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PRINTED: 04/29/2002

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: OLD DOMINION EXTENSION

ALTERNATE NAMES:
STEAD GROUP
NEVADA GROUP
CUPRITE GROUP
DENVER GROUP

GILA COUNTY MILS NUMBER: 539B

LOCATION: TOWNSHIP 1 N RANGE 15 E SECTION 14 QUARTER S2
LATITUDE: N 33DEG 25MIN 50SEC LONGITUDE: W 110DEG 47MIN 50SEC
TOPO MAP NAME: GLOBE - 7.5 MIN

CURRENT STATUS: EXP PROSPECT

COMMODITY:
MANGANESE
IRON
SILVER
COPPER

BIBLIOGRAPHY:
ADMMR OLD DOMINION EXTENSION FILE
CLAIMS EXTEND INTO SEC 13, 23 AND 24

The Old Dominion Company is now putting in two new 100-ton smelting furnaces. The production of black copper from November 1, 1895, to August 1, 1896, is given as 6,940,000 pounds.

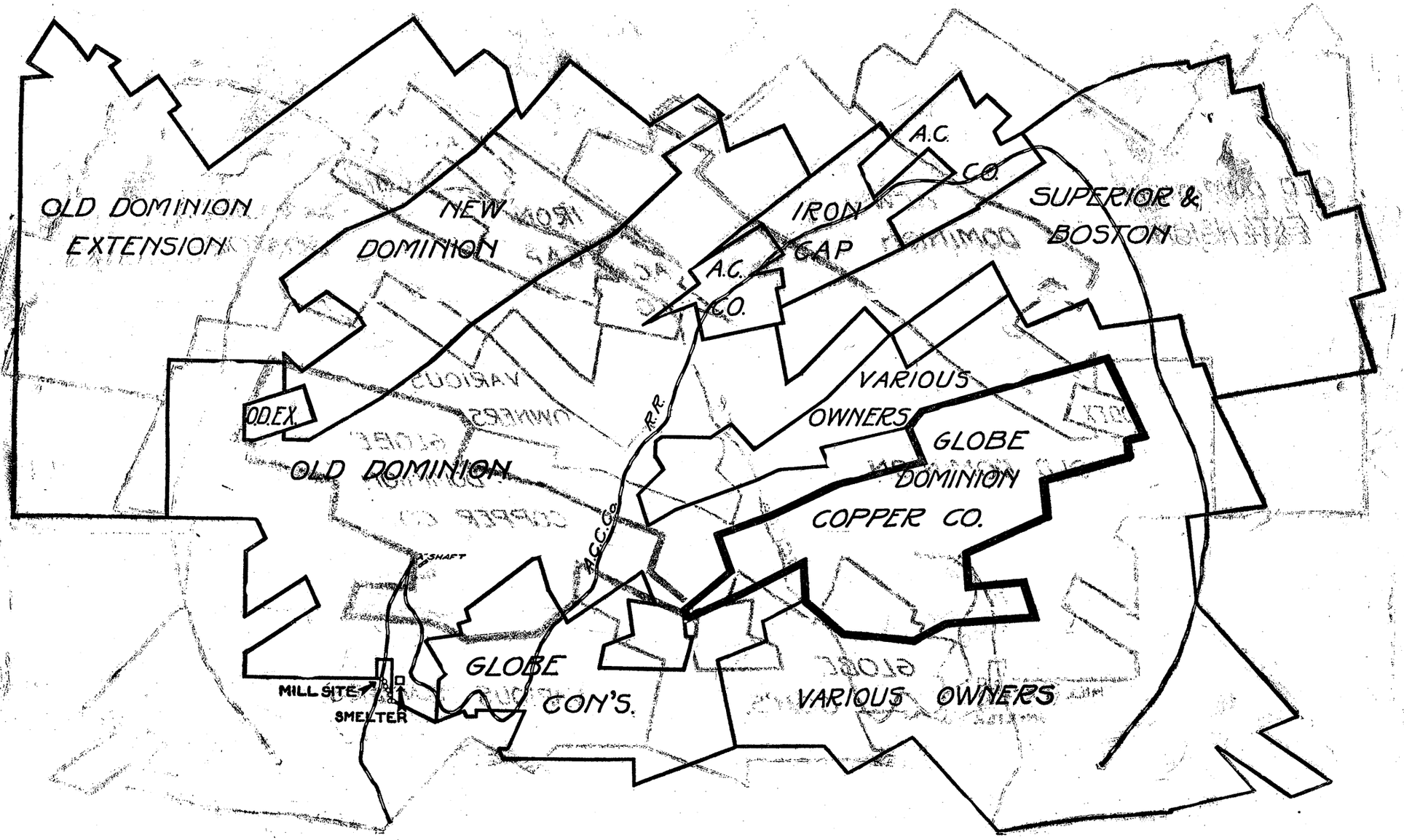
Gov Rep 1889

NAME OF MINE: OLD DOMINION

COUNTY: GILA
DISTRICT:
METALS: CU

OPERATOR AND ADDRESS: DATE:		MINE STATUS DATE:	
5/1/44	Bennett and ~~DeVoux~~ DE VAUX, Dom. Hotel, Globe	5/1/44	Shipping

Exhibit #2.



MAP
SHOWING PROPERTY OF
GLOBE DOMINION COPPER CO.
GLOBE MINING DISTRICT
GILA COUNTY ARIZONA

OLD DOMINION MINE GILA COUNTY

Globe, Arizona is the home of the well known old Dominion copper mine. In its past roll of copper its production stands well. Though idle, the steel shaft headframe still stands at the edge of the town as a symbol of copper mining. They say water drowned out the mine and it never resumed. There are pumps in the shaft and the mine water supplies part of the water requirements of Globe and the copper mills at Miami.

SKILLING MINING REVIEW FEB. 11, 1967

ABM Bull. 180, p. 121

SEE: ABM Bull. 115, p. 13 Bull 140, p 92

TAKEN FROM REPORT OF THE GOVERNOR OF ARIZONA 1895

Other mining companies in Tombstone district of note-all of which have steam hoists and own stamp mills-are the Sterling Silver Mine and Milling Company, Old Guard Company, and Watervale Mill and Mining Company. Many of the mines of the district not operated by the companies owning them are leased to chloriders, and royalty is paid by the latter on all ore extracted, and thus a number of miners are employed; the cyanide system of working low-grade ore is much in use, and has proven a success.

At Turquoise mining district several turquoise mines are in operation and producing handsome gems. Two companies of means are operating here, and their mines are proving dividend payers. Several silver mines are located in this district, the Turquoise Mining Company having a mill located near Soldier Hole.

In the Huachuca Mountains the Copper Glance Mining Company is continually working, being equipped with necessary machinery and making regular shipments of concentrates monthly. This is a good property, and is improving steadily, bringing handsome returns for its owners.

The Dos Cabezas gold district possesses many good properties, and is becoming an important factor in Cochise mining. The Cotton Wood Mining Company and Casey mining properties are two important mines in the district. Both companies own mills.

The Pierce mining district, a new gold discovery which recently sprung into prominence, is one that will command the attention of all on account of the immense showing of rich ore that has been brought to view, and from indications this camp will rival some of the best producers in the West. A village called Fittsburg has sprung into existence here, and with extensive work by some company on these properties the village will eventually bloom into a thriving city.

The pride of the county is the Globe mining district. Here are vast copper mines which have produced steadily for years, and their richness and quantity may be better understood when it is known that coke had to be hauled a distance of 150 miles from the railroad. The best producer has been the Globe mine, which has been worked steadily for the past ten years and produced 65,000,000 pounds of ingot copper direct from the furnace, 98.5 fine, valued at $6,500,000. This output has been used mostly for casting purposes, and the principal part shipped to European markets. The present company expects to largely increase its output, and before long Gila County will taken precedence in the exporting of copper from the Territory. The Bisbee Company also has extensive mining interests, and expects to commence operations as soon as the railroad reaches here. The northern portion of the county, near Payson, is a rich gold-producing section. Already three stamp mills have been erected, and the only thing that retards that section is its isolation.

1896 Globe Mining District

At present mining activity is confined chiefly to copper.

The first location on what is now considered the main copper-bearing belt was made in 1875 by the locators of the Silver King mine, and it was named "The Globe.". The location is now held and worked by the Old Dominion Copper Company, which also has two other locations on the same vein-the "Southwest Globe" and the "Globe Ledge."

OLD DOMINION 1899 This mine at Globe was run with one furnace in 1888. Coke at that time cost $48 per ton.

Old Dominion Ext File

Manqueros

Office of State Mine Inspector

STATE MINE INSPECTOR

SEP 22 1983

705 West Wing, Capitol Building
Phoenix, Arizona 85007
602-255-5971

NOTICE TO ARIZONA STATE MINE INSPECTOR

In compliance with Arizona Revised Statute Section 27-303* we are submitting this written notice to the Arizona State Mine Inspector (705 West Wing, Capitol Building, Phoenix, Arizona 85007) of our intent to start/stop (please circle one) a mining operation.

COMPANY NAME Nichols Development Corporation

CHIEF OFFICER Monty Nichols

COMPANY ADDRESS P.O. Box 167 Globe, Az. 85501

COMPANY TELEPHONE NUMBER (602) 425-7006

MINE OR PLANT NAME Old Dominion Mine

MINE OR PLANT LOCATION (including county and nearest town, as well as directions for locating by vehicle)

Gila County, Globe, Az.
Turn between Embers Motel + Pic-A-Rib Restaurant

TYPE OF OPERATION Mining PRINCIPAL PRODUCT Iron

STARTING DATE Approx 9-26-83 CLOSING DATE Unknown

DURATION OF OPERATION Unknown

PERSON SENDING THIS NOTICE Christy Nichols

TITLE OF PERSON SENDING THIS NOTICE Secretary

DATE NOTICE SENT TO STATE MINE INSPECTOR 9-19-83

*A.R.S. Section 27-303 NOTIFICATION TO INSPECTOR OF BEGINNING OR SUSPENDING OPERATIONS: When mining operations are commenced in any mine or when operations therein are permanently suspended, the operator shall give written notice to the inspector at his office prior to commencement or suspension of operations.

Hereto attached marked Exhibit "B", is a map showing the location of the properties of Old Dominion Extension Mining Development Company, in reference to the surrounding mining properties, said property now being under an option to the Company. Deeds will be obtained to six hundred, (600), acres of this property as shown by this map upon the exercise of options, on the 12th day of October, 1916.

There are three hundred, (300), acres additional of valuable mining property adjoining the mining property as shown on the map upon which the Company holds options which will be exercised at an early date, after the 12th day of October, A. D. 1916. By the exercise of these last mentioned options, the Company will become the owner of approximately nine hundred, (900), acres of valuable mineral ground.

Also attached hereto are the reports of three well known mining engineers, who have carefully examined the six hundred, (600), acres of mineral ground above mentioned.

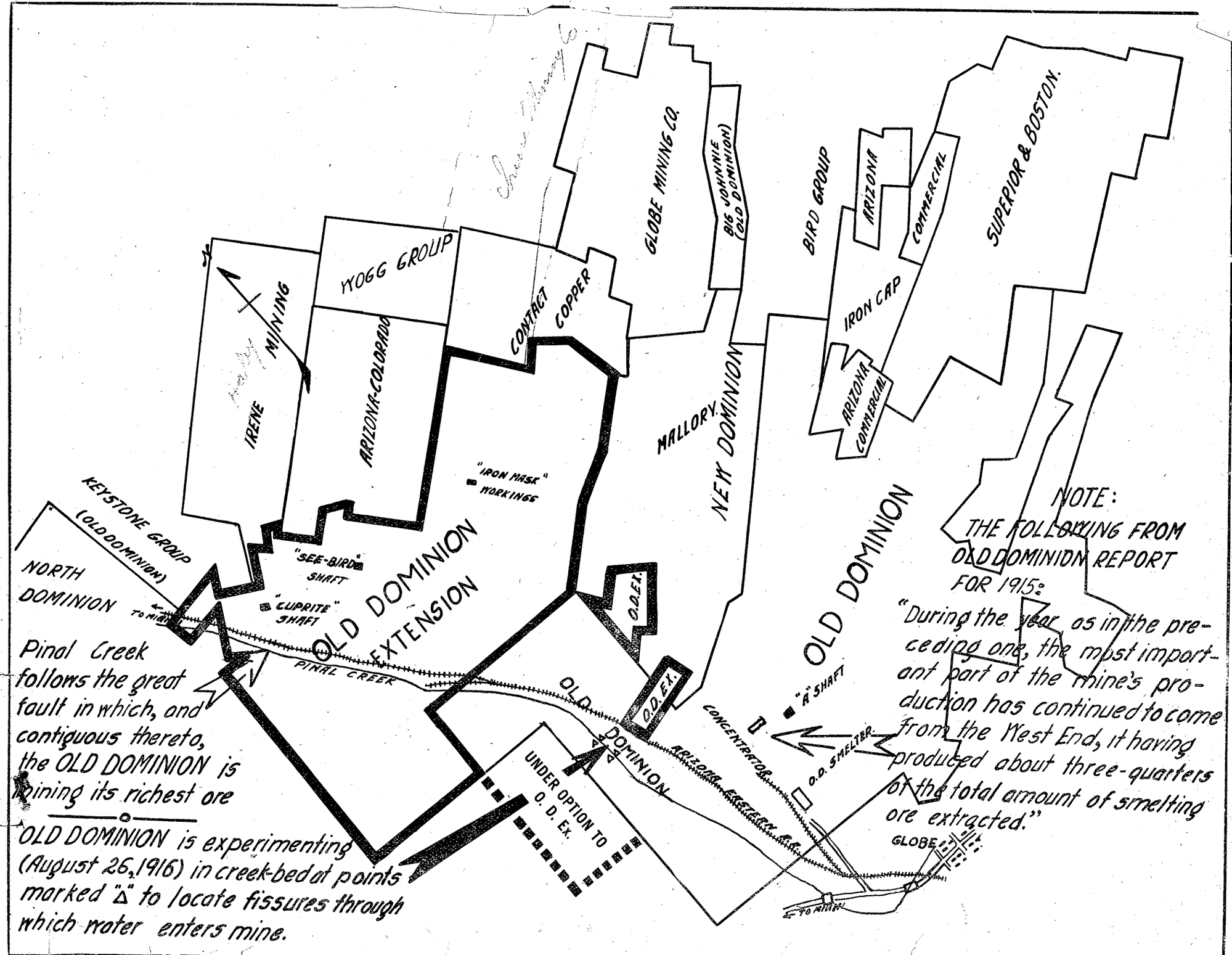

GLOBE MINING CO.
BIG JOHNNIE (OLD DOMINION)
BIRD GROUP
ARIZONA
COMMERCIAL
SUPERIOR & BOSTON.
WOGG GROUP
CONTACT
COPPER
IRONCAP
ARIZONA (COMMERCIAL)
MINING
IRENE
ARIZONA-COLORADO
MALLORY
NEW DOMINION
"IRON MASK" WORKINGS
KEYSTONE GROUP (OLD DOMINION)
NORTH DOMINION
"SEE-BIRD" SHAFT
"CUPRITE" SHAFT
OLD DOMINION EXTENSION
O.D.E.X.
O.D.E.X.
OLD DOMINION
"A" SHAFT
CONCENTRATOR
O.D. SMELTER
ARIZONA EASTERN R.R.
PINAL CREEK
UNDER OPTION TO O. D. EX.
GLOBE
TO MINE
NOTE:
THE FOLLOWING FROM OLD DOMINION REPORT FOR 1915:
"During the year, as in the preceding one, the most important part of the mine's production has continued to come from the West End, it having produced about three-quarters of the total amount of smelting ore extracted."
Pinal Creek follows the great fault in which, and contiguous thereto, the OLD DOMINION is mining its richest ore
OLD DOMINION is experimenting (August 26, 1916) in creek-bed at points marked "Δ" to locate fissures through which water enters mine.

Exhibit "B"

REPORT ON

OLD DOMINION EXTENSION.

- - -

(R. G. Thomas, who has carefully examined the OLD DOMINION EXTENSION property during a period covering several months, is an engineer of recognized ability. He has had abundance of experience in the mines of Arizona, especially so at Bisbee, Globe and Miami. The Board of Supervisors of Gila County are trusting to his discretion and integrity the expenditure of $350,000 for road improvement among the mines of his district.)

LOCATION

THE OLD DOMINION EXTENSION'S holdings consist of 600 acres of mineral ground (160 acres patented, 440 unpatented) adjoining the Old Dominion on the west and southwest. The Arizona Eastern railroad passes over the western portion of the property, paralleling Pinal creek, the local drainage outlet.

GEOLOGY AND MINERALIZATION

THE OLD DOMINION EXTENSION, Old Dominion, and Copper Hill properties are so closely related topographically and geologically that for an intelligible understanding they must be studied and treated as a unit. They comprise a northerly-tilted block of mineral-bearing sedimentaries, the Old Dominion and OLD DOMINION EXTENSION covering the southwesterly end and the Copper Hill district the higher portions.

This block of sedimentaries forms a portion of the southern slope of the Apache range, and from Pinal creek, at which point they dip beneath the overlying Gila conglomerate, rise rapidly to the northeast, reaching at Copper Hill an altitude of 4,500 feet. They consist essentially of a series of conformable limestones, shales, and quartzites, which have been subjected to a strong diabase intrusion, attended and followed by extensive shattering and faulting. The result has

been a series of numerous northeast-southwest fault zones showing strong iron and manganese brecciated outcrops. They are of great interest as they furnished the trunk channels for the ascending meteoric waters which deposited the original primary sulphide ores, and during following cycles of erosion furnished the channels for transportation of the mineral solutions from the belt of weathering of the higher to the more susceptible limestones of the lower horizons.

That the intrusive diabase furnished the original mineral constituents is proven by analysis of fresh diabase which gives a trace of copper.

A strong northwest-southeast cross-fault has dropped an extensive body of limestone toward and under Pinal creek, the lower portions of which are covered by a dacite flow, the latter being of comparatively recent origin and of minor importance.

EVIDENCES OF DEVELOPMENT

Development at the Old Dominion and Copper Hill properties has disclosed that the mineralization occurs as replacement ore bodies along the bedding planes of the limestone, shale, and quartzites; as large mineralized brecciated areas of quartzite; and as lodes in the diabase.

While the two latter classes have produced a large tonnage of commercial ore, the replacement bodies within the limestone are of first importance. These replacements occur both as lenses radiating from the fault zones, and as lenses entirely enclosed within the limestone with no apparent connection with the fault zones.

The richest ore bodies of the Old Dominion are found in that block of limestone which borders and dips beneath Pinal creek. Development on the OLD DOMINION EXTENSION has

been carried on in an extension of this same body of limestone farther to the west. Two shafts have been sunk to depths of about 115 feet and they have disclosed extensive leach zones of manganese and hematite gossan. A cross-cut from a drift driven from the bottom of the See Bird shaft (shown on attached plat) disclosed a heavy manganese gossan 35 feet wide carrying bunches of copper carbonate and oxide ore. Assays of the oxide of manganese throughout the drift run above 12 ounces in silver. That this is the apex of a body of argentiferous copper ore is unquestionable.

Development has shown that the ore bodies of the lower horizons along Pinal creek are far richer and more extensive than those of the upper horizons at Copper Hill. This is borne out in the development now being carried on by the Old Dominion, which shows that the ore is making constantly richer in the limestone towards the west and under Pinal creek, evidence that the mineral solutions of the higher horizons are continuously enriching the lower planes. The finding of ore bodies within the limestone, unassociated with the fault planes, is direct evidence of lateral leaching along the bedding planes.

There is no apparent geological reason why the intusive bodies of diabase within the sedimentaries when cooling should not have established, through the medium of contraction, independent channels, as shown in the Cuprite shaft, for ore-bearing solutions, and thus have created contact deposits, similar to the contact deposits at Bisbee.

R. G. THOMAS, E. M.,

Globe, Arizona.

REPORT ON

OLD DOMINION EXTENSION.

- - -

(J. G. Flynn, who wrote the following report on the OLD DOMINION EXTENSION, is one of the most thoroughly experienced mining men in the United States. He has been in charge of many mining plants in Montana, Nevada, Arizona and Mexico. His most recent work in Arizona has been that of mining superintendent at Ray and his present position of chief efficiency engineer for the Miami Copper Company. He is thoroughly familiar with the geological and mineralogical conditions of the Globe-Miami mining district.)

The property of the OLD DOMINION EXTENSION comprises, approximately, six hundred acres of mineral-bearing ground, adjoining on the north and west the Old Dominion mine of Globe, Arizona. The main county road, connecting Globe and Miami, passes the property; the Arizona & Eastern railroad passes across the western portion of it. The principal drainage system is Pinal creek, running in a northwesterly direction through the western portion. From the creek the ground rises to the northeast in a uniform though rapid slope. The formation consists of a series of sedimentaries, the principal of which are limestone and quartzite, partly covered by Gila conglomerate and a recent dacite flow. The limestones and quartzite have been tilted up by an intrusion of diabase. This intrusion of diabase was accompanied and followed by a series of fissuring and faulting. Speaking generally, these faults and fissures strike in a northeast and southwest direction.

MINERALIZATION

These faults are the most important economic feature of the geology of the property. They are traceable on the surface by the leached iron and manganeses cropping. They have been

the avenues or channels for the ascending and descending mineral solutions during the different periods or stages of ore deposition. The diabase, containing the primary source of mineralization, through later periods of ore deposition has mineralized shattered areas of quartzite and replaced ore bodies in the limestone, as well as formed well defined veins within itself.

The largest and richest bodies that have, so far, been opened up in the Old Dominion mine have been in the lower limestone.

They occur in large lenses, connected directly with the fault zone, and also in large bodies in the bedding planes of the limestones, in some instances completely isolated from the fault zone.

This limestone outcrops on the Old Dominion Extension property on the Cuprite, See Bird, and Iron Mask claims. Further down the slope toward the creek it is covered by the more recent dacite flow, then dips beneath the Gila conglomerate nearer Pinal creek.

A shaft has been sunk on the See Bird claim to a depth of 115 feet on an outcrop of manganese and iron gossan. A crosscut at the bottom of this shaft shows this gossan to be 35 feet wide at this point. Assays of this gossan show it to be silver-bearing. In all probability it is the capping of an ore body.

CONCLUSION

In conclusion, you have, in the OLD DOMINION EXTENSION property, the same quartzite, diabase and limestone that occur in the Old Dominion and Copper Hill properties, cut by a series of faults and fissures that show very strong mineralization on the surface, and I see no reason, geological or otherwise, why the same conditions that have formed ore bodies in the

Old Dominion and Copper Hill properties do not continue in the OLD DOMINION EXTENSION mining property.

J. G. FLYNN, E.M.,

Miami, Arizona.

REPORT ON

OLD DOMINION EXTENSION.

- - -

(L. M. Greenstein, whose report on the OLD DOMINION EXTENSION was made after months of familiarity with the property, has had years of experience in Arizona, both in connection with the staffs of the larger copper companies and as an independent engineer. As agent for the ore shippers of the Globe-Miami district and in his capacity as expert he has acquired an intimate knowledge of the geology and nature of the ore occurrence of this region.)

FACILITIES

LOCATION AND MEANS OF EGRESS - The holdings of the OLD DOMINION EXTENSION MINING DEVELOPMENT COMPANY include four groups, 160 acres of it patented, situate in the Globe Mining district, Gila County, Arizona, two and one-half miles from the town of Globe. The area of the entire group is approximately 600 acres, all lands being contiguous with the exception of two fractional claims, "Arizona Michigan No. 2" and "Arizona Michigan No. 3", which are isolated by a conflict with the Old Dominion.

The Globe-Miami division of the Arizona Eastern R. R. traverses the property along its southern extremity, cutting the Stead group diagonally, and cutting the "Nevada," "Cuprite" and "Denver" claims near their western side lines. Hamm siding has been constructed on this railway several hundred feet from the south boundary of the property, the smeltery of the Old Dominion Copper Mining & Smelting Company being one and one-half miles from this station, and the Miami smelting works of the International Smelting Company six and one-half miles, by rail.

A wagon road of easy grade which taps the Globe-Miami county highway opposite the Old Dominion smeltery follows the

meander line of Pinal creek to Hamm siding. A branch has been constructed onto the property from this station, culminating on the Iron Mask claim. There are several trails which render the property accessible from the town of Globe, but the above mentioned are the principal means of egress.

Railway spurs or gravity-operated tramways can be built from shaft sites on the property to the Arizona Eastern main-line below.

TOPOGRAPHY - Pinal Creek, to which all drainage of the district is tributary, forms a flat of variable width between the Old Dominion smelter and Irene gulch, the northwest boundary of the property. Its scope on the east side of its channel has been limited because of a dacite flow. On the west the creek has found the conglomerate more susceptible to erosion and in this formation has widened its channel. Cross drainage on the west of Pinal creek plays no important part in the topography of the country for a mile southeast of the Stead property, there being one ridge of conglomerate material extending for that length parallel to the creek. In the vicinity of the same group several ravines from the west make a junction with Pinal creek, forming a large flat upon which the southwestern portion of the same group is situate.

On the east of Pinal creek for a distance of several thousand feet from the creek channel the country between the Old Dominion mine and Irene gulch assumes a more rugged aspect, due to the degredation of the dacite flow. Erosion has resulted in large boulder-like masses of the lava. For several miles from the edge of this flow the country bounded by the above gulches rises gradually into the foothills of the Apache mountains.

Big Johnnie and Irene gulches, forming the most important features of the topography in the immediate vicinity of the OLD DOMINION EXTENSION, have carved their channels in diabase

intrusions striking in a northeasterly direction. They are wide and flat, but become narrower as they near the dacite extrusion and upon entering the latter appear as box canyons.

TIMBER AND WATER SUPPLY - There is no timber suitable for mining purposes on the property. All vegetation is confined to scanty shrubbery and numerous species of cactus.

Water in sufficient quantities for development purposes can be developed in Pinal creek. One well in the creek near the center of the Stead group taps a permanent flow at a depth of 80 feet. Another well in the creek, of greater depth, near the northwest corner of the property encountered several flows. With depth the property should have large volumes of water to handle. This being the history of the Old Dominion, which adjoins the Stead group on the south. The former not only develops its own water supply from the mine workings, but has an excess sufficient for the operation of the Miami Copper Company concentrator.

GEOLOGY

GENERAL GEOLOGY - The property shows members of the Apache group, quartzite and conglomerate grits of probable Cambrian age, apparently resting with intrusive contact upon diabase. The Apache formation, containing numerous parallel faults with a prevailing northeast strike, presents a long line of contact with the Globe limestone, appearing as a vertical displacement between the quartzite and limestone, the latter being probable later age than the faulting of the Apache formation which preceded and accompanied the diabase intrusions. A later Tertiary flow of dacite has partially covered the diabase and limestone, having been eroded to shallow depths near its eastern edge and gaining in depth toward Pinal creek. On the west of Pinal creek theproperty contains a considerable area of Gila conglomerate of post-dacitic deposition.

MINERALIZATION - Mineralization in the higher country northeast of the property is confined to fissures following well defined fault lines, in both quartzite and diabase. These, insofar as prospected, are tight and narrow and seem to have acted as feeders into the area in the immediate vicinity of the quartzite-limestone displacement, resulting in heavier mineralization in the limestone, which has been more susceptible to replacement.

As the cross fissures enter the shear zone of limestone and quartzite large areas of heavy gossan become apparent, the quartzite changing to hematite iron and the limestone into a yellow limonite. Black oxide of manganese, which appears in the district wherever faulting occurs in the limestone, also takes a part in the surface discoloration.

DEVELOPMENT

The property has been prospected by several shafts, tunnels and open cuts along the quartzite-limestone displacement. I have examined each, the following being a brief description of the most important:

The "Cuprite" shaft, sunk in the limestone near the contact, has attained a depth of 100 feet. At a depth of 50 feet from the surface it entered a quartzite horse, in which formation it was bottomed. Throughout its depth the formation showed a large area of oxidation and leaching in both the limestone and quartzite. A short drift running south from the bottom of the shaft entered soft, friable diabase. The shaft and drift show occasional carbonate stains in the leached material.

The "See Bird" shaft, sunk in the quartzite, has attained a depth of 125 feet. Near the bottom it entered a limestone which had been altered into a limonite. Four drifts radiate from the respective corners of the shaft, the longest being about 200 feet and following a highly leached and thoroughly oxidized

area which I afterward estimated to be the quartzite-limestone displacement. Several pockets of ore were encountered in the drift, the greater part of which had been stoped out. Three samples taken in these pockets assayed in my laboratory show a copper content of 25.15%, 6.73%, and 2.80% respectively. An average sample of black oxide of manganese common throughout the 200-foot drift assayed 13.84 ounces of silver. Invariably the shallower silver deposits overlaying the copper zone of the Globe district have been indicated by this manganese surface showing. The presence of cuprite in the ground from which the 25.15 per cent. sample was taken would seem to indicate that the rich oxide zone which throughout that section of the district overlays the zone of enriched sulphides is not distant.

A tunnel on the "Iron Mask" penetrates the quartzite-limestone displacement at a depth of 30 feet, copper carbonates appearing in the contact and also in a highly silicified area of brecciated quartzite. A winze 60 feet deep, sunk on the fault, followed a zone of oxidation and leaching similar to that encountered in the "Cuprite" and "See Bird" shafts. The limestone near the portal of the tunnel is soft and shaly in texture, being stained yellow by an oxide of lead and molybdenum. Crystals of wulfenite occasionally deposited on the limestone were encountered in this tunnel.

CONCLUSION

Insofar as the property has been prospected the possibility of encountering commercial ore at a greater depth seems excellent. So far there has been no curtailment in leaching, and to what depths this zone may extend is a matter of conjecture. Elsewhere in the district where similar geological conditions exist this zone has been found to maximum depths of 1400 feet, chalcocitization usually being encountered at about 500 feet, the ore bodies in some instances being entirely removed from the

actual line of displacement, taking the form of lens-shaped deposits in quartzite and limestone parallel to their bedding planes. Perhaps nowhere is this more apparent than in the Old Dominion to the south and southeast, where similar geological conditions exist.

Respectfully submitted,

L. M. GRUENSTEIN, E.M.,

Miami, Arizona.