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PRINTED: 05/31/2002

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: ORIZABA

ALTERNATE NAMES:

PINAL COUNTY MILS NUMBER: 672

LOCATION: TOWNSHIP 9 S RANGE 4 E SECTION 25 QUARTER NW
LATITUDE: N 32DEG 37MIN 10SEC LONGITUDE: W 111DEG 54MIN 43SEC
TOPO MAP NAME: SILVER REEF MTS - 15 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:
- SILVER
- GOLD
- SILICON
- LEAD
- COPPER OXIDE
- MOLYBDENUM

BIBLIOGRAPHY:

TENNEY, JAMES HISTORY OF MINING IN AZ 1927-29
P. 337-338
TENNEY, J.B., ECONOMIC GEOLOGICAL RECONN. OF
CASA GRANDE MINING DIST. AZBM 1934, P. 22-23
ADMMR PICO ACE GROUP FILE
ADMMR ORIZABA MINE FILE
ADMMR JACK RABBIT SILICA MINE FILE
BUR. GEO. & MIN. TECH. MIN. MAP NOTES
USAEC PERLIM. RECONN. REPORT 172-488, 1953
P. 13
ADMMR U FILE, PINAL AG12
ELEVATORSKI, E.A., AZ INDUSTRIAL MINERALS
1980, P. 57

Arizona Department of Mines and Mineral Resources

INFORMATION FROM MINE CARDS IN MUSEUM

ARIZONA

PINAL COUNTY

MM 921 Silver Ore

Orizaba Mine

MILS #672

O-AK4½

ORIZABA file

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

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

Orizaba (Pinal County) silver, lead, zinc
(Property) (ore)

rty which we would like to have

PHOENIX, ARIZ. JUL 8 7-PM 1958

Report form with as complete detail
aps, assay returns, shipment returns
efore and which might interest a
ty.

Mr. John J. Christie
P.O. Box 1853
Tucson, Arizona

RETURNED TO WRITER
UNCLAIMED

Frank P. Knight
FRANK P. KNIGHT,
Director.

Enc: Mine Owner's Rep

ORIZABA
Ag, Pb
Pinal 11 - 5 T 9 S, R 4 E
John J. Christie, Box 1853, Tucson '44

*

Location S25, 26, 9S, 4E

ORIZABA MINE

PINAL COUNTY

REFERENCES

METAL MINING AND PROCESSING JULY, 1964 p45

USBM "U" File reports vanadium None.

See: Casa Grande (Mines File) Casa Grande History Report

*

Orizaba

P.O. Box 1853
Hudson Arizona.
Oct. 5 1942.

Mr. J. S. Coupal Director,
Dept. of Mineral Resources.,
Phoenix Arizona,

Dear Sir: I have your letter of Sept. 30/42
In a few days I will forward to you
additional data on the Orizaba.
I have contacted Mr. Ballam and he
is cooperating with me. Very much
appreciating your interest, I am,

Respectfully yours
John J. Christie

DEPT. MINERAL RESOURCES
RECEIVED
OCT 6 1942
PHOENIX, ARIZONA

A.

September 30, 1942

Mr. John J. Christie
Box 1853
Tucson, Arizona

Dear Mr. Christie:

There has been submitted to us for review your application for a preliminary development loan on the Orizaba claims located in the Casa Grande Mining District.

Despite the report by A. B. Richmond which was attached to the application there is no specific information upon which a sound comment can be made as to the advisability of granting such a loan. These reports are submitted to the Department of Mineral Resources for review and we do not like to make unfavorable comments without giving the applicant every possible chance to supply additional information.

If you are unable to come to Phoenix to do this, I suggest that you contact Mr. George A. Ballam, P. O. Box 495, Tucson, or you may phone him at his residence telephone 1537-R. Mr. Ballam is the field engineer for the Department of Mineral Resources in the southern area and you may be able to supply him with some specific information as to the width and value of the ore that can be expected to be exposed when the present workings are unwatered.

I hope you have available your original copy of the application with the report and the skethh map submitted so that you may show these to Mr. Ballam.

With best wishes and kindest regards, I am

Yours very truly,

J. S. Coupal, Director

JSC:LP

September 24, 1942

MEMORANDUM

TO: George A. Ballam

FROM: Earl F. Hastings

We have an application on hand for a loan from the Orizaba Mine owned by John J. Christy, Box 1853, Tucson. This property is located in the Casa Grande Mining District about 23 miles southwest of Casa Grande.

We do not have any report on this property in our files and wonder if it has ever come to your attention. If you have any information on it, please let us know.

TUCSON
OCT 22
11 PM
1942
ARIZ.

THIS SIDE OF CARD IS FOR ADDRESS

DEPT. MINES & MINERAL RESOURCES
OCT 24 1942
PHOENIX ARIZONA

Mr. Sam Coupal
Arizona Mineral Research Bureau
Phoenix Ariz.

P.O. Box 1853
Tucson Ariz.

Mr. Coupal: In answer to your letter of some time ago I advised you I would have (soon) additional data to support my application for a P.D. loan on the Oriza ba S.W. of Casa Grande. So far I have not been able to secure the data, but have been advised Frank K. Hess is familiar with the property and I have written him regarding same. Yours truly

John J. Christie

April 5 (92 - 97?)

Memo to File
Orizaba Mine
Pinal County T9S R4E Sec. 24, 25

From
H. Mason Coggin

Visiting Pioneer Sand's Casa Grande Quarry on the Orizaba claim in 9S 4E Sec.25. They are quarrying in the limestone and have a plant that I estimate will handle about 300 tons per hours. The plant consist of a large portable jaw crusher, screens belts and a cone crusher. Stacker conveyors to store product and a truck scale make up the plant equipment. The mobile equipment includes a drill, two cat loaders and a dump truck on the property. Power is provided by several small generators.. They are making crushed stone products for local markets. This will add to their capabilities in Gilbert.

The road to the property leaves state highway 85 just south of mile post 35.

Pioneer's main yard is in Gilbert Phone 926-1700 or 926 -8200 and talk to Dave Sawyer

This mine is making a nice colored product which is buff to tan and most of the material comes from the limestone formations. I would suspect that the material could also be used for pH control and other limestone uses. .

PAUL BUTF, BLM, 5-4-01
REPORTS THIS IS OF
UNPATENTED MINING
CLAIMS BUT IS NOT
FLUX BUT COMMON VARIETY!

NSN

VIS6.17

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

VERBAL INFORMATION SUMMARY

1. Information from: Shirley Lunsman

   Company:

   Address: P. O. Box 1519
   Casa Grande, AZ 85222

2. Phone: (602) 421-0295

3. Mine: Orizaba

4. ADMMR Mine File: Orizaba

5. County: Pinal MILS Number: 672

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

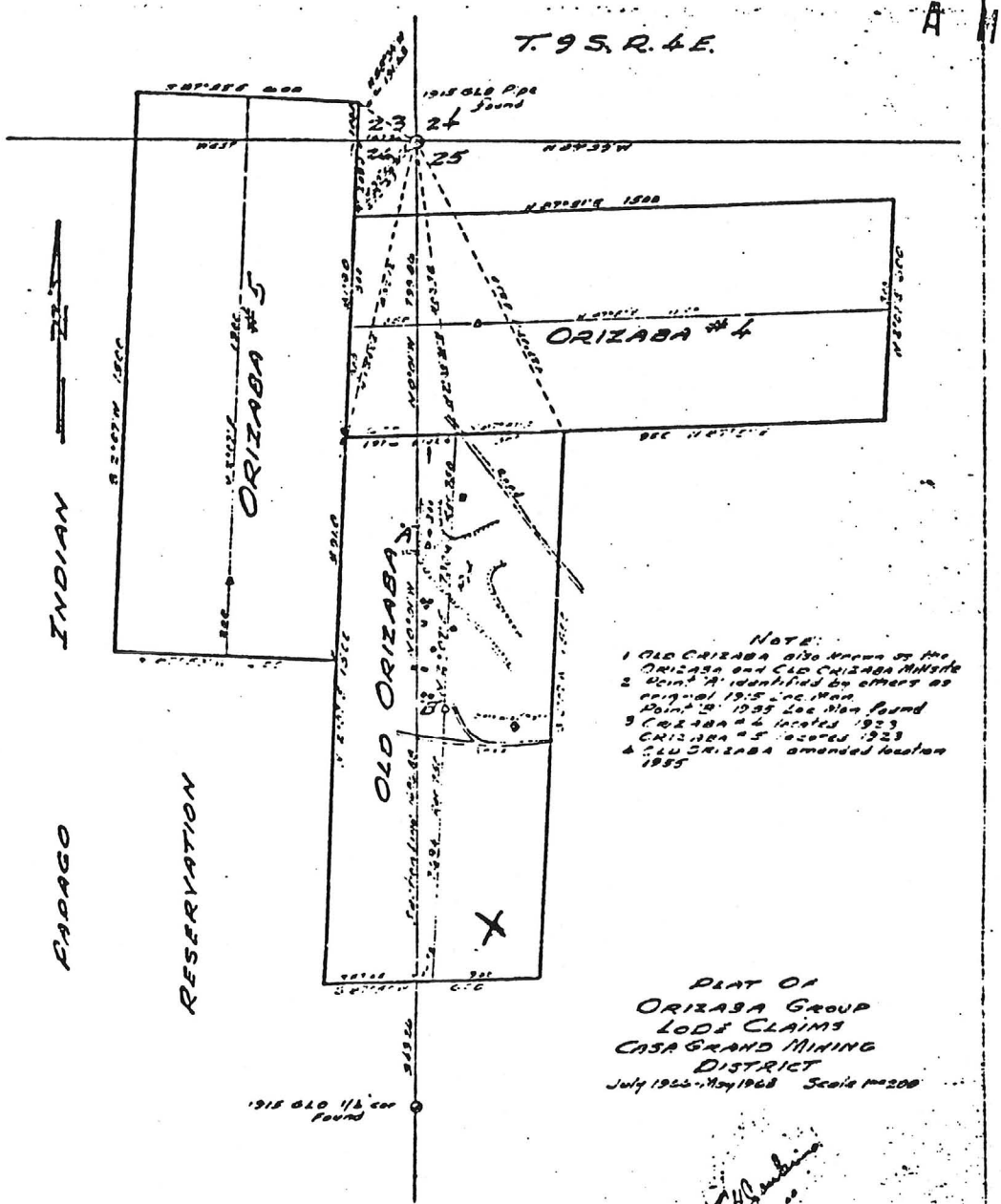
   Shirley Lunsman reported she and a partner Bob Andrist has acquired the Old Orizaba claim (AMC 78228) from Art Robert (now deceased) through his son Bill Robert.

   She is considering producing decorative stone, lead-silver, and silica. The commodities, values, sampling, development costs, etc. were discussed. She was advised to try to get the shipment records from the years during which the mine shipped silica to the Phelps Dodge Smelter in Ajo and shipped lead-silver ore to the Asarco Smelter in El Paso.

   She provided a map of the claim.

Date: November 4, 1991 Engineer: Ken A. Phillips

A MC 78228



NOTE:
1 OLD ORIZABA also known as the ORIZABA and OLD ORIZABA Millsite
2 Point 'A' identified by others as original 1915 Loc. Mon.
Point 'B' 1955 Loc. Mon. found
3 ORIZABA #4 located 1923
ORIZABA #5 located 1923
4 OLD ORIZABA amended location 1955

PLAT OF
ORIZABA GROUP
LODE CLAIMS
CASA GRAND MINING
DISTRICT
July 1966 - May 1968 Scale 1" = 200'

E. H. Jenkins, Tucson, Ariz.
Reg. Land Surveyor No. 2366
Mineral Surveyor BLM

RECEIVED
B. L. M. AZ STATE OFFICE

ORIZABA MINE Sec 25 & 26 T9S R4E PINAL COUNTY

There was no one at the Orizaba quartz-flux mine; but it appeared as though some mucking had been done recently. GW WR 1-22-71

Stopped at Orizaba mine. No one around altho loaded truck, back drill, front end loader and D-9 dozer with ripper blade on workings. Trailer off on hillside. JHJ - 5-28-71

The Orizaba Mine of A. W. Robard, furnished about 50 tons/day of high silica fluxing rock to the Ajo smelter after the copper strike. GW QR 9/71

A. W. Robard, at the Orizaba mine, 20 miles south of Casa Grande, produces his usual quota of siliceous ore for the New Cornelia smelter. GW QR 2/72

RRB WR 4/14/80: Stopped at the Orizaba Silica Quarry, 22 miles south of Casa Grande (Pinal County). No one was there but the equipment appeared to have been in use recently. Equipment on the property included:

D-9 Cat with ripper.
D-9 Cat with dozer.
Michigan Front End Loader
Track Mounted Air Drill
Small Tracked Dozer
20 Ton Kenworth Truck Loaded

RRB WR 12/11/81: Visited the Orizaba Mine, Sections 25 and 26 T9S R4E, Pinal County. Apparently working today as an engine on a 20 ton truck and a loader were still warm. Producing silica flux - a small pile of galena was set to one side.

KAP WR 4/22/83: Lance Vanderzal, BLm Mining Engineer, Yuma District, reported the Pico #1 and the Pico #2 on the Papago Indian Reservation have been the subject of a validity examination and are currently considered valid. The property was supplying silica flux to the New Cornelia Smelter (Phelps Dodge - Ajo) when the smelter was operating. Apparently the Pico #1 and Pico #2 are considered part of the Orizaba Mine Pinal County. The Orizaba was itself "dumped" years ago. The Pico #1 and #2, according to Mr. Vanderzal have a large reserve of +90% SiO_2 silica flux for use at Ajo. The BLM microfiche shows the Pico #1 and #2 to be in Section 24, T9S R4E. They are AMC 80062 and 80063 and shown as owned by Richard G. CLemons, Box 962, Casa Grande, AZ 85222 and Ira Wagon, P.O. Box 382, Casa Grande, AZ 85222. A claim, AMC #78228 known as the Old Orizaba is shown as located across the boundary of sections 25 and 26, in T9S R4E. This claim is shown to be held by A. W. Robart, 4916 W. Softwind Dr., Glendale, AZ 85310. Arizona DMR mine files known as "orizaba Mine, Pinal County" and Pico Ace, Pinal County" both discuss silica flux production from the Orizaba and Pico claims. It is likely these are nearly but different locations. The claims which were the subject of the BLM examination were the Pico #1 and Pico #2 (AMC 80062 and 80063).

ORIZABA MINE PINAL COUNTY

Orizaba and Pico Ace 1-3 mines in Tat Mamoli Mountains - Robert Dozer Co. during the first half of the year operated a silica pit on the Pico Ace Claims and then shifted to the Orizaba Mine when Freeman moved out. They mined and delivered 1000 tons per month to the New Cornelia Smelter at Ajo. This averaged 91% SiO_2 and $0.75 to $1.00 per ton in silver. The silver saves the operation, much of the value is used by a 90-mile truck haul to Ajo. The Robarts are good operators and have improved the pit considerably. The L.A. Drilling Co. of Casa Grande optioned the adjoining Pico Ace Claims and two other claims and drilled some shallow holes (which most observers felt were too shallow) and David Osborn reported very weak results. He kept watch on this drilling since Newmont was possibly interested if results were good.
Later American Exploration & Mining Co., 23rd floor, Russ Bldg., San Francisco drilled a hole on the Pico 1-3 Group, under R.G. Garwood, Engr. and Wm. Just General Supervisor. Results were not good. This was preceeded by geophysical work. (They were in the area from mid-April to mid-May, but the geophysical work was done earlier in 1967.) The Robarts report small lenses of lead-silver ore that carry up to 40 oz. Ag are occasionally encountered. The L.A. Drilling Co., is composed of Lester Cox and Art Wilson of Casa Grande (both are gone now). LAS Annual Report 6-1967

Visited the Orizaba silica mine - closed during the strike. GWI WR 1-20-68

Two men have been mining and shipping silica flux from the Orizaba and Jack Rabbit mines in the Papago Indian Reservation about 24 miles southwest of Casa Grande, in the Santa Rosa district. CLH QR 4-1968

A. W. Robart shipping about 50 tpd to Ajo from the Orizaba. FTJ WR 4-4-69

Active Mine List April 1969 - A. W. Robart, 3249 W. Dunlap Ave., Phoenix

Shipments at the rate of about 50 tons per day are being made to the Ajo smelter from the Orizaba mine by A. W. Robart, 3249 W. Dunlap Ave., Phoenix. Pay Dirt 6-23-69

Orizaba continued to ship approximately 600 tpm silica flux to Ajo. While this was originally a silver property, the silver content of the useable silica is usually too low for payment. GWI QR 9-1969

Has run into limestone - life may be limited. GWI Note 2-19-70

Orizaba mine mining silica. Drill holes hit alt. lime. GWI WR 2-21-70

Orizaba is shipping silica at the usual rate to the Ajo Smelter. GWI QR 2-27-70

Visited Orizaba mine - active - equipment in the pit. Two Inspiration geologists mapping area. FTJ WR 4-10-70

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Active Mine List May 1970 - 2 men - A.W. Robart - 16606 N. 44th St., 3249 W. Dunlap Ave. Phx.
Active Mine List Oct. 1970 - 2 men " "

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

1. Information from: Bill Robart & Visit
   Address: 420 E. McMurray Blvd Coia Grande
2. Mine: Orizaba
3. No. of Claims - Patented Indian lease
   Unpatented
4. Location: S. End of TAT MOMOLI MTS.
5. Sec 23-24-25-26 Tp 9S Range 4E
6. Mining District
7. Owner: Papago Indian Tribe
8. Address:
9. Operating Co.:
10. Address:
11. President:
12. Gen. Mgr.:
13. Principal Metals: Silica
14. No. Employed: 2
15. Mill, Type & Capacity: None
16. Present Operations: (a) Down ☐ (b) Assessment work ☐ (c) Exploration ☐
    (d) Production ☑ (e) Rate 1000 TPM ~~tpd.~~
17. New Work Planned:
18. Miscl. Notes: 2 men employed - One to mine othe to truck silica to Ajo & P.D. Smelter.

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Orizaba continued to ship approximately 600 tpm silica flux to Ajo. While this was originally a silver property, the silver content of the usuable silica is usually to low for payment. ~~CWI Quarterly Report 9/1970~~

Date: 10-22-69

(Signature) (Field Engineer)

ORIZABA MINE

PINAL COUNTY
SLATE MOUNTAINS

Visit and interview with Art Robart 1/18/67

Robart Dozer Co. is hauling 45 tons of silica flux to Ajo, per day. Robart said this runs 93 percent silica and 75 cents to $1.00 in silver per ton. (The monthly average is about 1000 tons).

LAS MEMO 1/18/67

Visit and Conference with Art Robart 2/7/67

Orizaba is still actively shipping silver flux at the same rate (41-45 tons per day) Jim Briggs, Mgr at New Cornelia said that the Robarts are considered excellent operators and were fortunate to have $1.00 or more silver in their flux. This is what makes their operation possible. Robart said his silica runs 93 to as much as 95 percent.

LAS MEMO 2/7/67

Robart Dozing Co., Phoenix, is still mining and delivering 1000 tons of 93% Silica flux "ore" to New Cornelia Smelter at Ajo. This material contains some silver and lead, in small lenses, veinlets or blebs. The silver varies from $0.75 to over $1.00 per ton. According to the Robarts, the lenses of lead-silver ore (galena, anglesite, cerargyrite, embolite and argentite) run up to 40 ounces silver.

The Robarts also reported that 2 Phelps Dodge field men were still in the region, looking. The Robarts said that Virgil Denning was still mining Silica at Anderson's Pit, but that there was a stock pile at Ajo of about 20,000 tons. ~~Robarts are planning to work a silver prospect in the Cerbat area if a strike should develop, and they report that this is fairly high-grade.~~

Conference with the Robarts (Junior and Senior at the Silica Pit 5/17/67)

The Robart Dozer Co. is still delivering 1000 tons per month of silica flux. (The Robarts were not at the mine at the time of the visit). According to Fenzi (Chief Engineer at New Cornelia) the silica grade is holding at well above 90 percent. However, during the past two months the silver content had dropped down somewhat. With a 90-mile haul the silver must be held close to $1.00 per ton to make a profit.

LAS MEMO 6/6/67

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ORIZABA MINE

PINAL COUNTY
SLATE MTN. DIST.

Mine Visit and later Conference with David Orr, Gen. Supt at New Cornelia Offices 10/4/66

No one was at the mines, but Robart Dozing Company is shipping 40 to 50 tpd to the Ajo Smelter. They now have the Orizaba, formerly worked for silica flux ore, by George Freeman, Casa Grande. The equipment was moved from Pico Ace 1-3 to Orizaba, which adjoins the Pico Group, both being owned by Ira Wagnon, et al, of Casa Grande. The option, briefly held by L. A. Drilling Co. of Casa Grande, was dropped after a few reportedly disappointing holes were drilled.

MEMO LAS 10/4/66

Not working 10/14/66 F.N.K.

ORIZAB A AND Pico Ace Group

Conference with Art Robart at the Mine 12/6/66

Mr. Robart said they were shipping at the usual rate of 40 tons, or more, per day and they were getting enough silver credits to make the deal go. The Robarts have reshaped the Orizaba pit by developing a broad bench on the northwest side of the old George Freeman pit. This bench can be carried with much additional height for several hundred feet to the NW. The present working face is over 100 feet long and up to 30 feet high. The overall working set-up is much improved over the pit conditions at the Pico 1-3 although the average silver content is not expected, over the long haul, to be good. This new location eliminates ¼ mile of fairly steep and not too good road. The present bench is only a few tens of feet above the flat surrounding the Orizaba.

MEMO LAS 12/6/66

Orizaba and Pico Ace Area

Conference with Wm. Yust Field Engineer & visit 12/6/66

American Exploration and Mining Company, 23rd Floor, Russ Building, San Francisco, California, is doing a geophysical survey of an area in the south half of the Tat Momoli Mountains, particularly around the Orizaba and Pico Ace Groups. Part of this ground could be affected by backup water from the proposed Santa Rosa Wash Dam. They are employing resistivity, I.P. and other electrical methods. Two objectives were raised to further or more extensively work in this area and both are probably valid at present (1) The proximity of the area to the Santa Rose Dam resevoir. (2) The uncertainty of what the Indians would do if discoveries are made. The first objection might be in part overcome but Wm. Yust, Field Engineer, said the Indian problem is entirely unpredictable. (The experiences that Newmont et al, in the Vekol has had with their lease has sort of put a damper on the enthusiasm of prospectors in the Papago Reservation.

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American Exploration maintains an Arizona office at 2901 N. Baxter, Tucson, Robert Garwood, Project Engineer.

MEMO LAS 12/6/66

ORIZABA MINE

SLATE MTNS. (Tat Mamoli Mtns.)
Pinal County

Conference with George Freeman and George Ballam, 5/19/65 And Mine Visit.

The mine is working again after several months of idleness. A shot was made on the north face of the main pit and near the east entrance. A yard shovel was mucking here. The silica looked clean and was well fragmented. According to Ballam, samples of the drillings showed 91-93 percent in silica and no more than 0.50 oz. silver per ton. Hauling was being done by 22-yard trucks. The haul amounts to 22.5 miles to Casa Grande. The other pit (on the Gila River Indian Reservation) will be temporarily idle while the quartz showing is developed. Work will return here later on and shipments will then alternate between the two pits.

MEMO LAS 5/19/65

Visit and Conference with George Freeman 6/1/65.

George Freeman said he would ship entirely from Orizaba for the next 6 months. The recent flux from here averaged 91-92 percent silica, but the silver runs no more than 50 cents per ton.

MEMO LAS 6/1/65

George Freeman mined here from June 15 to Sept. 15 and has not returned to the silica pit on the Salt River Reservation. He will not return for a while. He said that the silica ran 91 percent and silver about 3/4 ounce to the ton. (0.5 ounce is the cutoff). George ships 6 to 8 cars per week on the average to New Cornelia at Ajo.

Visit and conference with George Freeman at Casa Grande - 9-22-65 - LAS

Smith stated that George Freeman had not worked the Orizaba since early October, when he moved back to the Gila River Reservation silica pit (According to PD officials and Virgil Denning, Freeman's shipments of silica had declined recently.)

12-7-65 - LAS - conference with Ralph Smith at the Pico 1-3.

No work was in progress, and George Freeman said that he had not worked it since October, having moved back to the Gila Indian Reservation Lease.

Visit 1/20/66 LAS MEMO

Conference with Nate Coxon and Visit 9/21/66

*

No one was at the Pico 1-3 or the Orizaba but Nate Coxon said that Robart Dozing Co. Had both the Orizaba and the Pico Ace. They have now moved their equipment up to the Orizaba, near where George Freeman was working. This will be checked next week on the way to Ajo.

MEMO LAS 9/21/66

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine ORIZABA MINE Date 5/20/64

District Slate Mountain Dist. Pinal County Engineer Lewis A. Smith

Subject: Mine Visit and Conference with George Freeman in Casa Grande.

Mr. Freeman is currently shipping around 1500 tons per month from the Orizaba Silica flux pit. This runs nearly 90 per cent in Silica and 3/4 to over 1 ounce in silver per ton. The pit is, at the present, being worked from the new bench (Upper). This has shaped up well and will relieve the slide danger that existed in the main pit, the face of which had become too high for safe operation. Mr. Freeman said that he would remain on the upper bench for some time as he had a good reserve above this bench.

George Freeman stated that he was still delivering about 1500 tons of quartzite to New Cornelia Smelter at Ajo. However the silver content in the upper bench was not as good as it is lower down. Recently he was hampered by some heavy rains (4 inches in one).

LAS - 9-16-64 conference with George Freeman.

George Freeman is not, at present, working the Orizaba Silica Pit, but plans to mine some silica here so as to supplement his production from his new pit on the Gila River Indian Reservation, where he is now now mining 100 tpd. Since the last visit the upper bench has been extended SE. This has about cleared the lower bench, for future operations. The haul from Orizaba to Casa Grande is 6 miles more one way than that from the Gila Reservation.

Conference with George Freeman, Casa Grande - and Mine Visit 12/1/64
LAS MEMO

Visit and Conference with George Freeman 1/20/65

George Freeman said that he planned to reopen the Orizaba when and if, he needed supplementary tonnage to his production from the Gila Indian Reservation. No work has been done since the last mine visit.

LAS MEMO 1/20/65

Mine Visit and Conference with Ralph Smith at the Pico 1-3 Claims 4/8/65.

According to Smith, George Freeman had drilled a considerable area on the N. side of the Orizaba Pit and would soon move back, since the Gila Indian Reservation quartz showing had proved disappointing due to the splitting up of the quartz body there. He stated that it had been reported that George might have 2 months left on the Reservation. (He also said that Freeman had made an overture to Art Robart relative to acquiring the Pico Group but that Robart was not interested). The Shovel had been moved to clear a blast and the road to the Casa Grande-Quijotoa Hwy has been surfaced and is being widened. Freeman said previously, that the silica at Orizaba had carried 65.1 cents to one dollar in silver.

MEMO LAS 4/8/65

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine	Orizaba Mine	Date	10-17-62
District	Slate Mountain District, Pinal County	Engineer	Lewis A. Smith
Subject:	Mine Visit		

Orizaba is worked periodically by George Freeman. A lower bench has been started from a ramp which forms in the floor of the origin pit, near the original entrance. The ramp is now 45 feet long. The old pit is L-shaped, the SW wing being about 150 feet long and 75 feet deep at the NW face. The maximum width ranges from 50 feet, at the SE entrance, to 75 feet at the face. The NE wing is about 0 to 35 feet deep and is in the form of a trench about 75 feet long. The deepest portion is where this wing is cut off by the larger NW-SE wing. This latter wing is in the top of the quartzite outcrop, which trends NW-SE and dips about 45 degrees to the NE. The quartzite in this wing does not appear to be as pure as in the main wing, except on the bench bottom. To the northeast of the pit, the hill stopes down, dipping toward a canyon. Some stripping will be required as the pits move NW and NE. The quartzite beds range from a few inches up to 3 feet or more in thickness, but all of it appears to fragment well.

The recent floods washed out about 150 feet of the road between the Pits and the Casa Grande-Covered Wells Road. The latter was damaged severely, both to the north and south of the junction. This slowed operations for a time. The highway was also damaged 9 miles south of Casa Grande.

George Freeman, operator, was away, but the shovel runner said that they were producing at an accelerated rate due to Virgil Denning's closedown at White Peak. Considerable stripping was done since the last visit, particularly NE of the main pit and to the northwest along the quartzite outcrop. The production at present coming from a new and deeper bench that underlies the floor of the main pit. This will be fanned out to the NW and SE. A 40 foot cut, that is 300 or more feet long, was excavated in the upper portion of the quartzite ahead of the pit to the NW. The previous pit face in that direction was nearing 80-90 feet in height and was becoming dangerous. The reserve of silica appears to be adequate for a considerable future operation.

LEWIS A. SMITH - Mine visit - 10-23-63

Mr. Coxon said that George Freeman was still operating the Orizaba silica flux pit and was shipping to Ajo. We were unable to catch George.

* MEMO Conference with Nate Coxon in Casa Grande 1/22/64.

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active 10-62 - 4 men working

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine: Orizaba Mine

Date: September 13, 1960

District: Slate Mountains, Pinal Co.

Engineer: Lewis A. Smith

Subject: Mine Visit

The pit at Orizaba has been shaped up so that it is level and has a work face of about 30 feet. The pit is segregated into two halves, the north being nearly barren but good grade silica (85%) and the south carrying more silver and less silica. The two are mixed in a proportion that will meet New Cornelia specifications.

The fragmentation is very good now that sprung toe holes can be used. The reserve is good for a long operation.

This property active Feb. 1961, Oct. 1961, Feb. 1962

*

ORIZABA MINE

PINAL COUNTY
SLATE MOUNTAIN

JULIAN NICKEL MINES with George Freeman of Casa Grande, Arizona as manager, is mining a quartzite with low silver values at the Orizaba mine, southwest of Casa Grande, for shipment to the New Cornelia smalter of Phelps Dodge Corporation, at Ajo. The present work consists of bulldozer-opened pit with a working face 150 feet in length and 10 to 20 feet high.

Taken from MINING WORLD, June, 1960, p 61

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DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine: Orizaba Mine — Date: May 10, 1960

District: Slate Mountains Dist., Pinal County — Engineer: Lewis A. Smith

Subject: Mine visit and conference with George Freeman.

George Freeman now has a Buyers 1/2 yard diesel shovel in the silica pit. He hauls the silica with a G.M.C. Diesel 22 ton truck and a white gasoline engine driven 22 ton truck. The pit now is about 60 feet wide and 15 feet deep at the face. The quartzite, according to Freeman, contains narrow fractures with good silver values, sufficient to make the flux ore run up to 4 oz. of silver. The quartzite at the face dips flatly to the southwest and is heavy bedded and breaks coarsely. The silver bearing streaks range from 1/2 inch up to 8" but belly and pinch. The silver mineral appears to be embolite. Mr. Freeman says the silver content of the quartzite makes the material marketable. The streaks are transverse to the fault which borders the quartzite on the north-northeast. The stringers apparently have little throw but were evidently pre-mineral in age. Local pods of galena, anglesite and cerussite are found sparingly in the streaks with thin coats of wulfenite. Anglesite is the most important lead mineral in the near surface areas. J.B. Tenney and others state that the silver is affiliated with the galena and anglesite. Some galena, stored in powder boxes near the shaft, shows considerable argentite on the cleavage planes, giving it a dark color.

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DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Orizaba | Date March 8, 1960

District Casa Grande Dist., Pinal County | Engineer Lewis A. Smith

Subject: Mine visit by Lewis A. Smith

Location: T. 9 S., R. 4 E., Sec. 26 (E½) 254

Access: 9 miles of paved highway and 10½ miles of graded road (main highway to Sells from Casa Grande), thence 1½ miles of country road to the west.

Property: 6 claims and a mill site claim.

Operator: George Freeman, 201 4th St., Casa Grande

Minerals: Quartzite with 1-2 oz. of silver (flux). This material is being shipped to the New Cornelia smelter at Ajo. The haul is about 80 miles, 6 of which is graded and surfaced and the rest is paved via Quijotoa.

Work: Work done prior to 1944 consisted of 3 shafts, 2 of which were about 50 feet deep and the third was 105 feet on the incline. Present work consists of a bulldozer opened pit with a working face 50 feet in length and 10 feet high. 2 men were drilling with a wagon drill, the air being furnished by a 305 Ingersal-Rand compressor. According to Freeman the quartzite assays about 90-92% in silica and 1-2 oz. in silver. The quartzite is closely shattered and the silver is in the fracture planes.

Geology: Briefly the geology consists of a Paleozoic series composed of quartzite, shale and limestones, the quartzite being Cambrian and the limestone being Pennsylvanian in age. The shale may be Devonian in age. This series is cut by a fracture zone, 50 feet wide, which trends north and south and dips 60 to 75 degrees to the west, along the contact which has limestone to the west and quartzite to the east. The limestone appears to have been thrust over the quartzite. This contact extends 500 feet from valley fill to the north and then swings west. The quartzite beds dip north, as does the overlying limestone. The dip would approximate 30 degrees. The ore, in old piles, and stored in boxes, contains galena, sphalerite, cerussite, anglesite, vanadinite, wulfenite and some chrysocolla. The associate minerals are limonite and a little pyrolusite. The gangue in part appeared to be shale, and in part consisted of brecciated quartzite cemented by ore minerals.

Further details are contained in separate reports by J.B. Tenny, B. W. Brown, and A.B. Richmond.

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DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine ORIZABA Date Feb. 27, 1944

District Casa Grande Mining District, Pinal County, Arizona Engineer B. W. Brown

Subject: Copy of report by A. B. Richmond, dated Jan. 10, 1925
Copy made myself from the unsigned carbon

LOCATION: The Orizaba Mines, seven in number (Orizaba, Orizaba #1, Orizaba #2, Orizaba #3, Orizaba #4, Orizaba #5, and Orizaba Mill Site) are located in Pinal County, Arizona, twenty-three miles southwest from Casa Grande, and one and one-half miles West from the Jack Rabbit camp.

GEOLOGY: The district in general has been classed by prominent geologists as one of Paleozoic sediments, covered with later flows, and with an intrusive sheet of andesite underlying many square miles of the district and which, through faulting and erosion, is exposed at numerous places.

There seems to have been at least two and possibly three distinct periods of faulting. First: of a North-South direction; second: those with a Northwest-Southeast strike, with a possible third series with nearly an East-West strike. The intrusive sheet, where exposed, varies in thickness from a few feet to as much as three hundred feet, and at the Orizaba property lies under the quartzite and over the limestone beds, fracturing and mineralizing the quartzite and overlying shales and limestones, but apparently having little effect on the character of the underlying limestone; but as the main mineralization with heaviest mineral impregnation in the quartzite seems to occur for a few feet on either side of Northwest-Southeast faults and as no development has been done in the underlying lime along those faults, there may also be heavy mineralization in the lime along those same faults.

The known geological column begins with an unknown thickness of limestone underlying the intrusion of andesite, then a few feet of lime shales over the intrusion, then about 50 feet in thickness of mineralized quartzite, then 50 feet of clay and carbonaceous shales showing heavy iron contents and overlaid by about 50 feet of garnetiferous quartzite showing some lead and zinc, but neither the shales nor the garnet beds have been prospected, so little is known of their possibility as ore bodies of importance; over the garnetiferous lime beds there are several hundred feet of interbedded limes and quartzites showing little or no mineralization; but on the Eastern slope of Orizaba mountain a thirty feet bed of quartzite intruded by an andesite dyke, is heavily fractured and mineralized with silver-lead and silver-chloride ore and containing a small amount of zinc, approximately 10%, as shown by both concentrates and crude shipments to the El Paso smelter.

HISTORY: The Orizaba group of mines were located in the early eighties by John Kron, who worked them for about fifteen years and, so far as known, shipped approximately seventy-five thousand ounces of silver as a silver-lead ore, though the lead values contained are unknown at this time.

Kron never reached water level in his workings which were confined entirely to the quartzite bed not exceeding fifty feet in thickness, but his work was extensive as shown by the numerous openings shown on the plan (note: no map was attached) and most of which were connected either by stopes or drifts. As he could mine nothing but the extremely high grade ore, there must be a large amount of milling ore left in both the workings and the dumps.

About twenty years ago, the property was taken over by a Pittsburg Company who sunk the present shaft and did all of the development shown on the plan of the Orizaba main shaft workings, but their work only reached a depth of one hundred and five feet, and practically all of their work was confined to the thin bed of shale and one main fault line shown on the plan as A-fault.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine ORIZABA Date

District Engineer

Subject: continued--2

While some ore was found in the shales, the most of the work was done close to or along the main fault in the fault breccia, or close to small step faults in the shales, and no work was done in the quartzite or overlying shales or garnetiferous limestone.

Some ore of a shipping grade is now visible in these workings, but it is mostly either a vanadate or molybdate and of secondary importance compared to what may be encountered in systematic development in the proper places and beds.

The Orizaba #2 at which point the present work is being done was only located by the present owners a few years ago, and this ground has shown good ore in the quartzite, from the surface down to the present depth.

DEVELOPMENT: The old workings in the quartzite, while extensive, never reached either the underlying shales or the intrusive in the Orizaba, and the new workings are almost entirely in the fault breccia along A-Fault, so that neither method shows more than the fact that the development was done in the first place to get only high grade ore, and in the second place without any proper idea of what should be done to properly open up the mine and expose ore where logical conclusions indicate that it should be found, and where all indications seem to point that it will be found, and judging from three very small openings barely touched in the quartzite on both sides of A-Fault. The fact that the quartzite along the fault in the incline shaft with a width of six to twelve feet, is said to assay ten to twelve ounces in silver and six per cent lead, giving a large possible tonnage.

While there are two shafts which reach the 105 ft. level, they are so sunk that they merge close to the top of the main shaft, which to all intent and purpose makes only one shaft connecting with the surface, and practically destroys the air circulation which should be good on the lower level; this, however, can be remedied by bulkheading the incline about twenty feet below the surface, and driving through to the surface in a different course.

The principal workings on the Orizaba #2 which is now being worked, consist of two fifty ft. shafts and one shallow depth tunnel, none of which are connected.

Near the face of the tunnel, some stoping has been done to the east, and an underhand stope sunk to a depth of about ten feet; this stope has been carried on underneath the tunnel and a raise put up to the tunnel level, where a windlass is set to carry an incline shaft down in the ore.

About ten tons of ore and concentrates have been shipped from this working, showing the value of the crude ore to have been: Silver 23 oz., lead 18%, zinc 9%, while the concentrates showed a value of: Silver 40 oz., lead 39.9%, zinc 10.5%.

The run of mine rock as taken from the stope and shaft run over a ½ in. screen, gives a bulk value of approximately 50% and according to careful sampling shows 18.8 oz. silver and 15% lead, and by adding the coarser lumps of metal found in sinking the grade of ore is brought up to a very good shipping grade.

The vein is approximately thirty feet in thickness and seems to show three main fractures carrying ore, one near each wall and the one near the middle is now being worked, showing an average width of six feet. So far, neither the lime footwall nor the andesite hanging wall have been prospected. The general dip of the bed is 60 deg. to the Northeast, and water level should be approximately 200 feet.

RECOMMENDATIONS: Near the old workings on the Orizaba and Orizaba #1, drifting and

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine ORIZABA Date

District Engineer

Subject: continued--3

raising should be done in the quartzite on both sides of the fault line, to determine the extent of the lead known to exist there, and a drift should be driven North on the shales to a point about 200 feet North of the present face, and an upraise driven through the overlying quartzite and shales which will be encountered overlying the quartzite at that point.

Diamond or churn drilling over the known mineral area would also be justified.

At the Orizaba #2 a large shaft carried down to water level near the location of the present shaft, and equipped with a hoisting place, would seem necessary.

CONCLUSIONS: Judging from the large area of exposed mineral bearing ground, and the extensive workings and large dumps from which only the high grade shipping ore has been extracted, and with the possible results which may be expected from drilling operations on the Orizaba, it would seem that there may be enough ore on that section of the property to make the operation of a large capacity mill very profitable, and all indications point to the probability that on the Orizaba #2 which though only in the prospect stage at this time, will fully pay for its own development and probably make a large and valuable silver-lead producer.

Everything taken into consideration, the outlook for the Orizaba property is exceedingly favorable and it should, and probably will, make a very valuable producing mining property.

Jan. 10, 1925.

Unsigned

A. B. Richmond

Copied by B. W. Brown--Field
Feb. 27, 1944
(signed) B. W. Brown

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine ORIZABA Date Feb. 27, 1944

District Casa Grande Mining District
Pinal County, Arizona Engineer B. W. Brown

Subject: Copy of report by A. B. Richmond, dated Jan. 10, 1925
Copy made myself from the unsigned carbon

LOCATION: The Orizaba Mines, seven in number (Orizaba, Orizaba #1, Orizaba #2, Orizaba #3, Orizaba #4, Orizaba #5, and Orizaba Mill Site) are located in Pinal County, Arizona, twenty-three miles southwest from Casa Grande, and one and one-half miles West from the Jack Rabbit camp.

GEOLOGY: The district in general has been classed by prominent geologists as one of Paleozoic sediments, covered with later flows, and with an intrusive sheet of andesite underlying many square miles of the district and which, through faulting and erosion, is exposed at numerous places.

There seems to have been at least two and possibly three distinct periods of faulting. First: of a North-South direction; second: those with a Northwest-Southeast strike, with a possible third series with nearly an East-West strike. The intrusive sheet, where exposed, varies in thickness from a few feet to as much as three hundred feet, and at the Orizaba property lies under the quartzite and over the limestone beds, fracturing and mineralizing the quartzite and overlying shales and limestones, but apparently having little effect on the character of the underlying limestone; but as the main mineralization with heaviest mineral impregnation in the quartzite seems to occur for a few feet on either side of Northwest-Southeast faults and as no development has been done in the underlying lime along those faults, there may also be heavy mineralization in the lime along those same faults.

The known geological column begins with an unknown thickness of limestone underlying the intrusion of andesite, then a few feet of lime shales over the intrusion, then about 50 feet in thickness of mineralized quartzite, then 50 feet of clay and carbonaceous shales showing heavy iron contents and overlaid by about 50 feet of garnetiferous quartzite showing some lead and zinc, but neither the shales nor the garnet beds have been prospected, so little is known of their possibility as ore bodies of importance; over the garnetiferous lime beds there are several hundred feet of interbedded limes and quartzites showing little or no mineralization; but on the Eastern slope of Orizaba mountain a thirty feet bed of quartzite intruded by an andesite dyke, is heavily fractured and mineralized with silver-lead and silver-chloride ore and containing a small amount of zinc, approximately 10%, as shown by both concentrates and crude shipments to the El Paso smelter.

HISTORY: The Orizaba group of mines were located in the early eighties by John Kron, who worked them for about fifteen years and, so far as known, shipped approximately seventy-five thousand ounces of silver as a silver-lead ore, though the lead values contained are unknown at this time.

Kron never reached water level in his workings which were confined entirely to the quartzite bed not exceeding fifty feet in thickness, but his work was extensive as shown by the numerous openings shown on the plan (note: no map was attached) and most of which were connected either by stopes or drifts. As he could mine nothing but the extremely high grade ore, there must be a large amount of milling ore left in both the workings and the dumps.

About twenty years ago, the property was taken over by a Pittsburg Company who sunk the present shaft and did all of the development shown on the plan of the Orizaba main shaft workings, but their work only reached a depth of one hundred and five feet, and practically all of their work was confined to the thin bed of shale and one main fault line shown on the plan as A-fault.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine ORIZABA Date

District Engineer

Subject: continued--2

While some ore was found in the shales, the most of the work was done close to or along the main fault in the fault breccia, or close to small step faults in the shales, and no work was done in the quartzite or overlying shales or garnetiferous limestone.

Some ore of a shipping grade is now visible in these workings, but it is mostly either a vanadate or molybdate and of secondary importance compared to what may be encountered in systematic development in the proper places and beds.

The Orizaba #2 at which point the present work is being done was only located by the present owners a few years ago, and this ground has shown good ore in the quartzite, from the surface down to the present depth.

DEVELOPMENT: The old workings in the quartzite, while extensive, never reached either the underlying shales or the intrusive in the Orizaba, and the new workings are almost entirely in the fault breccia along A-Fault, so that neither method shows more than the fact that the development was done in the first place to get only high grade ore, and in the second place without any proper idea of what should be done to properly open up the mine and expose ore where logical conclusions indicate that it should be found, and where all indications seem to point that it will be found, and judging from three very small openings barely touched in the quartzite on both sides of A-Fault. The fact that the quartzite along the fault in the incline shaft with a width of six to twelve feet, is said to assay ten to twelve ounces in silver and six per cent lead, giving a large possible tonnage.

While there are two shafts which reach the 105 ft. level, they are so sunk that they merge close to the top of the main shaft, which to all intent and purpose makes only one shaft connecting with the surface, and practically destroys the air circulation which should be good on the lower level; this, however, can be remedied by bulkheading the incline about twenty feet below the surface, and driving through to the surface in a different course.

The principal workings on the Orizaba #2 which is now being worked, consist of two fifty ft. shafts and one shallow depth tunnel, none of which are connected.

Near the face of the tunnel, some stoping has been done to the east, and an underhand stope sunk to a depth of about ten feet; this stope has been carried on underneath the tunnel and a raise put up to the tunnel level, where a windlass is set to carry an incline shaft down in the ore.

About ten tons of ore and concentrates have been shipped from this working, showing the value of the crude ore to have been: Silver 23 oz., lead 18%, zinc 9%, while the concentrates showed a value of: Silver 40 oz., lead 39.9%, zinc 10.5%.

The run of mine rock as taken from the stope and shaft run over a ½ in. screen, gives a bulk value of approximately 50% and according to careful sampling shows 18.8 oz. silver and 15% lead, and by adding the coarser lumps of metal found in sinking the grade of ore is brought up to a very good shipping grade.

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RECOMMENDATIONS: Near the old workings on the Orizaba and Orizaba #1, drifting and

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine ORIZABA Date

District Engineer

Subject: continued---3

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Diamond or churn drilling over the known mineral area would also be justified.

At the Orizaba #2 a large shaft carried down to water level near the location of the present shaft, and equipped with a hoisting place, would seem necessary.

CONCLUSIONS: Judging from the large area of exposed mineral bearing ground, and the extensive workings and large dumps from which only the high grade shipping ore has been extracted, and with the possible results which may be expected from drilling operations on the Orizaba, it would seem that there may be enough ore on that section of the property to make the operation of a large capacity mill very profitable, and all indications point to the probability that on the Orizaba #2 which though only in the prospect stage at this time, will fully pay for its own development and probably make a large and valuable silver-lead producer.

Everything taken into consideration, the outlook for the Orizaba property is exceedingly favorable and it should, and probably will, make a very valuable producing mining property.

Jan. 10, 1925.

Unsigned

A. B. Richmond

Copied by B. W. Brown--Field
Feb. 27, 1944
(signed) B. W. Brown

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine ORIZABA Date Feb. 27, 1944

District Casa Grande Mining District Engineer B. W. Brown
Pinal County, Arizona

Subject:
Copy of report by A. B. Richmond, ~~not~~ dated Jan. 10, 1925
Copy made myself from the unsigned carbon

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DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine ORIZABA Date

District Engineer

Subject: Continued

The principal workings on the Orizaba #2 which is now being worked, consist of two fifty ft. shafts and one shallow depth tunnel, none of which are connected.

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Recommendations: Near the old workings on the Orizaba and Orizaba #1 drifting and raising should be done in the quartzite on both sides of the fault line, to determine the extent of the lead known to exist there, and a drift should be driven North on the shales to a point about 200 feet North of the present face, and an upraise driven through the overlying quartzite and shales which will be encountered overlying the quartzite at that point.

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At the Orizaba #2 a large shaft carried down to water level near the location of the present shaft, and equipped with a hoisting place, would seem to be necessary.

Conclusions: Judging from the large area of exposed mineral bearing ground, and the extensive workings and large dumps from which only thehigh grade shipping ore has been extracted, and with the possible results which may be expected from drilling operationson the Orizaba, it would seem that there may be enough ore on that section of the property to make the operation of a large capacity mill very profitable,

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DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine ORIZABA Date

District Engineer

Subject: Continued

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ORIZABA MINE

Slate Mountain District, Pinal Co.

The silica pit at Orizaba is now opened up over a width of 60 to 75 feet and a length of about 140 feet. The face is about 35-40 feet high. A quick observation of the extent of the quartzite indicates a substantial reserve. The quartzite dips northeast and strikes northwest. The south contact is against an altered limestone and shale and appears to be along a fault or a sharp anticlinal wing. To the northeast the quartzite is overlain by limestone. The area approaching the pit is now cleaned off and it appears as though a deeper bench can be started when the present bench is finished. The quartzite surface slopes northeastward under a wash, the bed of which is somewhat lower in elevation than the floor of the pit.

George Freeman is shipping entirely from Orizaba at present.

Memo - Lewis A. Smith - 3-1-62

George Freeman is still shipping siliceous flux to the New Cornelia Smelter, at Ajo. The operations were temporarily slowed by the heavy rains of a week ago, but are now O.K.

Interview with Jim Briggs, General Mgr., New Cornelia Br., Phelps Dodge Corp.

MEMO - LEWIS A. SMITH-10-2-62.

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DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine ORIZABA Date

District Engineer

Subject: Continued

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Jan. 10 1925.

Unsigned

A. B. Richmond

Copied by B. W. Brown-Field
Feb. 27, 1944.

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Excerpt from Economic Geological Reconnaissance
of Casa Grande Mining District
By J. B. Tenney

JACK RABBIT, TURNING POINT, DESERT QUEEN, AND ORIZABA MINES

History and Production.

These four silver-gold deposits in the Paleozoic sediments at the north end of the mountain were discovered in the early eighties. The first to be exploited was the Jack Rabbit where a little carefully sorted 300-ounce silver ore was shipped in 1883 and the mine had by then been developed to a depth of 90 feet. The following year the orizaba reported to the Director of the Mint the shipment of 5 tons netting $2000 in silver and that about 600 tons of $5 to $100 ore lay on the dump. After the exhaustion of the richer outcropping ore little further work was done until about 1892 when the Jack Rabbit mine was acquired by the Casa Grande Copper and Gold Mining Company financed from Denver. The mine was developed intermittently in the succeeding ten years during which time the demonitization of silver and the consequent drop in the price to a level of less than 60 cents and ounce were discouraging factors. The ore shoot was developed to a depth of 200 feet at which depth a large flow of water was encountered. A cyanide plant was built in 1901 which was not a financial success.

In 1908 the Jack Rabbit mine passed into the hands of the Tube City Mining and Milling Company of McKeesport, Pennsylvania. The main shaft was sunk by this company to a depth of about 400 feet against a very heavy flow of water, and a little rich sorted ore was sacked and shipped until the abandonment of the mine in 1910.

The Turning Point mine adjoining the Jack Rabbit on the west, located on a probable continuation of the Jack Rabbit lode was probably found at the same time as the Jack Rabbit. The first development work was done in 1898 when it was reported that a mill to treat the ore blocked was to be erected. Work was suspended until 1902 when a 10 -stamp mill was built which treated a small tonnage, after whichthe mine was closed. A little high grade ore was stoped in 1911 and shipped.

The Desert Queen, adjoining the Jack Rabbit to the south was first worked from 1905 to 1907 by the Desert Queen Gold Mining Company. Considerable shallow development work was done and a Tremain steam stamp mill of 4 stamps was erected. Amalgamation and concentration methods were employed. After a short run the mine was abandoned.

The Orizaba Mine, about two miles North 50 degrees West from the Jack Rabbit is located in one of several low hills in the much dissected ridge between the Silver Reef and Slate Mountains. After the first work in the early eighties, little was done until about 1915 when the property was developed by a deep vertical shaft, and was equipped with a small mill. Since that time, lessees have stoped a little rich lead-silver ore from shallow depths, chiefly in 1923 and 1925.

The total production of the four mines has been small. Accurate figures are not available. It is probable that at least $20,000 in silver and silver-lead ore was produced in the eighties, chiefly from the Jack Rabbit and Orizaba. The production since then has not been over an equal amount.

Geology and Ore Occurrence.

The ore bodies of the Jack Rabbit, Turning Point, and Desert Queen mines at the northern end of Slate Mountain are replacements of Pennsylvanian limestone in

strong fault zones, at or near the contact with dikes of porphyry classified in the field as diorite porphyry. At the Jack Rabbit and Turning Point, the ore is found in a strong fracture striking North 20 to 30 degrees East dipping 60 degrees to the East, at the contact of a 100-foot wide dike of porphyry and Pennsylvanian limestone, the porphyry forming the footwall of the fault. The ore consists of heavily limonite-stained sheared limestone with a little copper silicate and carbonate stain. The better ore is said to have averaged about $18 in silver and gold. The shafts of both the Jack Rabbit and Turning Point are caved and inaccessible. The total length exposed by surface trenching between the two shafts is about 2000 feet.

A heavy flow of water was encountered in the Jack Rabbit shaft at a depth of 200 feet.

At the Desert Queen, the ore occurs in a strong fault striking North 60 degrees East dipping 50 to 80 degrees to the south, cutting Pennsylvanian limestone. Southeast of the fault and parralleling it is a dike of diorite porphyry ten to 20 feet thick. The ore consists of limonite-stained quartz and calcite with some chrysocolla stain. Most of the stoping was done in a single outcropping ore shoot 50 feet long and 80 feet deep. The fault vein has been opened at intervals by pits and cuts for a distance of about 1500 feet along the strike. The porphyry contacts are usually barren. A little lime garnet has been developed sparadically. The ore is said to have contained values in silver.

At the Orizaba Mine, two miles North 50 degrees West from the Jack Rabbit, the ore is associated with a fracture zone 50 feet wide striking north and dipping 60 to 75 degrees to the west, at the contact of Cambrian quartzite to the east and Pennsylvanian limestone to the west. The Pennsylvanian limestone is highly crushed and occurs as a block thrust over the quartzite. The eastern boundary of the block is the north-south fault zone in which the ore occurs. The contact extends to the north a distance of about 500 feet from the valley fill, and then swings to the west. The quartzite beds dip north 50 degrees East 30 degrees. The ore consists of limonite and chrysocolla-stained quartzite with seams of silver-bearing lead carbonate partly replacing the bedding and partly replacing fault gouge. The zone has been opened by shallow pits, stopes and open cuts for a total length of 300 feet on the strike of the fault zone. A vertical shaft was sunk 200 feet southeast of the zone, from which considerable work was done, judging from the size of the dump. The shaft is caved and water stands 75 feet below the surface. A second zone of fracturing within the quartzite occurs 300 feet north of the shaft. This zone strikes North 72 degrees East and dips 70 degrees to the south. It also has been extensively prospected by shallow pits and open cuts. The mineralization in this zone is similar to that in the main workings and it has been followed for a distance of about 200 feet to the northeast from its junction with the north-south zone. Altogether several thousand feet of work has been done on the property.

Excerpt from Economic Geological Reconnaissance
of Casa Grande Mining District
By J. B. Tenney

JACK RABBIT, TURNING POINT, DESERT QUEEN, AND ORIZABA MINES

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1

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine ORIZABA Date Feb. 27, 1944

District Casa Grande Mining District, Pinal County, Arizona Engineer B. W. Brown

Subject: Copy of report by A. B. Richmond, dated Jan. 10, 1925
Copy made myself from the unsigned carbon

LOCATION: The Orizaba Mines, seven in number (Orizaba, Orizaba #1, Orizaba #2, Orizaba #3, Orizaba #4, Orizaba #5, and Orizaba Mill Site) are located in Pinal County, Arizona, twenty-three miles southwest from Casa Grande, and one and one-half miles West from the Jack Rabbit camp.

GEOLOGY: The district in general has been classed by prominent geologists as one of Paleozoic sediments, covered with later flows, and with an intrusive sheet of andesite underlying many square miles of the district and which, through faulting and erosion, is exposed at numerous places.

There seems to have been at least two and possibly three distinct periods of faulting. First: of a North-South direction; second: those with a Northwest-Southeast strike, with a possible third series with nearly an East-West strike. The intrusive sheet, where exposed, varies in thickness from a few feet to as much as three hundred feet, and at the Orizaba property lies under the quartzite and over the limestone beds, fracturing and mineralizing the quartzite and overlying shales and limestones, but apparently having little effect on the character of the underlying limestone; but as the main mineralization with heaviest mineral impregnation in the quartzite seems to occur for a few feet on either side of Northwest-Southeast faults and as no development has been done in the underlying lime along those faults, there may also be heavy mineralization in the lime along those same faults.

The known geological column begins with an unknown thickness of limestone underlying the intrusion of andesite, then a few feet of lime shales over the intrusion, then about 50 feet in thickness of mineralized quartzite, then 50 feet of clay and carbonaceous shales showing heavy iron contents and overlaid by about 50 feet of garnetiferous quartzite showing some lead and zinc, but neither the shales nor the garnet beds have been prospected, so little is known of their possibility as ore bodies of importance; over the garnetiferous lime beds there are several hundred feet of interbedded limes and quartzites showing little or no mineralization; but on the Eastern slope of Orizaba mountain a thirty feet bed of quartzite intruded by an andesite dyke, is heavily fractured and mineralized with silver-lead and silver-chloride ore and containing a small amount of zinc, approximately 10%, as shown by both concentrates and crude shipments to the El Paso smelter.

HISTORY: The Orizaba group of mines were located in the early eighties by John Kron, who worked them for about fifteen years and, so far as known, shipped approximately seventy-five thousand ounces of silver as a silver-lead ore, though the lead values contained are unknown at this time.

Kron never reached water level in his workings which were confined entirely to the quartzite bed not exceeding fifty feet in thickness, but his work was extensive as shown by the numerous openings shown on the plan (note: no map was attached) and most of which were connected either by stopes or drifts. As he could mine nothing but the extremely high grade ore, there must be a large amount of milling ore left in both the workings and the dumps.

About twenty years ago, the property was taken over by a Pittsburg Company who sunk the present shaft and did all of the development shown on the plan of the Orizaba main shaft workings, but their work only reached a depth of one hundred and five feet, and practically all of their work was confined to the thin bed of shale and one main fault line shown on the plan as A-fault.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine ORIZABA Date

District Engineer

Subject: continued--2

While some ore was found in the shales, the most of the work was done close to or along the main fault in the fault breccia, or close to small step faults in the shales, and no work was done in the quartzite or overlying shales or garnetiferous limestone.

Some ore of a shipping grade is now visible in these workings, but it is mostly either a vanadate or molybdate and of secondary importance compared to what may be encountered in systematic development in the proper places and beds.

The Orizaba #2 at which point the present work is being done was only located by the present owners a few years ago, and this ground has shown good ore in the quartzite, from the surface down to the present depth.

DEVELOPMENT: The old workings in the quartzite, while extensive, never reached either the underlying shales or the intrusive in the Orizaba, and the new workings are almost entirely in the fault breccia along A-Fault, so that neither method shows more than the fact that the development was done in the first place to get only high grade ore, and in the second place without any proper idea of what should be done to properly open up the mine and expose ore where logical conclusions indicate that it should be found, and where all indications seem to point that it will be found, and judging from three very small openings barely touched in the quartzite on both sides of A-Fault. The fact that the quartzite along the fault in the incline shaft with a width of six to twelve feet, is said to assay ten to twelve ounces in silver and six per cent lead, giving a large possible tonnage.

While there are two shafts which reach the 105 ft. level, they are so sunk that they merge close to the top of the main shaft, which to all intent and purpose makes only one shaft connecting with the surface, and practically destroys the air circulation which should be good on the lower level; this, however, can be remedied by bulkheading the incline about twenty feet below the surface, and driving through to the surface in a different course.

The principal workings on the Orizaba #2 which is now being worked, consist of two fifty ft. shafts and one shallow depth tunnel, none of which are connected.

Near the face of the tunnel, some stoping has been done to the east, and an underhand stope sunk to a depth of about ten feet; this stope has been carried on underneath the tunnel and a raise put up to the tunnel level, where a windlass is set to carry an incline shaft down in the ore.

About ten tons of ore and concentrates have been shipped from this working, showing the value of the crude ore to have been: Silver 23 oz., lead 18%, zinc 9%, while the concentrates showed a value of: Silver 40 oz., lead 39.9%, zinc 10.5%.

The run of mine rock as taken from the stope and shaft run over a $\frac{1}{2}$ in. screen, gives a bulk value of approximately 50% and according to careful sampling shows 18.8 oz. silver and 15% lead, and by adding the coarser lumps of metal found in sinking the grade of ore is brought up to a very good shipping grade.

The vein is approximately thirty feet in thickness and seems to show three main fractures carrying ore, one near each wall and the one near the middle is now being worked, showing an average width of six feet. So far, neither the lime footwall nor the andesite hanging wall have been prospected. The general dip of the bed is 60 deg. to the Northeast, and water level should be approximately 200 feet.

RECOMMENDATIONS: Near the old workings on the Orizaba and Orizaba #1, drifting and

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine ORIZABA Date

District Engineer

Subject: continued--3

raising should be done in the quartzite on both sides of the fault line, to determine the extent of the lead known to exist there, and a drift should be driven North on the shales to a point about 200 feet North of the present face, and an upraise driven through the overlying quartzite and shales which will be encountered overlying the quartzite at that point.

Diamond or churn drilling over the known mineral area would also be justified.

At the Orizaba #2 a large shaft carried down to water level near the location of the present shaft, and equipped with a hoisting place, would seem necessary.

CONCLUSIONS: Judging from the large area of exposed mineral bearing ground, and the extensive workings and large dumps from which only the high grade shipping ore has been extracted, and with the possible results which may be expected from drilling operations on the Orizaba, it would seem that there may be enough ore on that section of the property to make the operation of a large capacity mill very profitable, and all indications point to the probability that on the Orizaba #2 which though only in the prospect stage at this time, will fully pay for its own development and probably make a large and valuable silver-lead producer.

Everything taken into consideration, the outlook for the Orizaba property is exceedingly favorable and it should, and probably will, make a very valuable producing mining property.

Jan. 10, 1925.

Unsigned

A. B. Richmond

Copied by B. W. Brown--Field
Feb. 27, 1944
(signed) B. W. Brown

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine ORIZABA, Pb., Ag. Date November 30, 1942

District Casa Grande Engineer Earl F. Hastings

Subject: Reconstruction Finance Corporation
Preliminary Development Loan

Docket No. C-ND-7734 (Phx. 41)
Date Application Received September 16, 1942
Date of Report November 28, 1942

1. Name and address of applicant (correspondent):
John J. Christie, Box 1853, Tucson, Arizona.

2. Character of project and estimated cost thereof:
Pb., Au. Unwater and retimber main shaft and clean out drifts. $5000.00.

3. Location of property:
Casa Grande Mining District, 23 miles southwest of Casa Grande, Pinal County, Arizona.

4. Applicant's interest in or ownership of property:
Applicant is not owner and the nature of his interest is not described.

5. Loan requested:
$5000.00.

6. Loan recommended:
None.

7. Comments:
(A) The applicant has been contacted several times relative to additional information to be added to the docket. This promised data has not been forthcoming, although the docket has been held pending for a period of two months.

(B) The Richmond report is favorable toward future possibilities of the property and advises exploration work in more favorable zones than have been prospected. No mention is made of commercial ore in place either blocked or to be developed, though it is "assumed" a mill grade would be found as rejects in the older shallow workings. As a favorable prospecting chance, and that alone, this loan cannot be recommended.

ARIZONA DEPARTMENT OF MINERAL RESOURCES

Earl F. Hastings
Assistant Director and
Projects Engineer

O R I Z A B A M I N E.

Location:

The Orizaba Mines, seven in number (Orizaba, Orizaba # 1, Orizaba # 2, Orizaba # 3, Orizaba # 4, Orizaba # 5, and Orizaba Mill Site) are located in Pinal County, Arizona, twenty-three miles Southwest from Casa Grande, and one and one-half miles West from the Jack Rabbit camp.

GEOLOGY:

The district in general has been classed by prominent geologists as one of Paleozoic sediments, covered with later flows, and with an intrusive sheet of andesite underlying many square miles of the district and which, through faulting and erosion, is exposed at numerous places.

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The intrusive sheet, where exposed, varies in thickness from a few feet to as much as three hundred feet, and at the Orizaba property lies under the quartzite and over the limestone beds, fracturing and mineralizing the quartzite and overlying shales and limestones, but apparently having little effect on the character of the underlying limestone; but as the main mineralization with heaviest mineral impregnation in the quartzite seems to occur for a few feet on either side of Northwest-Southeast faults and as no development has been done in the underlying lime along those faults, there may also be heavy mineralization in the lime along those same faults.

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History:

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showing an average width of six feet. So far neither the lime foot wall nor the andesite hanging wall have been prospected. The general dip of the bed is 60° deg. to the Northeast, and water level should be approximately 200 feet.

Recommendations:

Near the old workings on the Orizaba and Orizaba #1, drifting and raising should be done in the quartzite on both sides of the fault line, to determine the extent of the lead known to exist there, and a drift should be driven North on the shales to a point about 200 feet North of the Present face, and an upraise driven through the overlying quartzite and shales which will be encountered overlying the quartzite at that point.

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Conclusions:

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Jan. 10, 1925.

Yours very truly

A. B. Richmond