



CONTACT INFORMATION  
Mining Records Curator  
Arizona Geological Survey  
3550 N. Central Ave, 2nd floor  
Phoenix, AZ, 85012  
602-771-1601  
<http://www.azgs.az.gov>  
[inquiries@azgs.az.gov](mailto:inquiries@azgs.az.gov)

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12/05/88

PREPARED BY: DIETZ AND ASSOCIATES, 4706 N. 31ST DRIVE  
PHOENIX, AZ. 85017 PHONE (602)841-1744

PRIMARY NAME: CHILITO MINE

ALTERNATE NAMES:

SCHNEIDER GROUP  
CLAIMS MS 4680  
GILA CANYON COPPER CO CLAIMS  
VELASCO PIT

GILA COUNTY MILS NUMBER: 11A

LOCATION: TOWNSHIP 4 S RANGE 15 E SECTION 22 QUARTER SE  
LATITUDE: N 33DEG 04MIN 00SEC LONGITUDE: W 110DEG 47MIN 48SEC  
TOPO MAP NAME: HAYDEN - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:

COPPER  
SILICON

BIBLIOGRAPHY:

- ① ATOMIC ENERGY COMM. 172-480, P. 164  
BLM MINING DISTRICT SHEET 673
- ② ADMMR CHILLITO MINE FILE, "U" FILE CU28
- ADMR PUB PROD POSS MARGINAL CU MINE 1941, P97
- ③ CROSS C P ORE DEP SADDLE MTN & BANNER MGN DIST  
USGS BULL 771, 1925, P. 63 *See APEX FILE*
- ④ ELEVATORSKI E A AZ IND MIN, ADMR PUB.1978 P31
- ✓ MSHA YELLOW SHEETS

Do not Have

Cinco de Mayo. This is a patented property consisting of two claims, the Altata and Little Giant, and a third fraction named the Cinco de Mayo. The mine, owned by Annie Dryden, for whom John J. Lowitz, 29 Broadway, New York City, is agent, was once known as the Altata. It is located two miles southeast of Chloride in Mohave County.

The mine has produced about \$200,000 from a bonanza ore body assaying 20 per cent copper and enough additional in silver to bring total values to about \$100 a ton. This ore was recovered about 40 years ago and the last report of operations was in 1909 when the Altata Mining Company was reported to be working a vein running \$12 to \$15 in gold, silver, and copper. The property is an attractive prospect, but a considerable amount of work would be required to determine just what it could produce.

Chilito. The Chilito mine, six miles north of Hayden, Arizona, was a producer in 1939 and again in 1940, but no ore has been removed as yet this year. Production in 1939 totaled 64,548 pounds and in 1940 73,394 pounds of copper were recovered.

The property is owned by Bernardo C. Velasco of Hayden who states that a 14-cent price of copper is necessary for the property and that a mill and other machinery are needed to permit operations on a material scale. The principal commercial mineral is copper, but there are accessory values in gold and silver. Development work done includes a small shaft, drifts, tunnels, and crosscuts. The property is still in the prospect stage.

Copper King. This mine, located in the Ash Creek mining district near Camp Verde, Arizona, is a promising prospect owned by Charles S. Wilson and Cal Wilson of Camp Verde. Two thousand pounds of copper were produced from the mine in 1938 and 1939 recovery totaled about 500 pounds.

Development work includes a 20-foot shaft, a 50-foot tunnel, and a 25-foot shaft filled with water. Samples showing 8 per cent copper, \$360 in gold and \$5.20 in silver have been taken. There is no machinery on the property. Reserves are unknown.

El Oro. During the last war this mine, which is located in the Old Hat district of Pinal County, Arizona, seven miles off the Oracle Highway, was a shipper, but it has been idle ever since. Many of the old production records have been lost, but Queen

CHILITO PROPERTY-VELASCO PIT

GILA COUNTY

HM WR 4/8/88: A report on the Chilito copper deposit, Gila Co was obtained for the file. The report has been widely circulated among professional geologists for over 10 years, so there should be little reason to class the data as proprietary. The deposit was developed by Kennecott but is now owned by ASARCO.

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CHILLITO MINE

GILA COUNTY  
Banner District

Dick Lobb was in to say hello and stated that Mike Guzman no longer was at the Chillito, because the grade in copper dropped too much. Someone by the name of White and a partner since are reported to have found some better copper. LAS Superior Conference - 6-22-61

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Mr. Wainwright reported by letter of Feb. 1962, that in 1961 Chillito produced 24,271 tons of siliceous ore yielding 295,960 lbs. of copper. They stripped 250,000 tons of waste in the process. They worked 9 men during first 3 months and 4 men during the remainder of the year. A followup letter was written to verify the year that represents this production. Memo - Lewis A. Smith - letter from Gordon Wainwright of Chillito Copper Co., Box 459, Hayden. Feb. 25, 1962

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This property active 2-1962 - 3 men working

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Active Mine List Oct. 1962 - 3 men

Has not operated for a year. LAS 10-20-64

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Bear Creek at the Chillito mine - also studying the "79" mine. FTJ WR 1-26-68

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Kennecott has the Chillito mine and are obtaining 250 tpd from contract miner, did not get the details. FTJ WR 9-27-68

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Active Mine List April 1969 - 4 men - Gordon Wainwright, Hayden

Visited Superior - both perlite plants were in operation. JHS Conf. 6-18-69

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Visited Wainwright's house (trailer) - he mines 3 to 5 thousand ton/mo. FTJ WR 9-26-69

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Active Mine List Oct. 1969 - 5 men - Gordon Wainwright  
Active Mine List April 1970 - 5 men - Gordon Wainwright  
Active Mine List Oct. 1970 - 5 men - Gordon Wainwright

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Directory of Mining - August 1971 - 5 men.

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Wainwright continued to mine flux ore from the Chillito mine north of Hayden. FTJ QR 9/71

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Chillito mine continued to produce copper flux ore for Kennecott smelter at their regular rate of about 150 T/D. FTJ QR 3rd 71-72

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Active Mine List - October 1972 - Empl. 5

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To Wainwright office and talked to Mrs. Wainwright who said there was no change in their

GILA COUNTY (Continued)

Location	Quadrangle Map	Known Names	Description-Comments
GYPSUM (Cont'd) sec <del>9,10</del> proj. 1S-18E	Bucket Mtn. 7½'	<del>San Carlos</del> <del>Gilson Wash</del> Area Gypsum Report	Granular gypsum inter-bedded with mudstone in lake sediments (Cenozoic).
LIMESTONE-DOLOMITE sec. 31, 32, <del>33</del> proj. <del>8N-21E</del> 9N 11E	Picture Mtn. 7½'	Chalk Mtn. Area, Grant-ham-Withers Property	Limestone.
OK sec. 17, 20 proj. 5N-18E	Beckers Butte 7½'	Flying V Canyon	Kaibab and Fort Apache limestone (Permian).
OK sec. 28, 29 proj. 4N-21E	Forks Butte 7½'	Horse Mesa	Naco limestone (Penn.).
OK sec. 9, 10 1N-15E	Globe 7½'	Hoopes Lime Pit, Moore	Active quarry, lime and metall. flux produced from Escabrosa limestone (Miss.).
OK sec. 24 1N-15E	Globe 7½'	Limestone Quarry	Naco limestone (Penn.).
OK sec. 11 5S-15E	Hayden 7½'	Hayden Quarry	Active quarry, lime and metall. flux produced from Escabrosa limestone (Miss.).
PERLITE <i>Sec 27 &amp; 28</i> approx. sec. 27, <del>SE</del> 28, 4S-15E	Hayden 7½'	<i>Fondulizing Consolidated</i> <del>Dripping Springs Mtn.</del>	Perlite occurrence.
PUMICE GROUP NE½ 11N-9E	Pine 15'		Basalt.
OK <i>Portion of</i> sec. 2 proj. 1S-18E <del>25 18E</del> <del>10 18E</del>	San Carlos 7½' <i>and</i> Natural Corral 7.5'	"Tuff" Quarry	Pumiceous tuff.
OK SILICA-QUARTZ sec. 15 1N-15E	Globe 7½'	Copper Hill Mine, Moore's Silica	Active mine, Troy quartzite (Cambrian) used for smelter flux.
OK sec. 22 4S-15E	Hayden 7½'	Chillito Mine	Active mine, copper-silica flux.

UNITED STATES GEOLOGICAL SURVEY  
BUREAU OF MINERALS

John Paul and D. V. Saines

October 4, 1953

Chilite Canyon area (including Escalante Canyon, Capitol Reef National Park, and Glen Canyon National Recreation Area), Utah (Cedar Valley), and surrounding areas.

A. Location of section from Nicholas P. O. drive 3.4 miles northwest on Jackson Highway 277, 1/2 mile west (east) for about 1-1/2 miles to the abandoned town of Chilite. Mine workings are north, south, and east of the town.

B. Section location: Utah, Co. 1, 1925. See description of the section in the Bulletin of the United States Geological Survey, 771, 72 p.

C. See section description sheets, 101a, 101b, and 101c.

D. See section description sheets for radioactivity using a Geiger counter.

E. Section description: The section is a typical example of the Chilite type of limestone and dolomite. The main matrix (Cav.) is composed of thin, gray, crystalline limestone and thin, gray, crystalline dolomite. All inclusions are thin and are of various sizes. The matrix is composed of calcite, dolomite, and quartz. The inclusions are composed of calcite, dolomite, and quartz.

F. Section description: Calcite, dolomite, quartz, and various minor minerals. A yellow mineral (Fe) and hematite.

G. See section description sheets for radioactivity and location.

H. Section description: H.L.C. Geiger counter, total count, 1000 counts per minute. No potential increase of count rate above background.

Sample No.	Count	Type of Sample	Notes
101a	1000	Matrix	
101b	1000	Matrix	
101c	1000	Matrix	

No unusual radioactivity.  
No samples taken.

This is a preliminary report based on observations made during the field work. It is subject to change as more data are available.

In cooperation with the Utah Geological Survey.



Sample No.	Count	Type of Sample	Notes
101a	1000	Matrix	
101b	1000	Matrix	
101c	1000	Matrix	

No  
164

Sulfide System Name Chilito Mine, Gila Co., Arizona

IV. Aeromagnetic Expression of Sulfide System or Mega-District

A. Type Magnetic low embayment at south edge of intrusive, or  
gradient area south of intrusive.

B. Magnitude -40 Gammas, Line Spacing 1/3 mile  
Clearance 1000' AT

C. Source

1. Length 2,000 ft. Width 2,000 ft. Azimuth equidimensional

2. Susceptibility  $-600 \times 10^{-6}$  cgs. (?)

D. Diagnostic Character WITHOUT Geology embayment at south edge of  
intrusive; sediments or altered intrusive.

E. Diagnostic Character WITH Geology Sediments (pEt) and altered  
intrusive south of larger intrusive source. 50% of the large positive  
magnetic source lies within the sulfide system.

F. Other Geophysical Expression IP anomaly

G. Reference:

Andrews, R. K., 1970, Preliminary Interpretation of the Saddle  
Mountain Aeromagnetic Survey: KEI-GDO Report.

BCM Saddle Mt. Aeromagnetic Survey, 1970.

H. Comments on Quality of Data:

Good quality data but iregular terrain clearance due to 1200+ feet of  
topographic relief.

Sulfide System Name Chilito

III. Center of Mineralization (zone of best copper)

A. Name Chilito

\*B. Copper Mineralization

1. Type	*%	Av. Grade	Rock Type	*Other Data
a. Primary	X	0.1-0.4	diabase	
b. Enriched	X		diabase	
c. Skarn (replacement)				
d. Oxide	X			
e. Mixed	100	0.51%Cu	diabase	

2. Current Mineral Inventory

a. Tons 74.7 x 10<sup>6</sup> ; Av. Grade 0.51 Cu %; Cutoff

b. Other Credits 0.01% Mo; 0.04 oz Ag/T.; tr -0.005 oz Au/T.

3. Past Production

a. Tons None ; Av. Grade  %; Cutoff  %

b. Other Credits

C. Cover

1. 100 % Exposed at time of discovery

2. Projected Post Mineral Cover

a. Thickness (ft.) None (0)

\* b. Formations None

\* c. Estimated  $\Delta$  elevation of base of cover to top of cc blanket (ft.)

No data

3. Premineral Cover

a. Thickness (ft.) None

b. Formations

## Reconnaissance

Chilito has many strong similarities to the Ray deposit. At Chilito, Ray, Troy, and Christmas, the mineralization has apparently been introduced along the stock contacts and yet has not significantly affected the stocks themselves.

Areas of good diabase mineralization are noticably marked by numerous mineralized oxide fractures, small shears, and small pebble dikes.

Sulfide System Name Chilito

II. Diagnostic Reconnaissance Characteristics

A. District Prospect Zoning Outside of Sulfide System

1. Prospects/Mines

Metal/Type	Min. Diam. (feet)	(M) Mines (P) Prospects	Rock Types	Deposit Types
Cu ✓	18,000	M	Martin limestone	replacement
Pb-Zn-Cu ✓	12,000	M	Paleozoic limestone	skarn
Ag-Au ✓				
Mn				
Other				
Other				

B. Dike Swarms

Rock Types	Qtz. monz.			
Length (ft.)	1500-3000			
Width (ft.)	4000			
Azimuth (°)	70			
Age	uncertain			
* Spatial Rel.				
Contacts				
Other				

\*C. Important Regional Structures (other than dike swarms)

Type	Normal fault		
Length	15,000+		
Azimuth (°)	345		
Recognition Factors	Cn/db contact		
Age	Postmineral		
Spatial Rel.	West boundary		
Contacts	nd		
Other			

\*D. Other Reconnaissance: (See back of page)

Geologic Setting

Precambrian Pinal Schist (small outcrop) overlain by Dripping Spring quartzite, Mescal Limestone and Troy quartzite are intruded by Precambrian (?) diabase and overlain by Paleozoic sediments. These are overlain by Cretaceous(?) andesite and basalt and intruded by Laramide(?) quartz-diorite and quartz-diorite porphyry. Postmineral rocks include Tertiary hornblende porphyry, rhyolite porphyry and Qal.

Alteration - Mineralization

Mineralization occurs as stockwork fractures in diabase adjacent to the quartz-diorite stock. Diabase contains locally abundant sericite, clay, biotite, and chlorite and probably should be included in the clay sericite alteration type. However, the alteration mineralogy of the diabase primarily reflects a deuteric or late magmatic alteration, which is a Precambrian rock-type effect. Most samples of quartzite and quartz-diorite showing biotite-orthoclase alteration are very fractured and are found in and near ore. Quartz-sericite-limonite is found in and peripheral to ore in quartzite and also the south end of the quartz diorite stock. The quartz diorite only weakly mineralized.

References

- DeWilliam, P. P., 1964, Chilito project, Banner mining district, Gila County, Arizona: BCMC-SWD Rept. (Sept. 16).
- Eastlick, J. T., 1968, Geology of the Christmas Mine and vicinity, Banner mining district, Arizona, in Ore Deposits in the United States 1933-1967, J. D. Ridge (ed.): Am. Inst. Mining Metall. Engineers, p. 1191-1210.
- Lehner, R. E., 1962, Chilito property appraisal: BCMC-SWD Rept. (April 11).
- Taylor, S. A., 1963, Chilito examination, Banner mining district, Gila County, Arizona: BCMC-SWD Rept. (Dec. 3).
- Wilson, J. C., 1964, Final report on applied geochemical studies at Chilito, Arizona: KES-GRD (Dec. 30).

**79 AND CHILITO MINES  
GILA COUNTY, ARIZONA**

**EXPLANATION**

<b>Qal</b>	<b>Alluvium</b>	}	<b>QUATERNARY</b>
<b>QTg</b>	<b>Gila Conglomerate</b>	}	<b>TERTIARY AND QUATERNARY</b>
<b>qp</b>	<b>Quartz porphyry dike</b>	}	<b>TERTIARY</b>
<b>qdp</b>	<b>Quartz diorite porphyry</b>		
<b>Ka</b>	<b>Andesite</b>	}	<b>CRETACEOUS</b>
<b>Pn</b>	<b>Naco Limestone</b>	}	<b>PENNSYLVANIAN</b>
<b>Me</b>	<b>Escabrosa Limestone</b>	}	<b>MISSISSIPPIAN</b>
<b>Dm</b>	<b>Martin Limestone</b>	}	<b>DEVONIAN</b>
<b>Ca</b>	<b>Abrigo Formation</b>	}	<b>CAMBRIAN</b>
<b>db</b>	<b>Diabase</b>	}	<b>PRECAMBRIAN</b>
<b>pqt</b>	<b>Troy Quartzite</b>		
<b>pSm</b>	<b>Mescal Limestone</b>		

 **fault**

**PORPHYRY COPPER PROBABILITY STUDY  
OCCURRENCE DESCRIPTION OUTLINE**

**I. SULFIDE SYSTEM**

A. Name CHILITO County Gila State Arizona

\*B. Length: Exposed 3800 ft; Extrapolated 5000 ft.

\*C. Width: Exposed 3500 ft; Extrapolated 4500 ft.

\*D. Azimuth of Elongation 10°; Sulfide Concentration 1.5(?) Vol. %

\*E. Capping (circle one for each)

Oxidized Capping	yes	no		no data
Leached Capping	yes	no		no data
Intensity in Outcrop	subtle	apparent	obvious	no data
Color	red-brown	maroon	bleached-yellow	no data

\*F. Absolute Age (m. y.); Min. \_\_\_\_\_; Max. \_\_\_\_\_; Average \_\_\_\_\_  
Relative Age (bracket): 62 m. y. Christmas

\*G. Drillholes

1. Maximum Depth 700 ft.

2. Comments Drilled by BCMC into mineralized Precambrian diabase.

\*H. Geologic Setting (age, host rocks, intrusive relationships, oldest to youngest formations, contacts, alteration halo to core zone).

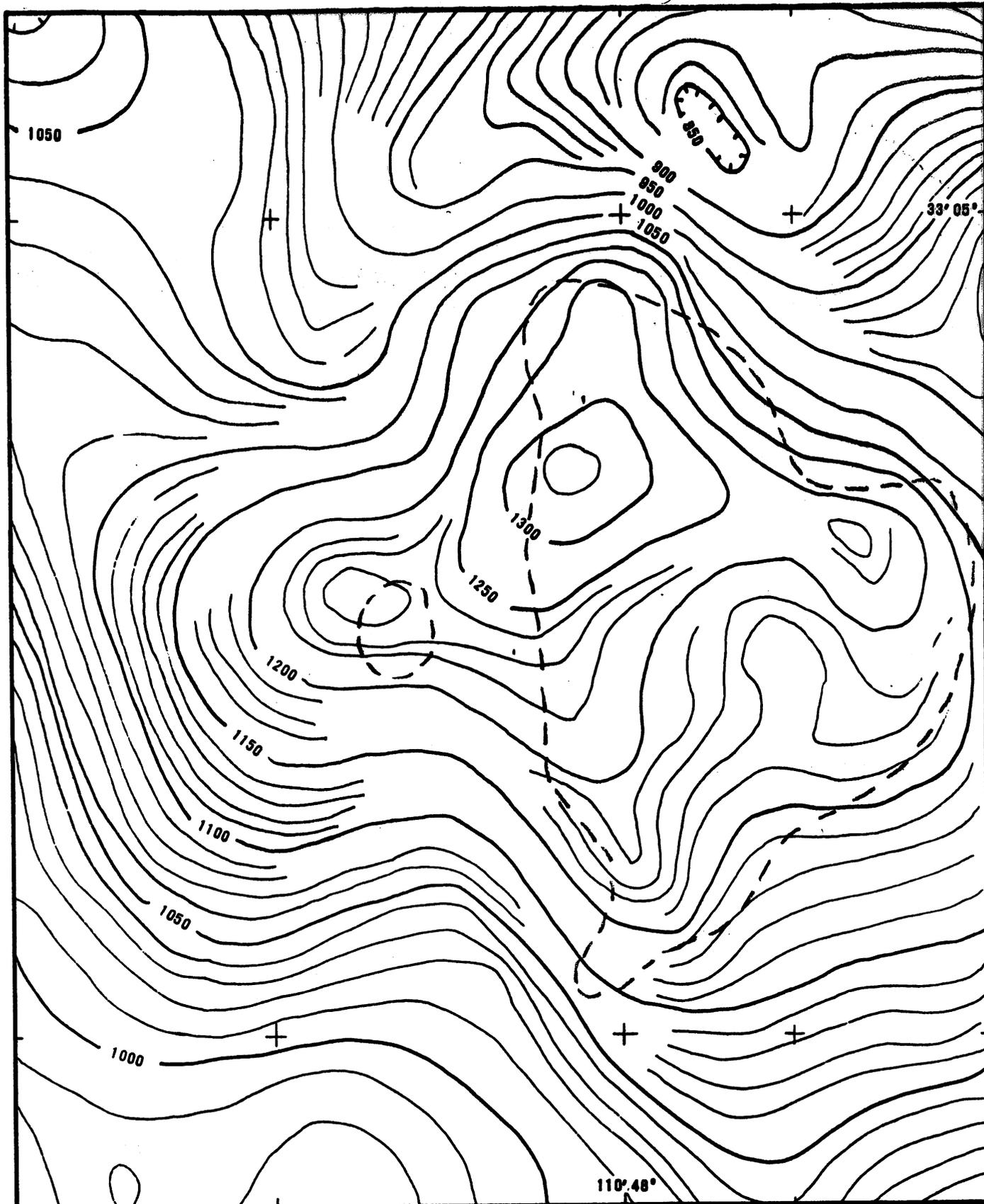
See Attached

I. Reference:

See Attached

\*Note: See Rules and Conventions.

R15E

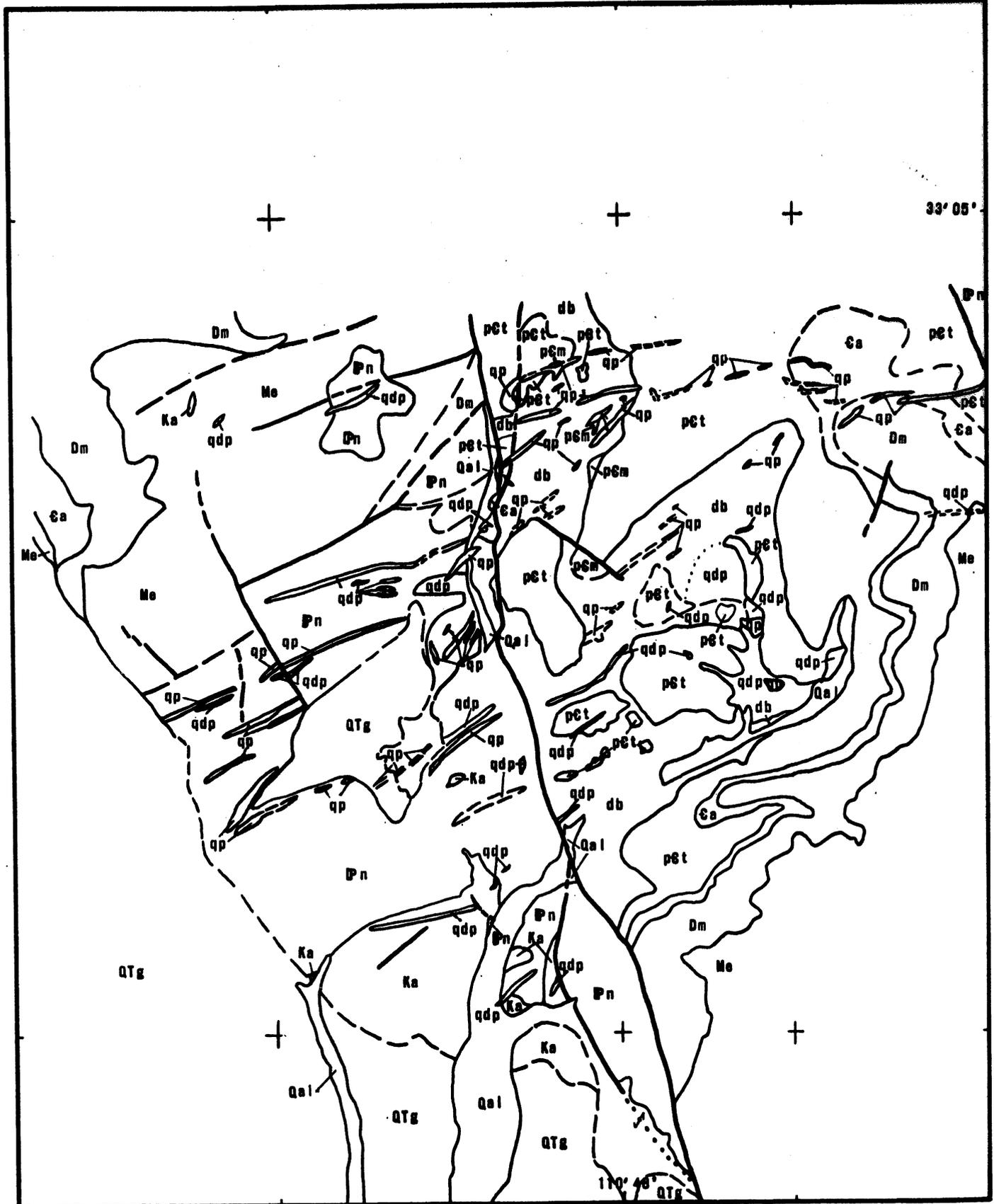


Aeromagnetic map of Area 8 Florence Junction and Saddle Mountain, Arizona;  
BCMC Geophysics Div., no. AZ3-301, 1970.

### AEROMAGNETIC MAP OF THE 79 AND CHILITO MINES GILA COUNTY, ARIZONA

Scale 1" = 2000'  
Contour interval 10 and 50 gammas

TC 500', FI 1/3 mile, NW-SE.

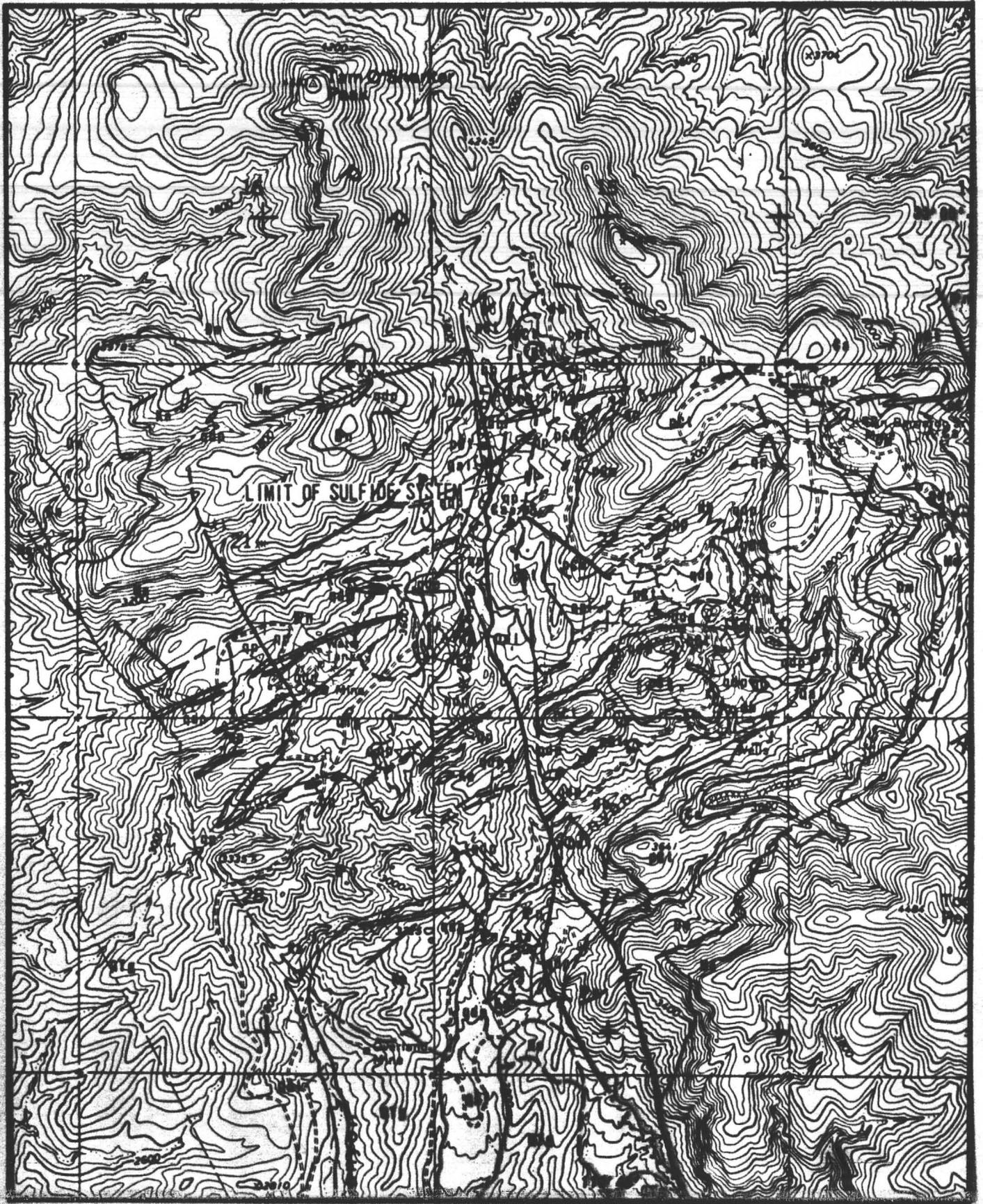


Lehner, R.E., 1982, Geology map of the Chilito-Kullman-McCool-79 Mine Area, Banner Mining District, Arizona: BCMC, SW Dist., pl.4.

**GEOLOGIC MAP OF THE 79 AND CHILITO MINES  
GILA COUNTY, ARIZONA**

Scale 1" = 2000'

RISE

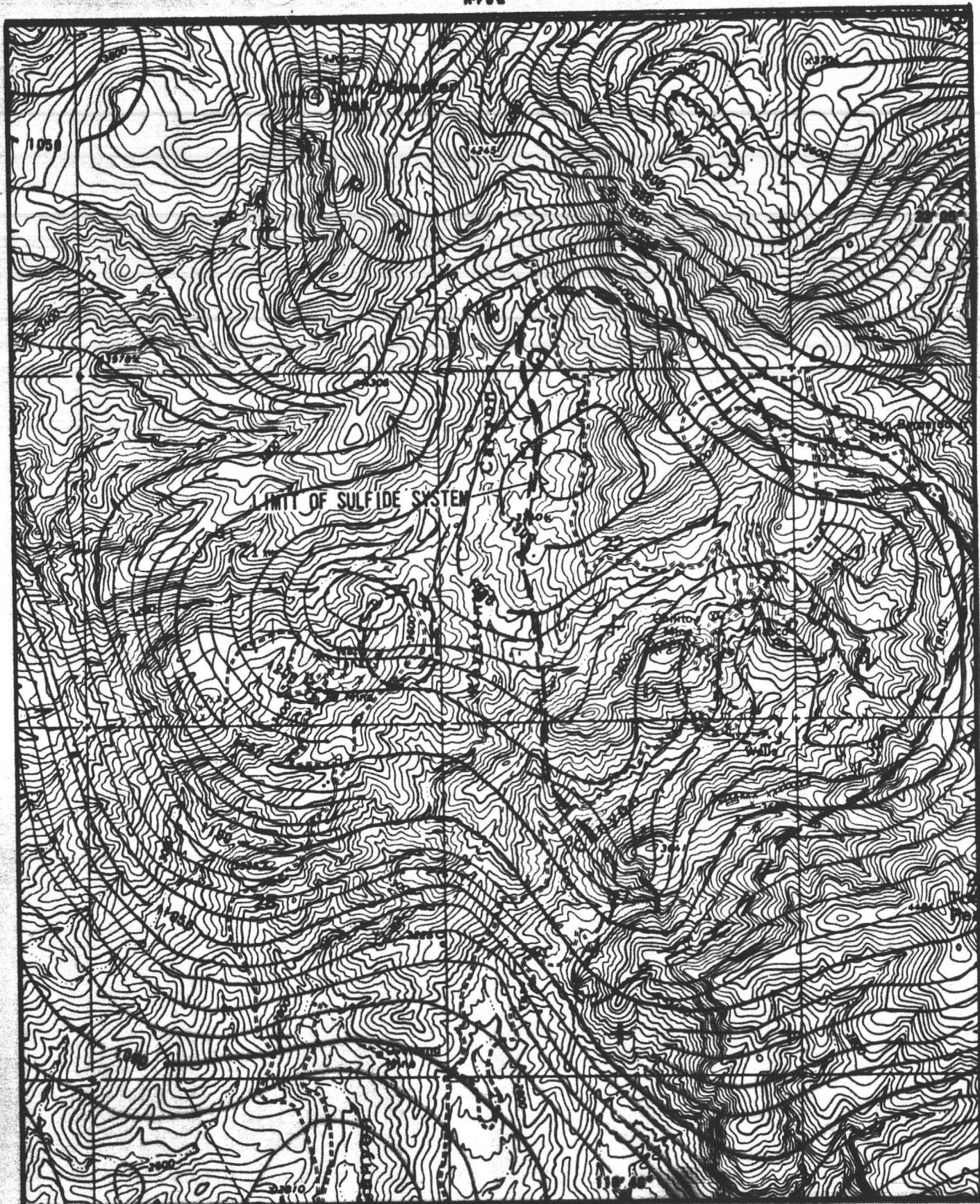


Tommy, W. E., 1902, 'Geology map of the Chilito-Ruffian-Subout-78 Mine Area, Banner Mining District, Arizona: SCMC, SW Dist., pl. 4.

**GEOLOGIC MAP OF THE 78 AND CHILITO MINES  
GILA COUNTY, ARIZONA**

Scale 1" = 2000'

R10C



Aeromagnetic map of Area B Florence Junction and Saddle Mountain, Arizona;  
DCMC Geophysics Div., no. AZ3-301, 1970.

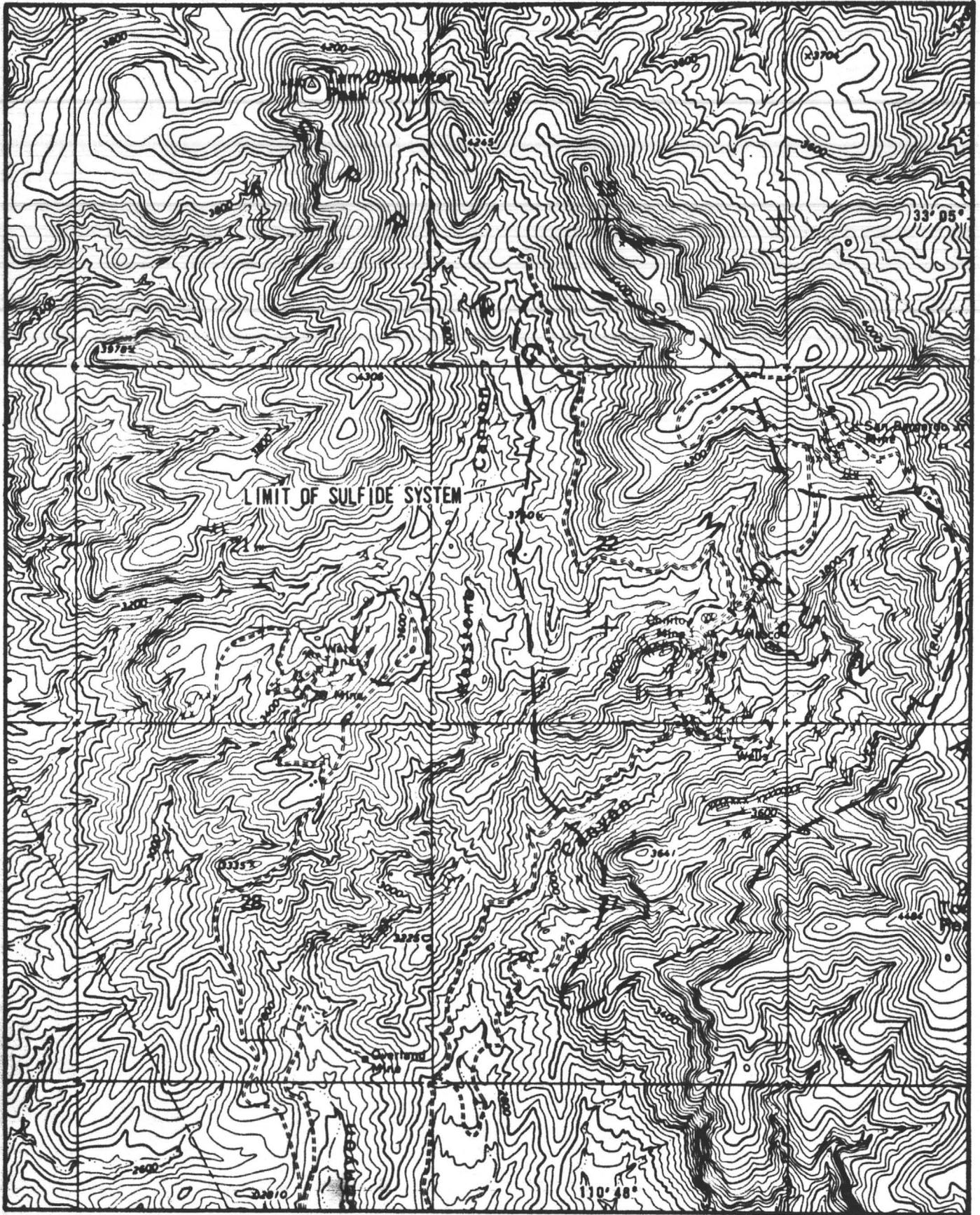
### AEROMAGNETIC MAP OF THE 79 AND CHILITO MINES GILA COUNTY, ARIZONA

Scale 1" = 2000'  
Contour interval 10 and 30 commas

TC 500°, PI 1/3 alt, 48-56.

T  
4  
S

R15E



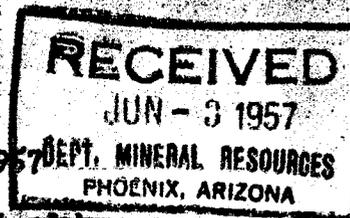
Topography from the Hayden quadrangle, Arizona: USGS, 1964.

TOPOGRAPHIC MAP OF THE 79 AND CHILITO MINES  
GILA COUNTY, ARIZONA

Scale 1" = 2000'

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Not for publication



Mine Chillito Mine ✓

Date May 23, 1957

District Banner District ---- Gila County

Engineer Axel L. Johnson

Subject: Mine Report. Personal visit & information from Gordon Wainwright, operator.

Location 8 1/2 miles N. of Hayden. See report of Jan. 24, 1957 for directions.

Number of Claims 36 unpat. claims.

Owners See report of Jan. 24, 1957.

Lessees & Operators, Chillito Copper Co., Box 361, Winkelman, Ariz. ✓  
composed of following & --- Gordon Wainwright, Mrs. Martha Murray, M. E. Talley, and Mike Guzman. Address Gordon Wainwright, Box 361, Winkelman, ARIZ.  
Royalty --- 1 to 3 % copper-- 5 %; 3 to 5 % copper -- 10 %; over 5 % copper -- 15 %.

Principal Minerals High silica copper ore -- all carbonates.

Present Mining Activity Production of copper ore. Open pit operations.  
Production about 45 tons per day, working 6 days per week, or about 270 tons per week.  
3 men working.

Geology See report of June 18, 1953.

Ore Values Mr. Wainwright reports that his ore mined recently has averaged about 1.4 % in copper, with no gold or silver. The silica has run from 65 to 82 %, with an average of about 75 %. The alumina has run about 7 %.

Ore in Sight No computed tonnage of "ore in sight" has been made. The ore, however, is exposed for considerable distance along a 30 to 40 ft. high bank, where mining operations are being conducted. Mr. Wainwright expressed the opinion that they will have enough ore for 5 to 10 years operation, by doing necessary stripping of some overburden.

Milling & Marketing Facilities The ore mined is trucked to the A. S. & R. smelter at Hayden. Operators receive free smelter charges on account of the siliceous nature of the ore, but ~~approximately~~ the usual 8 lbs. per ton is deducted.

Past History See previous reports of June 18, 1953, and Jan. 24, 1957.

Present Mining Operations See report of Jan. 24, 1957.

Addendo---- Ore is trucked to the Hayden smelter, a distance of 9 miles, by Mike Guzman, on contract, the contract rate, as reported, being \$ 2.00 per ton. A 15 ton truck is used for the hauling of the ore.

Addendo # 2 ---- Operators are forced to shut down tomorrow and Saturday, because the smelter is overloaded with flux ore.

Proposed Plans Operators are planning to do considerable stripping of some of the overburden on top of the deposit, and this will materially reduce their margin of profit. Amount of stripping not computed in tons or yards, but the overburden appears to be from 5 to 20 ft. thick and may extend a considerable distance back from the present working face.

General Remarks Mr. Wainwright expressed the opinion that the A. S. & R. smelter at Hayden may need considerable more flux ore after the Kennecott smelter is completed (about May, 1958), as the supply of high silica ores from the Ray pit will be cut off.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Page 2.

Mine **Chillito Mine (continued)**

Date **June 18, 1953**

District **Banner District --- Gila County.**

Engineer **Abel L. Johnson**

Subject: **Mine Report --- Personal Visit, and information Gordon Mainwright.**

Location Sections 22 and 23 --- T 4 S -- R 15 E.

Go on Winkelman-Ray Highway north from Winkelman. Turn right  $3\frac{1}{2}$  miles north of Winkelman on private mine road. Drive 5 miles north-east on this mine road. Road very rough, and steep grades last mile, from 1916 to 1916. Mr. Chittenden is reported as having done considerable work on the property at Border Hill, near 1000 ft.

Number of Claims 36 unpatented claims. Mr. Mainwright filed a report to the effect that 20 of the claims are now taken out by Mr. Chittenden.

Owners **Bernardo Valasco, Romaldo Valasco, Mary Beard, Elias Lehner, & Fred E. Adams.**

Lessees and Operators **Gordon Mainwright, and E. H. Murray.** Since 1931. Property has been leased to the operators during that time. Lessees would ship one or two carloads

Principal Minerals **Copper ore (all carbonates)**

Number of men Employed The two operators, Mr. Mainwright and Mr. Murray working the mine themselves.

Production Rate Have shipped 8 carloads since starting operations on Jan. 15th, and another carload ready for shipment. Rate about 100 tons per month.

Topography **Mountainous and rough. Near the center of the Mescal Mts.**

Geology Country rock is **Quartzite**, and underlying this is a **Diabase**. These formations dip approximately 33 degrees to the SE. The copper carbonate ore mined by the operators is found in a shattered layer in the Quartzite formation. This layer is from 50 ft. to 100 ft. in thickness, and just above the Diabase formation, and dips 33 degrees to the SE. The minerals found are **chrysocolla, malachite, azurite, cuprite**, with a small amount of **shalcocite**.

Ore Values Ore runs from 1.5 % to 3.7 %, after hand sorting, practically all copper carbonates. **Silica runs from 60 to 85 %.** Sample in open cut ran 2.89 % Copper. Most of the minerals are concentrated along the cracks and crevices of the shattered quartzite. They would like to install an air compressor, drilling equipment, and a truck engine.

Ore in Sight Several hundred tons of this low grade ore are exposed along the sides of the 3 open cuts mined by the operators. They are of the opinion that there is about 5 to 10 ft. of higher grade ore at the contact between the quartzite and the

Marketing Facilities Operators are shipping the ore to the **Magma Copper Co.** at **Superior**. They realize only about \$250 per carload for this ore, and claim they are losing money on their operations.

Mine workings Workings on this property consist of 9 tunnels --- 30 to 40 ft. long each, and one old tunnel (used), about 1750 ft. long. There are some old stopes in these tunnels. Also there are 6 open cuts on the surface, 3 worked at present.

DEPARTMENT OF MINERAL RESOURCES  
DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Page 2.

Mine **Chillito Mine (continued)** Date **June 18, 1953**  
District **Banner District ---- Gila County.** Engineer **Axel L. Johnson**  
Subject: **Mine Report ---- Personal Visit, and information Gordon Wainwright.**

Past History

(1) Property owned by a Mr. Snyder prior to 1916. Mr. Snyder is reported as having done some mining on the property.

(2) Owned by a Mr. Chittenden from 1916 to 1918. Mr. Chittenden is reported as having done considerable mining on the property at Snyder Hill, some 1000 ft. to the west of the present operations. Mr. Wainwright cites a report to the effect that \$336,000 worth of ore was taken out by Mr. Chittenden.

(3) Property held by a Mr. Scott from 1919 to 1930. No ore was shipped at that time.

(4) Present owners have owned the property since 1930. Property has been leased intermittently during that time. Lessees would ship one or two carloads of ore and then give up the lease.

(5) Kennecott Copper had a lease on the property from 1946 to 1949. They are reported as having drilled 5 diamond drill holes on the property in 1948 and 1949. They gave up the lease in 1949. No copies of the drilling results were given to the owners, according to Mr. Wainwright.

Present Operations

Mr. Wainwright and Mr. Murray are working in 3 of the open cuts, on the slopes of a rather steep hill. They have no air compressor, and do not drill any holes for blasting operations. They place the powder in some of the many cracks and crevices in the shattered quartzite formation. Where the crack or crevice is too narrow, they use bars and picks to make it large enough to insert the sticks of dynamite.

After the rock is broken, it is hand sorted, shoveled by hand in a pick up truck, dumped into a small ore bin. From the ore bin, it is loaded into a 6 ton truck, and hauled to Burns Siding, a distance of 5 miles for rail shipment to Magma Copper at Superior.

Proposed Plans

Operators are trying to raise enough capital to purchase mining machinery in order to operate the mine more efficiently, and also to develop some ore reserves. They would like to install an air compressor, drilling equipment, and a truck loader.

In their mining operations, they have not yet got down to the contact between the quartzite and the diabase. They are of the opinion that there should be from 5 to 10 ft. of higher grade of ore at the contact between the quartzite and the diabase.

Remarks

Operators now losing money on their operations. Operations on a much larger scale with modern machinery may show a slight profit, if operators do not have to resort to too much hand sorting. Grade of ore might get better with increased depth, at and near the quartzite-dabase contact.

How long would it take, after financing has been provided for, before production on the above basis could be reached? As soon as mill and machinery were put up ready to work.

Does your organization have the facilities for raising the necessary capital to increase production to the amount stated? No

If not, do you believe that your company would be amenable and agreeable to government financing? Yes

Do you believe that you could finance the capital investment yourself on some such basis as a guarantee of sale of output at a fixed price and for a definite period, with damages to cover unamortized portion of capital investment in the event the government failed to take the output for the agreed upon time - or some similar arrangement? No

Please let us have your comments on the probability or possibility of your organization participating in such a program for national defense purposes

It is probable that we can participate in a National Defense Program except that we can't put the mine to work because of lack of funds.

What would be your ideas on financing and carrying out such a plan as is indicated by these questions? That through some means machinery could be gotten and a mill constructed, since I don't have the money.

Kindly list names and addresses of other potential copper producers in Arizona whose operations should be included within this survey.

Date June 16, 1941

Signed Raymundo Velasco

Arizona Department of Mineral Resources, Capitol Building, Phoenix, Arizona

QUESTIONNAIRE

Relating to survey of potential copper production from Arizona small and marginal mines for national defense purposes;

Name of mining property..... Chilito Mine.....

Location..... About six miles north of Hayden.....

Ownership..... Bernardo C. Velasco.....

Name of Manager..... Not working at present.....

Post Office address..... Hayden, Arizona.....

Copper production (pounds) during each of the past five years:

1936..... 1937..... 1938.....

1939.. 64,548 Lbs..... 1940.. 73,394 Lbs.....

1941 rate of copper production based upon first four months... Haven't been operated so far

How much copper could this property produce annually

on a 14 cent price? ..\$10,275.16... approximately..

on a 16 cent price? ..\$11,743.04....."

on an 18 cent price? ..\$13,210.92....."

on a 20 cent price? ..\$14,678.80....."

What price copper is necessary for this property? ..14..... cents per pound?

What plant facilities would be required and how much is the estimated cost in the event a 14 cent price could be assured? ..Mill, can't estimate the cost, but the greater the mill, the greater produce.

a 16 cent price could be assured? ..

18 cent price? ..

20 cent price? ..

For what length of time would assurance of price and sale of full production be necessary? ..Over 20 years approximately..

## Shipments OF ORE FROM SCHNEIDER HILL

Prior to 1928

TONS NET	CU. %	NET RETURNS	CU. AT CENTS PER POUND	TONS NET	CU. %	NET RETURNS	CU. AT CENTS PER POUND
46.02	4.27	\$486.01	10.56	47.43	3.97	424.53	19.01
33.89	4.89	466.46	13.76	43.63	6.62	755.66	19.01
38.86	4.35	387.62	10.05	56.06	6.07	864.53	19.01
44.40	3.19	297.99	17.5	58.35	8.22	1451.18	19.01
49.65	4.32	547.69	11.03	41.98	4.27	441.89	19.01
53.62	2.82	238.08	20.00	48.91	3.69	398.64	19.01
54.07	4.34	610.01	22.50	49.30	3.42	363.83	19.01
24.12	3.65	197.30	22.50	55.28	5.47	756.37	19.01
33.14	5.37	522.37	22.50	52.91	7.52	1079.39	19.01
47.71	4.22	122.16		48.78	3.57	380.53	19.01
48.69	2.77	252.22	19.01	41.74	4.26	408.25	19.01
37.17	5.48	601.83	22.50	50.51	3.28	352.10	19.01
41.75	5.92	751.15	22.50	47.84	4.08	443.53	19.01
52.99	5.29	673.52	19.01	62.98	3.03	389.25	19.01
53.61	6.28	1011.69	22.50	61.61	5.23	789.93	19.01
30.92	2.17	47.00	22.50	45.47	3.91	399.29	19.01
43.71	4.03	431.48	20.53	60.33	11.22	2026.55	19.01
63.516	4.6	771.00	22.50	37.56	5.25	258.79	19.01
48.673	2.41	130.44	22.50	38.50	4.72	426.86	19.01
46.78	8.20	1192.99	21.00	52.55	10.33	1586.58	19.01
42.00	9.16	1094.39	19.1	51.64	3.75	429.67	19.01
43.947	7.27	966.39	21.00	40.30	6.40	666.22	19.01
39.38	4.38	451.31	22.50	35.66	4.21	362.75	20.06
44.95	3.82	382.11	19.01	33.60	7.42	1001.98	26.43
42.4	5.12	587.69	21.00	53.76	5.62	857.07	21.18
39.72	3.13	259.83	19.01	59.00	4.37	666.80	21.18
50.13	2.5	208.04	19.01	50.19	4.68	652.58	22.12
48.68	4.43	499.98	19.01	50.24	8.33	1220.39	19.87
55.01	3.63	439.04	19.01	58.32	4.28	599.02	19.87
48.77	3.03	401.44	19.01	60.04	4.10	584.22	19.875
54.63	2.97	325.37	19.01	42.66	4.35	446.68	19.87
53.62	4.35	538.92	19.01	74.82	4.33	900.13	22.68
47.94	3.04	350.98	19.01	40.96	4.48	514.51	22.68
45.60	2.82	244.87	19.01	42.56	5.56	677.56	23.43
55.90	3.46	418.71	19.01	40.70	6.60	918.80	23.62
42.67	3.70	349.07	19.01	41.82	6.76	972.37	23.62
44.35	3.64	355.26	19.01	38.64	4.83	578.05	23.62
37.33	3.85	321.45	19.01	47.91	4.60	679.39	24.00

TONS NET	CU. %	NET RETURN	CU. AT CENTS PER POUND	TONS NET	CU. %	NET RETURNS	CU. AT CENTS PER POUND
33.69	3.67	381.44	24.37	45.22	4.40	677.50	26.25
37.94	5.04	630.29	24.37	42.57	5.84	906.86	25.50
51.68	4.05	619.16	24.37	57.22	9.62	2212.93	25.50
32.47	3.63	336.09	24.18	25.66	4.81	398.12	24.87
59.00	5.09	983.10	24.18	35.91	5.84	722.65	24.37
38.34	6.29	665.31	24.00	36.49	6.04	766.36	24.37
53.13	3.68	544.28	24.00	45.02	4.22	569.08	24.37
39.27	2.74	265.07	23.06	25.79	9.47	913.80	24.00
42.18	5.13	666.12	23.06	58.68	6.32	1279.88	24.00
35.56	3.85	376.61	23.06	40.49	4.54	525.56	22.87
43.00	4.85	626.21	23.06	47.70	3.16	359.22	21.37
56.74	2.75	385.32	23.06	43.42	5.33	651.42	21.37
49.75	3.86	532.84	23.25	40.32	4.12	464.68	23.06
58.99	4.35	732.68	23.25	35.41	5.32	587.57	23.06
55.19	5.15	819.77	21.75	30.98	6.79	727.54	23.81
44.41	3.92	452.21	21.75	40.60	5.12	688.40	23.81
34.54	3.78	320.24	20.81	43.70	6.17	979.43	25.12
39.46	7.20	847.26	20.81	45.07	2.87	357.45	25.12
42.72	3.56	369.14	21.00	48.21	3.58	457.09	22.68
46.72	3.94	459.80	21.00	54.69	2.62	287.14	20.62
31.81	5.47	483.31	21.00	26.59	5.01	348.45	20.62
51.70	4.18	628.20	23.81	29.21	5.05	387.10	20.62
34.22	5.29	574.55	23.81	25.38	3.95	272.58	22.68
47.55	4.82	732.27	28.18	57.17	4.29	588.88	19.87
42.38	4.39	564.61	24.18	72.43	4.35	899.61	23.25
50.37	5.22	895.11	24.75	31.56	5.42	542.23	23.25
57.58	3.93	675.47	24.75	30.13	3.63	298.64	23.25
48.50	3.64	520.98	24.93	40.72	4.74	579.08	23.25
43.99	4.97	738.61	24.93	48.31	3.39	438.69	23.25
44.69	3.58	470.15	24.95	40.43	3.22	343.29	23.25
51.60	4.48	734.90	25.31	29.50	6.55	646.53	23.25
35.44	7.00	935.45	25.31	36.66	4.34	488.74	21.75
48.15	6.08	1068.57	25.31	37.35	4.87	498.66	21.96
48.49	5.92	1041.75	25.31	47.68	2.80	320.91	21.56
44.79	3.55	477.99	25.50	49.71	2.78	310.71	21.37
48.19	4.51	735.00	25.87	30.84	5.16	442.97	21.37
49.56	3.85	594.78	25.87	45.86	4.92	614.64	21.37
42.48	5.03	775.79	26.25	46.14	3.19	348.85	21.37

## Engineer Report

By

Joe D. Scott

The Schneider Hill Group is located in the Banner Mining District in Gila County, Arizona, about  $4\frac{1}{2}$  miles from Hayden Junction and  $6\frac{1}{2}$  miles from Hayden, where the American Smelting and Refining Company's smelter is located. The Lenden-Arizona Company's holding lies to the south and east, the Apex to the north and north-east, and the Seventy-Nine mine to the west. In fact, the Group lies in the center of all the principal producers of the Banner Mining District. The Camp of Chilite lies within the limits of the property to a large extent. A good wagon road leads directly to the property from Hayden Junction.

The property consists of 20 unpatented claims which are held by right of discovery and by annual assessment work, records are on file.

A tunnel 1800 feet through diabase, a series of shorter tunnels from 300 to 800 feet in length, numerous drifts and 1200 feet of stopes and winzes, open this property up to a comparatively shallow depth. All of the stoping being done above the 300-foot level.

### SAMPLING AND PROSPECTING:

The ores on this property are found along the contact of the Trey Quartzite and the diabase. The upper workings along this contact have been done on the relatively high grade ore which shows in numerous croppings at the surface. Leasers of these high grade croppings have extracted a large portion of the high grade ore and for this reason only a limited number of samples were taken from the high grade still exposed in the workings.

Below the upper contact the diabase sill which was intruded between the Trey Quartzite and the underlying limestone and which shows a considerable enrichment, especially along and near the intrusive Quartz Mica Diorite dikes, was thoroughly sampled with the idea of determining the possible value of the diabase as low grade ore which could be profitably mined under the proper conditions.

East Mountain has been worked to a very limited degree and shows the same contact between the Trey Quartzite and the diabase as appears on Schneider Hill. Here the Quartzite is largely stained and replaced in sections along the contact by the carbonates, oxides and silicates of copper, and in some cases, considerable chalcocite is shown in the ore.

The contact is easily discernible on both East Mountain and Schneider Hill, standing out as they do above Schneider Canyon and separated only by a low divide. A deep gulch along the west side of East Mountain, together with Stone Cabin Gulch on the north of both, shows the formation to a depth well below the workings on the property. Several Quartz Mica Diorite outcrops cut through and are clearly traceable on the property. The workings sampled most thoroughly were the 800 foot tunnel driven through the diabase on East Mountain near the floor of the gulch; the working tunnel on Schneider Hill which is the central tunnel of a number runs in the immediate vicinity of the Quartz Mica Diorite dike

which cuts through the property northeast and southwest; tunnel B which lies below the working tunnel and gives an additional depth of 200 feet on the deposit; tunnel C which lies to the north of the working tunnel a distance of 260 feet; the contact tunnels and the 1800 foot tunnel running a little of north on the Glance Claim on Schneider Hill. At no place on the property has the lower limit of the diabase sill been reached and the lime which underlies it and which is much more subject to replacement has never been reached. This limestone in other places in the district and in the surrounding districts shows a thickness of from 200 to 1000 feet.

Here the main ore bodies of the property should be developed. Underlying this line the shales and Quartzite may develop ore bodies of equal magnitude and importance but it is probable that the limestone will yield a tonnage of commercial ore sufficient to make this property a large producer for years to come. While the surface ores and these developed by the shallow workings along the Quartz Mica Diorite dikes have never been extremely high grade, averaging for those shipped about four per cent. I am convinced that the whole body of limestone underlying the diabase sill can be expected to average better than 2% copper with numerous occurrences of from 5 to 10% ore along the contact and adjacent to the Quartz Mica Diorite intrusions.

Sample sheets attached show the results of all sampling done on the property and are clearly indicative of what may be expected at depth on this property.

#### ORE RESERVES:

These consist essentially of the ore on the dumps, which is of milling grade, in all about 10,000 tons, and two small blocks of enriched diabase developed by raises following the grade occurrences along the intrusive dike.

#### Dimensions of Blocks:

No. 1 250 x 200 x 4 - 200,000 cu. feet - 15,077 tons

No. 2 200 x 100 x 4 - 30,000 cu. feet - 5,030 tons.

This gives an ore reserve of actually blocked out ore and ore on the dumps of only 20,107 tons with an average value of 1.65%.

#### PROSPECTIVE ORE:

Since this property is purely in the prospective stage, the ore which can be figured as prospective ore must be estimated from the evidence gained by the sampling of that partially exposed and that which is probable from this history of surrounding districts of Ray, Globe, and Miami.

The diabase outcrops and exposures by tunnels and cross-cuts gives assurance of a body of ore which will average 2%; of the approximate area shown below; 1600 feet x 2000 feet x 400 feet - 800,000,000 cu. feet - 600,000,000 - 61,307,700 tons in the diabase.

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This is assuming a depth of only 400 feet in the diabase, which is out by the 1800 foot tunnel its full length and shows a depth at the face of 960 feet, with the lower limit not reached. The lime underlying this diabase, more

susceptible to replacement, should be mineralized more heavily and more extensively than the diabase, but it is reasonable to expect an equal area and an average of at least 2% ore.

This would give an additional ore reserve of 66,530,500 tons, or a total of 127,856,307 tons. This would assure a life of 42 years for the property, producing 1000 tons a day. Twelve feet of ore lying along the Quartz Mica Diorite dike, which was cut through by the 1800 foot tunnel at a distance of 780 feet, is claimed to have run better than 4% copper; but the tunnel was caved in and was impossible to verify this statement. Several other occurrences of this grade of ore will undoubtedly be cut in the development of this property, thus adding materially to the value of the ore reserve.

#### ASSETS:

The greater part of the shallow workings on this property would have little value for the future development of the property. In fact, all the work so far done can be classed as of value simply for proving the property, and for that reason will be so considered.

The 1800 foot tunnel driven in the diabase, cross-cutting the sill and proving a thickness of 960 feet at the present face, would have a value of 1600 x \$15, or \$27,000. The 800 foot tunnel on the East Mountain would have value of 800 x \$15, or \$12,000. The working tunnel running at almost right angles to the 1800 foot tunnel and about 499 feet higher on the mountain and 500 feet northeast of the face of the same would have a value of about \$10,000. A total development value of about \$56,000. Two springs and a well supply ample water for domestic purposes.

The indicated value of the property on a basis of a ten-year production and with a 10% return on the investment would be \$3,390,000 x 5.45 - \$18,475,500. I have indicated a 10,000 ton daily plant capacity because ore reserve is so large. The appraised valuation of the property will prove extremely conservative with the development of this property, as the ore body figured will no doubt prove larger with the development of the ground.

✓Conclusions: In summing up the principal features of the Schneider Hill Group, a number of factors must be considered. First, an estimated tonnage of 61,327,807 tons of 2% ore is partially proven by the present workings

Second, the dissemination of copper values through the greater portion of the diabase sill is shown by the sampling of this on one exposure and by the dump sample taken from the several dumps which are in all cases run through the diabase.

Third, the outcrops of the diabase are clearly traceable through the property and they all show evidence of a mineralization.

Fourth, shipments from the property of unsorted diabase show an average copper content of 2% or better.

Fifth, the scattered inclusions of limestone brought up by the Quartz Mica Diorite, at the time of its intrusion, all are a very good grade of copper due to replacement, and indicate that the limestone which underlies the diabase

will be a better grade of ore than the less susceptible diabase which lies directly above it.

Sixth, the shales and quartzite which underlies the limestone are much more liable to replacement than the diabase and certainly more susceptible to dissemination through them. These all lead to the conclusion that the small investment necessary for the proving of the block of ore which will contain an estimated tonnage of 65,538,800 tons is more than justified by the showing on the property.

SHIPMENTS OF ORE from Schneider Hill Group Prior to 1928 - 397 Cars by C. B. Chittenden. The average above 5% and up.

By

J. D. Scott  
Mining Engineer

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

Date July 31, 1939

1. Mine  Chilelito
2. Mining District & County Banner
3. Former name Chileto
4. Location Hayden Junction, Arizona
5. Owner  R. D. Beard
6. Address (Owner) Winkelman, Arizona
7. Operator R. D. Beard
8. Address (Operator)
9. President R. D. Beard
10. Gen. Mgr. R. D. Beard
11. Mine Supt. None
12. Mill Supt. None
13. Principal Metals  Copper
14. Men Employed None
15. Production Rate Any amount
16. Mill: Type & Cap. None
17. Power: Amt. & Type Gas 25 H.P. compressor
18. Operations: Present Small development work
  
19. Operations Planned None
  
20. Number Claims, Title, etc. 19 claims
  
21. Description: Topography & Geography
  
22. Mine Workings: Amt. & Condition There are a few small shipments being made by the owners outside of any other work being done.

23. Geology & Mineralization.

24. Ore: Positive & Probable, Ore Dumps, Tailings 2 large ore dumps

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

25. Mine, Mill Equipment & Flow Sheet None

26. Road Conditions, Route Good road right to mine

27. Water Supply Plenty of water for large mill

28. Brief History This mine was worked back about 1900 and has been worked a little ever since, but no great amount. Has plenty of development work on it.

29. Special Problems, Reports Filed

30. Remarks This property needs a large mill on it to be of any value for working

31. If property for sale: Price, terms and address to negotiate. The property is for sale.  
\$125,000 - and can get your own time and terms on the property.  
Write to R. D. Beard, Winkelman, Arizona

32. Signed R. D. Beard.....

33. Use additional sheets if necessary.



General Information: In the eastern part of the Chilito group the area proposed to be worked, the ore occurs in the bottom part of the Troy quartzite at its contact with shaley limestone and underlying diabase. The ore occurs at the bottom of a nearly vertical cliff of quartzite, and talus from the cliff covers the contact. Two narrow cuts in the talus expose a small amount of low-grade ore showing chalcocite and cuprite with some malachite. In many places malachite, mainly as a stain, occurs 15 to 25 feet above the base of the quartzite cliff.

Character of Ore: Chalcocite, cuprite, and malachite.

Equipment (Date 12/52): Caterpillar tractor (RD 4), a jeep pickup, and a few hand tools.