



CONTACT INFORMATION

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

The following file is part of the

Arizona Department of Mines and Mineral Resources Mining Collection

ACCESS STATEMENT

These digitized collections are accessible for purposes of education and research. We have indicated what we know about copyright and rights of privacy, publicity, or trademark. Due to the nature of archival collections, we are not always able to identify this information. We are eager to hear from any rights owners, so that we may obtain accurate information. Upon request, we will remove material from public view while we address a rights issue.

CONSTRAINTS STATEMENT

The Arizona Geological Survey does not claim to control all rights for all materials in its collection. These rights include, but are not limited to: copyright, privacy rights, and cultural protection rights. The User hereby assumes all responsibility for obtaining any rights to use the material in excess of "fair use."

The Survey makes no intellectual property claims to the products created by individual authors in the manuscript collections, except when the author deeded those rights to the Survey or when those authors were employed by the State of Arizona and created intellectual products as a function of their official duties. The Survey does maintain property rights to the physical and digital representations of the works.

QUALITY STATEMENT

The Arizona Geological Survey is not responsible for the accuracy of the records, information, or opinions that may be contained in the files. The Survey collects, catalogs, and archives data on mineral properties regardless of its views of the veracity or accuracy of those data.

05/11/87

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: SEGAR LEASE

ALTERNATE NAMES:

LA PAZ COUNTY MILS NUMBER: 271

LOCATION: TOWNSHIP 4 S RANGE 23 W SECTION 35 QUARTER NE
LATITUDE: N 33DEG 02MIN 21SEC LONGITUDE: W 114DEG 35MIN 38SEC
TOPO MAP NAME: PICACHO - 7.5 MIN

CURRENT STATUS: EXP PROSPECT

COMMODITY:

COPPER
SILVER
GOLD LODE
FLUORINE FLUORSPAR

BIBLIOGRAPHY:

AZBM FILE DATA
ADMMR SEGAR LEASE FILE
POSSIBLY IN T4S R23W SEC 36 NW4

SEGAR LEASE

ABM Bull. 134

LaPaz

~~SENA~~ COUNTY

T 4S R 23W Sec. 35

NE

STATE OF ARIZONA
DEPARTMENT OF MINERAL RESOURCES
MINERAL BUILDING, FAIRGROUNDS
PHOENIX, ARIZONA 85007



July 7, 1966

Mr. Ralph Curtis
2626 West Curtis Road
Tucson, Arizona 85705

Dear Mr. Curtis:

In compliance with your request for copies of the file information under "Segar Lease", we have photocopied the only report of the file for which we obtained permission to distribute. The report is enclosed herewith and we hope will be of some help to you.

Yours very truly,

Adm. Assistant.

P
Enc: Report of LASmith 8-31-64.

C
O
P
Y

Conference with Walter Segar - Yuma

Walter Segar has now moved to Martinez Landing north of Yuma. He stated that he has an RD8 Cat at the mouth of Yuma Wash and plans to build 4 miles of road to his lease opposite Picacho Landing. Recent sampling revealed 6-12 feet of ore that assayed 5-7 percent copper and \$6-12 in gold and silver to the ton. He wants to ship to Hayden (AS&R) since this ore carries 75-80 percent SiO_2 . He thinks that by some sorting the grade could be raised. The maximum elevation between Yuma Wash and the mine would be about 350'. The haul to Blaisdell, on the S. P. Railroad would be approximately 37 miles, 25 of which is paved. Memo LAS 2-3-65

Walter Segar reported on his lease from the State in the Silver Eureka District, he has completed a bulldozer road to it and had a large specimen showing good oxide copper (chrysocolla) and red iron oxides that reportedly show some gold. Samples are now in progress. Conf. LAS 2-2-66

Reference: ABM Bull. 134

24

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Segar Lease

Date October 7, 1964

District Silver-Eureka Dist., Yuma Co.

Engineer Lewis A. Smith

Subject: Mine visit with Walter Segar.

Access: The mine was reached by means of a boat from Martinez Landing, 12 miles W or upstream. From this point it is 1/2 to 3/4 miles north into the center of the claims. It is about a mile and one-half west of the River View mine. It can be reached by 3 miles of trail in a SW direction from the Dives. The property borders the Red Cloud, Pacific, Silver Glance and Papago, these mines lying N and E of the property.

The region is composed of rugged, steep-sided, serrated ridges, alternating with weaving canyons that are several hundred feet deep and drain southward or south westward to the Colorado River. The prevailing rocks are gray quartz-sericite schists alternating with some more basic schist bands. Eldred Wilson considers these to be of sedimentary origin. They generally strike N, dip at various angles, and display several systems of faults. A few aplitic dikes cut the schists. The principal veins strike about N 70° E and dip 45° NW up to vertical. The veins generally average from 1 foot to 3 feet wide but locally may swell to widths of 20 feet or more (no such widths were observed on the Segar claims). Some veins in the area persist for up to a mile of length, but the shoots, so far found, tend to be pockety and tend to be localized in the vicinity of places where fissures intersect the main faults at small angles.

Vein fillings consist of manganiferous to ferruginous white calcite along with brecciated country rock or gouge or very cellular, crystalline white quartz. Locally a few narrow streaks of copper stained rock are seen. On the Segar claims the copper is impregnated in streaks or zones that range up to 6-8 feet wide. In these zones the schist is almost uniformly copper stained (mostly chrysocolla) out from fault hanging walls. Where seen in a 75 foot adit and a few other places there was a narrow hanging wall streak which ranged from 2 to 6 inches wide, and was higher grade than the impregnated bordering material. The veins are said to carry good gold and silver in places. The samples taken by Segar were not run for lead and no evidence of lead minerals was seen. However at the Riverview mine to the E occasional small shipments of silver-lead ore were made and these were high grade. A small lot of concentrates ran 60 percent lead, 8.7 percent zinc, 28 oz. silver and 0.08 oz. gold per ton (Arizona Bureau Mines Bull. 134 (1933) p. 71). A shaft several hundred feet NE of the adit contained considerable gold-bearing material that also carries some silver and several percent copper. The dump was sampled by Segar and Davis, a consultant from Salt Lake City. Farther east is a 200 foot shaft that was sunk many years ago. This followed a white or pink quartz vein downward. It is reported to have yielded some good gold values. Samples were taken from the near surface, on a 100 foot grid and these ran 0.6 up to 2 percent copper. The composite sample ran around 1 percent. These were obtained by digging small shallow pits. In some of the mineralized area surface copper showings are meager, but the copper stain or copper values show up from a few inches to a foot below the surface. According to Segar the schist in such places, shows no green copper staining, but still runs 0.6 or more in copper, possibly as oxides (melanconite or cuprite). The most pronounced alteration is sericitization near the veins and silicification as impregnations and narrow quartz veins or bunches in much of the rock. Chloritization was less prominent,

generally, but locally is stronger in the more basic bands in the schist. In the deepest canyons a very fine-grained, light brown rock underlies the schist. This appeared to be an aplite dike that has locally at least, domed the schist. North of the area observed, granitic rocks are present and these mostly appear to be fault bordered irregular shaped blocks. In addition to the larger faults, considerable jointing and intimate shearing has occurred. The schist is twisted and locally folded. No granite was seen in the claims although it probably may underlie the schist in part of the area. N-NE of the mine andesite flows & tuffs are mapped.

Considerable drilling would be necessary to determine if the schist will run enough to have value between the fault zones or "veins," since the rock surfaces often are severely whipped out. The ridges could best be tested by flat angle holes from the canyons that are generally transverse to the veins, or many fractures. Some copper staining was also seen in the aplite. The Geronimo and Red Cloud north of Segar, are on a N 15° W zone that dips 45 to 60 degrees E. The vein separates andesitic rocks on the east from granite on the west. No andesite was seen in the Segar area but a large mountain to the NE appeared to be andesite. This has a somewhat greenish cast that may be due to chloritization. The principal veins, carrying lead and silver, trend NW-SE, whereas the copper-gold veins of the Segar generally trend NE-SW, possibly representing two generations of metallization. The rough topography and difficult haul to Blaisdell would mean considerable cost and only good grade ore could be shipped. The ore in the area is said to run up to 75-80 percent silica.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA
FIELD ENGINEERS REPORT

FILED

007 6 1964

Mine Segar Lease

Date 8-31-64

District Silver Eureka District, Yuma Co.

Engineer Lewis A. Smith

Subject:

Location: Sec. 36, T. 4 S., R. 2 W. (next to Island Lake or 6 miles upstream from Martinez Lake by boat).

Access: Access is (1) by means of boat from Martinez Lake (2) or by means of Yuma Wash and the Red Cloud road for 5 miles, thence by trail 3 miles southwest to the mine. 3 miles of new road would be required to reach the mine.

Lessee: Walter Segar, P.O. Box 934, Page, Arizona

Property: Segar has leased the ground from the State of Arizona, owner of Section 36.

Minerals: Copper, gold & silver.

Geology: The oldest rocks in the area are moderately fissile schist consisting of fine grained quartz and sericitized feldspar alternating with bands of partly chloritized biotite, that are probably of Pre-Cambrian Age. Granite locally intrudes the schist and may be as late as Mesozoic in age. Aplitic dikes intrude the granite. Later a volcanic series (probably related to the Kofa Series) overlies the older rocks, although not in the immediate vicinity of the Segar ground. The volcanics consist of andesites, trachytes and rhyolite in order of age. These also include flow breccia whose relationship to the other volcanics is not definitely determined. Tuffs that are partly rhyolitic and partly andesitic form the flatter slopes in places. Many veins in the higher portions of the Chocolate Mountains have walls in these rocks. The schist in the Chocolate Mountain gap generally trend N and dip variably. The volcanics generally trend N-NW and dip at low angles. Faults of some magnitude are frequent and sometimes separate the older rocks from the volcanics. The principal faults trend N-NW and dip steeply and are grouped into 3 roughly parallel zones. North of the Segar mine the ridge that lies between the Dives and Mendevil mines is a horst of Pre-Cambrian rocks and the valley east of and next to this horst is believed to be a graben that is occupied by volcanics. The veins in the area are persistent and range from 1-30' wide. The usual gangue consists of calcite, fluorite, quartz and barite and are banded. These minerals, according to the Arizona Bureau of Mines Bull. 158 were deposited in this order: earlier quartz, fluorite, later quartz, barite and calcite, metallic minerals consisting of limonite, hematite, pyrolusite, cerussite, anglesite, smithsonite, calamine, argentite, galena, wulfenite, vanadinite, yellow lead oxides and cerargyrite.

At the Segar mine, however, copper occurs as malachite, chalcocite, cuprite, chrysocolla and probably chalcopyrite deeper. No lead minerals were present in the suite of specimens. The principal gangue mineral is quartz. According to Segar the copper mineralization lies in a strongly fractured zone in schists. The specimens showed a little calcite, and some fluorite, with abundant limonite. Schist specimens appeared to be silicified and some chloritization is present. According to Segar the ore carries \$2.00 gold and 7-9 ounces silver to the ton. Copper ranges from less than 1 to 30 percent. The deposit may be classed as mesothermal. Sericite, while present, is not important in the suite specimens.

REFERENCE LINES APPROX. 3000' FEET LONG

Inez &
Seagull
claims

Sec. 35436
T4S R23W.

SOLID WHITE
FORMATION (LEACHED
COPPER)

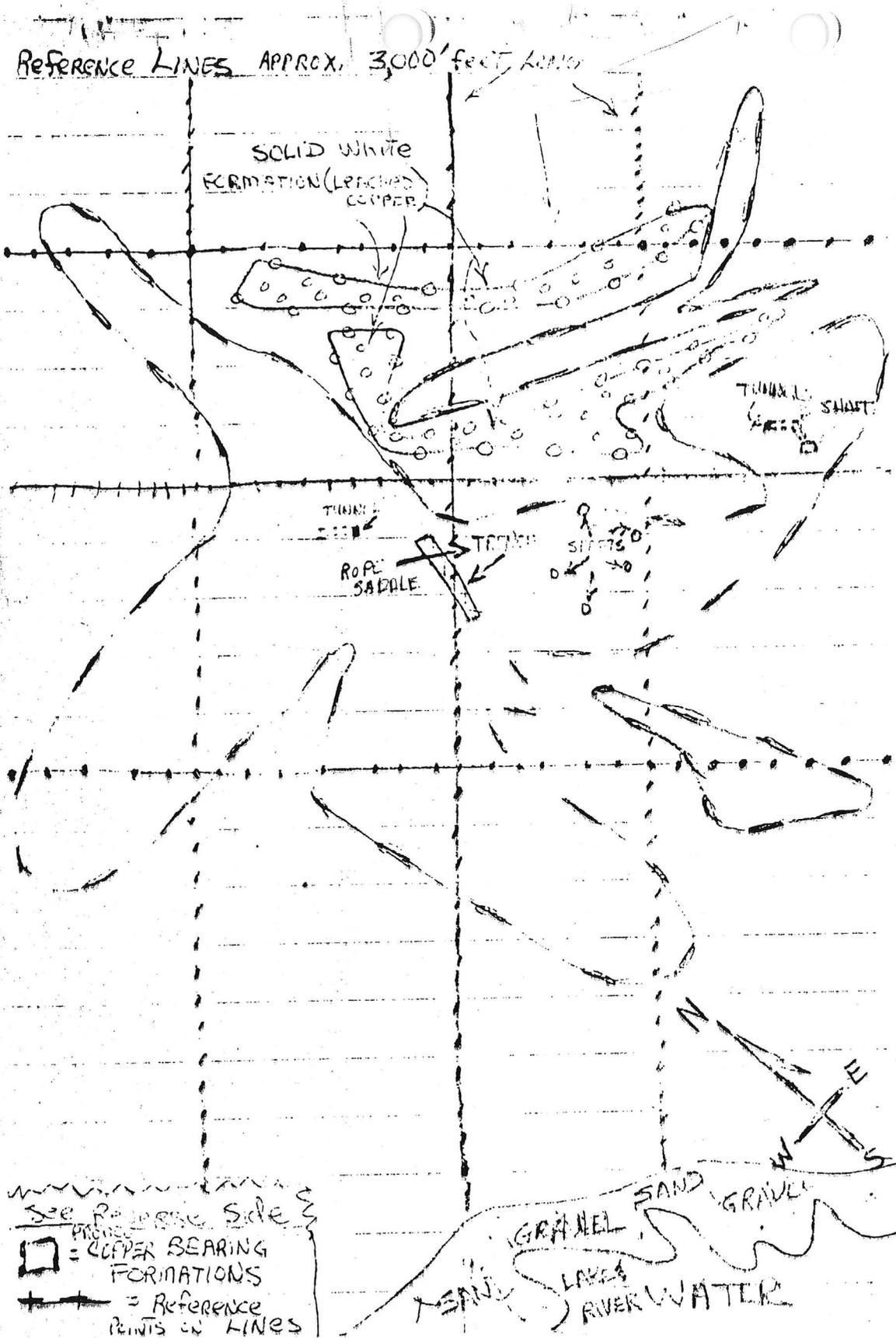
TUNNEL
SHAFT

ROPE
SADDLE

STARTS
TO
DIP

See Reverse Side
of
= COPPER BEARING
FORMATIONS
= Reference
POINTS or LINES

GRAVEL SAND GRAVEL
LAKE
RIVER WATER



Results of Metallurgical
Tests on Ore from the Inez
and Seagull Mining Claims, Silver
District, Yuma County, Arizona

ABSTRACT

A series of leaching tests were performed on ore from the Inez and Seagull Mining claims, Silver District, Yuma County. Results of these tests indicate that the optimum reduction for the ore for leaching is to minus fifteen mesh. Based on the results of these tests, it is estimated that from fifty to sixty-five percent of the copper may be recovered by leaching but that leaching will require a high consumption of acid.

Walter W. Walker
12

Professional Engineering Report No. 62-3

62

INTRODUCTION: This report comprises the second in a series of engineering reports on the Ines and Seagull Mining Claims, Silver District, Yuma County. This report describes results of leaching tests on samples of copper ore from the above claims. Details of mine examination and ore sampling are given in the previous report (Prof. Engr. Report No.60-5).

PROCEDURE: One hundred gram samples were quartered from each of the various fractions from the sampling process. These samples consisted of the following sized ore: (a) minus 1/2 inch crusher product; (b) minus 1/4 inch first roll product; (c) minus ten mesh second roll product; (d) minus fifteen mesh third roll product; and (e) minus 200 mesh pulverizer product. Each sample of dry ore was placed in an agitation bottle and one-hundred ml. of 10 % H_2SO_4 was added. The bottles were stoppered and the samples were agitated by rolling for 24 hours. The leach solution was then filtered from the ore. The undissolved ore, which was retained on the filter, was washed ten times with 10 ml. portions of distilled water. The resulting leach solutions, and undissolved ore were assayed by the volumetric thiocyanate method. The acid consumption was determined by standard acidimetric techniques.

RESULTS: Results of these tests are shown in Tables I, II, and III, attached. Certain results are also shown graphically in Fig. 1.

DISCUSSION OF EXPERIMENTAL RESULTS: Review of the data given in Tables I, II and III and in Fig. 1 indicates that the optimum reduction of the ore prior to leaching should be to minus 15 mesh.

The results of these preliminary tests indicate that the ore is only partially amenable to leaching and that the acid consumption is inordinately high.

The low efficiency indicated by the leaching tests is believed to be due to the presence of an appreciable amount of chrysacolla in the ore. The high acid consumption is attributed to the presence of calcite in the gangue.

It is the writer's opinion, based upon the limited tests described herein, that the probability of success of a small scale leaching plant is at best marginal. Review of Table III supports this opinion. It is quite possible that a small scale leaching plant may recover only one-half of the copper available in the ore. This low recovery, together with a high expenditure for materials and labor would make the profit margin very small.

CONCLUSIONS AND RECOMMENDATIONS:

1. The optimum reduction of the ore for leaching is to minus 15 mesh.
2. Under optimum conditions only approximately 70% of the copper can be recovered by simple leaching and precipitation. Leaching, however, entails the consumption of excess acid which would tend to reduce the profit margin.
3. Based on the conclusions of this limited series of tests it is again recommended that leaching on a small scale be abandoned as a possible metallurgical recovery method for this property.

TABLE I

LEACHING TEST RESULTS

Sample Identification	Average Size	ASSAYS Leach Solution gr/cc #/gal.		Tailings % Copper	Heads by Assay %	Heads by Product %	% Efficiency
Crusher Product	-2"	0.0086	0.072	1.60	3.54	3.52	49.0
1st Roll Product	-1/2"	0.0098	0.083	1.73	"	3.59	56.0
2nd Roll Product	-1/4"	0.0106	0.101	1.36	"	3.48	60.5
3rd Roll Product	-10 mesh	0.0121	0.115	1.12	"	3.54	69.0
4th Roll Product	-15 mesh	0.0125	0.119	1.00	"	3.50	71.5
Pulverizer Product	-200 mesh	0.0093	0.078	1.70	"	3.56	53.0%

TABLE II
ACID CONSUMPTION

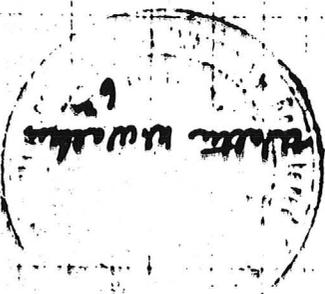
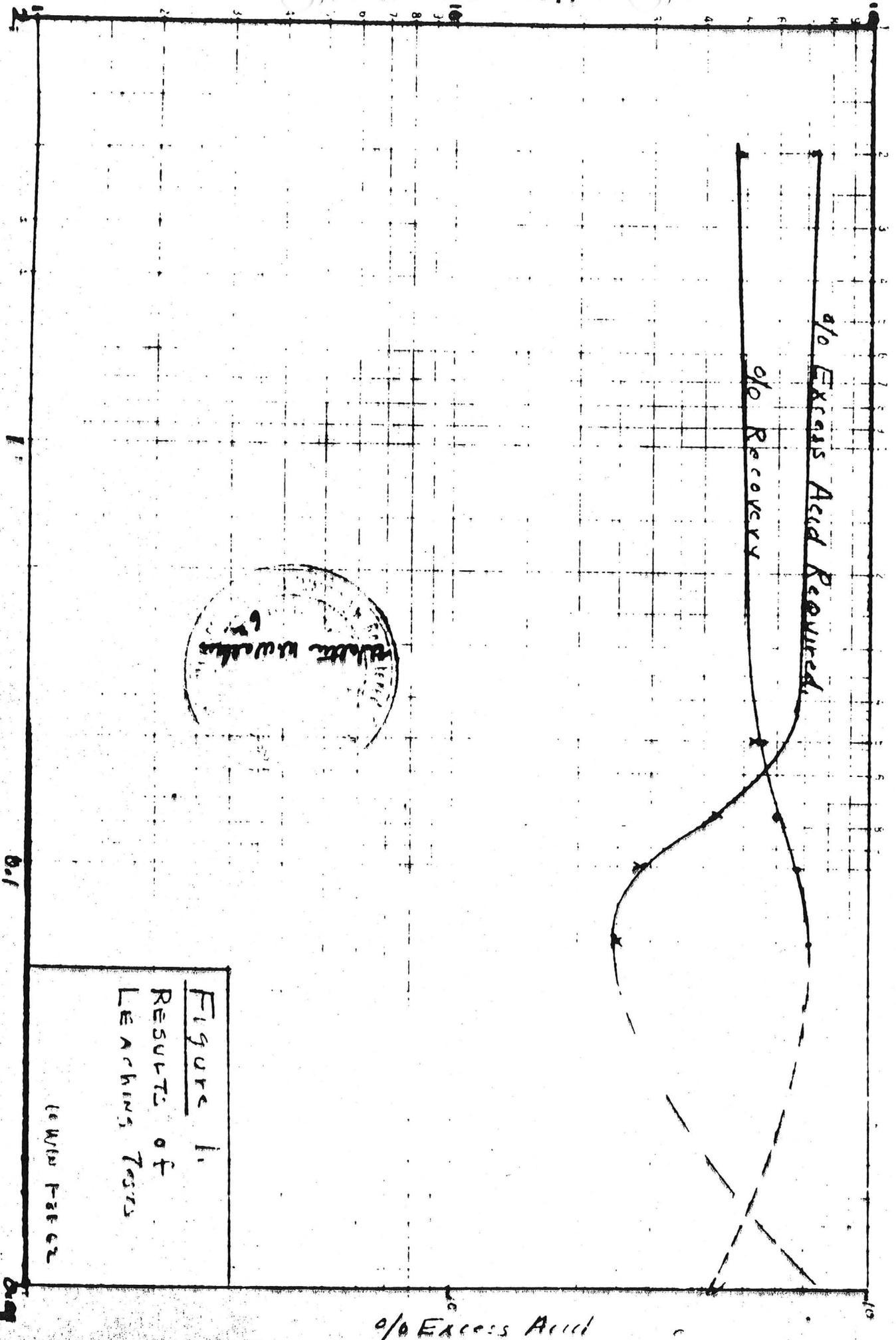
Site of ore	Theoretical Acid Consumption (grams H ₂ SO ₄)	Actual Acid Consumption (grams H ₂ SO ₄)	Excess Acid %
-2"	2.67	4.60	73.2
-1/2"	3.04	4.67	53.7
-1/4"	3.29	4.70	43.0
-10 mesh	3.70	4.80	27.8
-15 mesh	3.88	4.85	25.0
-200 mesh	2.59	4.83	83.0

TABLE III

SUMMARY OF LEACHING TESTS

Copper Available in Ore	<u>lbs./ton</u> 70.8
Leachable Copper in Ore	47.8
Estimate Precipitated Copper	44.0
Acid Consumption	74.5
Iron Consumption	100.0

RECOVERY OF COPPER



Size of One (inches)

Figure 1.
RESULTS OF
LEACHING TESTS

LEACHING TESTS

0.1

10

% Excess Acid

**Preliminary Examination of
The Ines and Seagull Mining
Claims, Silver District, Yuma County**

ABSTRACT

The mining claims held by Mr. N. W. Clayton and Mr. W. Sager located in the Silver District of Southern Yuma County were visited and a thorough surface examination was made of these properties. Results of this surface examination indicate that (1) a copper sulfide ore body may exist below the surface and (2) that initial small scale leaching of surface copper oxides may be feasible. Approximately seventy (70) pounds of surface rock exhibiting typical copper oxide mineralization was sampled. This 70 lb. sample assayed: gold - 0.04 oz./ton; silver - 2.3 oz./ton; copper 3.54%. This material is being retained for further ore testing. The results of these tests will be the subject of a separate report.

Introduction: In August, 1960, the writer, in the company of Mr. N. W. Clayton, examined a group of mining claims lying on State and Federal lands, in Sections 35 and 36, T4S, R23W of the Gila and Salt River Meridian. The claims lie in the Southern Trigo Mountains within a mile of the Colorado River, and most easily accessible at present by boat from Fisher's Landing on Maricopa Lake, a distance of about 12 miles. The surface of the two State claims and part of the Federal claims was inspected on foot. No examination was made of the subsurface workings.

Topography: The topography of this part of the Trigo Mountains is quite rugged, consisting of narrow, rocky ridges alternating with steep-sided, narrow, canyons which empty southwards into the Colorado River. The area is very dry with sparse vegetation.

Geology and Mineralization: The prevailing rocks in this area are severely distorted gray quartz - schistose schists which according to Wilson ¹ are of probable sedimentary origin. Severe folding and faulting was noted. Two systems of faults were observed. The premineralization fault system in which veins were formed strikes approximately N 70° E and dips nearly vertically. This system is cut by a post mineralization fault system at approximately 90° to the premineralization system.

The relatively more recent origin of the post mineralization system is attested to by the fact that the narrow canyons follow these faults, and cut the veins.

The veins consist predominantly of quartz intermingled in places with white calcite. Copper mineralization tends to follow the footwall of the quartz veins, and consists of thin disseminated stringers of chrysocolla and malachite. Examination of the copper mineralization near the surface of the various old workings indicated that the copper veins widened with depth and that the amount of chrysocolla decreased with a corresponding

increase in cuprite and other oxides. No evidence of sulfides was noted at the surface. Chloritization of the footwall was noted in many places. The mineralized area extended for over a mile in an easterly direction and it varied in width from about 300 yards to one-half mile. Many of the outcrops and all the old workings in this area exhibit copper mineralization as described above.

Sampling and Assay: Approximately twenty pounds of mineralized rock was sampled from various outcrops, mine dumps and exposed veins on the eastern portion of the mineralized area. The remainder of the seventy pound lot was sampled from the hill above the tunnel. According to Mr. Clayton, present plans call for open pit or cut mining of this hill.

This rock was crushed and cut according to the flowsheet given in Figure 1. A wet assay for copper was made on the sample. Results of this assay were verified by a separate assay by an independent assayer:

Assay Results

	<u>Copper</u> %	<u>Gold</u> oz./ Ton	<u>Silver</u> oz./ Ton
Assay by Writer:	3.50	*	
Jacobs Assay Office:	3.54	3.04	2.3

*Assay Not Taken.

Evaluation of Property:

Cautionary Note: The author of this report is a Registered Professional Metallurgical Engineer and as such claims proficiency only in the science of Metallurgy. All other data (i.e. the geological and mining engineering aspects) should only be regarded as estimates by an educated layman. For this reason further examination by a qualified professional mining engineer is strongly recommended.

With the above reservation in mind the following evaluation of this property is offered:

(1) Possibility of the Existence of a Sulfide Ore Body: The wide extent of copper mineralization and indicated enrichment with depth suggest that a large sulfide ore body may exist at some depth below the surface. According to Wilson² chalcophrite was probably present in all of the copper bearing deposits of the region prior to their oxidation. Hence a sulfide deposit may exist below the oxidized zone in these claims. Test drilling of these claims is therefore strongly recommended to determine if such a deposit exists.

(2) Treatment of Surface Oxides: Enough oxides are present on the surface to warrant establishment of a small scale treatment plant, providing further metallurgical testing shows that such treatment is feasible. No recommendation can be made as to establishment of a large scale treatment plant without further subsurface exploration to determine the extent of the ore body.

Conclusions and Recommendations: A cursory, surface examination of this property indicates that a copper deposit of feasible economic importance may be present.

Further development is recommended along the following lines:

1. A thorough surface and subsurface examination should be made by a competent professional mining engineer.
2. Test drilling should be done to determine if a sulfide deposit is present at depth and to prove the nature and extent of the oxide mineralization.
3. If further ore-testing of the sample prepared during my examination of the property indicates that the copper minerals are amenable to treatment:
 - a) A more thorough sampling of the hill above the tunnel is recommended.

b) A larger lot should be procured for pilot plant testing prior to design of a treatment plant.

BIBLIOGRAPHY

1. "The Mineral Resources of Southern Yuma County", by E. D. Wilson, Arizona Bureau of Mines Publication #34.
2. Ibid, Ref. 1.

720 Sample

Crush to Minus 2"

Split

Crusher Product
47%

Roll to Minus 1/2"

Split

1st Roll
Product
14-1/2%

Roll to Minus 1/4"

Split

2nd Roll Prod-
uct 10%

Roll to Minus 10 mesh

Split

3rd Roll
Product
2%

Roll to Minus 15 Mesh

Split

4th Roll
Product
(1%)

Pulverize to Minus 200 mesh

Split

Assay
Sample #1

Assay
Sample #2

FIGURE 1.

Sampling Flow Sheet.