 | .6 | 26.5 | 24.9 | 3.54 | |
| Amalgamated over plate — Heads | .15 | .4 | | | | |
| Tests: — Ore Steil Dump | .04 | 1.6 | | | | Per Cent of Concentrate 8.5 |
| Waste " " | .03 | .4 | | | | 2. |
| Left Drift to East (Grab dump) | .04 | 3.6 | | | | 3.5 |
| [illegible] | .06 | .8 | | | | |

# DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
## OWNERS MINE REPORT



Date October 16, 1940

Mine Old Yuma Mine

District Amole, Pima Co.

Location 17 miles W from Tucson

Former name Same

Owner Yuma Mining Co.

Address

Lessee:
~~Operator~~ Grady Wilson

Address G. D. Tucson, Ariz.

President No Corp.

Gen. Mgr.

Mine Supt.

Mill Supt.

Principal Metals Molyb. Van. Pb. Gold

Men Employed

Production Rate Not established

Mill: Type & Cap.

Power: Amt. & Type None

Operations: Present Property idle, lessee busy.

Operations Planned Install concentrating mill.

Number Claims, Title, etc. Seven unpatented lode claims on public domain.

Description: Topog. & Geog. On foothills, north slope Tucson Mts. 3 mi W. E. from Amole (Wasson) Peak.

Mi Workings: Amt. & Condition 1 shaft (incline) 1½ compartment 300 ft depth. Drifting on 100' level 250' E, 200' W. One 200' level 250' E, 200' W, on 300' level 30' E. Many shallow workings 20'-30' on outcrop.

(over)

23. Geology & Mineralization — Country rock, andesitic fissure vein, strike NE-SW. Both replacement rich fissure filling. Lead minerals predominate with gold and minor silver.

24. Ore: Positive & Probable, Ore Dumps, Tailings — 17,000 Tons on dumps Av. 1% $MoO_3$
75,000 " showing in mine Av. 0.7% $MoO_3$
and 0.7% $V_2O_5$ - $4.00 per ton gold.

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

25. Mine, Mill Equipment & Flow Sheet — Proposed mill, crusher, rolls, screws, and tables.

26. Road Conditions, Route — 5 miles off State h'way 84 at Cortaro. 4 miles graded, 1 mile fair for trucks and automobiles.

27. Water Supply — Water on property limited. Abundant in valley of Santa Cruz. Three miles to drilled well 500 g.p.m. 200' vertical below mine.

170/525/695

28. Brief History — Located about 1885- operated intermittedly. Produced considerable molybdenum during World War.

29. Special Problems, Reports Filed — Will file Engineers Reports.

30. Remarks — Values given for ore in mine based on 200 samples and other data. Many carloads shipped to smelter as lead gold ore.

31. If property for sale: Price, terms and address to negotiate. — Financed to put in plant. Would consider sale.

32. Signed Grady Wilson.

33. Use additional sheets if necessary.

# DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
## OWNERS MINE REPORT

Date October 16, 1940

Mine Old Yuma Mine

District Amole, Pima Co.

Location 17 miles W from Tucson

Former name Same

Owner Yuma Mining Co.

Address

Lessee:
~~Operator~~ Grady Wilson

Address G. D. Tucson, Ariz.

President No Corp.

Gen. Mgr.

Mine Supt.

Mill Supt.

Principal Metals Molyb. Van. Pb. Gold

Men Employed

Production Rate Not established

Mill Type & Cap.

Power: Amt. & Type None

Operations: Present Property idle,

OLD YUMA MINE

Mo, V, Pb, Au

Pima 10 - 1

Operations Planned Install conce

Yuma Mining Co., Gen. Del, Tucson '40
Lessee: Grady Wilson, 102 W. Lincoln St., Tucson

Number Claims, Title, etc. Seven unpatented lode claims on public domain.

Description: Topog. & Geog. On foothills, north slope Tucson Mts. 5 mi N W. E. from Amole (Wasson) Peak.

Mine Workings: Amt. & Condition 1 shaft (incline) 1½ compartment 300 ft depth. Drifting on 100' level 250' E, 200' W. One 200' level 250' E, 200' W, on 300' Level 50' E. Many shallow workings 20'-50' on outcrop.

| | |
|---|---|
| eology & Mineralization | Country rock, andesitic fissure vein, strike NE-SW. Both replacement rich fissure filling. Lead minerals predominate with gold and minor silver. |
| re: Positive & Probable, Ore Dumps, Tailings | 17,000 Tons on dumps Av. 1% $MoO_3$<br>75,000 " " showing in mine Av. 0.7% $MoO_3$ and 0.7% $V_2O_5$ - $4.00 per ton gold. |
| Dimensions and Value of Ore body | |
| ine, Mill Equipment & Flow-Sheet | Proposed mill, crusher, rolls, screws, and tables. |
| oad Conditions, Route | 5 miles off State H'way 84, at Cortaro. 4 miles graded, 1 mile fair for trucks and automobiles. |
| Water Supply | Water on property limited. Abundant in valley of Santa Cruz. Three miles to drilled well 500 g.p. m. 200' vertical below mine. |
| rief History | Located about 1885--operated intermittedly. Produced considerable molybdenum during World War. |
| pecial Problems, Reports Filed | Will file Engineers Reports. |
| Remarks | Values given for ore in mine based on 200 samples and other data. Many carloads shipped to smelter as lead gold ore. |
| f property for sale: Price, terms and address to negotiate. | Financed to put in plant. Would consider sale. |

32. Signature (Signed) Grady Wilson

DMC-1K

# DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
## OWNERS MINE REPORT

Date October 16, 1940

Mine Old Yuma Mine

District Amole, Pima Co.

Location 17 miles W from Tucson

Former name Same

Owner Yuma Mining Co.

Address

Lessee:

~~Operator~~ Grady Wilson

Address G. D. Tucson, Ariz.

President No Corp.

Gen. Mgr.

Mine Supt.

Mill Supt.

Principal Metals Molyb. Van. Pb. Gold

Men Employed

Production Rate Not established

Mill: Type & Cap.

Power: Amt. & Type None

Operations: Present Property idle, lessee busy.

Operations Planned Install concentrating mill.

Number Claims, Title, etc. Seven unpatented lode claims on public domain.

Description: Topog. & Geog. On foothills, north slope Tucson Mts. 3 mi W. E. from Amole (Wasson) Peak.

Mine Workings: Amt. & Condition 1 shaft (incline) 1½ compartment 300 ft depth. Drifting on 100' level 250' E, 200' W. One 200' level 250' E, 200' W, on 300' level 30' E. Many shallow workings 20'-30' on outcrop.

(over)

3. Geology & Mineralization — Country rock, [illegible] vein, strike [illegible]. [illegible] rich fissure filling. Lead minerals [illegible] with gold and minor silver.

4. Ore: Positive & Probable, Ore Dumps, Tailings — 17,000 [illegible] on dumps av. 1[illegible] $MnO_3$
75,000 " [illegible] in mine av. [illegible].7% $MnO_3$
and [illegible].7 [illegible] - $4.00 per ton gold.

4A. Dimensions and Value of Ore body

5. Mine, Mill Equipment & Flow-Sheet — Pro[illegible] mill, crusher, rolls, screens, and tables.

6. Road Conditions, Route — 5 mil[illegible] of State H'way 8A, at Cortaro. 4 mile[illegible], 1 mile fair for trucks and automobiles.

7. Water Supply — Water on property limited. Abundant in valley of Santa Cruz. Three wells to drilled well 500 g.p.m. 200' vertical below mine.

8. Brief History — Located about 1885--o[illegible]rated intermittently. Produced considerable molybdenum during World War.

9. Special Problems, Reports Filed — Will file Engineer's Reports.

10. Remarks — Values given for ore in mine based on 200 samples and other data. Many [illegible] shipped to smelter as lead gold ore.

[illegible]roperty for sale: Price, terms and address to negotiate. — Financed to put in plant. Would consider sale.

32. Signature (Signed) Grady Wilson

# DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
## OWNERS MINE REPORT

Date October 16, 1940

1. Mine Old Yuma Mine

2. Mining District & County A mole, Pima Co.

4. Location 17 miles W from Tucson

3. Former name Same

5. Owner Yuma Mining Co.

6. Address (Owner)

Lessee:

7. ~~Operator~~ Grady Wilson

8. Address (Operator) G. D. Tucson, Ariz.

9. President No. Corp.

10. Gen. Mgr.

11. Mine Supt.

12. Mill Supt.

13. Principal Metals Molyb. Van. Pb. Gold

14. Men Employed

15. Production Rate Not established

16. Mill: Type & Cap.

17. Power: Amt. & Type None

18. Operations: Present Property idle, lessee busy.

19. Operations Planned Install concentrating mill.

20. Number Claims, Title, etc. Seven unpatented lode claims on public domain.

21. Description: Topography & Geography On foothills, north slope Tucson Mts. 3 mi W. E. from Amole (Wasson) Peak.

22. Mine Workings: Amt. & Condition 1 shaft (incline) 1½ compartment 300 ft depth. Drifting on 100' level 250' E, 200' W. One 200' level 250' E, 200' W, on 300' level 30' E. Many shallow workings 20'-30' on outcrop.

(over)

Geology & Mineralization — Country rock, andesitic fissure vein, strike NE-SW. Both replacement rich fissure filling. Lead minerals predominate with gold and minor silver.

Ore: Positive & Probable, Ore Dumps, Tailings — 17,000 Tons on dumps Av. 1% $MoO_3$
75,000 " showing in mine Av. 0.7% $MoO_3$
and 0.7% $V_2O_5$ - $4.00 per ton gold.

Mine, Mill Equipment & Flow Sheet — Proposed mill, crusher, rolls, screens, and tables.

Road Conditions, Route — 5 miles off State hiway 84 at Cortaro. 4 miles graded, 1 mile fair for trucks and automobiles.

Water Supply — Water on property limited. Abundant in valley of Santa Cruz. Three miles to drilled well 500 g.p.m. 200' vertical below mine.

Brief History — Located about 1885- operated intermittently. Produced considerable molybdenum during World War.

Special Problems, Reports Filed — Will file Engineers Reports.

Remarks — Values given for ore in mine based on 200 samples and other data. Many carloads shipped to smelter as lead gold ore.

If property for sale: Price, terms and address to negotiate. — Financed to put in plant. WPTA consider sale.

Signed Crofy Wilson.

# DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
## MINE OWNER'S REPORT

Date Oct. 10, 1940

1. Mine Old Yuma Mine
2. Location 17 miles N from Tucson
3. Mining District & County [illegible], [illegible] Co.
4. Former name None
5. Owner Yuma Mining Co.
6. Address (Owner)
7. Operator Grady Wilson
8. Address (Operator) S. E. Tucson, Arizona
9. President, Owning Co. No Corp.
9A. President, Operating Co.
10. Gen. Mgr.
14. Principal Minerals Molybdenum, Vanadium, Pb., Cu.
11. Mine Supt.
15. Production Rate Not established
12. Mill Supt.
16. Mill: Type & Cap.
13. Men Employed
17. Power: Amt. & Type None
18. Operations: Present For forty [illegible], [illegible] day.
19. Operations: Planned Install concentration mill
20. Number Claims, Title, etc. Seven unpatented lode claims on public domain
21. Description: Topography & Geography On foothills, north slope Tucson Mts. 3 mi. W. E. from Agua (Wasson) Peak.
22. Mine Workings: Amt. & Condition 1 shaft (incline) 1½ compartment 300 ft. depth. Drifting on 100' level 250' N, 200' level 250' N, 250' W, on 300' level 50' N. Many shallow workings 20'-30' on outcrop.

Geology & Mineralization — Country rock, andesitic fissure vein, strike NE-SW. Both replacement rich fissure filling. Lead minerals predominate with gold and minor silver.

Ore: Positive & Probable, Ore Dumps, Tailings — 17, 000 Tons on dumps Av. 1% $MoO_3$
75,000 " showing in mine Av. 0.7% $MoO_3$
and 0.7% $V_2O_5$ - $4.00 per ton gold.

Mine, Mill Equipment & Flow Sheet — Proposed mill, crusher, rolls, screws, and tables.

Road Conditions, Route — 5 miles off State h'way 84 at Cortaro. 4 miles graded, 1 mile fair for trucks and automobiles.

Water Supply — Water on property limited. Abundant in valley of Santa Cruz. Three miles to drilled well 500 g.p.m. 200' vertical below mine.

Brief History — Located about 1885- operated intermittedly. Produced considerable molybdenum during World War.

Special Problems, Reports Filed — Will file Engineers Reports.

Remarks — Values given for ore in mine based on 200 samples and other data. Many carloads shipped to smelter as lead gold ore.

If property for sale: Price, terms and address to negotiate. — Financed to put in plant.
Would consider sale.

MMC

Signed Grady Wilson.

Use additional sheets if necessary.

# DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
## MINE OWNER'S REPORT

Date Oct. 16, 1940

1. Mine Old Yuma Mine
2. Location 17 miles W from Tucson
3. Mining District & County Amole, Pima Co.
4. Former name Same
5. Owner Yuma Mining Co.
   LESSEE:
6. Address (Owner)
7. ~~XXXXXXXXX~~ Grady Wilson
8. Address (Operator) G. D. Tucson, Arizona
9. President, Owning Co. No Corp.
9A. President, Operating Co.
10. Gen. Mgr.
11. Mine Supt.
12. Mill Supt.
13. Men Employed
14. Principal Minerals Molybdenum, Vanadium, Pb., Gold.
15. Production Rate Not established
16. Mill: Type & Cap.
17. Power: Amt. & Type None
18. Operations: Present Property idle, lessee busy.
19. Operations: Planned Install concentrating mill
20. Number Claims, Title, etc. Seven unpatented lode claims on public domain
21. Description: Topography & Geography On foothills, north slope Tucson Mts. 3 mi. W. E. from Amole (Wasson) Peak.
22. Mine Workings: Amt. & Condition 1 shaft (incline) 1½ compartment 300 ft. depth. Drifting on 100' level 250' E, 200' level 250' E, 200' W, on 300' level 30' E. Many shallow workings 20'-30' on outcrop.

Geology & Mineralization — Country rock, andositic fissure vein, strike NE-SW. Both replacement rich fissure filling. Lead minerals predominate with gold and minor silver.

Ore: Positive & Probable, Ore Dumps, Tailings — 17,000 Tons on dumps Av. 1% $MoO_3$
75,000 " showing in mine Av. 0.7% $MoO_3$
and 0.7% $V_2O_5$ - $4.00 per ton gold.

Mine, Mill Equipment & Flow Sheet — Proposed mill, crusher, rolls, screws, and tables.

Road Conditions, Route — 5 miles off State h'way 84 at Cortaro. 4 miles graded, 1 mile fair for trucks and automobiles.

Water Supply — Water on property limited. Abundant in valley of Santa Cruz. Three miles to drilled well 500 g.p.m. 200' vertical below mine.

Brief History — Located about 1885- operated intermittedly. Produced considerable molybdenum during World War.

Special Problems, Reports Filed — Will file Engineers Reports.

Remarks — Values given for ore in mine based on 200 samples and other data. Many carloads shipped to smelter as lead gold ore.

If property for sale: Price, terms and address to negotiate. — Financed to put in plant. Would consider sale.

MNG

Signed Grady Wilson.

Use additional sheets if necessary.

# DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
## MINE OWNER'S REPORT

Date Oct. 1[illegible], 1940

Mine Old Yuma Mine

2. Location 17 miles W from Tucson

Mining District & County [illegible], Pima Co.

Former name [illegible]

Owner Yuma Mining Co.

6. Address (Owner)

LEASE:
~~Operator~~ [illegible] Wilson

8. Address (Operator) S. D. Tucson, Arizona

President, Owning Co. No Corp.

9A. President, Operating Co.

Gen. Mgr.

14. Principal Minerals Molybdenum, Vanadium, Pb., [illegible]

Mine Supt.

15. Production Rate Not [illegible]

Mill Supt.

16. Mill: Type & Cap.

Men Employed

17. Power: Amt. & Type None

Operations: Present Property idle, lease busy.

Operations: Planned Install concentrating mill

Number Claims, Title, etc. Seven unpatented lode claims on public domain

Description: Topography & Geography On foothills, north slope Tucson Mts. 3 mi. W. E. from [illegible] (Wasson) Peak.

Mine Workings: Amt. & Condition 1 shaft (incline) 1½ compartment 300 ft. depth. Drifting on 100' level 250' [illegible], 200' level 250' [illegible], 200' [illegible], on 300' level 30' [illegible]. Many shallow workings 20'-30' on outcrop.

Geology & Mineralization [illegible] vein, strike N-S. [illegible] [illegible] filling. Lead minerals [illegible] silver.

Ore: Positive & Probable, Ore Dumps, Tailings [illegible] $MoO_3$ [illegible] .7% $MoO_3$ and 0.7 [illegible] - [illegible] per ton gold.

.. Dimensions and Value of Ore body

Mine, Mill Equipment & Flow-Sheet [illegible] mill, [illegible], [illegible], [illegible], and [illegible].

Road Conditions, Route 9 [illegible] Hwy 84, [illegible]. 4 miles good, 1 mile [illegible] for trucks and automobiles.

Water Supply [illegible] property limits. [illegible] in valley of Santa Cruz. [illegible] to drill [illegible] 500 [illegible] [illegible]° vertical below mine.

Brief History [illegible] 1885—[illegible] intermittently. Produced considerable molybdenum during [illegible].

Special Problems, Reports Filed [illegible] file engineer reports.

Remarks [illegible] given for ore in mine based on 300 samples and other [illegible]. Many [illegible] [illegible] to another and [illegible] ore.

If property for sale: Price, terms and address to negotiate. Financed to put in plant. Would consider sale.

(Signed) Grady Wilson

32. Signature.....

Mar[illegible] 15, 1942.

The following figures have been compiled for the comparison of royalties received by the owner of the Old [illegible] Mine from concentrated ores and from the direct shipment of mine ore. The calculations are made on two types of ore. The high grade ore has been chosen of that value because it is thought that by very carefull and selective mining a limited tonnage of that grade could be produced. The lower grade ore is the minimum that could be mined and milled under the limited necessary capital expenditure warrented by the property. There is a considerable quantity of this type of ore available.

In calculating the head assays the following values were used; gold--$35.00/oz., silver -- $0.71/oz., lead -- $0.0325/lb. (this value includes the recently established premium)

| Heads: | Au, oz | Ag, oz | Pb% | |
|---|---|---|---|---|
| | 0.10 | 1.50 | 8.5 | |
| Value | $3.50 | $1.07 | $14.03 | Total, $18.60 |

Payable values according to A. S. & R.;

| | | |
|---|---|---|
| Gold -- 100% $32.31825 | | $ 3.25 |
| Silver - 1.5 x 1.0 -- 0.5oz $0.69 | | 0.35 |
| Lead -- 8.5-1.5 -- 7.0% less 10% --- 6.3% payable | | |
| 6.3% -- 126lbs lead @ $0.0494 | | 6.22 |
| Premium @ $0.0275, 126# 2.75% | | 3.37 |
| Total payable value/ton | | 13.17 |

Deductions:

| | | |
|---|---|---|
| Smelter base rate | $ 3.50 | |
| SR freight | 2.20 | |
| Moisture | 0.07 | |
| Switching | 0.08 | |
| Empire | 0.15 | |
| Total deduction | 6.00 | 6.00 |
| Net smelter return per ton of ore | | 7.17 |
| Royalty per ton @ 10% | | 0.62 |

---

| Head | Au, oz | Ag, oz | Pb, % | |
|---|---|---|---|---|
| | 0.060 | -- | 5.0 | |
| Value | $2.10 | -- | $8.25 | Total head $10.35 |

Payable values according to A. S. & R.;

| | |
|---|---|
| Gold-- 100% $32.31825 | 1.94 |
| Lead -- 5.0-1.5 -- 3.5 less 10% -- 3.15% payable | |
| 3.15% -- 63 lbs @ $0.0494 | 3.12 |
| Premium, 63lbs @ 2.75% | 1.73 |
| Total payable value per ton | 6.79 |
| Deduction; same as for high grade ore | 6.00 |
| Net smelter return per ton of ore | 0.79 |
| Royalty per ton @ 10% | 0.08 |

## Costs

The milling plant should not cost more than $7,500.00 installed. A crushing plant, a sizing unit, tabling unit, and a small storage bin are all that are needed. It is questionable if the plant would have to be housed to start with.

With a 6 to 1 concentration ratio the following costs are reasonable;

| Dump ore; | Cost/ ore | Cost/conct. |
|---|---|---|
| Load & haul | $ 0.50 | $ 3.00 |
| Milling | 1.00 | 6.00 |
| | 1.50 | 9.00 |
| Transfer cost/ton conct. to RR.car | | 2.00 |
| Total | | 11.00 |
| Smelter royalty @ 15%/ton concts. | | 3.01 |
| Total cost/ton concts. | | 14.01 |
| Smelter return | | 26.75 |
| Cost/ton concts. | | 14.01 |
| Net return on 6 tons dump ore | | 12.74 |
| " " / ton dump ore | | 2.12 |

With 5,000 tons dump ore available there are $10,600.00 net available. Deducting the plant cost of $7,500.00 this would leave a net of $3,100.00.

The same costs would apply to mined ore, except that an additional $2.00/ton must be added. This would indicate that there was a $0.12 profit per ton mined.

It will cost about $7,500.00 to put the mine in shape to produce 25 tons of ore a day.

The Old Yuma Mine is 15 miles from Tucson. All except the last two miles are good road. The last two miles are poor but quite passable.

A mill site with a drilled well on it is available about three miles from the mine. The mill is about fourteen miles from Tucson.

A. Brodie Campbell

# DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA
518 TITLE AND TRUST BUILDING
PHOENIX, ARIZONA



May 20, 1942

REPLY TO

We have submitted your Mine Owner's Report to Mr. G. Donald Emigh, who is representing the U. S. Vanadium Corporation, with present headquarters at the Pioneer Hotel, Tucson, Arizona as being one of the properties from which vanadium production may be obtained.

The following item will explain our reason for so doing:

> The U. S. Vanadium Corporation has been designated by the Metals Reserve Company to increase the production of lead vanadates and they are working in the southwest.
>
> G. Donald Emigh, Pioneer Hotel, Tucson, is their representative, and Arthur L. Flagg, 29 W. Holly Street, Phoenix, is their field manager.
>
> They are seeking small vanadium properties and are ready to handle them on almost any kind of a deal except actually buying properties. They will put money into development, they will lease, they will build small mills, they will work out processes, they will co-operate with the man to develop his own property. They will pay premium prices for that which they get. They will do almost anything and everything designed to bring out increased vanadium production.
>
> An office is going to be established in Tucson and we will let you know the address as soon as we get it. Any occurrences of lead vanadates should be promptly reported to either Mr. Emigh or Mr. Flagg, or anyone who has vanadium properties should be referred to them.

We would suggest that you contact these parties at once and if you can furnish any information in addition to that which occurs in your Mine Owner's Report on file with us that you do so at once. Please advise us of your action.

With best wishes and hoping you get your property into early production, I am

Yours very truly,

J. S. Coupal

J. S. Coupal,
Director

JSC:LP

NAME OF MINE: OLD YUMA
OWNER:

COUNTY: Pima
DISTRICT: Amole
METALS: Pb,Mo,Vd

| Date: | OPERATOR AND ADDRESS | Date: | MINE STATUS |
|---|---|---|---|
| 11/44 | Grady Wilson, 102 W. Lincoln, Tucson | 11/44 | Developing |

**Old Yuma Mine, Amole District, Pima County**

**Visited sometime in April 1944 - Lead Gold property.**
**No study of the property was made at this time due to the fact that it could give no immediate production and under present conditions required too much exploration. Under right conditions it justifies a detailed study with view to further exploration to determine if commercial sulphide orebodies may occur. (Messers. Stone and Hernon).**

# DEPARTMENT OF MINERAL RESOURCES

## REPORT TO OPA ON ACTIVE MINING PROJECT

Date: 12-2-41

Name of Mine: Cal Yuma

Owner or Operator: [illegible]

Address: 102 W [illegible] Tucson

Mine Location: Avra Dist Tucson Mts

**Filing Information**

File System:

File No.:

This chart to be used for gallons of gasoline required per month.

**PRESENT OPERATIONS:** (check X)

Production: X; Development: ; Financing: ; Sale of mine: ;

Experimental (sampling): ; Owner's occasional trip: ;

Other (specify):

Sec 9, T13S, R12E

**PRODUCTION:** **Past and Future.**

| | Tons |
|---|---|
| Approx. tons last 3 months | |
| Approx. present rate per 3 months | |
| Anticipated rate next 3 months | |
| If in distant future check (X) here | |

**EQUIPMENT OPERATED:**

| Type | Quantity or Horse Power | Miles or Hours Per Month | Gallons Required Per Month |
|---|---|---|---|
| Personal Cars | | 1000 | |
| Light or Service Trucks | | | |
| Ore Hauling Trucks | | | |
| Compressors | | | |
| Other Mine or Mill Eqpt. | | | |

**PRODUCT PRODUCED OR CONTEMPLATED:** Name metals or minerals.

Lead, Mn, Copper, Chrysotile

**REMARKS:**

ARIZONA DEPARTMENT OF MINERAL RESOURCES

By: George A. Kellam

FORM 24 BCM 7-47 CAIRNS

AMERICAN SMELTING AND REFINING COMPANY
EL PASO SMELTING WORKS

# ORE SETTLEMENT

EL PASO, TEXAS 2-25-47
SMELTER LOT 351
SHIPPER'S LOT
CLASSIFICATION Ore
NAME OF MINE Old Yuma Dump

BOUGHT OF Arthur S. Jacobs, Mgr. Tucson Ore Mg. Co.
ADDRESS P. O. Box 2667, Tucson, Arizona
SHIPPING POINT " "

| CAR No. | CAR INITIAL | WEIGHT IN AVOIRDUPOIS POUNDS: GROSS | SACKS No | SACKS Wt Gnt | NET WEIGHT | MOISTURE % | DRY WEIGHT |
|---|---|---|---|---|---|---|---|
| 91598 | SP | | | | 75020 | 2.9 | 72844 |

PROVISIONAL

N. Y. METAL QUOTATIONS
Settlement Date 2-11-47
B/L Date 2-6-47

| | | |
|---|---|---|
| Silver | 90.0 | Cts. per oz. |
| Fgn Silver | 70.75 | |
| Lead | $ 15.00 | Per 100 lbs. |
| E. & M. J. Copper | | Cts. per lb. |

PREMIUM METAL CONTENT
Lead ____ lbs.
Copper ____ lbs.

PAYMENTS FOR METALS — VALUE

| ELEMENTS | ASSAY PER TON 2000 LBS | | DEDUCTED | NET ASSAY | EQUIVALENT IN LBS. | PERCENT PAID FOR | NET PAID FOR | | RATE | AMOUNT PER TON | AMOUNT [illegible] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gold | .07 | oz. | | | | | .07 | oz. | 32.31825 | 2.26 | |
| Silver | .5 | oz. | no | pay | | | | oz. | | | |
| Lead | 6.6 | % | 1.5 | 5.1 | 102 | 90 | 91.8 | lbs. | .1129 | 10.36 | |
| Copper | .05 | % | no | pay | | | | lbs. | | | |
| TOTAL PAYMENTS FOR METALS | | | | | | | | | | | 12.62 |

DEDUCTIONS

| | DEBITS | CREDITS |
|---|---|---|
| TREATMENT CHARGE: F. O. B. El Paso, for Metal Payments, not exceeding $ 15.00 per ton | 4.50 | |
| 10 % of $ - excess over $ 15.00 per ton | | |
| Handling Sacks | | |
| Copper Deficiency | | |
| Bullion Freight Tax 91.8 @ .00024 | .02 | |

| ANALYSIS | | | DEDUCTION | NET | | | RATE | | DEBITS | CREDITS |
|---|---|---|---|---|---|---|---|---|---|---|
| Insoluble | 61.2 | % | 40.0 | 21.2 | % | @ | | Cts. | 1.06 | |
| Silica | 55.6 | % | | | % | @ | | Cts. | | |
| Iron | 6.3 | % | | | % | @ | | Cts. | | |
| Mn | | % | | | % | @ | | Cts. | | |
| Lime | 2.0 | % | | | % | @ | | Cts. | | |
| Zinc | 6.9 | % | 5.0 | 1.9 | % | @ | 30 | Cts. | .57 | |
| Sulphur | .1 | % | | | % | @ | | Cts. | | |
| Alumina | 2.9 | % | | | % | @ | | Cts. | | |
| As | .17 | % | | | % | @ | | Cts. | | |
| Sb | .18 | % | | | % | @ | | Cts. | | |
| Pb | | % | | | % | @ | | Cts. | | |
| TOTAL DEDUCTIONS | | | | | | | | | 6.15 | 6.15 |
| NET VALUE PER TON | | | | | | | | | | 6.47 |

| | | | | | DEBITS | CREDITS |
|---|---|---|---|---|---|---|
| Total Value on | 36.422 | Dry Tons @ | 6.47 | Per Ton | | 235.65 |
| Less Freight on | 37.51 | Wet Tons @ | 2.64 | Per Ton 99.03 + 2.97 tax | 102.00 | |
| | | Hauling Charge | | | | |
| | | Switching | | 3.10 + .09 tax | 3.19 | |
| | | Umpires | | | | |
| | | Demurrage | | 2.80 + .07 tax | 2.87 | |
| Amount withheld pending receipt of Silver Affidavit | | | | | 12.82 | |
| Royalty 10% | | | | | | |
| | | BALANCE DUE SHIPPER | | | 118.37 | |
| Valuation for freight per wet ton $ 6.28 | | | | | 235.65 | 235.65 |

FORM 14 SOM 2 47 CAINNB

AMERICAN SMELTING AND REFINING COMPANY
EL PASO SMELTING WORKS

# ORE SETTLEMENT

EL PASO, TEXAS 2-28-47
SMELTER LOT 351
SHIPPER'S LOT
CLASSIFICATION Ore
NAME OF MINE Old Yuma Dump

BOUGHT OF Authur W. Jacobs, Mgr., Tucson Ore Mg. Co.
ADDRESS P. O. Box 2667, Tucson, Arizona
SHIPPING POINT Tucson, Arizona

| CAR No. | INITIAL | GROSS | SACKS No | SACKS Weight | NET WEIGHT | MOISTURE % | DRY WEIGHT |
|---|---|---|---|---|---|---|---|
| 91592 | SP | | | | 75020 | 2.9 | 72844 |

WEIGHT IN AVOIRDUPOIS POUNDS

FINAL SETTLEMENT

N. Y. METAL QUOTATIONS

| | | |
|---|---|---|
| Settlement Date | 2-11-47 | |
| E/L Date | 2-6-47 | |
| Silver | 90.0 | Cts per oz. |
| F'gn Silver | 70.75 | |
| Lead | $ 13.00 | Per 100 lbs. |
| E. & M. J. Copper | | Cts. per lb. |

PREMIUM METAL CONTENT

Lead 5232 lbs.
Copper lbs

PAYMENTS FOR METALS

| ELEMENT | PER TON 2000 LBS. | | | BASE | POLICY | PERCENT PAID FOR | NET PAID FOR | | RATE | VALUE AMOUNT PER TON | VALUE AMOUNT TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gold | .09 | oz. | | | | | .09 | oz. | 32.31825 | 2.91 | |
| Silver | .5 | oz. | No Pay | | | | | oz. | | | |
| Lead | 7.56 | % | 1.5 | 6.06 | 121.2 | 90 | 109.08 | lbs. | 1129 | 12.32 | |
| Copper | .05 | % | No Pay | | | | | lbs. | | | |

TOTAL PAYMENTS FOR METALS 15.23

DEDUCTIONS

| | | DEBITS | CREDITS |
|---|---|---|---|
| SMELTER CHARGE F. O. B. El Paso, for Metal Payments not exceeding $ 15.00 per ton | | 4.50 | |
| 10 % of $ .23 excess over $ 15.00 per ton | | .02 | |
| Handling Sacks | | | |
| Copper Deficiency | | | |
| Bullion Freight Tax | 109.08 @ .00024 | .03 | |

| ANALYSIS | | | DEDUCTION | NET | | | RATE | | DEBITS | CREDITS |
|---|---|---|---|---|---|---|---|---|---|---|
| Insoluble | 61.2 | % | 40.0 | 21.2 | % | @ | 5 | Cts. | 1.06 | |
| Silica | 55.6 | % | | | % | @ | | Cts. | | |
| Iron | 6.3 | % | | | % | @ | | Cts. | | |
| Mn | | % | | | % | @ | | Cts. | | |
| Lime | 2.0 | % | | | % | @ | | Cts. | | |
| Zinc | 6.9 | % | 5.0 | 1.9 | % | @ | 30 | Cts. | .57 | |
| Sulphur | .1 | % | | | % | @ | | Cts. | | |
| Alumina | 2.9 | % | | | % | @ | | Cts. | | |
| As | .17 | % | | | % | @ | | Cts. | | |
| | .18 | % | | | % | @ | | Cts. | | |
| Fl | | % | | | % | @ | | Cts. | | |
| TOTAL DEDUCTIONS | | | | | | | | | 6.18 | 6.18 |
| NET VALUE PER TON | | | | | | | | | | 9.05 |

| | | | | DEBITS | CREDITS |
|---|---|---|---|---|---|
| Total Value on | 36.422 | Dry Tons @ 9.05 | Per Ton | | 329.62 |
| Less Freight on | 37.51 | Wet Tons @ 2.64 | Per Ton 99.03 + 2.97 Tax | 102.00 | |
| | | Hauling Charge | | | |
| | | Switching | 3.10 + .09 Tax | 3.19 | |
| | | Umpires | | | |
| | | Demurrage | 2.20 + .07 Tax | 2.27 | |
| Amount withheld pending receipt of Silver Affidavit | | | | | |
| Royalty 10% | 22.22 | | | 22.22 | |
| | 12.82 | | | | |
| | 9.40 | | | 115.37 | |
| | | Pd. 2-26-47 | BALANCE DUE SHIPPER | 84.57 | |
| Valuation for freight per wet ton $ 8.79 | | | | 329.62 | 329.62 |

FORM 8A 50M 1-47 CAIRNS

AMERICAN SMELTING AND REFINING COMPANY
EL PASO SMELTING WORKS

# ORE SETTLEMENT

EL PASO, TEXAS 3-6-47
SMELTER LOT 351
SHIPPER'S LOT
CLASSIFICATION Ore
NAME OF MINE Old Yuma Dump

BOUGHT OF Arthur W. Jacobs, Mgr., Tucson Ore Mg. Co.
ADDRESS P. O. Box 2667, Tucson, Arizona
SHIPPING POINT " "

| CAR NO. | INITIAL | GROSS | SACKS NO. | SACKS WEIGHT | NET WEIGHT | MOISTURE % | DRY WEIGHT |
|---|---|---|---|---|---|---|---|
| 91592 | SP | | | | 75020 | 2.9 | 72844 |
| | | CORRECTION a/p SCHEDULE | | | | | |

WEIGHT IN AVOIRDUPOIS POUNDS

N. Y. METAL QUOTATIONS

| | | |
|---|---|---|
| Settlement Date | 2-11-47 | |
| Bill Date | 2-6-47 | |
| Silver | 90.0 | Cts. per oz. |
| Fgn Silver | 70.75 | |
| Lead | $ 13.00 | Per 100 lbs. |
| E. & M. J. Copper | | Cts. per lb. |

PREMIUM METAL CONTENT

| | | |
|---|---|---|
| Lead | 5232 | lbs. |
| Copper | | lbs. |

PAYMENTS FOR METALS

| ELEMENTS | ASSAY PER TON 2000 LBS. | | DEDUCT | ASSAY | EQUIVALENT | PERCENT | NET PAID FOR | | RATE | AMOUNT PER TON | AMOUNT TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gold | .09 | oz. | | | | | .09 | oz. | $2.31825 | 2.91 | |
| Silver | .5 | oz. | no | pay | | | | oz. | | | |
| Lead | 7.56 | % | 1.5 | 6.06 | 121.2 | 90 | 109.08 | lbs. | .1129 | 12.32 | |
| Copper | .05 | % | no | pay | | | | lbs. | | | |

VALUE

TOTAL PAYMENTS FOR METALS 15.23

DEDUCTIONS

| | DEBITS | CREDITS |
|---|---|---|
| BASE CHARGE: F. O. B. El Paso, for Metal Payments, not exceeding $ 15.00 per ton | 3.50 | |
| 0 % of $ .23 excess over $ 15.00 per ton | .02 | |
| Handling Sacks | | |
| Copper Deficiency | | |
| Bullion Freight Tax 109.08 @ .00024 | .03 | |

| ANALYSIS | | | DEDUCTION | NET | | RATE | | | DEBITS | CREDITS |
|---|---|---|---|---|---|---|---|---|---|---|
| Insoluble | 61.2 | % | | | % | @ | | Cts. | | |
| Silica | 55.6 | % | | | % | @ | | Cts. | | |
| Iron | 6.3 | % | | | % | @ | | Cts. | | |
| Mn | | % | | | % | @ | | Cts. | | |
| Lime | 2.0 | % | | | % | @ | | Cts. | | |
| Zinc | 6.9 | % | 5.0 | 1.9 | % | @ | 30 | Cts. | .57 | |
| Sulphur | .1 | % | | | % | @ | | Cts. | | |
| Alumina | 2.9 | % | | | % | @ | | Cts. | | |
| As | .17 | % | | | % | @ | | Cts. | | |
| Sb | .18 | % | | | % | @ | | Cts. | | |
| Bi | | % | | | % | @ | | Cts. | | |

TOTAL DEDUCTIONS 4.12 4.12

NET VALUE PER TON 11.11

| | | | | | DEBITS | CREDITS |
|---|---|---|---|---|---|---|
| Total Value on | 36.422 | Dry Tons @ | 11.11 | Per Ton | | 404.65 |
| Less Freight on | 37.51 | Wet Tons @ | 2.64 | Per Ton 99.03 + 2.97 tax | 102.00 | |
| | | Hauling Charge | | | | |
| | | Switching | 3.10 + .09 tax | | 3.19 | |
| | | Umpires | | | | |
| | | Demurrage | 2.80 + .07 tax | | 2.87 | |
| Amount withheld pending receipt of Silver Affidavit | | | | | 29.72 | |
| Royalty 10% | | 29.72 | | Paid 2-26-47 | 115.37 | |
| | | 22.22 | | Paid 2-28-47 | 84.57 | |
| | | 7.50 | | | | |
| | | | BALANCE DUE SHIPPER | | 67.53 | |
| Valuation for freight per wet ton $ 10.79 | | | | | 404.65 | 404.65 |

AMERICAN SMELTING AND REFINING COMPANY
EL PASO SMELTING WORKS

# ORE SETTLEMENT

EL PASO, TEXAS 4-4-46
SMELTER LOT 8-681
SHIPPER'S LOT -
CLASSIFICATION Cts.
NAME OF MINE Old Tuna Dump

BOUGHT OF Tucson Ore Milling Co.
ADDRESS 1187 East Speedway, Tucson, Arizona
DEPARTMENT Tucson, Arizona

| WEIGHT IN AVOIRDUPOIS POUNDS | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | |
| 34167 | SP | | | 55000 | 12.1 | 48345 |

N Y METAL QUOTATIONS

| | | |
|---|---|---|
| Settlement Date | 3-15-46 | |
| B/L Date | 3-12-46 | |
| Silver | 70.625 | Cts per oz |
| F'gn Silver | 70.75 | |
| Lead | $ 6.50 | Per 100 lbs. |
| E. & M. J. Copper | 11.650 | Cts per lb |

PREMIUM METAL CONTENT

| | | |
|---|---|---|
| Lead | 9325 | lbs |
| Copper | | lbs |

Final Settlement

PAYMENTS FOR METAL

| | | | | | | | | | | | VALUE | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | NET PAID FOR | | RATE | AMOUNT PER TON | AMOUNT TOTAL |
| | .945 | oz | | | | | .945 | oz. | 32.31825 | 30.54 | |
| Silver | 2.235 | oz | .5 | 1.735 | | | 1.735 | oz. | .69125 | 1.20 | |
| Lead | 20.305 | % | 1.5 | 18.805 | 376.1 | 90 | 338.49 | lbs. | .049 | 16.59 | |
| Copper | .09 | % | | | | | | lbs. | | | |
| Iron | 8.6 | Ins 39.6 | | - | | | | | | | |

TOTAL PAYMENTS FOR METALS 48.33

| DEDUCTIONS | | DEBITS | CREDITS |
|---|---|---|---|
| Bond Charges: F. O. B. El Paso, for Metal Payments not exceeding $ 15.00 per ton | | 3.90 | |
| 10 % of $ 33.33 excess over $ 15.00 per ton | Max. | 1.50 | |
| Handling Sacks Non dump car | | .25 | |
| Copper Deficiency | | | |
| Buffalo Freight Tax 338.49 @ .0002 | | .07 | |

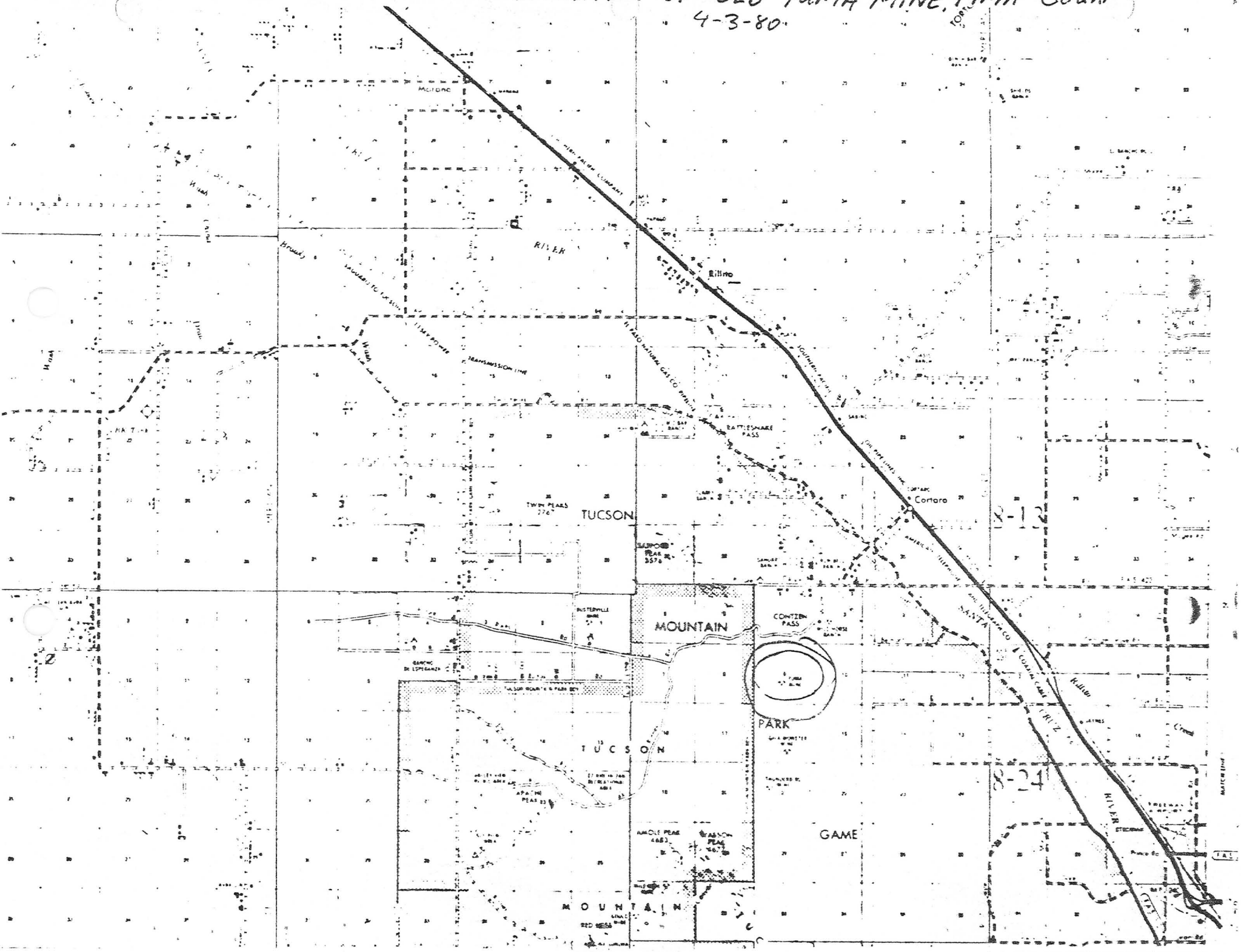
| ANALYSIS | | | DEDUCTION | NET | | | RATE | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Insoluble | 39.6 | % | 40.0 | | % | @ | Cts. | | | |
| Silica | 30.4 | % | | | % | @ | Cts. | | | |
| Iron | 8.6 | % | | | % | @ | Cts. | | | |
| Mn | - | % | | | % | @ | Cts. | | | |
| Lime | 1.4 | % | | | % | @ | Cts. | | | |
| Zinc | 8.2 | % | 7.0 | 1.2 | % | @ | 30 Cts. | .36 | | |
| Sulphur | 4.1 | % | 2.0 | 2.1 | % | @ | 25 Cts. | .53 | | |
| Arsenic | .5 | % | | | % | @ | Cts. | | | |
| Zinc | .25 | % | | | % | @ | Cts. | | | |
| | .18 | % | | | % | @ | Cts. | | | |
| | - | % | | | % | @ | Cts. | | | |

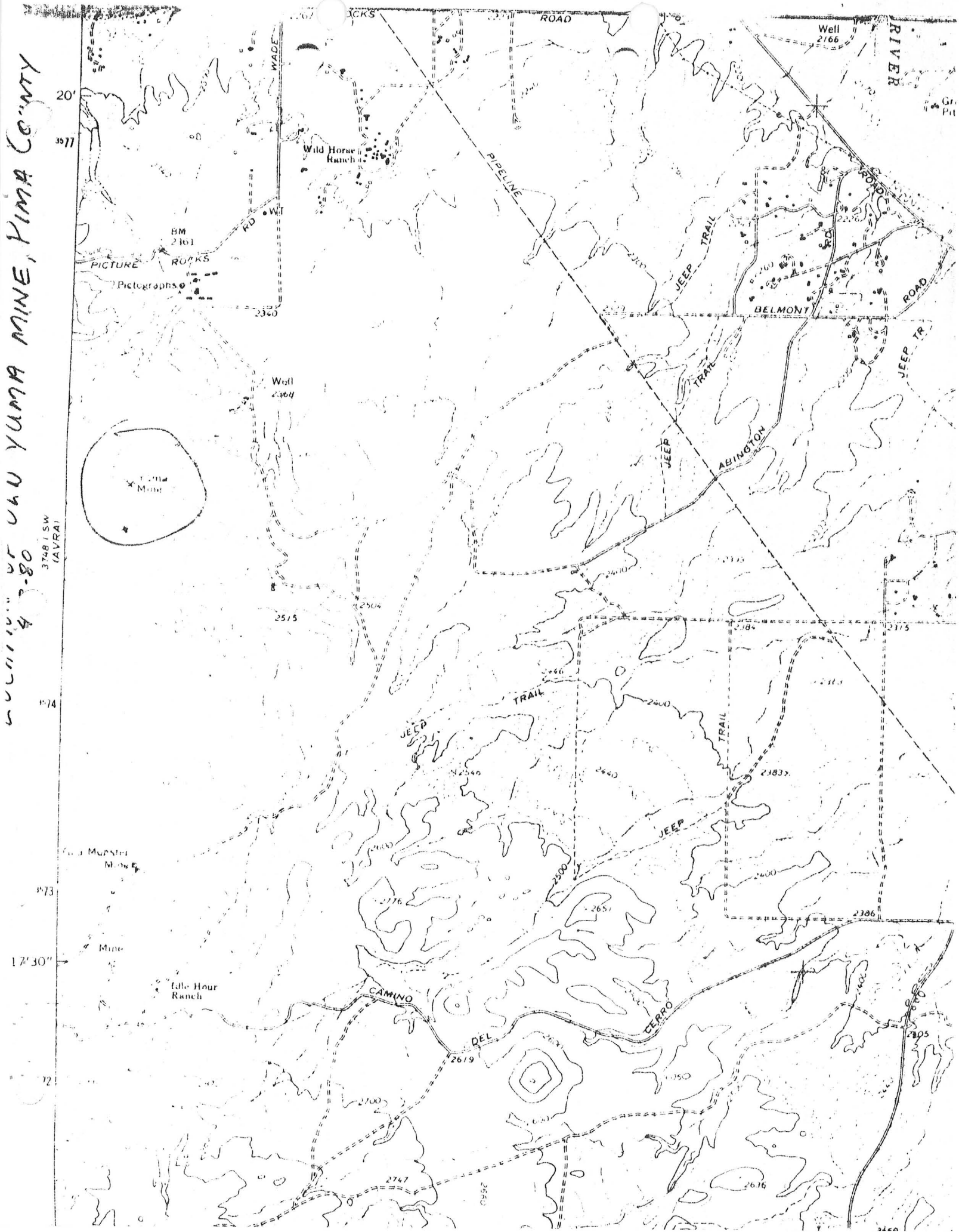
TOTAL DEDUCTIONS 6.21 6.21

NET VALUE PER TON 42.12

| | | | | | DEBITS | CREDITS |
|---|---|---|---|---|---|---|
| Total Value on | 24.1725 | Dry Tons @ | 42.12 | Per Ton | | 1018.15 |
| Less Freight on | 27.500 | Wet Tons @ | 3.70 | Per Ton 111.00 ÷ 3.33 | 114.33 | |
| | | Hauling Charge | | | | |
| | | Switching | 2.48 + .07 | | 2.55 | |
| | | Umpires | | | 10.16 | |
| | | | Hawley Lot 190 & 305 | | 22.50 | |
| Amount withheld pending receipt of Silver Affidavit | | | | | | |
| Royalty 10% | 86.86 | | | | 86.86 | |
| | 86.48 | | Pd. 3-25-46 | | 778.27 | |
| | .38 | | | | | |
| | | | BALANCE DUE SHIPPER | | 3.48 | |
| Valuation for freight per wet ton $ | 37.02 | | | | 1018.15 | 1018.15 |

LOCATION OF OLD YUMA MINE, PIMA COUNTY
4-3-80




ROAD
Well
2166
RIVER
WADE
20'
3577
Wild Horse
Ranch
PIPELINE
ROAD
BM
2161
RD
PICTURE
ROCKS
Pictographs
JEEP
TRAIL
BELMONT
ROAD
JEEP TR
Well
2464
TRAIL
JEEP
ABINGTON
Mine
3748 I SW
(AVRA)
2515
TRAIL
JEEP
TRAIL
JEEP
Mine
Mine
17'30"
Idle Hour
Ranch
CAMINO
DEL
CERRO
2619
2747
2386

ARIZONA DEPARTMENT OF MINERAL RESOURCES
MINERAL BUILDING, FAIRGROUNDS
PHOENIX, ARIZONA

July 8, 1958

To the Owner or Operator of the Arizona Mining Property named below:

Old Yuma Mine (Pima County) lead, molybdenum, vanadium
(Property) (ore)

above property which we would like to have

ine Owner's Report form with as complete detail

of reports, maps, assay returns, shipment returns

ot sent us before and which might interest a

t the property.

PHOENIX, ARIZ. JUL 8 7-PM 1958

RETURNED WITH Unknown at Address

Mr. Grady Wilson
~~102 W Lincoln St.~~
Tucson, Arizona

Frank P. Knight
FRANK P. KNIGHT,
Director.

Enc: Mine Owner's Report

USBM "U" File states vanadium Low

see - Book V-VII - A.L. Flag vanadium reports

Randolph, Col. Epes
Epitaph
April 11, 1915

# OLD YUMA MINE BONDED BY EPES RANDOLPH

Epitaph — Apr. 11, 1915

Tucson Apr. 2—The Old Yuma mine fourteen miles west of Tucson in the Tucson mountains has been bonded by Col. Epes Randolph and associates and development work has been started in order to determine definitely the possibilities of the property.

The ore is andesite feebly mineralized and carries small values in gold a little copper and molybdenum and vanadium. It is expected that on account of the large bodies of low grade gold ore that the latter metal will prove the most profitable to be extracted. The market for both molydenum and vanadium has been injured on account of the war but may improve later.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April 11 - 15
Epitaph

OVER

THE TUCSON CITIZEN, TUCSON, ARIZONA

FEBRUARY 29, 1916

# OLD YUMA MILL TO BE COMPLETED WITHIN A MONTH

## Colonel Randolph Regards Molybdenum As Good Business Risk.

The mill of the Old Yuma mine, which is no wunder construction, will be ready to operate within a month, according to Colonel Epes Randolph. This is a molybdenum mine, 15 miles west of the city in the Tucson mountains. It was originally a gold property and was bonded by Colonel Randolph and associates from Colonel John H. Martin and Mrs. W. H. Barnes of Tucson.

"We are preparing to take advantage of the market when the demand for molybenum comes," said Col. Randolph.

The mill will be capable of handling 100 tons a day.

Courtenay DeKalb, the mining engineer, is associated with Colonel Randolph in the development of this property and has patented a process for refining the concentrates.

The market for molybdenum ore will increase steadily in years to come. It could be used in the manufacture of cannon and armor plate, but mills in this country are built for using tungsten. The production of tungsten is very uncertain. It can be mined profitably when the price is high, but properties are apt to be closed down, Colonel Randolph thinks, when the price falls.

He regards molybdenum, on the contrary, as a good business risk, for the reason that its production on a large scale is assured. It will find a very extensive use in the arts of peace and mills in this country will be remodeled for its use as soon as a slackening in war orders gives them a chance. Molybdenum will be used in automobile axles and for hardening steel.

of Arizona and more particularly described as follows to wit; Commencing at this monument of stones being the center of the easterly end of the claim and upon which this notice is posted; thence Northerly 300 feet to a monument of stones; thence Westerly 1500 feet to a monument of stones; thence Southerly 300 feet to a monument of stones being the center of westerly end of claim; thence Southerly 300 feet to Monument of stones thence Easterly 1500 feet to a monument of stones thence Northerly 300 feet to the place of beginning. This claim is more particularly described as situated about 13 miles northwesterly from the City of Tucson about four miles northwesterly from the "Nine Mile water hole" of the Santa Cruz River, and about 100 yards South of the Silver Bell Road and shall be known as the Old Yuma Mine. Located on the ground August 1st 1885.

Witness P. J. Garcia
M. Gervais

C. C. Stephens
Locator

Filed and recorded at request of C. C. Stephens 3rd Aug A.D. 1885 at 9:30 a.m.

A. B. Dawson
County Recorder.

| Name of Mine | Part | Location date | Record date |
|---|---|---|---|
| Old Vienna | Tarson Mine | Aug 1 1885 | Aug 3 1885 |

| Book | Page |
|---|---|
| W | 358 |

Epes Randolph President Ang Eaton R.R. Co
& Southern Pacific RR Co of Mexico
Born - Lunenburg Co. Va Aug 16, 1856
died 10:30 PM on Monday Aug 22, 1921
in apt in Santa Rita Hotel
Father, Native Virginian William Eaton Randolph
Clarke Co VA
Mother Sarah Lavinia Epes Lunenburg
Co. Started with ½ day RR. in 1876
to 1885
Married Jan 1886 to Miss Eleanor
Taylor of Winchester Ky.
1895 was made Supt of SP

OLD YUMA MINE
HISTORY & PRODUCTION

[illegible] pine of
[illegible] pine
[illegible] wulfenite
[illegible] Tonnage of
[illegible]

[illegible] Mine Co. [illegible]
[illegible] Mine, [illegible]

Bonanza Park Mining Co.

The mining district of Pima Co
[illegible] and in spite
of the adverse conditions during & immediately
following the war the large properties
have continued to operate.