



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

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2 June 1971

Mr. John J. Hinton
3730 West Rose Lane
Phoenix, Arizona

Dear Mr. Hinton:

Thank you very much for the information you sent us on your properties in Graham County, Arizona.

The information you supplied looks quite interesting, but unfortunately, we are quite busy at the present time. However, when we have a man available to look at your properties, we will be sure to contact you.

Very truly yours,

ESSEX INTERNATIONAL, INC.

E. Grover Heinrichs
Asst. Manager of Exploration

EGH:jbg

Cobre Grande
Greenlee Co, Ariz.
Braham Co

3730 West Rose Lane
Phoenix, Arizona
March 21, 1971

SXM

MAR 26 1971

RECEIVED

Essex International Inc.
% Howard Lanier
1704 West Grant
Tucson, Arizona 85705

Dear Sir;

Wishing that you are in the market for copper properties, I am sending to you this report on the Cobre Grande mine. There are about 70 claims at this location and others extending along the mineralized zone for several miles to another larger grouping of claims that show large quantities of copper. At one place here, I had a well dug in 1954 and hit good copper at about 70 feet. This was a wide, black, burned looking ledge.

I hope that a combination of all these claims will be of interest to you and I will be available to show you this property at any time convenient for you.

Very truly yours,

John W. Hinton
John W. Hinton.

jwh.

937-2297

REPORT ON THE
Cobre Grande Mining Claims
and the
Mineral Hill Tunnel site claim
in
Graham County, Arizona

by
Tom Beard
Consulting Mining Geologist

*

September 1956

Los Angeles, California

*

LOCATION OF PROPERTY

The mining property and claims are located in the County of Graham, State of Arizona, in Township 5 South - Range 20 East Salt River Base and Meridian - in sections 21, 22, 27 and 28 and further being situated in the Coronado and formerly the Crook National Forest.

The mine tunnel and dumps are at 6600 feet above sea level, with the apex cropping of the east-west strike rising to 6800 feet elevation.

ACCESSIBILITY AND CLIMATE

The property is available throughout the year, and lies some 9 miles south and west of the Will Hinton cattle ranch, of which 4 miles of road has been installed, with the remaining 5 miles to be yet constructed. This last 5 miles can all be made with an D-8-Caterpillar angle dozer and road grader - in this 5 miles are two places which basic rock of limestones and granites are in place structure, and it will be necessary to dynamite and use rock breaking equipment for a total distance of 125 yards in one section and a distance of 25 yards in another section of the proposed road. The mine lies 25 miles south of the Southern Pacific Rail, from the small town of Fort Thomas, Arizona - The property is 45 miles westerly of Safford, Arizona, the county seat, and the supply and hub of commercial activities. U.S. highway no. 70 serves both Safford and Fort Thomas, Arizona. Two through trains from Phoenix to Globe to Lordsburg, New Mexico, and El Paso, Texas, serve the area daily. Two flights daily connecting with international terminals have offices at the Safford Municipal Air Field, which affords planes of commercial and civilian status all accommodations of major facilities. All interstate bus and truck lines run regular schedules over Highway 70.

ACCESSIBILITY & CLIMATE - (Continued)

Climatic conditions permit year round mining operations, similar to the schedules carried on at Globe and Ray, Hayden and Morenci, Arizona.

STATUS OF TITLE

Mr. John Hinton of Fort Thomas, Arizona, is the owner, purchaser and locator of the Cobre Grande Mining Claims numbering from one to six (1 - to - 6) inclusive, situated in the AwaKaipa Mining District, in Cobre Grande Mountain on the slopes of the Santa Teresa Mountain Range of Graham County, Arizona. Legal record shows a quit claim deed from Norman L. Hancock and Dee Hill of Eden, Arizona to John Hinton, Fort Thomas, Arizona, on the 6th day of September, 1956 and shown as a matter of record in Docket 42, pages 280 and 281 indexed in Mine Deeds. Notices of location of lode mining claims of the Cobre Grande Group from 1-to-6 - dated Sept. 13, 1956 in Docket 42, pages 282-283-284-285-286 and 287 and indexed in Book of Mines.

Notice of location of the Mineral Hill Tunnel Site, dated Sept. 13, 1956 - Docket 42 page 353, indexed in Book of Mines.

Made a matter of record is a Township Map and Claim Map combined by John Hinton - Docket 42 - page 437 in Book of Mines - numbered 3936 - Sept. 20, 1956.

These claims are held under possessory title from the United States Government. They are located on surveyed United States Government lands and conform as nearly as practical

STATUS OF TITLE - (Continued)

with the United States public land surveys and the rectangular subdivision of such surveys. The Mineral Hill Tunnel site was made under the federal mining laws, Section 2323 Revised Statutes, and constitutes 200 acres more or less - and is held under the procedures of this revised statute, and-is-shown-as-a part of the mining laws of Arizona.

The above notices - records - maps, etc., are made a matter of record in the Graham County Court House, Safford, Arizona.

HISTORY

Because of the poor accessibility to the Township as a whole, the area has had little exploration and development. The writer has nothing in the way of production records to show past shipments made, and when and to whom. Reports from old mining men by word of mouth report that at the turn of the century a mining man responsible with early development of the mines of Miami and Superior, Arizona, sold out his interest at the turn of the century, and prospected and claimed and developed some 300 feet of tunnels, raises and winze represented in this mine. The ore from this operation was put on mules and burros and shipped to an unknown destination. It is reported this ore averaged 13% in copper with fair values in gold and silver. The ~~Miner~~ ^{Miner} has checked this report with sampling on the tunnel and open pit cuts and finds such values did and still do exist in commercial quantities, as evidenced by assay sheets attached. The forest service and cattlemen have maintained horse trails and foot paths used for erecting fence lines over the years. It is reported by good source of information that over the years the Hinton family and others have kept this present trail cleared and for over 30 years Mr. Landsman walked each year to the mine and cleaned the trail and path and did hand work on the tunnel and put in some open cuts to further explore the mineralized

AREAS.

HISTORY - (Continued)

This man passed on in 1950, and is buried at his request at his camp on the west side of the mountain. Such factual data being available, prompted the writer to investigate this virgin and unexplored area, and to note such data and geological occurrences that presents itself from the workings done, together with the general physical structures relative to ore deposition.

TOPOGRAPHY

The mining properties discussed in this Report are a part of the southern Arizona Rockies, and lie in what is known as the Mountain Region or Mexican Highlands, which constitutes a section of The Basin and Range Province. These deposits are located on a pediment that is a northwestward projection of the Santa Teresa Mountains. The terrain is highly faulted with uplifts and sheer wall systems combined with folding and trenching of the rugged mountain range province. This type of complex structuring was probably due to the major late tertiary volcanics. The range trends northerly to the local area of the San Carlos Dam, thence a slow southerly faulting system which grades down in sedimentary movements to the lower pediments and forming the Regional drainage system of the area into the Gila and San Pedro Rivers. Pine trees, scrub oak, together with mesquite, greasewood, and paloverde and cactus are common vegetation, with ocotillo and catsclaw on the low desert benches. Where the fault and contact zones combine together, the water table is relatively shallow, which has been evidenced by creating water at depths not to exceed 100 ft. for domestic purposes, and by shallow excavating for spring water for cattle use within a few hundred yards of the general mine area. Many natural springs and seepage areas are scattered through the township in which this report has reference to.

GEOLOGY

The Santa Teresa Range consists of many series of unconformities from faulting and displacement related to the volcanic epic of the tertiary times. Two systems of fracturing and faulting occur in this district. The first system is a north east strike, which consists of the pre-mineral conditions, and in which the major ore depositions are confined. There seems to be a second system of post mineral fracturing that is striking northwest and is faulting the veins and the secondary replacement zone in limestone. The main tunnel reflects the chalcopyrite replacement of the limestone where folds occur and the impervious volcanic rock has afforded a condition of damming the solutions, creating rooms and traps in which there appears rich localization of the copper ores. The main ore system from the surface vein of the northwest structure is related to three types of deposition -- No. 1: that tabular replacement is occurring along the fault fissures; No. 2: that irregular replacements occur in the wall system and favor the carboniferous limestones, and creating an outward movement of mineralization from the main depositional structure. This type of mineralization has been noted to 100 feet on each side of the major structure, and on the veins and beds. The third condition is related to the disseminated deposits, occurring in the diabase and quartzite, in which large bodies of

GEOLOGY - (Continued)

medium grade ore appear to exist. Mineralization consists of pyrite, chalcopyrite and bornite with some azurite and malachite together with coatings on the wall structure of diopside. It is this writer's opinion that the rock formation consisting of paleozoic limestones and sediments, quartzites-shales and conglomerates are lying on a basement of complex structure which is unknown at this time as there are no developments to depth to denote this formation, however this structure has been intruded by the diabase and granitic rocks, which have prepared the way for mineral replacement within the structural limits referred to in this report. The mineralized zone follows the trend of the intrusive rocks, and both intrusives and mineralization are coincident with a main regional axis of uplift along which paleozoic sediments have been raised, folded and distorted with relation to the volcanics that flank the uplifted block. The general area within this Township and the adjoining Township 19, reflects the same occurrences depositionally as is recorded here, in which the Stanley Butte, and Deer Creek area of western Graham County depict the top of the Gila conglomerate lying above the Dacite flows, under which is the whitetail conglomerate, thence into the cretaceous sandstone, shale, and overlying andesitic volcanic rocks of the Deer Creek Basin which is some 3 miles northerly and westerly of this area.

Approximately 1500 feet westerly along the mineralized

GEOLOGY - (Continued)

zone from the tunnel, there is an occurrence of a quartz-diorite porphyry dike which cuts the mineral zone and is a thick sill which has almost a vertical structure. An open cut referred to on the accompanying map, and butting against the overlying sediments shows high values in copper, gold and some silver. This cut some 16 feet wide and 5 deep and 10 feet ~~wide~~^{long} is the only workings going westerly on the mineral-zone which has a strike of north 65° west. The dike cuts north 10° east across the mineral zone. Surface examination farther west on the ore producing anomaly reflects good mineralization relative to the removal of the overlying limestone capping, which could vary from 20 to 50 feet before contacting the ore zone. It appears to the writer that the limestone replacement of chalcopyrite ore was related to the mineralizing solutions having traversed the limestone bedding, and depositing high values in copper, gold and silver in the localized areas of contacts. There is continued ore deposition of lower grade along the entire 2000 feet of exposed mineralization, which in turn was the emanation of the fissuring from the transverse strike, with the solutions having been crudely selective, in working out a variety of beds along the minor fractures and folds so that the sulphide ore occurs as irregular masses, distributed through the partly garnetized limestone.

The general rule the writer has found from inspection of the area is that surface indication of the clusters of garnet,

GEOLOGY - (Continued)

associated with diopside and tremolite, in the limestone and altered sediments is evidence of copper bearing mineralization at not too great depths. Relative to ore indication at surface, it is indicated from the present workings in the tunnel that as the mineral zone gains in depth, the width of the ore bearing zone becomes greater. The greatest ore bodies are reached at the 2500 foot level in the Magma Mine at Superior, Arizona where the main shoot is 30 to 40 feet wide.

The traverse conditions of the mineral zone in its easterly and westerly course has played a major part in the formation of the massive andradite during the epoch of replacement, and it is my opinion that the associated minerals of diopside, tremolite, epidote, accompanied by pyrite, magnetite, chalcocopyrite and some sphalerite were simultaneous in their occurrence as sulphides and not introduced at later periods. Such an occurrence of complex minerals creates a depositional condition in which the basic character of the original rocks have been altered to the complexity of the present types of replacement minerals that are found in this deposit ranging from oxides, sulphides, carbonates and sulphates.

In conclusion and genetically speaking, the writer suggests so far as present evidence appears, that the copper zone of mineralization occurred independently of the main porphyry mass of granites of the Santa Teresa Range from which the

GEOLOGY - (Continued)

Cobre Grande Pediment radiates, and is particularly associated with dykes which were highly charged with magnetic ^{waters.} ~~wafers.~~

ESTIMATED ORE

In order that as near a true estimate be made of immediate tonnage available, the writer has taken the tunnel workings at the floor level and has taken the width of the face that shows in a north drift from the main tunnel which emerges into a large room, which has a wide raise from the floor of the drift, and has taken the westerly length of the strike to the open cut designated on map and estimate the depth at 100 feet from present tunnel depth which is conservative, allowing for the surface alteration of limestones cappings. The over all estimate is 1500 feet long - 20 feet wide and 100 feet deep, with the rock figured at 12 cubic feet to the ton, it would appear that there is some 125,000 tons of commercial grade ore, with an over all average of 5% copper, .05 gold, and .50 to 1 ounce of silver.

Extending the known further width of the ore mineral zone to 50 feet and to the known length of 2 claims or 3000 feet in which copper mineralization outcrops and taking 200 feet in depth which is proven from the tunnel and dump exit to the apex of the easterly and westerly strike along the mineral zone, would show some ^{2,500,000}~~23,000,000~~ tons of copper ore that from the writer's opinion will be good grade of milling ore, with the metalurgy for treatment still to be determined. Should this

ESTIMATED ORE - (Continued)

Cobre Grande pediment be equivalent to its name, the tonnage of copper ore could be in unknown millions of tons, and could be comparable to Miami, Superior and Morenci if development and exploration work is projected into active operation.

METHOD OF OPERATION

The removal of ore from this deposit can be operated as an open pit mine. The known width of higher grade ore with average of 5% copper content can be selectively mined by shooting the waste and lower grade ores and creating a stock pile of future milling material, and taking the 8 to 20 foot width of shipping grade ores. This type of operation is available for wagon drills for deep blasting either in volume or in a selective handling of ores. Movement can be done with power shovels and loaded onto heavy duty trucks for trucking to rail head. Removal of overburden to expose the ore zone can be accomplished with either D-6 or D-8 Caterpillars or with any type of Dozer equivalent to these machines mentioned. The area topographically speaking is ideal for stock pile of ore and disposal of waste as the zone of mineralization is the apex of the pediment, with a long extended faulted trough on the north extremity, which has a 300 foot sheer dip into the trough, that leads into a major canyon where a fault alters its direction to a northerly course of travel. The westerly end of the pediment shears off into a north south extending canyon with a northerly dip into the Deer Creek area, and acts as relief for the Western area of the Township. This type of topography is typically suitable for an operation as is presented here in that there is disposal room for millions

METHOD OF OPERATION - (Continued)

of tons of waste materials and possible future tailing dumps. Power for stationary machinery and domestic purposes must be developed by generators for electric power. Fuel storage will be necessary for continued operations. Purchasing under contract in all departments can be arranged f.o.b. mining operations.

IMPROVEMENTS

Facilities for housing have been built from logs taken from native timber - The years have deteriorated the two buildings and they need 60% repair. The mine portal needs about 2 square sets to make safe mining and hauling ore from underground. The track is installed to the face of ore a distance of some 200 feet, and has a 1200 pound ore car that is in good condition. Native timber can be cut for varied uses in the mining operations, or to further maintain the present improvements.

MARKETING ORE

The ore that has been developed, and the possibilities of future developed ore in excess of the ore tonnage now estimated is a good smelting type of copper rock. Such ore that is acceptable from the point of low penalties and good silica content is in demand under good contracts from smelters, in Arizona and in El Paso, Texas. The writer suggests the American Smelting and Refining Company at El Paso, Texas to handle the ore from this deposit, as the proposed road leads to the nearest rail head, and the freight rate on to El Paso would be less than the dirt road haul to Hayden, and the Miami plant is not accepting custom ore. Excellent loading ramp facilities are to be had at the siding at Ashurst, Arizona, and is 25 miles distant from the mine location. The regional ore buyer, Mr. Reed Welch, is located in Tucson, Arizona for A. S. and R. and could be consulted relative to contracts on regular shipments.

OPERATION COSTS

The proposed costs per ton of mining and developing ore for shipment from open pit operations is estimated at \$3.00 per ton. Trucking costs to rail head for 25 miles of dirt road \$3.00. Rail transportation cost from Ashurst, Arizona to El Paso, Texas, estimated at \$4.00 per ton. Estimated smelter treatment charges at \$4.00 per ton of ore. Administrative costs 50¢ per ton of ore. Supervising engineer and/or geologist in charge of all operations \$1000.00 per month, plus expenses. All other labor costs are absorbed in the estimated per ton costs. The Arizona industrial commission requires a cash deposit on labor and the compensation fund estimated at \$1,000.00.

Cost Breakdown Per Ton

Mining operation cost.....	\$3.00	1.00
Trucking costs to rail.....	3.00	.09
Rail freight to smelter.....	4.00	.12
Smelter treatment charges.....	4.00	4.00
Administrative costs.....	.50	105
Engineering costs.....	1.00	20
<i>Representation Costs</i>		50
General & Miscellaneous Expense.....	<u>1.00</u>	25
Total expense per tnn of ore.....	\$16.50	1.00 8.26

OPERATION COSTS - (Continued)

	<u>Ore Returns Per Ton</u>	
One (1) Ton of 5% Copper ore @	3.40	6.16
Less operation costs.....		\$35.00
Less 20% for smelter & total deducts.		14.00
Total deductions.....		7.00
		\$23.50
		6.26
		23.50
Total net profit.....		\$12.50
		7.74

This operation is estimated to produce not less than 1000 tons per month or an average of 5 rail dump gondola cars of 50 tons each per week and/or a car per day on a 5 day work week.

Estimated net profit per month -- \$12,500.00.
day - concentrates
Rated 200 tons day - net 1598.00

University of Arizona

TUCSON 22, ARIZONA

May 21, 1956

COLLEGE OF MINES
ARIZONA BUREAU OF MINES

Mr. Ruskin Lines
Attorney-at-Law
Safford, Arizona

Dear Mr. Lines:

In reply to your letter of May 15, the only information we have regarding the Cobre Grande Mine is given on pages 102-103 in the U. S. Geological Survey Bulletin 763, GEOLOGY AND ORE DEPOSITS OF THE ARAVAIPA AND STANLEY MINING DISTRICTS, by C. P. Ross. This bulletin was published in 1925 and is now out of print, but copies may be seen in libraries. Regarding the Cobre Grande mine, it reads as follows:

"The Cobre Grande mine lies on the northeast slope of the mountain of the same name. It is 4 miles northeast of Arivaipa and 6 miles southeast of Stanley, measured in straight lines, and is accessible only by steep trails. The camp of the miners consisted of several tent houses and cabins about half a mile south of the main workings, at a place where there was formerly a good spring. The camp has been uninhabited for several years. The Cowboy tunnel, in which most of the ore has been found, winds around in an irregular curve a few hundred feet long; short drifts lead off it, and near the end stopes have been opened above and a winze about 40 feet deep below. Another tunnel near by cut ore also. A short distance down the slope is a caved tunnel reported to have been over 600 feet long but to have encountered no ore. A few hundred yards to the west, on the other side of the mountain spur, is a shaft reported to have been 160 feet deep in which some ore was found. On the trail to the old camp is a partly caved tunnel reported to have been over 700 feet long. There are doubtless other excavations, but those enumerated are the principal ones."

"The deposits appear to have been first located in 1905 by Julius Riser and W. A. Clark. In recent years the owners have been Messrs. Snell, Elliot, Fisk, and Alderman, of Globe, Arizona. Location notices of J. C. Sayers, dated January 3, 1922, were posted on the property when it was visited. A carload of ore running about 8 per cent of copper is reported to have been shipped to the Old Dominion smelter at Globe some years ago. Most of this ore came from the Cowboy tunnel."

"The Cowboy tunnel and the workings near it are all in the Tornado limestone. The accessible part of the tunnel on the trail to the camp is in an altered fine-grained igneous rock, but the face is reported to have been in limestone. In the Cowboy tunnel, which is the

only one where ore in place was accessible at the time of the visit, the ore is in irregular bodies in the limestone. In general the replacement followed the bedding. The gangue minerals include quartz, calcite, chlorite, epidote, garnet, specularite, and magnetite. The hypogene sulphides are pyrite, chalcopyrite, and a little galena. A little chalcocite is also present. There is scant evidence of oxidation in any of the ore."

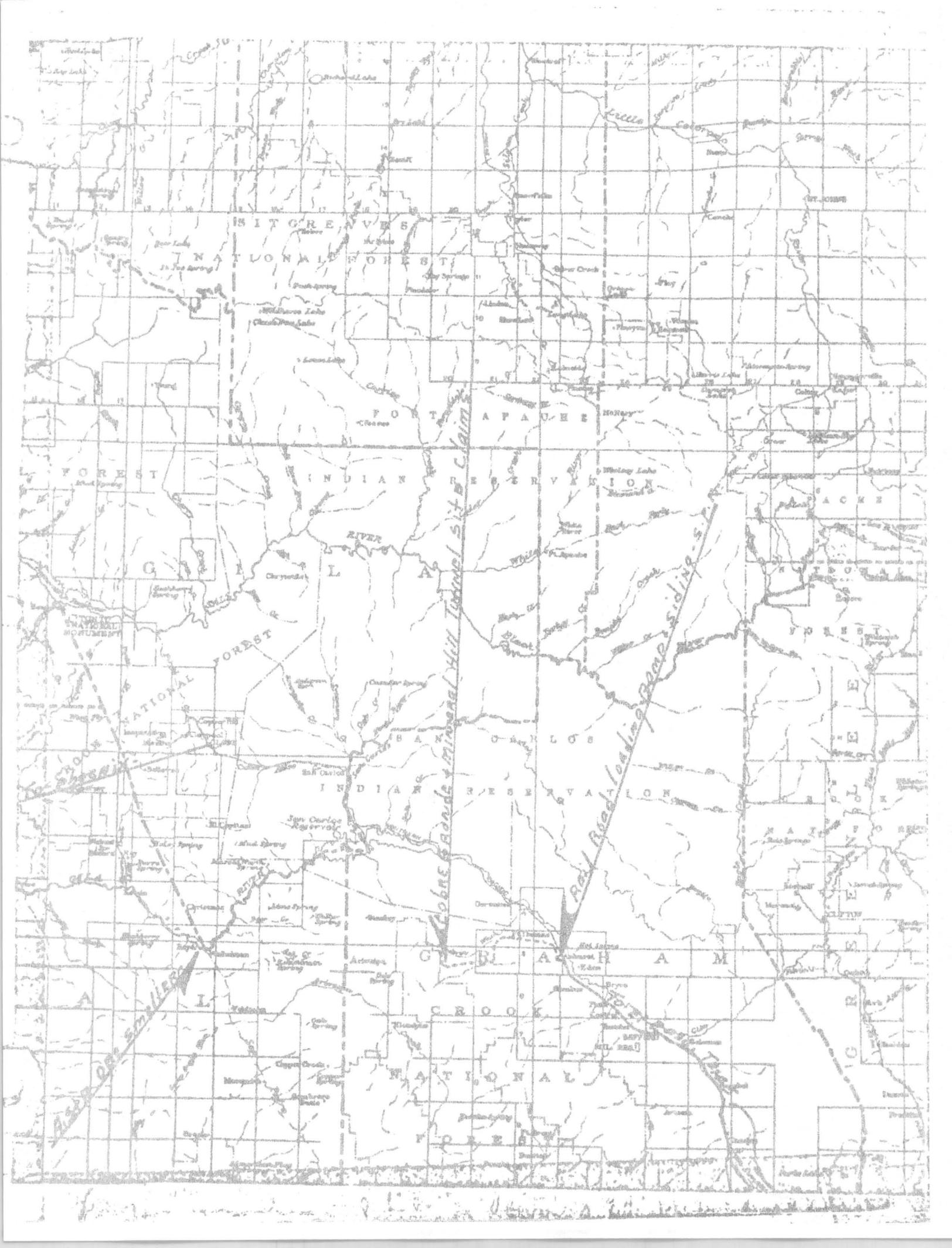
Trusting this information will be of service to you,

Sincerely yours,



Eldred D. Wilson
Geologist
Arizona Bureau of Mines





THE EISENHAUER LABORATORIES

916-322 South San Pedro Street
Los Angeles 13, California

ASSAY CERTIFICATE

FORM VANGINE 9389

Los Angeles, Calif

Sept. 28/56

19

I hereby certify that the samples described below, received from

Mr. Tom Beard

assay as follows:

Owner's Mark and Sample	GOLD		SILVER		TOTAL VALUE PER TON	PERCENTAGE OF		
	OZS. PER TON	VALUE PER TON	OZS. PER TON	VALUE PER TON		COPPER	LEAD	ZINC
#2 Open cut	trace		.28	\$.25	\$ 28.25	3.5		

GOLD @ \$ 35 PER OZ.
SILVER @ \$.90 PER OZ.
LEAD @ C.
COPPER @ 40 C.

W. E. Eisenhauer
ASSAYER

Established 1914

W. E. HAWLEY
PRESIDENT

EL PASO, TEXAS
BOX 4

HAWLEY & HAWLEY

ASSAYERS AND CHEMISTS, INC.

SHIPPERS REPRESENTATIVE

H. W. BOLLWEG, JR.
TREASURER

LABORATORIES:
DOUGLAS, ARIZONA
537 TWELFTH STREET
TEL. EMPIRE 4-2741 BOX 1080

WE HEREBY CERTIFY THAT THE FOLLOWING RESULTS WERE OBTAINED FROM SAMPLES OF TOM BEARD

OFFICE NO.	M A R K E D	GOLD OZS.	SILVER OZS.	LEAD PER CENT	COPPER PER CENT	ZINC PER CENT	IRON PER CENT	Mn %	SI O ₂ %
294767	1 - Out	0.35	1.2		19.70				
	2 - Tunnel	Trace	0.3		3.59				
	<i>See manganese sample authentication area.</i>								
	4 - Single Piece	Trace	0.2		2.65				

METAL QUOTATIONS:

GOLD \$35.00 PER OZ. COPPER _____ C PER LB. CHARGES \$ 18.00
SILVER _____ PER OZ. _____ PER LB. DATE 9/11/56

PER *[Signature]* HAWLEY & HAWLEY ASSAYER

THE EISENHAUER LABORATORIES
 916-322 South San Pedro Street
 Los Angeles 13, California

ASSAY CERTIFICATE

PHONE VAUGHN 8320

Los Angeles, Calif. Sept. 28/56 19

I hereby Certify that the samples described below, received from

Mr. Tom Beard

assay as follows:

Owner's Mark and Sample	GOLD		SILVER		TOTAL VALUE PER TON	PERCENTAGE OF		
	GRS. PER TON	VALUE PER TON	GRS. PER TON	VALUE PER TON		COPPER	LEAD	ZINC
#3 Open cut	Trace		.30	\$.27	\$ 63.47	7.9		

GOLD @ \$ 35 PER OZ
 SILVER @ \$ 90 PER OZ
 LEAD @ _____ C
 COPPER @ 40 C

W. E. Eisenhauer
 ANALYST

Revised 1956

GEO. L. DICKINSON—PRESIDENT
 GEO. G. DICKINSON—VICE-PRESIDENT
 ROBERT L. DICKINSON—VICE-PRESIDENT
 DR. F. A. HANCOCK, Ph. D.—CONSULTING CHEMIST

DICKINSON LABORATORIES, INC.

ASSAYERS — CHEMISTS — METALLURGISTS
 UMPIRES
 WATER ANALYSIS
 PHONE 3-3413 & 2-8284 — P. O. BOX 7008
 1300 WEST MAIN ST. EL PASO, TEXAS

Feb. 26, 1957.



CERTIFICATE OF ASSAY

ASSAYED FOR: Mr. Tom Beard Lab No. 11559

ADDRESS: El Paso, Texas.

MARKED: Copper Ore sample

Gold Ozs. per ton	Silver Ozs. per ton	% Lead	% Copper	% Zinc	% Silicon	% Calcium Fluoride	Effective Units	% Manganese	% Iron
0.00	0.40		5.20		24.6				

CHARGES \$7.75

Geo. L. Dickinson ASSAYER

SUBSIDIARIES:

Texas Testing Laboratories • Colloidals Oils • Physical Testing • Form Service Laboratory • Soil and Water Analyses

FORM 12 5M 7-36 M-7050 K. P. S.

INTERNATIONAL SMELTING & REFINING COMPANY

MIAMI PLANT

ASSAY CERTIFICATE

Name Cobre Grande Mng. Co.
MINE

Class _____ Lot _____ Date 4/11 1957

Smelter Lot	Per Ton of 2000 Lbs.		Per Cent Copper	Per Cent Insoluble	Per Cent Si O ₂	Per Cent Al ₂ O ₃	Per Cent Fe	Per Cent CaO	Per Cent S	Per Cent
	Oz. Silver	Oz. Gold								
	<u>0.96</u>	<u>4</u>	<u>9.00</u>		<u>38.7</u>	<u>6.4</u>	<u>15.0</u>	<u>9.2</u>		

C. F. Smith
 Chief Chemist

AMERICAN SMELTING AND REFINING COMPANY

DEMING MILLING UNIT

P. O. BOX 253

DEMING, NEW MEXICO

April 12, 1957

Mr. Tom Beard
Cobre Grande Mining Company
P. O. Box 253
Safford, Arizona

DEMING MILLING UNIT
Sample for Investigation

Dear Sir:

Your sample, submitted on April 4 for our investigation, has been assayed with the following results:

Fb	Cu	Ox Cu	Zn	N-S Zn
0.25	14.35	13.80	0.70	0.55

We will check the floatability of this ore, but do not expect to be able to handle it at Deming. If the high copper content can be maintained, smelter shipments should be considered.

A further report will advise our decision as to treatment at Deming.

Very truly yours,



B. L. Rickman
Mill Superintendent

BIR/bp

AMERICAN SMELTING AND REFINING COMPANY
SOUTHWESTERN ORE PURCHASING DEPARTMENT
810 VALLEY BANK BUILDING
TUCSON, ARIZONA

April 15, 1957

REED F. WELCH
MANAGER

Mr. Tom Beard
Cobre Grande Mining Company
P.O. Box 253
Safford, Arizona

Dear Sir:

I have copy of Mr. Rickman's letter of April 12th reporting assays on the oxidized copper ore you sent to our Deming Mill.

This type of ore is suitable for direct-smelting and we could purchase for El Paso delivery on terms that would give you a return of about \$60.30 per ton after freight and smelting on 14.35% copper based on 31-cent copper price.

When you have a carload mined and wish to ship to El Paso I shall be glad to issue a purchase schedule and shipping instructions upon receipt of your lease agreement or evidence of mine ownership.

Yours very truly,

REED F. WELCH

By *AC Stipp*

INTERNATIONAL SMELTING AND REFINING COMPANY

P. O. BOX 1263
MIAMI, ARIZONA

FILE NO. 700

April 13, 1957

Mr. Tom Beard
1333 E. 7th St.
Los Angeles 21
California.

Dear Sir:

Enclosed is our assay certificate showing the values and analysis of your sample of ore.

This grade of 9.00% copper would give a smelter net value of nearly \$40.00 per ton at present prices.

We could accept some of this type now, so when you have ore to ship let us know.

Yours very truly,



C. F. Smith
Ore Buyer

CFS:r

CONCLUSIONS

The following general conclusions were reached as a result of the findings made and further related in the report attached.

1. The mineralization of the mine and the area discussed from the geological setting, warrants the immediate development program stated in this report to be activated.

2. Past workings of the mine, combined with present reconnaissance in determining the geological prospects have revealed a definite ore tonnage of commercial grade mining and shipping ore.

3. The potentials relative to ore production in this mine for future operations appear as an enormous ore body with both smelter ore for shipping purpose and local milling and treatment ore for assured plant recovery systems.

4. Simplicity in all detail is more than favorable in every consideration in establishing a profitable operation in the removing and development of specific ores from favorable zones of known mineralization.

5. The amount of capital required in financing this projected mining operation, in relation to the possible returns from a net profit consideration, place this proposed mining project high on the lists of one that should be a successful venture.

CONCLUSIONS - (Continued)

6. The writer can only conclude this report with a favorable recommendation that the main contention in any mine is that if mineable ore is present and is to be had without any complexities in its removal and development of further valuable ore, there should be no mistake in its success, and such a contention seems to reflect the possibilities that are represented in this proposed mining operation.

Respectfully submitted,



Tom Beard
Consulting Geologist.

Report on the
Cobre Grande Mining Claims
and the
Mineral Hill Tunnel site Claim
in
Graham County, Arizona

by

Tom Beard

Consulting Mining Geologist

September 1956

Los Angeles, California

Y
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Location of Property

The mining property and claims are located in the County of Graham, State of Arizona, in Township 5 South - Range 20 East Salt River Base and Meridian - in Sections 21, 22, 27, and 28 and further being situated in the Coronado and formerly the Crook National Forest.

The mine tunnel and dumps are at 6600 feet above sea level, with the apex cropping of the east-west strike rising to 6,800' elevation.

A
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Accessibility and Climate

Property is available throughout the year, and lies some 9 miles east and west of the Will Hinton cattle ranch, of which 4 miles of road have been installed, with the remaining 5 miles to be yet constructed. This last 5 miles can all be made with an D-8 Caterpillar angle dozer and road grader - in this 5 miles are two places which basic rock of limestones and granites are in place structure, and it will be necessary to use dynamite and rock breaking equipment for a total distance of 125 yds. in one section and a distance of 25 yards in another section of the proposed road. The mine lies 25 miles south of the Southern Pacific Rail, from the small town of Fort Thomas, Arizona - The property is 45 miles westerly of Safford, Arizona, the county seat, and the supply and hub of commercial activities. U. S. Highway #70 serves both Safford and Fort Thomas, Az.

Two through trains from Phoenix to Globe to Lordsburg, N. M., and El Paso, Texas, serve the area daily. Two flights daily connecting with international terminals have offices at the Safford Municipal Air Field, which affords planes of commercial and civilian status all accommodations of major facilities. All interstate bus and truck lines run regular schedules over Highway #70.

STATUS OF TITLE

Mr. John Hinton of Fort Thomas, Az., is the owner, purchaser and locator of the Cobre Grande Mining Claims numbering from one to six (1 - to 19) inclusive, situated in the Aravaipa Mining District, in Cobre Grande Mountain on the slopes of the Santa Teresa Mountain Range of Graham Co., Az. Legal record shows a quit claim deed from Norman L. Hancock and Dee Hill of Eden, Az., to John Hinton, Ft. Thomas, Az., on the 6th day of September, 1956, and shown as a matter of record in Docket 42, pages 280 and 281 indexed in Mine Deeds. Notices of location of lode mining claims of the Cobre Grande Group from 1-to-6 - dated Sept. 13, 1956 in Docket 42, pages 282-283-284-285-286 and 287 and indexed in Book of Mines.

Notice of location of the Mineral Mill Tunnel Site, dated Sept. 13, 1956 - Docket 42 page 353, indexed in Book of Mines. Made a matter of record in a Township Map and Claim Map combined by John Hinton - Docket 42 - page 437 in Book of Mines - numbered 3936 - Sept. 20, 1956. These claims are held under possessory title from the United States Govt. They are located on surveyed U. S. Government lands and conform as nearly as practical with the U. S. public land surveys and the rectangular subdivision of such surveys. The Mineral Hill Tunnel site was made under the federal mining laws, Section 2323 Revised Statutes, and constitutes 200 acres more or less - and is held under the procedures of this revised statute, and-is-shown-as-a part of the mining laws of Arizona. The above notices - records - maps, etc., are made a matter of record in the Graham County Court House, Safford, Az.

History

Because of the poor accessibility to the Township as a whole, the area has had little exploration and development. The writer has nothing in the way of production records to show past shipments made, and when and to whom. Reports from old mining men by word of mouth report that at the turn of the century a mining man responsible with early development of the mines of Miami and Superior, Az., sold out his interest at the turn of the century, and prospected and claimed and developed some 300' of tunnels, raises and winze represented in this mine.

The ore from this operation was put on mules and burros and shipped to an unknown destination. It is reported this ore averaged 13% in copper with fair values in gold and silver. The writer has checked this report with sampling on the tunnel and open pit cuts and finds such values did and still do exist in commercial quantities, as evidenced by assay sheets attached. The forest service and cattlemen have maintained horse trails and foot paths used for erecting fence lines over the years. It is reported by good source of information that over the years the Hinton family and others have kept this present trail cleared and for over 30 years Mr.

Landsman walked each year to the mine and cleaned the trail and path and did hand work on the tunnel and put in some open cuts to further explore the mineralized areas.

TOPOGRAPHY

The mining properties discussed in this Report are a part of the Southern Arizona Rockies, and lie in what is known as the Mountain Region or Mexican Highlands, which constitutes a section of the Basin and Range Province. These deposits are located on a pediment that is a northwestward projection of the Santa Teresa Mountains. The terrain is highly faulted with uplifts and sheer wall systems combined with folding and trenching of the rugged mountain range province.

This type of complex structuring was probably due to the major late tertiary volcanics. The range trends northerly to the local area of the San Carlos Dam, thence a slow southerly faulting system which grades down in sedimentary movements to the lower pediments and forming the Regional drainage system of the area into the Gila and San Pedro Rivers.

Pine trees, scrub oak, together with mesquite, greasewood, and paloverde and cactus are common vegetation, with ocotillo and catsclaw on the low desert ~~benches~~ benches.

Where the fault and contact zones combine together, the water table is relatively shallow, which has been evidenced by creating water at depths not to exceed 100' for domestic purposes, and by shallow excavating for spring water for cattle use within a few hundred yards of the general mine area. Many natural springs and seepage areas are scattered through the township in which this report has reference to.

GEOLOGY

The Santa Teresa Range consists of many series of unconformities from faulting and displacement related to the volcanic epic of the tertiary times. Two systems of fracturing and faulting occur in this district. The first system is a north east strike, which consists of the pre-mineral conditions, and in which the major ore despositions are

confined. There seems to be a second system of post mineral fracturing that is striking northwest and is faulting the veins and the secondary replacement zone in limestone. The main tunnel reflects the chalcopyrite replacement of the limestone where folds occur and the impervious volcanic rock has afforded a condition of damming the solutions, creating rooms and traps in which there appears rich localization of copper ores.

The main ore system from the surface vein of the northwest structure is related to three types of deposition -- No. 1: that tabular replacement is occurring along the fault fissures; No. 2: that irregular replacements occur in the wall system and favor the carboniferous limestones, and creating an outward movement of mineralization ~~in~~ from the main depositional structure. This type of mineralization has been noted to 100' on each side of the major structure, and on the veins and beds. The third condition is related to the disseminated deposits, occurring in the diabase and quartzite, in which large bodies of medium grade ore appear to exist. Mineralization consists of pyrite, chalcopyrite and bornite with some azurite and malachite together with coatings on the wall structure of diopside. It is this writer's opinion that the rock formation consisting of paleozoic limestones and sediments, quartzites-shales and conglomerates are lying on a basement of complex structure which is unknown at this time as there are no developments to depth to denote this formation, however this structure has been intruded by the diabase and granitic rocks, which have prepared the way for mineral replacement within the structural limits referred to in this report.

The mineralized zone follows the trend of the intrusive rocks, and both intrusives and mineralization are coincident with a main regional axis of uplift along which paleozoic sediments have been raised, folded and distorted with relation to the volcanics that flank the uplifted block. The general area within this Township and the adjoining Township 19, reflects the same occurrences depositionally as is recorded here, in which

the Stanley Butte, and Deer Creek area of western Graham County depict the top of the Gila conglomerate lying above the Dacite flows, under which is the whitetail conglomerate, thence into the cretaceous sandstone, shale, and overlying andesitic volcanic rocks of the Deer Creek Basin which is some 3 miles northerly and westerly of this area.

Approximately 1,500' westerly along the mineralized zone from the tunnel, there is an occurrence of a quartz-diorite porphyry dike which cuts the mineral zone and is a thick sill which has almost a vertical structure. An open cut referred to on the accompanying map, and butting against the overlying sediments shows high values in copper, gold, and some silver. This cut some 16' wide and 5' deep and 10' long is the only workings going westerly on the mineral-zone which has a strike of north 65° degrees west. The dike cuts north 10 degrees east across the mineral zone. Surface examination farther west on the ore producing anomaly reflects good mineralization relative to the removal of the overlying limestone capping, which could vary from 20 to 50' before contacting the ore zone. It appears to the writer that the limestone replacement of chalcopyrite ore was related to the mineralizing solutions having traversed the limestone bedding, and depositing high values in copper, gold, and silver in the localized areas of contacts. There is continued ore deposition of lower grade along the entire 2000' of exposed mineralization, which in turn was the emanation of the fissuring from the transverse strike, with the solutions having been crudely selective, in working out a variety of beds along the minor fractures and folds so that the sulphide ore occurs as irregular masses, distributed through the partly garnetized limestone.

The general rule the writer has found from inspection of the area is that surface indication of the clusters of garnet, associated with diopside and tremolite, in the limestone and altered sediments is evidenced of copper bearing mineralization at not too great depths. Relative to ore indication at surface, it is indicated from the present workings in

the tunnel that as the mineral zone gains in depth, the width of the ore bearing zone becomes greater. The greatest ore bodies are reached at the 2,500' level in the Magma Mine at Superior, Az., where the main shot is 30 to 40' wide.

The traverse conditions of the mineral zone in its easterly and westerly course has played a major part in the formation of the massive andradite during the epoch of replacement, and it is my opinion that the associated minerals of diopside, tremolite, epidote, accompanied by pyrite, magnetite, chalcopyrite and some sphalerite were simultaneous in their occurrence as sulphides and not introduced at later periods. Such an occurrence of complex minerals creates a depositional condition in which the basic character of the original rocks have been altered to the complexity of the present types of replacements minerals that are found in this deposit ranging from oxides, sulphides, carbonates and sulphates.

In conclusion and genetically speaking, the writer suggests so far as present evidence appears, that the copper zone of mineralization occurred independently of the main porphyry mass of granites of the Santa Teresa Range from which the Cobre Grande Pediment radiates, and is particularly associated with dykes which were highly charged with magmatic waters.

Estimated Ore

In order that as near a true estimate be made of immediate tonnage available, the writer has taken the tunnel workings at the floor level and has taken the width of the face that shows in a north drift from the main tunnel which emerges into a large room, which has a wide raise from the floor of the drift, and has taken the westerly length of the strike to the open cut designated on map and estimate the depth at 100' from present tunnel depth which is conservative, allowing for the surface alteration of limestone cappings.

The overall estimate is 1,500' long - 20' wide and 100' deep, with the rock figured at 12 cubic feet to the ton, it would appear that there is some 125,000 tons of commercial grade ore, with an overall average of 5%

copper, .05 gold, and .50 to 1 ounce of silver.

Extending the known further width of the ore mineral zone to 50' and to the known length of 2 claims or 3,000' in which copper mineralization outcrops and taking 200' in depth which is proven from the tunnel and dump exit to the apex of the easterly and westerly strike along the mineral zone, which would show some 2,500,000 tons of copper ore that from the writer's opinion will be good grade of milling ore, with the metalurgy for treatment still to be determined.

Should this Cobre Grande periment be equivalent to its name, the tonnage of copper ore could be in unknown millions of tons, and could be comparable to Miami, Superior and Morenci if development and exploration work is projected into active operation.

METHOD OF OPERATION

The removal of ore from this deposit can be operated as an open pit mine. The known width of higher grade ore with average of 5% copper content can be selectively mined by shooting the waste and lower grade ores and creating a stock pile of future milling material, and taking the 8 to 20 foot width of shipping grade ores. This type of operation is available for wagon drills for deep blasting either in volume or in a slective handling of ores. Movement can be done with power shovels and loaded onto heavy duty trucks for trucking to rail head. Removal of overburden to expose the ore zone can be accomplished with either D-6 or D-8 Caterpillars or with any type of Dozer equivalent to these machines mentioned.

The area topographically speaking ~~xxxx~~ is ideal for stock pile of ore and disposal of waste as the zone of mineralization is the apex of the pediment, with a long extended faulted trough on the north extremity, which has a 300' sheer dip into the trough, that leads into a major canyon where a fault alters its direction to a northerly course of travel. The westerly end of the pediment shears off into a north south extending canyon with a northerly dip into the Deer Creek area, and acts as relief for the western area of the Township. This type of topography is typically suitable

for an operation as is presented here in that there is disposal room for millions of tons of waste materials and possible future tailing dumps. Power for stationary machinery and domestic purposes must be developed by generators for electric power. Fuel storage will be necessary for continued operations. Purchasing under contract in all departments can be arranged f.o.b. mining operations.

IMPROVEMENTS

Facilities for housing have been built from logs taken from native timber - The years have deteriorated the two buildings and they need 60% repair. The mine portals needs about 2 square sets to make safe mining and hauling ore from underground. The track is installed to the face of the ore a distance of some 200', and has a 1,200 pound ore car that is in good condition. Native timber can be cut for varied uses in the mining operations, or to further maintain the present improvements.

MARKETING ORE

The ore that has been developed, and the possibilities of future developed ore in excess of the ore tonnage now estimated is a good smelting type of copper rock. Such ore that is acceptable from the point of low penalties and good silica content is in demand under good contracts from smelters, in Arizona and in El Paso, Texas.

The writer suggests the American Smelting and Refining Company at El Paso, Texas to handle the ore from this deposit, as the proposed road leads to the nearest railhead, and the freight rate onto El Paso would be less than the dirt road haul to Hayden, and the Miami plant is not accepting custom ore. Excellent loading ramp facilities are to be had at the siding at Ashurst, Az., and is 25 miles distant from the mine location. The regional ore buyer, Mr. Reed Welch, is located in Tucson, Az., for A. S. and R. and could be consulted relative to contracts on regular shipments.

OPERATION COSTS

The proposed costs per ton of mining and developing ore for shipment

OPERATION COSTS

The proposed costs per ton of mining and developing ore for shipment from open pit operations is estimated at \$3.00 per ton. Trucking costs to rail head for 25 miles of dirt road \$3.00. Rail transportation cost from Ashurst, Az. to El Paso, Texas, estimated at \$4.00 per ton. Estimated smelter treatment charges at \$4.00 pr. ton of ore. Administrative ~~xxx~~ costs 50¢ per ton of ore. Supervising engineer and/or geologist in charge of all operations \$1,000 per month, plus expenses. All other labor costs are absorbed in the estimated per ton costs. The Arizona Industrial commission requires a cash deposit on labor and the compensation fund estimated at \$1,000.

Cost Breakdown per Ton

Mining operation cost -----	\$3.00	
Trucking costs to rail -- -- --	3.00	1.00
Rail freight to smelter - - - - -	4.00	.09
Smelter treatment charges- - - - -	4.00	.12
Administrative costs - - - - -	.50	4.00
Engineering costs - - - - -	-1.00	.05
General & Misc. expenses - - - - -	1.00	.20
Depreciation costs - - - - -	-	.25
	16.50	.50
Total expense per ton of ore - - - - -	16.50	6.25

Ore Return Per Ton

One (1) ton of 3% copper ore @ - - - - -	6.16	
Less operation costs - - - - -	16.50	35.00
Less 20% for smelter & total deducts - - - - -	7.00	
Total deductions	23.50	
		6.26
		23.50
		12.50

This operation is estimated to produce not less than 1,000 tons per month or an average of 5 rail dump gondola cars of 50 tons each per week and/or a car per day on a 5 day work week.

Estimated net profit per day - concentrates - \$12,500
 Rated 200 tons day net ----- \$1,598.00

University of Arizona

Mr. Ruskin Lines
Attorney-at-Law
Safford, Az.

May 21, 1956

Dear Mr. Lines:

In reply to your letter of May 15, the only information we have regarding the Cobre Grande Mine is given on pages 102-103 in the U. S. Geological Survey Bulletin 763, GEOLOGY AND ORE DEPOSITS OF THE SRAVAIPA & STANLEY MINING DISTRICTS, by C. P. Ross. This bulletin was published in 1925 and is now out of print, but copies may be seen in libraries. Regarding the Cobre Grande mine, it reads as follows:

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Another tunnel nearby cut ore also. A short distance down the slope is a caved tunnel reported to have been over 600' long, but to have encountered no ore. A few hundred yards to the west, on the other side of the mountain spur, is a shaft reported to have been 160' deep in which some ore was found. On the trail to the old camp is a partly caved tunnel reported to have been over 700' long. There are doubtless other excavations, but those enumerated are the principal ones."

"The deposits appear to have been first located in 1905 by Julius Riser and W. A. Clark. In recent years the owners have been Messrs. Snell, Elliott, Fisk, and Alderman of Globe, Az. Location notices of J. C. Sayers, dated 1/3/22, were posted on the property when it was visited. A carload of ore running about 8% of copper is reported to have been shipped to the Old Dominion smelter at Globe some years ago. Most of this ore came from the Cowboy tunnel."

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Sincerely,

Eldred D. Wilson, Geologist

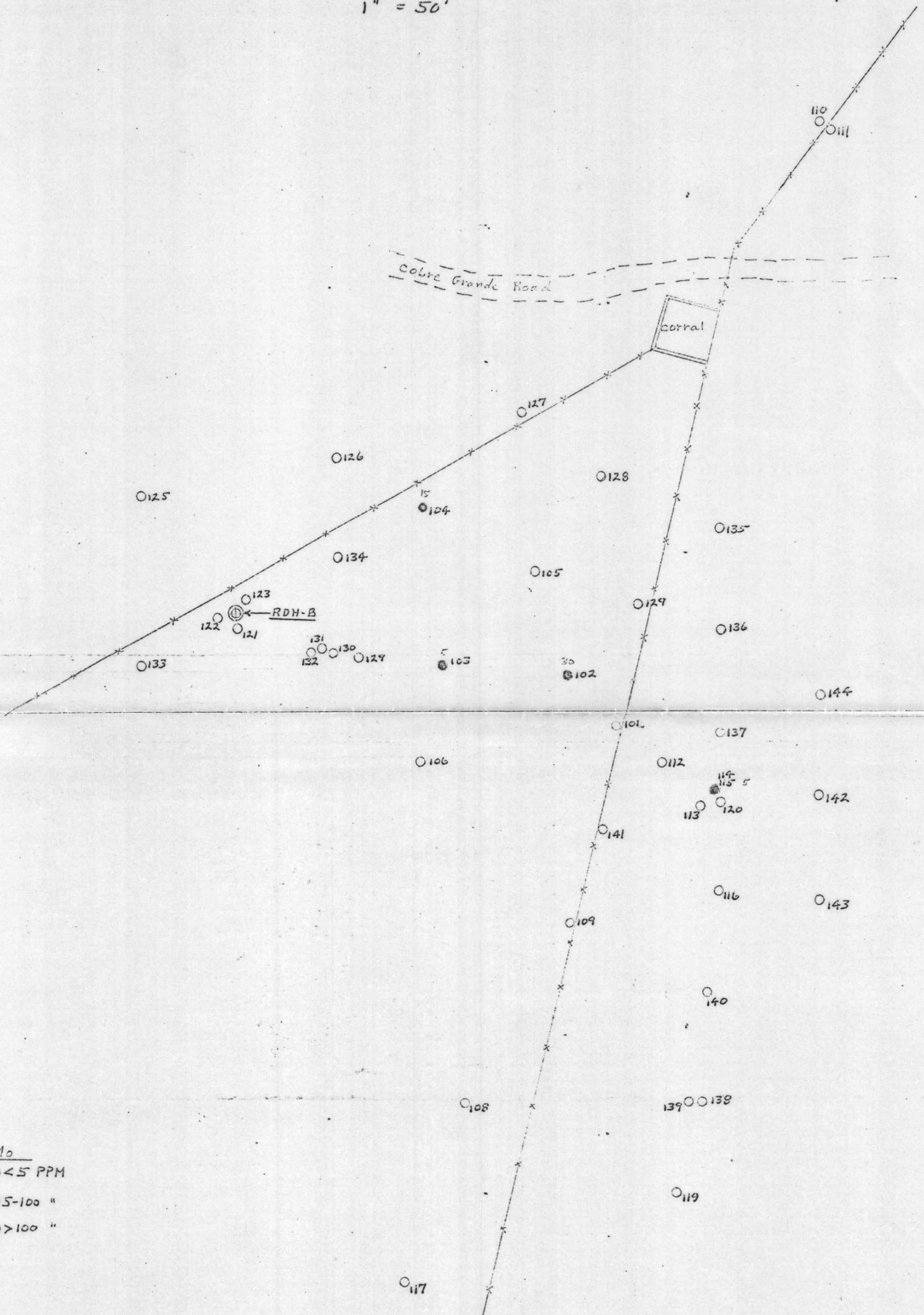
51/85/238 1000002

Cobre Grande
Graham Co.,
ARIZ.

Rotary Drill-"B" area - Geochemical Sampling

Hinton Moly Prospect

1" = 50'



Mo
 ○ < 5 PPM
 ● 5-100 "
 ● > 100 "

"Corral Hill" east half 'chula' 85
 (Sample numbers in black ink)

0107

0118

0117

0119

0139 0138

0108

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0142

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0115 5

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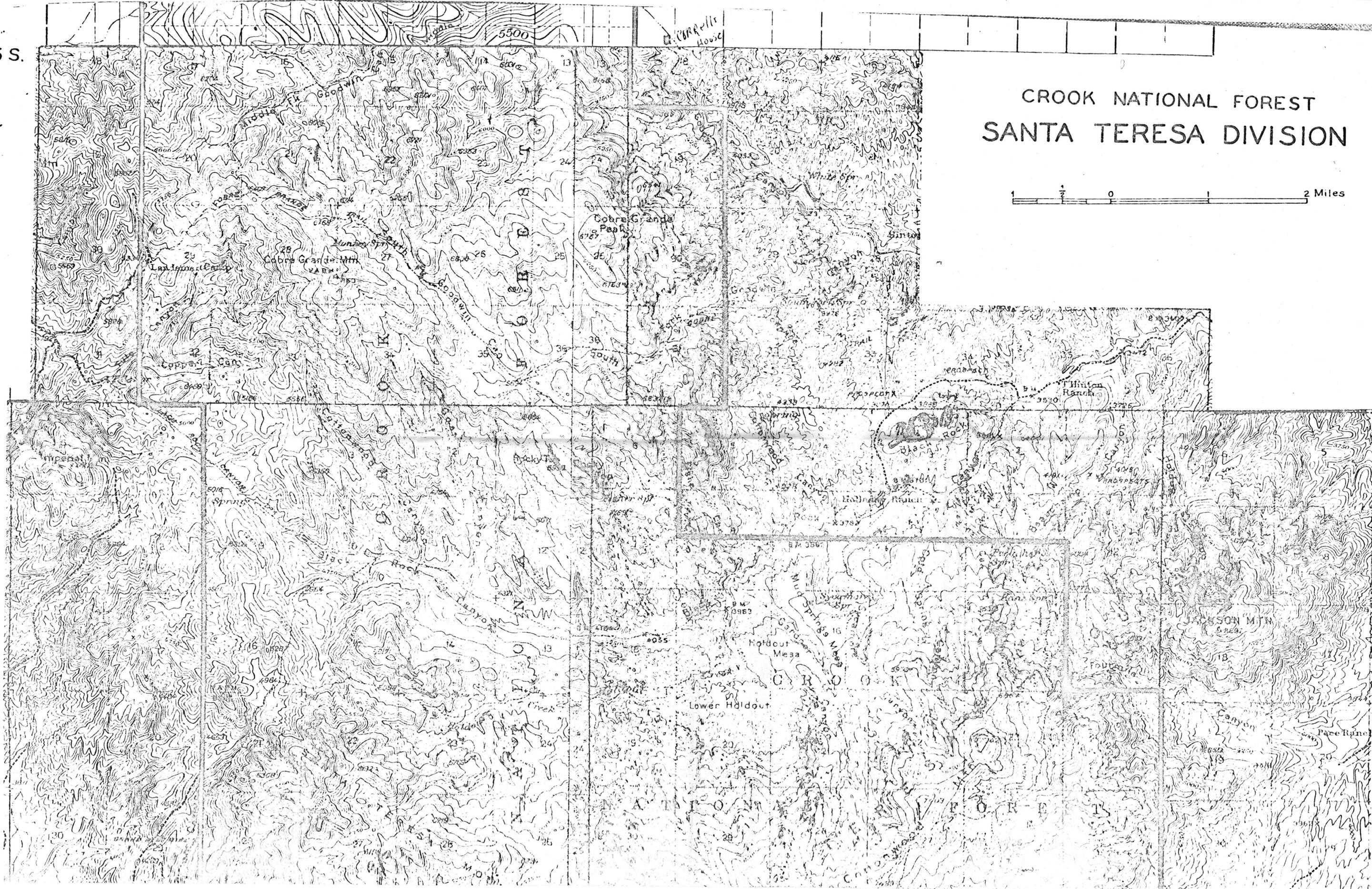
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CROOK NATIONAL FOREST SANTA TERESA DIVISION

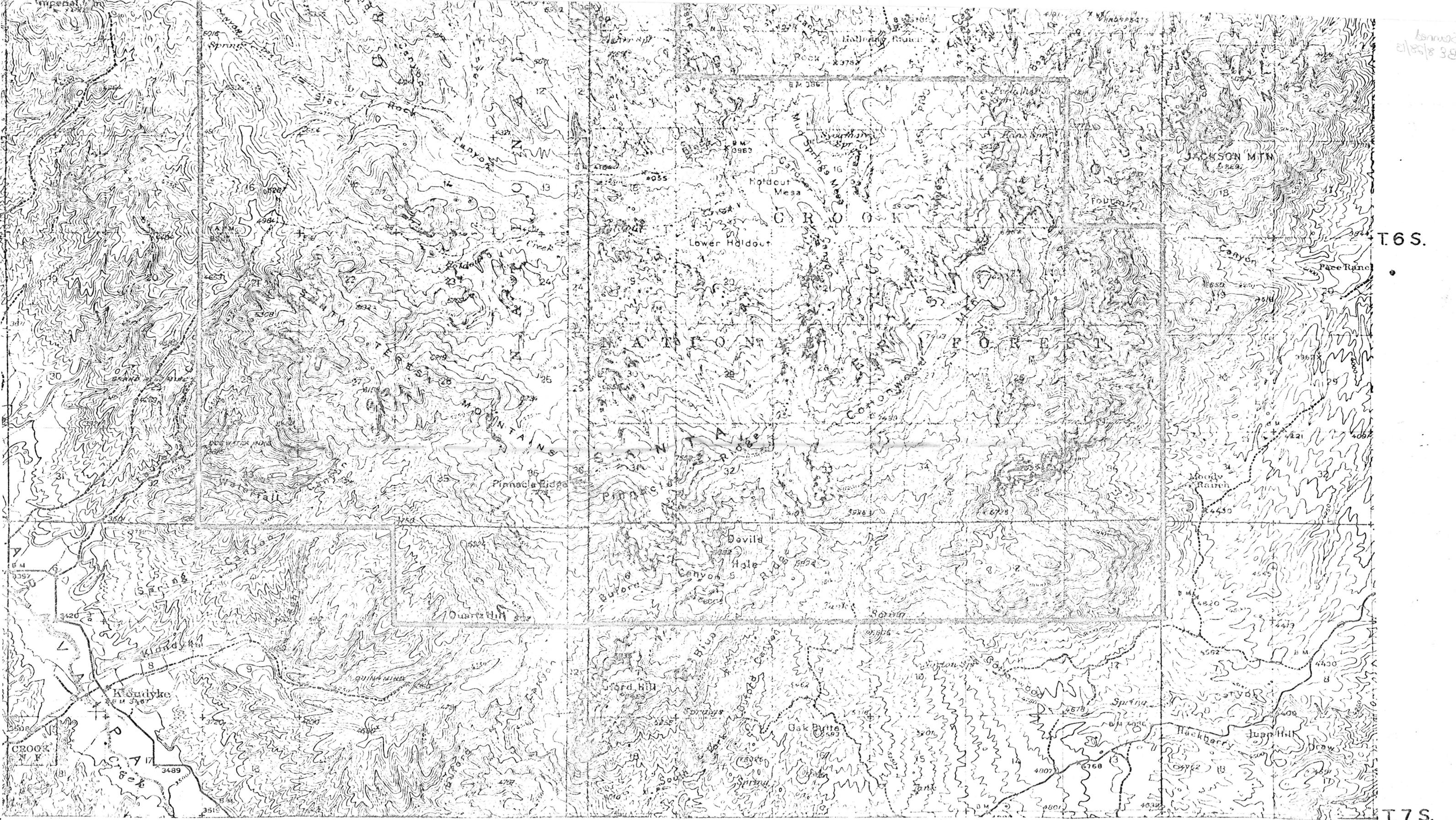


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R. 20 E.

R. 21 E.

T. 7 S.

Cobre Grande
Prospect
Graham to
1912

COUNTY: GRAHAM	COUNTRY:	STATE: Az.	NAME OF PROPERTY: Cobre Grande
DISTRICT OR AREA: Aravaipa - Stanley	METALS: Cu	ACCOUNT NUMBER:	NUMBER:
GENERAL DESCRIPTION: Replacement veins + bodies in Tornado limestone.		EXAMINED BY: Bob Helming DATE: SEPT 25, 1974	BRIEFED BY: DATE: STATUS:
TYPE OF DEPOSIT: limestone replacement		LOCATION: Sec- 21, 22, 27, 28 T. 5 S., R. 20 E. ELEVATION: 6600 ± FEET LAT: 33 N. LONG: 110° 15'	
GEOLOGY An erosional remnant or island of Paleozoic sediments is surrounded and underlain by granite of Cretaceous-Tertiary age. Ross identified the limestone as Carboniferous Tornado fm. The modern equivalent is Mississippian Escabrosa l.s. and perhaps the lower Horquilla. A fine-grained mineralized igneous rock is common and in one instance formed a dike occupying part of a mineralized zone in the limestone.		ACCESS: By very rough jeep road up South Fork Goodwin Canyon, southwest of Fort Thomas, Az.	
MINERALIZATION: Fairly wide spread gold to dark brown limonite w/ minor hematite occurs as coatings and weak disseminations in the f.g. igneous rock. Very locally there is abundant float of massive gossan type material. Strongly mineralized veins cutting the igneous rock and in places associated w/ igneous dikes formed skarn type mineralization where they encountered limestone. The mineralogy is described by C.P. Ross on the attached sheet. <u>over page</u>		DEVELOPMENT: A few old pits dating back to early 1900.	
PROPERTY & OWNERSHIP: Mr. John Hinton of Scottsdale, Az. Phone 937-2297 Information and access available through Ted Hinton of Fort Thomas, Az. Phone 485-2242		GEOCHEMISTRY:	
GEOPHYSICS:		AERIAL PHOTOGRAPHS:	
TOPOGRAPHIC MAPS: Klondyke 15' Quad.		MAPS & REPORTS: Ross, C.P.; 1925; Geology and Ore Deposits of the Aravaipa and Stanley Mining Districts; U.S.G.S. Bulletin 763	

MINERAL PROSPECT

ESSEX INTERNATIONAL, INC.

1704 WEST GRANT RD., TUCSON, ARIZONA 85705
PHONE (602) 624-7421

DEPOSIT DATA SHEET

BY: Bob Helming

DATE: 9/26/74

NAME OF PROPERTY: *Cobre Grande*

NUMBER:

REFERENCES:

PRODUCTION & RESERVES

SAMPLES:

METALLURGY:

ENGINEERING:

FACILITIES:

EXPLORATION POSSIBILITIES:

The very restricted occurrence of mineralization seems to preclude the discovery of any large replacement type copper deposit. The fine grained leucocratic igneous rock was only weakly mineralized and unaltered. White, milky feldspars were hard. There is no evidence to indicate

ADDITIONAL INFORMATION OR SKETCH MAP:

a deeper porphyry type target.

Mineralization: (continued)

Only surface exposures were examined on this brief visit therefore no sulfides were observed. Goethite oxidation products were abundant and varied in color from gold to black. The streak of the darker goethite was seal brown to coffee brown.

In all observed mineralized outcrops the contact between barren and mineralized limestone was very sharp. The barren limestone was essentially devoid of any megascopic alteration. This was surprising because the Escabrosa is known to be a good ore horizon in many skarn type deposits. One possible explanation is that the mineralizing solutions were controlled by pre-existing gouge and fracturing along a fault.

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Cobre Grande

NUMBER:

REFERENCES:

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University of Arizona

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Safford, Az.

May 21, 1956

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Sincerely,

Eldred D. Wilson, Geologist



ESSEX INTERNATIONAL, INC.

METALLURGICAL & MINING DIVISION

1704 WEST GRANT RD., TUCSON, ARIZONA 85705 • PHONE (602) 624-7171

July 24, 1973

Mr. A. Kosak
A-Bar-K Realty
P.O. Box 2043
Scottsdale, Arizona 85252

John Hinton
937-2297

Ted Hinton 485-2242
Fort Thomas, Az

Dear Mr. Kosak:

This will acknowledge your letter of July 14, 1973. I am sending a copy of your report on Cobre Grande Mining Claims to our geologist, Mr. Bob Helming, in Safford, Arizona with the anticipation that he may be able to visit the claims sometime this fall.

Our crews are quite occupied for the summer months but we would like to have a list of the available properties you have so that we can schedule for examination this fall any of them that might be of interest to us.

Best regards,

Paul I. Eimon
Manager of Exploration

ESSEX INTERNATIONAL, INC.

PIE:td

cc: B.H. Helming ✓



A. KOSAK
Broker

Off. (602) 253-6819
Res. (602) 947-4903

A-BAR-K

REALTY



2100 EAST TAYLOR STREET
PHOENIX, ARIZONA

P. O. BOX 2043
SCOTTSDALE, ARIZONA 85252

SXAM
JUL 16 1979 July 14, 1973
RECEIVED

Paul I. Eimon, Manager of Exploration
1704 West Grant Rd.
Tucson, Arizona - 85705

Dear Mr. Eimon:

Following your letter of January 8th, enclosed is a copy of John Hinton's report on the "Cobre Grande". He has the 100 claims, plus possibly another 100 in the Black Rock Mining District.

We have had received more listings on mines, and if your company has any interest at this time we would be glad to mail copies to you.

Evidently some are certainly of interest, as we had one geologist in from Montana who reviewed our prospects, and immediately made an appointment to see one yesterday near Globe, and another appointment today for one in the Dragons.

Sincerely,

A. Kosak - broker

P. S. If you think it would be more thorough we would be glad to bring our listings down for your inspection, as I do have to make a trip to Arizona City to put some signs up on land we have listed down there. Please let me know.

Report on the
Cobre Grande Mining Claims
and the
Mineral Hill Tunnel site Claim
in
Graham County, Arizona

by

Tom Beard

Consulting Mining Geologist

September 1956

Los Angeles, California

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Location of Property

The mining property and claims are located in the County of Graham, State of Arizona, in Township 5 South - Range 20 East Salt River Base and Meridian - in Sections 21, 22, 27, and 28 and further being situated in the Coronado and formerly the Crook National Forest.

The mine tunnel and dumps are at 6600 feet above sea level, with the apex cropping of the east-west strike rising to 6,800' elevation.

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Accessibility and Climate

Property is available throughout the year, and lies some 9 miles east and west of the Will Hinton cattle ranch, of which 4 miles of road have been installed, with the remaining 5 miles to be yet constructed. This last 5 miles can all be made with an D-8 Caterpillar angle dozer and road grader - in this 5 miles are two places which basic rock of limestones and granites are in place structure, and it will be necessary to dynamite and use rock breaking equipment for a total distance of 125 yds. in one section and a distance of 25 yards in another section of the proposed road. The mine lies 25 miles south of the Southern Pacific Rail, from the small town of Fort Thomas, Arizona - The property is 45 miles westerly of Safford, Arizona, the county seat, and the supply and hub of commercial activities. U. S. Highway #70 serves both Safford and Fort Thomas, Az.

Two through trains from Phoenix to Globe to Lordsburg, N. M., and El Paso, Texas, serve the area daily. Two flights daily connecting with international terminals have offices at the Safford Municipal Air Field, which affords planes of commercial and civilian status all accommodations of major facilities. All interstate bus and truck lines run regular schedules over Highway #70.

STATUS OF TITLE

Mr. John Hinton of Fort Thomas, Az., is the owner, purchaser and locator of the Cobre Grande Mining Claims numbering from one to six (1 - to 19) inclusive, situated in the Aravaipa Mining District, in Cobre Grande Mountain on the slopes of the Santa Teresa Mountain Range of Graham Co., Az. Legal record shows a quit claim deed from Norman L. Hancock and Dee Hill of Eden, Az., to John Hinton, Ft. Thomas, Az., on the 6th day of September, 1956, and shown as a matter of record in Docket 42, pages 280 and 281 indexed in Mine Deeds. Notices of location of lode mining claims of the Cobre Grande Group from 1-to-6 - dated Sept. 13, 1956 in Docket 42, pages 282-283-284-285-286 and 287 and indexed in Book of Mines.

Notice of location of the Mineral Mill Tunnel Site, dated Sept. 13, 1956 - Docket 42 page 353, indexed in Book of Mines. Made a matter of record in a Township Map and Claim Map combined by John Hinton - Docket 42 - page 437 in Book of Mines - numbered 3936 - Sept. 20, 1956. These claims are held under possessory title from the United States Govt. They are located on surveyed U. S. Government lands and conform as nearly as practical with the U. S. public land surveys and the rectangular subdivision of such surveys. The Mineral Hill Tunnel site was made under the federal mining laws, Section 2323 Revised Statutes, and constitutes 200 acres more or less - and is held under the procedures of this revised statute, and-is-shown-as-a part of the mining laws of Arizona. The above notices - records - maps, etc., are made a matter of record in the Granam County Court House, Safford, Az.

History

Because of the poor accessibility to the Township as a whole, the area has had little exploration and development. The writer has nothing in the way of production records to show past shipments made, and when and to whom. Reports from old mining men by word of mouth report that at the turn of the century a mining man responsible with early development of the mines of Miami and Superior, Az., sold out his interest at the turn of the century, and prospected and claimed and developed some 300' of tunnels, raises and winze represented in this mine.

The ore from this operation was put on mules and burros and shipped to an unknown destination. It is reported this ore averaged 13% in copper with fair values in gold and silver. The writer has checked this report with sampling on the tunnel and open pit cuts and finds such values die and still do exist in commercial quantities, as evidenced by assay sheets attached. The forest service and cattlemen have maintained horse trails and foot paths used for erecting fence lines over the years. It is reported by good source of information that over the years the Hinton family and others have kept this present trail cleared and for over 30 years Mr.

Landsman walked each year to the mine and cleaned the trail and path and did hand work on the tunnel and put in some open cuts to further explore the mineralized areas.

TOPOGRAPHY

The mining properties discussed in this Report are a part of the Southern Arizona Rockies, and lie in what is known as the Mountain Region or Mexican Highlands, which constitutes a section of the Basin and Range Province. These deposits are located on a pediment that is a northwestward projection of the Santa Teresa Mountains. The terrain is highly faulted with uplifts and sheer wall systems combined with folding and trenching of the rugged mountain range province.

This type of complex structuring was probably due to the major late tertiary volcanics. The range trends northerly to the local area of the San Carlos Dam, thence a slow southerly faulting system which grades down in sedimentary movements to the lower pediments and forming the Regional drainage system of the area into the Gila and San Pedro Rivers.

Fine trees, scrub oak, together with mesquite, greasewood, and paloverde and cactus are common vegetation, with ocotillo and catsclaw on the low desert ~~benches~~ benches.

Where the fault and contact zones combine together, the water table is relatively shallow, which has been evidenced by creating water at depths not to exceed 100' for domestic purposes, and by shallow excavating for spring water for cattle use within a few hundred yards of the general mine area. Many natural springs and seepage areas are scattered through the township in which this report has reference to.

GEOLOGY

The Santa Teresa Range consists of many series of unconformities from faulting and displacement related to the volcanic epic of the tertiary times. Two systems of fracturing and faulting occur in this district. The first system is a north east strike, which consists of the pre-mineral conditions, and in which the major ore depositions are

confined. There seems to be a second system of port mineral fracturing that is striking northwest and is faulting the veins and the secondary replacement zone in limestone. The main tunnel reflects the chalcopyrite replacement of the limestone where folds occur and the impervious volcanic rock has afforded a condition of damming the solutions, creating rooms and traps in which there appears rich localization of copper ores.

The main ore system from the surface vein of the northwest structure is related to three types of deposition -- No. 1: that tabular replacement is occurring along the fault fissures: No. 2: that irregular replacements occur in the wall system and favor the carboniferous limestones, and creating an outward movement of mineralization ~~from~~ from the main depositional structure. This type of mineralization has been noted to 100' on each side of the major structure, and on the veins and beds. The third condition is related to the disseminated deposits, occurring in the diabase and quartzite, in which large bodies of medium grade ore appear to exist. Mineralization consists of pyrite, chalcopyrite and bornite with some azurite and malachite together with coatings on the wall structure of diopside. It is this writer's opinion that the rock formation consisting of paleozoic limestones and sediments, quartzites-shales and conglomerates are lying on a basement of complex structure which is unknown at this time as there are no developments to depth to denote this formation, however this structure has been intruded by the diabase and granitic rocks, which have prepared the way for mineral replacement within the structural limits referred to in this report.

The mineralized zone follows the trend of the intrusive rocks, and both intrusives and mineralization are coincident with a main regional axis of uplift along which paleozoic sediments have been raised, folded and distorted with relation to the volcanics that flank the uplifted block. The general area within this Township and the adjoining Township 19, reflects the same occurrences depositionally as is recorded here, in which

the Stanley Butte, and Deer Creek area of western Graham County depict the top of the Gila conglomerate lying above the Dacite flows, under which is the whitetail conglomerate, thence into the cretaceous sandstone, shale, and overlying andesitic volcanic rocks of the Deer Creek Basin which is some 3 miles northerly and westerly of this area.

Approximately 1,500' westerly along the mineralized zone from the tunnel, there is an occurrence of a quartz-diorite porphyry dike which cuts the mineral zone and is a thick sill which has almost a vertical structure. An open cut referred to on the accompanying map, and butting against the overlying sediments shows high values in copper, gold, and some silver. This cut some 16' wide and 5' deep and 10' long is the only workings going westerly on the mineral-zone which has a strike of north 65° degrees west. The dike cuts north 10 degrees east across the mineral zone. Surface examination farther west on the ore producing anomaly reflects good mineralization relative to the removal of the overlying limestone capping, which could vary from 20 to 50' before contacting the ore zone. It appears to the writer that the limestone replacement of chalcopyrite ore was related to the mineralizing solutions having traversed the limestone bedding, and depositing high values in copper, gold, and silver in the localized areas of contacts. There is continued ore deposition of lower grade along the entire 2000' of exposed mineralization, which in turn was the emanation of the fissuring from the transverse strike, with the solutions having been crudely selective, in working out a variety of beds along the minor fractures and folds so that the sulphide ore occurs as irregular masses, distributed through the partly garnetized limestone.

The general rule the writer has found from inspection of the area is that surface indication of the clusters of garnet, associated with diopside and tremolite, in the limestone and altered sediments is evidenced of copper bearing mineralization at not too great depths. Relative to ore indication at surface, it is indicated from the present workings in

the tunnel that as the mineral zone gains in depth, the width of the ore bearing zone becomes greater. The greatest ore bodies are reached at the 2,500' level in the Magma Mine at Superior, Az., where the main shot is 30 to 40' wide.

The traverse conditions of the mineral zone in its easterly and westerly course has played a major part in the formation of the massive andradite during the epoch of replacement, and it is my opinion that the associated minerals of diopside, tremolite, epidote, accompanied by pyrite, magnetite, chalcopyrite and some sphalerite were simultaneous in their occurrence as sulphides and not introduced at later periods. Such an occurrence of complex minerals creates a depositional condition in which the basic character of the original rocks have been altered to the complexity of the present types of replacement minerals that are found in this deposit ranging from oxides, sulphides, carbonates and sulphates.

In conclusion and genetically speaking, the writer suggests so far as present evidence appears, that the copper zone of mineralization occurred independently of the main porphyry mass of granites of the Santa Teresa Range from which the Cobre Grande Pediment radiates, and is particularly associated with dykes which were highly charged with magmatic waters.

Estimated Ore

In order that as near a true estimate be made of immediate tonnage available, the writer has taken the tunnel workings at the floor level and has taken the width of the face that shows in a north drift from the main tunnel which emerges into a large room, which has a wide raise from the floor of the drift, and has taken the westerly length of the strike to the open cut designated on map and estimate the depth at 100' from present tunnel depth which is conservative, allowing for the surface alteration of limestone cappings.

The overall estimate is 1,500' long - 20' wide and 100' deep, with the rock figured at 12 cubic feet to the ton, it would appear that there is some 125,000 tons of commercial grade ore, with an overall average of 5%

copper, .05 gold, and .50 to 1 ounce of silver.

Extending the known further width of the ore mineral zone to 50' and to the known length of 2 claims or 3,000' in which copper mineralization outcrops and taking 200' in depth which is proven from the tunnel and dump exit to the apex of the easterly and westerly strike along the mineral zone, which would show some 2,500,000 tons of copper ore that from the writer's opinion will be good grade of milling ore, with the metalurgy for treatment still to be determined.

Should this Cobre Grande periment be equivalent to its name, the tonnage of copper ore could be in unknown millions of tons, and could be comparable to Miami, Superior and Morenci if development and exploration work is projected into active operation.

METHOD OF OPERATION

The removal of ore from this deposit can be operated as an open pit mine. The known width of higher grade ore with average of 5% copper content can be selectively mined by shooting the waste and lower grade ores and creating a stock pile of future milling material, and taking the 8 to 20 foot width of shipping grade ores. This type of operation is available for wagon drills for deep blasting either in volume or in a slective handling of ores. Movement can be done with power shovels and loaded onto heavy duty trucks for trucking to rail head. Removal of overburden to expose the ore zone can be accomplished with either D-6 or D-8 Caterpillars or with any type of Dozer equivalent to these machines mentioned.

The area topographically speaking ~~xxxx~~ is ideal for stock pile of ore and disposal of waste as the zone of mineralization is the apex of the pediment, with a long extended faulted trough on the north extremity, which has a 300° sheer dip into the trough, that leads into a major canyon where a fault alters its direction to a northerly course of travel. The westerly end of the pediment shears off into a north south extending canyon with a northerly dip into the Deer Creek area, and acts as relief for the western area of the Township. This type of topography is typically suitable

for an operation as is presented here in that there is disposal room for millions of tons of waste materials and possible future tailing dumps. Power for stationary machinery and domestic purposes must be developed by generators for electric power. Fuel storage will be necessary for continued operations. Purchasing under contract in all departments can be arranged f.o.b. mining operations.

IMPROVEMENTS

Facilities for housing have been built from logs taken from native timber - The years have deteriorated the two buildings and they need 60% repair. The mine portals needs about 2 square sets to make safe mining and hauling ore from underground. The track is installed to the face of the ore a distance of some 200', and has a 1,200 pound ore car that is in good condition. Native timber can be cut for varied uses in the mining operations, or to further maintain the present improvements.

MARKETING ORE

The ore that has been developed, and the possibilities of future developed ore in excess of the ore tonnage now estimated is a good smelting type of copper rock. Such ore that is acceptable from the point of low penalties and good silica content is in demand under good contracts from smelters, in Arizona and in El Paso, Texas.

The writer suggests the American Smelting and Refining Company at El Paso, Texas to handle the ore from this deposit, as the proposed road leads to the nearest railhead, and the freight rate onto El Paso would be less than the dirt road haul to Hayden, and the Miami plant is not accepting custom ore. Excellent loading ramp facilities are to be had at the siding at Ashurst, Az., and is 25 miles distant from the mine location. The regional ore buyer, Mr. Reed Welch, is located in Tucson, Az., for A. S. and R. and could be consulted relative to contracts on regular shipments.

OPERATION COSTS

The proposed costs per ton of mining and developing ore for shipment

OPERATION COSTS

The proposed costs per ton of mining and developing ore for shipment from open pit operations is estimated at \$3.00 per ton. Trucking costs to rail head for 25 miles of dirt road \$3.00. Rail transportation cost from Ashurst, Az. to El Paso, Texas, estimated at \$4.00 per ton. Estimated smelter treatment charges at \$4.00 pr. ton of ore. Administrative ~~xxx~~ costs 50¢ per ton of ore. Supervising engineer and/or geologist in charge of all operations \$1,000 per month, plus expenses. All other labor costs are absorbed in the estimated per ton costs. The Arizona Industrial commission requires a cash deposit on labor and the compensation fund estimated at \$1,000.

Cost Breakdown per Ton

Mining operation cost -----	\$3.00	
Trucking costs to rail -- -- --	3.00	1.00
Rail freight to smelter - - - - -	4.00	.09
Smelter treatment charges- - - - -	4.00	.12
Administrative costs - - - - -	.50	4.00
Engineering costs - - - - -	-1.00	.05
General & Misc. expenses - - - - -	1.00	.20
Depreciation costs - - - - -	-	.25
	-	.50
Total expense per ton of ore - - - - -	16.50	6.25

Ore Return Per Ton

One (1) ton of 3% copper ore @ - - - - -	6.16	
Less operation costs - - - - -	16.50	35.00
Less 20% for smelter & total deducts - - - - -	7.00	
Total deductions	23.50	
		6.26
		23.50
		12.50

This operation is estimated to produce not less than 1,000 tons per month or an average of 5 rail dump gondola cars of 50 tons each per week and/or a car per day on a 5 day work week.

Estimated net profit per day - concentrates - \$12,500
 Rated 200 tons day net ----- \$1,598.00

University of Arizona

Mr. Ruskin Lines
Attorney-at-Law
Safford, Az.

May 21, 1956

Dear Mr. Lines:

In reply to your letter of May 15, the only information we have regarding the Cobre Grande Mine is given on pages 102-103 in the U. S. Geological Survey Bulletin 763, GEOLOGY AND ORE DEPOSITS OF THE SRAVAIPA & STANLEY MINING DISTRICTS, by C. P. Ross. This bulletin was published in 1925 and is now out of print, but copies may be seen in libraries. Regarding the Cobre Grande mine, it reads as follows:

"The Cobre Grande mine lies on the northeast slope of the mountain of the same name. It is 4 miles northeast of Arivaipa and 6 miles southeast of Stanley, measured in straight lines, and is accessible only by steep trails. The camp of the miners consisted of several tent houses and cabins, and about half a mile south of the main workings at a place where there was formerly a good spring.

The camp has been uninhabited for several years. The Cowboy tunnel, in which most of the ore has been found, winds around in an irregular curve a few hundred feet long; short drifts lead off it, and near the end stopes have been opened above and a winze about 40' deep below.

Another tunnel nearby cut ore also. A short distance down the slope is a caved tunnel reported to have been over 600' long, but to have encountered no ore. A few hundred yards to the west, on the other side of the mountain spur, is a shaft reported to have been 160' deep in which some ore was found. On the trail to the old camp is a partly caved tunnel reported to have been over 700' long. There are doubtless other excavations, but those enumerated are the principal ones."

"The deposits appear to have been first located in 1905 by Julius Riser and W. A. Clark. In recent years the owners have been Messrs. Snell, Elliott, Fisk, and Alderman of Globe, Az. Location notices of J. C. Sayers, dated 1/3/22, were posted on the property when it was visited. A carload of ore running about 8% of copper is reported to have been shipped to the Old Dominion smelter at Globe some years ago. Most of this ore came from the Cowboy tunnel."

"The Cowboy tunnel and the workings near it are all in the Tonornado limestone. The accessible part of the tunnel on the trail to the camp is in an altered fine-grained igneous rock, but the face is reported to have been in limestone. In the Cowboy tunnel, which is the only one where ore in place was accessible at the time of the visit, the ore is in irregular bodies in the limestone. In general the replacement followed the bedding. The gangue minerals include quartz, calcite, chlorite, epidote, garnet, specularite, and magnetite. The hypogene sulphides are pyrite, chalcopyrite, and a little galena. A little chalcocite is also present. There is scant evidence of oxidation in any of the ore."

Sincerely,

Eldred D. Wilson, Geologist

University of Arizona

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