



CONTACT INFORMATION

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

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12/20/96

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: ARGONNE COPPER CO. PROPERTY

ALTERNATE NAMES:

YAVAPAI COUNTY MILS NUMBER: 1021A

LOCATION: TOWNSHIP 12 N RANGE 2 E SECTION 31 QUARTER N2
LATITUDE: N 34DEG 22MIN 46SEC LONGITUDE: W 112DEG 11MIN 25SEC
TOPO MAP NAME: MAYER - 7.5 MIN

CURRENT STATUS: EXP PROSPECT

COMMODITY:
COPPER

BIBLIOGRAPHY:
USGS MAYER QUAD
ADMMR ARGONNE COPPER CO. FILE

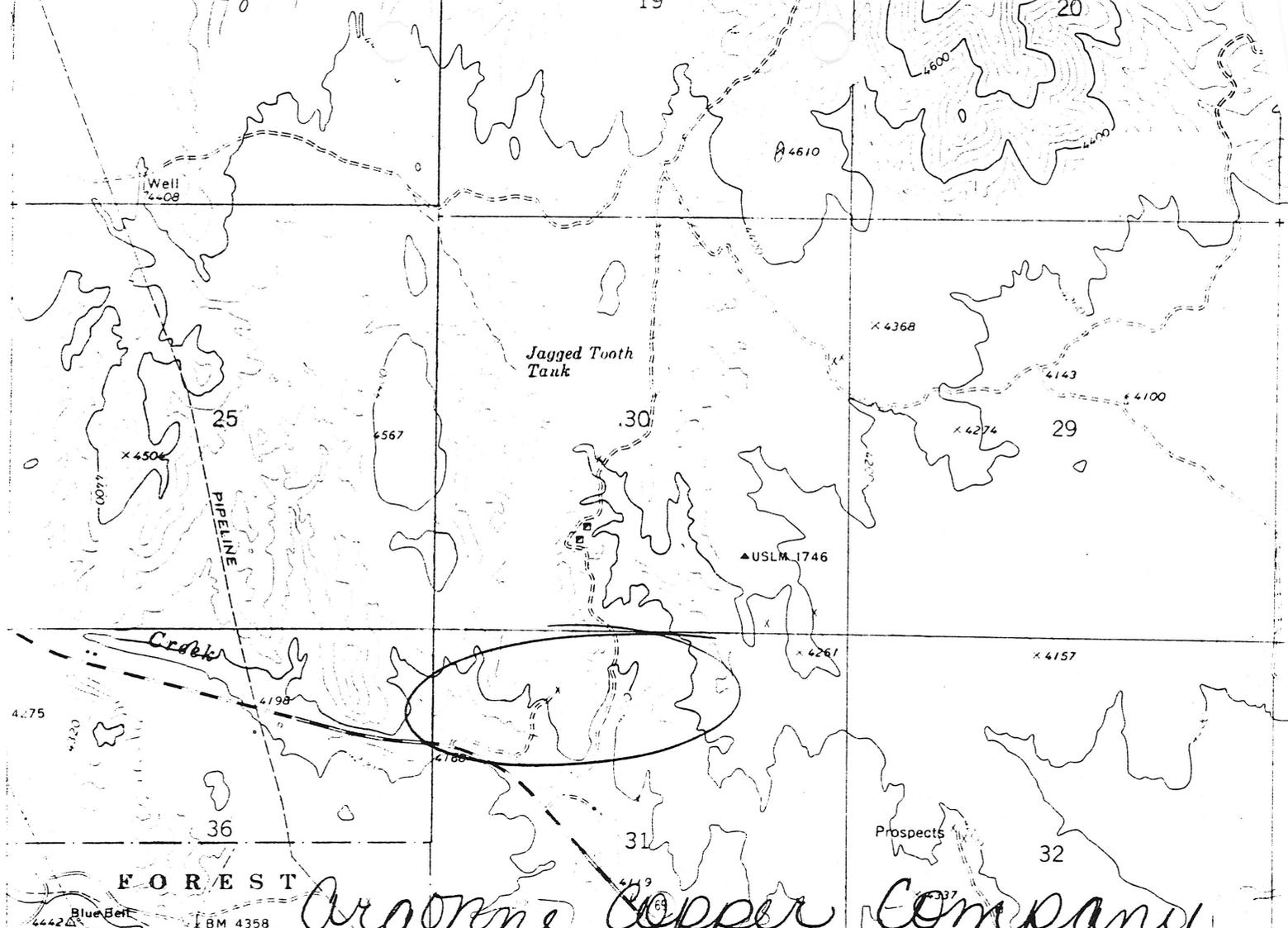
ARGONNE COPPER COMPANY

REFERENCES

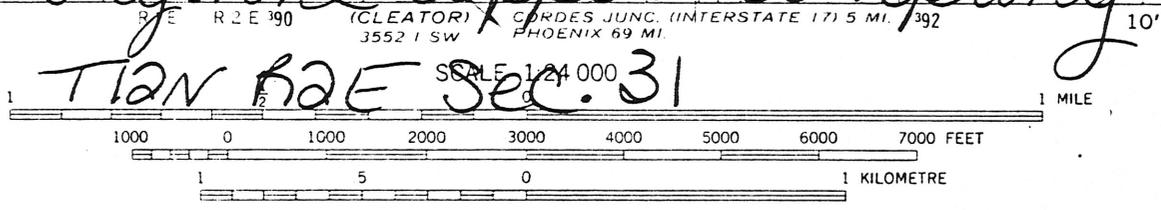
YAVAPAI COUNTY
BIG BUG DIST.
T12N R2E Sec. 31

Yavapai County MILS Index #1021A

Mayer 7.5' Topo (included in file)



Argonne Copper Company
 TIAN RAE Sec. 31



CONTOUR INTERVAL 40 FEET
 NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
 FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
 A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

Mayer 7.5'

BRIEF REPORT ON ARGONNE PROPERTY.

The lode claims owned by the Argonne Copper Company are situated in the Big Bug Mining District about four miles south of the Arizona Binghamton Copper Company, and about five miles east of the Blue Bell, which is owned by the Consolidated Arizona Smelting Company. There are twenty-seven claims, all in one group, and the area covered is approximately 580 acres. None of these claims are patented, and title is vested in location rights on four claims, while the rest are bonded.

Geology.

The geological conditions are in general similar to those of the entire district and Jerome. The porphyry and schists are those considered by geologists as necessary to the presence of copper ores in the district above mentioned, and diorite dikes seem to have intruded through the schists. Quartz porphyry bodies have been forced upward through the schists also, and seem to have been the source of the mineral bearing solutions that enriched the softer schists adjoining. The mineralized area is large, and commercial ore appears at the surface, in greater or less quantity, upon most of the group. Upon the Grace and Uncle Sam claims there is an immense iron capping, or gossan, about 700 feet long and 40 feet wide. There is considerable commercial ore exposed here and of very good grade. It is an ideal capping for a large ore body at greater depth, and secondary enrichment should be on a large scale, as the gossan is well leached, and the original copper content should be found as secondary mineral at greater depth. This gossan lies over the mineralized schists joining the quartz porphyry, and is a

real contact body. This is the largest vein on the property, though the other veins, as shown on the map and exposed by location work, all give promise of much improvement as development progresses. Some of the veins are from two to six feet wide as at present shown, and carry commercial ore in varying quantity, as shown by location and assessment work.

Development.

Practically all development work has been done on the large gossan, or capping, and consists of several small shafts varying from 15' to 80' in depth, all of which have produced commercial ore, and there is good ore still in the bottom of these. In addition to these there is one 180' shaft that is in the foot wall of the vein, and no crosscutting was ever carried out to tap the vein. This shaft, however, seems to be in the proper position as a deep working shaft in future development, and by re-timbering will be in good condition. The 80' shaft, which is an incline shaft, shows a very large body of soft, well leached material, which indicates very positively the existence of a large secondary ore body at greater depth. The indications as shown at present development point out the fact that there will be little water to handle until a shaft is down several hundred feet. There is no water in any of the workings at present other than surface water in the deeper shaft. There was no water flow when the shaft was being sunk.

Facilities.

The Humboldt branch of the Santa Fe R. R. passes within about four miles of the property, and an excellent road connects the two, and it is an easy truck or team haul from mine to railroad at Cordes siding. From Cordes siding it is about 16 miles to

the smelter at Humboldt by railroad.

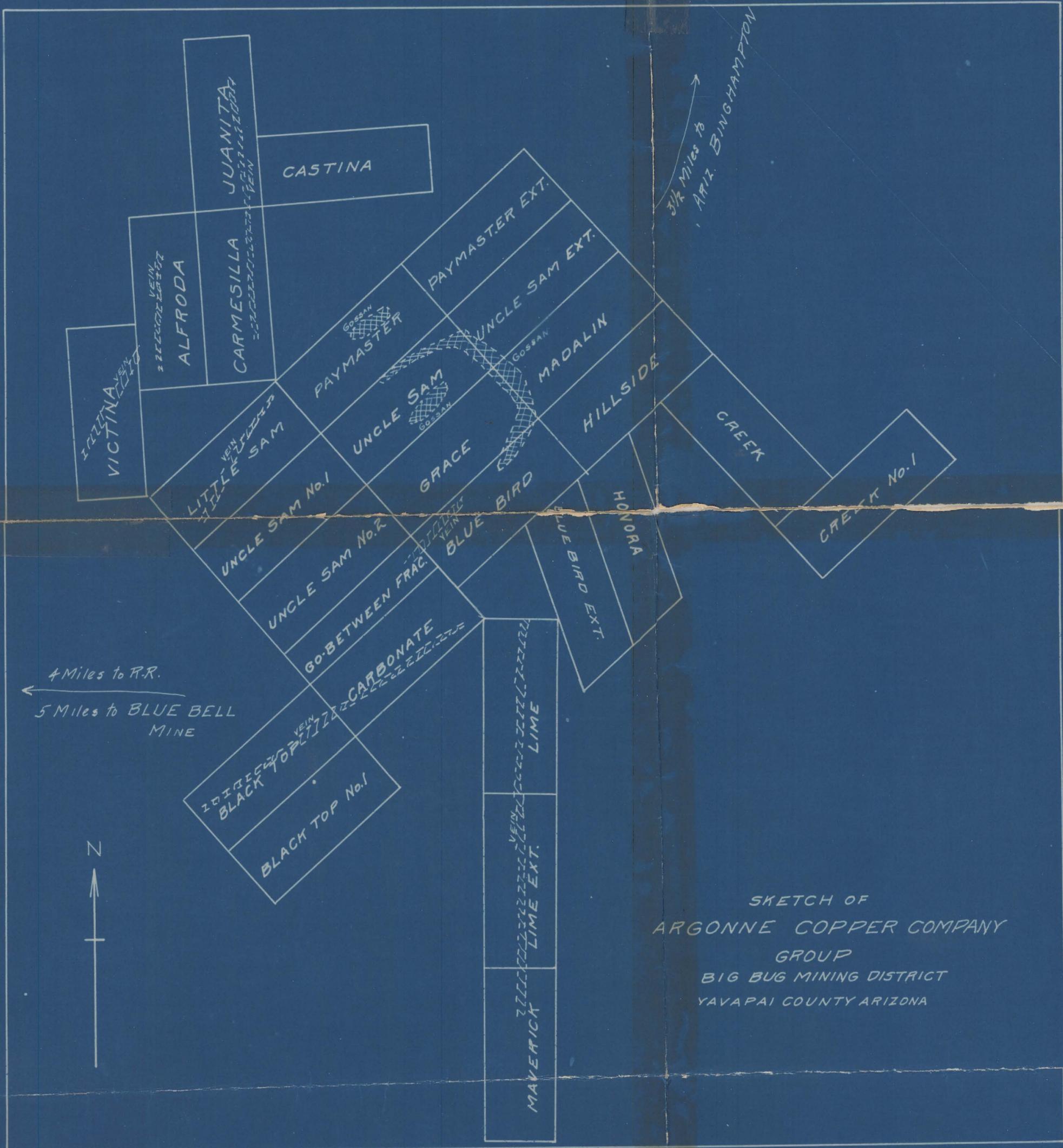
There is an abundance of water joining the property, as the Big Bug River runs across one claim of the group, and there is sufficient water at all times of the year.

My opinion, as a Mining Engineer, is that the Argonne Copper Company has a very promising piece of ground, and that geologically the conditions for a large commercial ore body are good. I have operated in the Jerome District where the formation is very similar, and do not hesitate in stating that the conditions, as I have observed by examination at the Argonne property, are fully as good as any I observed at Jerome or in the Mayer District.

Respectfully,

E. M. Dickinson
E. M.

Dated, Prescott, Arizona,
March 28, 1919.



SKETCH OF
 ARGONNE COPPER COMPANY
 GROUP
 BIG BUG MINING DISTRICT
 YAVAPAI COUNTY ARIZONA

Exhibit 4