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ADMMR

Arizona Department of Mines and Mineral Resources
1502 West Washington, Phoenix, AZ 85007 Phone (602) 255-3795
Toll Free in Arizona 1-800-446-4259 FAX (602) 255-3777

San Juan mine (f) Graham Co.

November 24, 1998

Tom Terry, Project Manager
Bureau of Land Management
711 14th Avenue
Safford, Arizona 85546
Attn: Dos Pobres/San Juan Mine Comments
Dear Tom Terry:

The Arizona Department of Mines and Mineral Resources supports the development of the Dos Pobres/San Juan copper mine.

We believe the Dos Pobres/San Juan copper mine can be developed and operated in a manner that will be safe for Arizona's environment, will produce a valuable basic raw material for society, and will be good for the southeastern Arizona economy. We encourage the Bureau of Land Management to continue the permitting process toward timely, economically sound, and environmental responsible development of Arizona's copper resources.

Copper produced from the Dos Pobres/San Juan Mine can reduce the use of copper from mines in countries with far less safe environmental practices. Production of mineral resources mined in the USA and Arizona is the most environmentally safe in the Western Hemisphere. As people improve their quality of life, upgrade or build new homes, factories, and businesses, and develop safer ways to produce and conserve energy they will use more copper. That copper should be produced by Arizona workers, under Arizona and US environmental oversight.

Sincerely:

Ken A. Phillips
Chief Engineer and Acting Director

SAN Juan mine(f) Graham Co

phelps dodge Safford Inc. P.O. Box 151, Safford, Arizona 85548 • (520) 428-0205 • FAX (520) 428-7827

October 12, 1998

Mason Coggin
Dept. of Mines and Mineral Reso
1502 W. Washington
Phoenix, AZ 85007

Dear Mr. Coggin:

You may have heard that Phelps Dodge Mining Company has been involved with permit activities for the Dos Pobres/San Juan Mine north of Safford, Arizona. An important milestone was reached in late September with the release of a draft Environmental Impact Statement (EIS). The U.S. Bureau of Land Management (BLM) issued the two-volume document in conjunction with other federal agencies in accordance with the National Environmental Policy Act. The comprehensive study is the basis for obtaining numerous state and federal environmental permits relating to the protection of water, air and other resources. The next step for the agencies is to gather public comments to include in a final version of the EIS. It is important that comments supportive of the project be part of the official record. A 60-day public comment period began on September 25.

Three public open houses have been scheduled by the agencies to gather comments on the EIS. The times and locations for these opportunities to comment are:

October 27	**October 28**	**October 29**
4:00 – 8:00 pm	4:00 – 8:00 pm	4:00 – 8:00 pm
BLM Safford Field Office	BLM Tucson Field Office	BLM Phoenix Field Office
711 14th Avenue	12661 East Broadway	2015 West Deer Valley Road
Safford, Arizona	Tucson, Arizona	Phoenix, Arizona

We invite you to drop in to at least one of these meetings and offer your comments on the EIS. The format is designed so that your visit can be as long or as brief as you desire. You may also send written comments directly to the BLM in care of Tom Terry, Project Manager, Bureau of Land Management, 711 14th Avenue, Safford, Arizona 85546, or you may comment electronically to him at tterry@az.blm.gov. The comment period lasts 60 days and ends on November 25, 1998.

We have enclosed some information that highlights the economic significance of this proposed world-class operation.

If you have questions for BLM, please call Mr. Terry at (520) 348-4400. If you would like to talk to someone from Phelps Dodge, please call (520) 428-0205. Thank you in advance for your participation.

This is a significant and encouraging development, but it is only one of many hurdles we must clear before the Safford Project becomes a reality. Actual operations could still be from two to five years away depending on the permitting process.

Sincerely,

Steve Eady

C.S. Eady
Senior Geologist

phelps dodge Mining Company

Safford Project Circular

Quick Facts

Description:	A proposed copper mining operation to develop the mineral resources of the Dos Pobres and San Juan deposits.
Owner:	Phelps Dodge Mining Company, a business division of Phelps Dodge Corporation.
Location:	Approximately eight miles north of Safford, Arizona, in the foothills of the Gila Mountain Range.
Property:	Approximately 20,000 acres of Phelps Dodge property with the right to operate on public land via a Mine Plan of Operations. However, under a land exchange alternative being considered by the Bureau of Land Management, the Company would acquire approximately 17,000 additional acres of federal public land adjacent to the property in a dollar-for-dollar exchange for about 3,900 acres of Phelps Dodge land at various Arizona locations.
Mine:	Two open pit mines: -- Dos Pobres – 4,200 feet diameter. Final depth 1,400 feet. – San Juan – 5,000 feet by 3,800 feet (oblong). Final depth 1,000 feet.
Ore:	626 million tons of ore averaging less than 0.4% copper; 385 million tons non-ore.
Process:	Mine for leach (solution extraction/electrowinning) with crushing and conveying systems.
Mining rate:	181,000 tons per day average.
Annual Production:	Up to 250 million pounds of 99.999 percent pure copper cathode.
Employment:	250 full-time employees earning an average $36,000 and benefits annually, and an additional 100 contract employees. Construction will require an average of 470 employees over a 15-month period. An average of an additional 275 indirect jobs will be generated by the project within the community.
Annual Payroll:	$9 million for PD employees and an additional $2.5-$3 million for contract employees. Construction payroll is estimated at $25 million.
Construction Cost:	Approximately $370 million, including engineering.
Sales/Tax Revenues:	-- $137.7 million state and local taxes over life of project. -- $282.5 million in federal income and payroll taxes over life of project -- $13.1 million by employees over life of project. -- Increased tax revenues to Graham County and local cities and towns estimated at $3.6 million annually.
Mine Life:	Approximately 16 years.
Startup:	Dependent on permitting, with estimates ranging from two to five years from publication date of draft Environmental Impact Statement (9/98)
Information:	Call or write the Phelps Dodge Safford office, (520) 428-0205, 625 Main Street, P.O. Box 151, Safford, AZ 85548.

phelps dodge Mining Company

Safford Project Circular

Overview of the Safford Project

The Safford Project is a proposed copper mining operation located eight miles north of Safford, in southeastern Arizona. The project will develop the mineral resources of the Dos Pobres and San Juan deposits, enhancing the area's economy and producing copper needed to make many of the items essential to daily life. Project planning, which started in 1993, took a significant step forward in September 1998 with the release of a Draft Environmental Impact Statement (EIS). That document was completed by federal agencies in accordance with the National Environmental Policy Act. The next step for the agencies is to gather public comments to include in a final version of the EIS. Key information about the project is listed below.

PROCESS

- The project will combine open pit mining and solution extraction/electrowinning (SX/EW) technologies and will include a rock-crushing and material handling system, and infrastructure and support facilities. This SX/EW process is smelter-free, uses modern, proven technology, and yields a 99.999 percent pure copper product for use in the manufacturing and electrical industries. The project will produce up to 250 million pounds of copper annually at world competitive costs for approximately 16 years.

SCHEDULE

- Construction of the plant and mine facilities will require approximately 15 months to complete and may start upon completion of the Project's permitting requirements. The mining operations phase, which would likely begin sometime three to five years from now, is currently expected to last 16 years.

JOBS & ECONOMY

- About 250 full-time workers will be employed when the mine is fully operational. Those workers will earn an average of $36,000 annually. This workforce, meanwhile, will be supplemented by local area businesses which will provide services on a contract basis with a payroll of $2.5 to $3.0 million annually (representing about 100 additional jobs). An average of an additional 275 indirect jobs will be generated by the project within the community. Over the project's life, local expenditures for goods and services will reach in excess of $100 million, and some $3.6 million will be added annually to tax revenues of Graham County and its local cities and towns, supporting local government and education.

ENVIRONMENT

- The Safford Project will adhere to all applicable environmental regulations and will protect air and water resources. Our promise, from construction and operation through eventual reclamation of mined land, is to be a responsible natural resource developer and member of the community.

- The processing system is designed to conserve water. Impacts to the surrounding environment will be minimized. Water for mining will come from wells in bedrock aquifers located on Phelps Dodge property, and will be recycled and retained on the property.

- Phelps Dodge would have the right to operate on public land via a Mine Plan of Operations (MPO). However, the Bureau of Land Management is considering a land exchange in which the public would receive 3,858 acres of environmentally valuable and sensitive lands, including riparian habitat, wetlands, conservation areas and property adjacent to wilderness areas in exchange for approximately 17,000 acres of less valuable, creosote-dominated desertscrub land adjacent to Phelps Dodge's existing approximately 20,000-acre tract at Safford. The overall public interest would be better served by a land exchange than an MPO. Phelps Dodge would own the land where it would operate under strict State and Federal environmental regulations. The public would own other, more valuable land which has historic significance, scenic beauty, diverse wildlife, recreational and other natural benefits. ❖❖❖

phelps dodge Mining Company

Safford Project Circular

Economic Benefits

The positive economic impact of the Safford Project on Graham County, its cities and towns, and area businesses and residents will be substantial. This circular describes how the area will benefit economically from the project.

CURRENT SITUATION

- Graham County had a Civilian Labor Force of 11,425 in 1996, of which about 1,100 or about 9.7 percent were unemployed. In the most recent Census Data available (1990), the median household income in the county was approximately $3,600 below that of Arizona as a whole. On the more positive side, about one-third of Phelps Dodge employees who work in neighboring Greenlee County already live in Graham County and, like mining employees overall, earn salaries above that of the average Arizonan. This project will create additional Phelps Dodge employment opportunities for local residents, and opportunities for local businesses to provide goods and services to the company, or otherwise receive direct or indirect economic benefits.

FUTURE JOBS

- The project will employ approximately 250 workers earning an average of $36,000 per year plus benefits over the project's anticipated 16-year life -- about 80 percent of whom will be hired from Graham or Greenlee counties. Salaries, over 16 years of operation, will total about $144 million.

- A contract payroll of $2.5 to $3.0 million annually will provide jobs for another 100 workers. Over the life of the project, the contract payroll will amount to about $44 million.

- An average of an additional 275 indirect jobs will be generated by the project within the community.

- Although it may be several years before the project begins hiring for operations, there will be job opportunities during the 15-month construction phase. An average of about 470 workers are expected to be employed during this period (with a jump in employment during the peak eight months of construction). Phelps Dodge expects contractors will award about 40 percent of the jobs included in the $25 million construction payroll to residents of Graham and Greenlee Counties.

OTHER BENEFITS: TAX REVENUES, LOCAL EXPENDITURES AND COMMUNITY CONTRIBUTION

- Currently, only about 7 percent of the 3 million acres of land in Graham County are taxable. With the addition of this project, the County (along with local cities and towns) will receive $3.6 million per year in tax revenues that it does not receive today. Other tax impacts (over the life of the project) will include nearly $138 million paid by Phelps Dodge in state and local taxes and just over $282.5 million in federal income and payroll taxes. Approximately $13 million in additional state and local taxes will be paid by Phelps Dodge employees. Local expenditures for goods and services, meanwhile, will exceed $100 million.

- The project could help bring 145 new households to Graham County as a result of direct and indirect employment.

- Communities around the Safford Project already benefit from Phelps Dodge's community involvement and contributions program, and from the many Phelps Dodge employees who already live in the community. Once hiring begins for the Safford Project (which may be several years from now), Phelps Dodge will continue to encourage its employees to volunteer and contribute financially to their communities (that is, through matching gifts programs, community giving campaigns in the workplace, involvement in civic organizations, and other support). ❖❖❖

phelps dodge Mining Company

Safford Project Circular

Quick Facts – Economic Benefits

Construction Cost: Approximately $370 million, including engineering & payroll.

Construction Payroll: Approximately $25 million over a 15-month period.

Jobs: 350 direct (250 PD and 100 contractor), 275 indirect.

Annual Payroll: $9 million for PD employees and an additional $2.5-$3 million for contract employees during operation.

Tax Revenues:

$ 54.2 million	local property taxes
$ 5.9 million	state & local sales taxes
$ 53.3 million	state income taxes
$ 31.0 million	state severance taxes
$ 6.3 million	state & local construction taxes
$150.9 million	TOTAL STATE & LOCAL TAXES GENERATED
$282.5 million	FEDERAL INCOME & PAYROLL TAXES

Taxes Returned to Local Community: $57.6 million (estimated).

Mine Life: Approximately 16 years.

Schedule: Startup dependent on permitting, with estimates ranging from two to five years from publication date of draft Environmental Impact Statement (9/98).

Information: Call or write the Phelps Dodge Safford office, (520) 428-0205, 625 Main Street, P.O. Box 151, Safford, AZ 85548.

SAFFORD COPPER MINE (F) GRAHAM CO. SAN JUAN (F) GRAHAM CO.
LONE STAR GROUP (F) GRAHAM CO

Bureau of Land Management · Arizona

Update: Phelps Dodge Mining Plan of Operation

August 1996

Summary:

Phelps Dodge Corporation, a mining company, has submitted a Mining Plan of Operation to BLM which outlines their intended use of public lands adjacent to their mining properties near Safford, Arizona. As an alternative of the Mining Plan of Operation, Phelps Dodge has proposed a land exchange in which Phelps Dodge would acquire approximately 15,000 acres of public lands (selected land) adjacent to their existing Dos Pobres, San Juan, and Lone Star properties located near Safford. In exchange, BLM would acquire approximately 3,000 acres of privately held land (offered land) occurring in four parcels located in Graham, Cochise, Santa Cruz and Pima counties.

Background:

Phelps Dodge Mining Company, the mining and metals division of Phelps Dodge Corporation, is one of the world's largest producers of copper and continuous-cast rod. In the United States, Phelps Dodge Mining Company operates three open-pit copper mines, three concentrators, three solution extraction/electrowinning plants and two smelters.

Phelps Dodge is seeking to utilize and consolidate its land holdings within and adjacent to their existing Dos Pobres, San Juan and Lone Star properties. Phelps Dodge intends to use a portion of the selected land to support and expand mining-related operations, with the remainder used for site security and environmental buffers. Through the exchange, BLM has the opportunity to acquire lands containing important natural resources and other values which would meet desired management objectives.

The proposed exchange is consistent with BLM's Safford District Resource Management Plan (RMP), which identifies the selected lands for potential disposal. The offered lands are located within three Long-Term Management Areas (LTMAs) identified by the RMP.

BLM will prepare an Environmental Impact Statement (EIS) to analyze the mining plan of operation and the exchange alternative. Also included in the EIS study, will be an application under the Clean Water Act for a Section 404 permit.

Current Status:

Three public open house meetings will be held during September 1996, in Safford, Phoenix, and Tucson to provide information to the public concerning the proposed mining plan of operation and exchange. A Draft Environmental Impact Statement will be published in April 1997. The Final EIS will be prepared and distributed to the public in November 1, 1997. A Record of Decision will be published in January 1998.

BLM Position:

BLM has authority to approve the proposed land exchange under Section 206 of the Federal Land Policy Management Act of 1976, after considering whether the exchange will 1) provide the opportunity to achieve better management of federal lands; 2) meet the needs of state and local residents and their economies; and 3) secure important objectives, including but not limited to, protection of fish and wildlife habitats, cultural resources, watersheds, and wilderness and aesthetic values. After careful analysis and consideration, which includes the preparation of an EIS, the BLM will be in a position to finalize its decision.

Contact:

Carol Kershaw, BLM Arizona State Office
602/650-0235

Denise Meridith, BLM Arizona State Director
602/650-0500

Safford Copper Mine (+)

SWCA INC. ENVIRONMENTAL CONSULTANTS
343 South Scott Avenue • Tucson, Arizona 85701
(520) 325-9194 • FAX (520) 325-2033

San Juan Mine (+)

October 4, 1996

Richard Beard
AZ. DEPARTMENT OF MINES AND
MINERAL RESOURCES
1502 W. Washington
Phoenix, Arizona 85007

RE: ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED DOS POBRES/SAN JUAN MINING PLAN OF OPERATIONS AND SAFFORD LAND EXCHANGE PROJECT

Dear Mr. Beard:

I am writing to you on behalf of the BLM as part of their public scoping efforts for the above-referenced project. To ensure that adequate coordination efforts are made with both state and federal agencies such as yours, I am following up on an earlier notice (a BLM press release) about the project that was sent to your agency in August 1996.

The proposed project being analyzed in the EIS is described in the enclosed information sheet, with attached comment sheet and maps showing the locations of the lands proposed for mining and the lands proposed for exchange. This information was provided at the scoping meetings which were held on September 5, 10, and 11, 1996, in Safford, Tucson, and Phoenix, respectively. Please note that we had contacted your agency previously in December 1994, when the proposed project was a land exchange only. Since that time, however, the project has evolved into a Mining Plan of Operations with a land exchange alternative, with BLM as the lead agency and the Army Corps of Engineers as a cooperating agency in preparing the EIS. BLM is rescoping the project due to the significant changes in the Proposed Action.

As noted on the information sheet, the current public scoping period ends on October 12, 1996. If you have comments or concerns about the project, we hope you will submit them to the BLM address on the comment sheet as soon as possible. Should you have any questions about the project or the environmental review process, please feel free to contact me (Project Manager for the BLM's Third-Party contractor, SWCA, Inc., Environmental Consultants) or Mr. Tom Terry, BLM's Project Leader at (520) 428-4040.

Sincerely,

Tina Lee
Project Manager

cc: T. Terry, BLM, Safford DO w/o encl.
M. Blaine, COE, Tucson FO w/o encl.

INFORMATION SHEET
Safford Land Exchange and Dos Pobres/San Juan Mining Plan of Operations

What is the Safford Land Exchange and Dos Pobres/San Juan Mining Plan of Operations project?

Phelps Dodge Mining Company (PD) is planning to develop the Dos Pobres and San Juan copper ore bodies which are located primarily on private lands owned by PD. PD seeks to either acquire additional public lands in the vicinity of these ore bodies through a federal land exchange or utilize them for mining purposes as allowed under the General Mining Law of 1872. As part of the proposed exchange, PD also seeks to consolidate its existing land holdings in the Safford Mining District in support of long-range planning activities.

To this end, PD has submitted two proposals to the Safford District of the Bureau of Land Management for their consideration and action. The first is a land exchange to acquire approximately 17,000 acres of public lands adjacent to and surrounding PD's existing Dos Pobres, San Juan, and Lone Star properties. The second is a Mining Plan of Operations (MPO) to use a portion of the public lands that are proposed for exchange for mining and mining-related uses for development of the Dos Pobres and San Juan ore bodies.

Where is the project located?

The approximately 17,000 acres of public lands that Phelps Dodge has selected to acquire through the proposed land exchange are located northeast of Safford, Graham County, in the foothills and bajadas of the Gila Mountains. A portion of these lands, roughly 5,000 acres, is also identified for mining development in the MPO. The location of both the public lands selected for exchange (called selected lands) and the lands identified for mining is depicted on the display boards.

The approximately 5,200 acres of private lands that Phelps Dodge is offering to the public for the exchange (called the offered lands) are located in Graham, Pima, Cochise, Santa Cruz, Yavapai, and La Paz counties, in areas that the BLM would like to maintain its long-term management presence. Seven of the 14 offered properties comprise the base package of offered lands. The remaining seven properties are optional, that is, any combination of these properties could be added to the base package as necessary to equalize the appraised values of the offered and selected lands.

The locations of both the base and optional offered lands are identified on the meeting display boards. Detailed maps of the selected and offered lands will be provided in the draft Environmental Impact Statement, a document described later in this pamphlet.

Why is the BLM considering this proposed project?

The BLM considers land exchange proposals on a case-by-case basis. The BLM is authorized to complete land exchanges under Section 206 of the Federal Land Policy Management Act (FLPMA) of 1976, after considering whether the exchange will 1) provide an opportunity to achieve better management of federal lands; 2) meet the needs of state and local residents and their economies; 3) secure important objectives, including but not limited to, protection of fish and wildlife habitats, cultural resources, watersheds, and wilderness and aesthetic values; and 4) comply with the Safford District Resource Management Plan, as amended.

For the mining component of the project, there are several federal laws and regulations that allow PD to exercise their mining rights through a BLM-approved MPO: the Mining Law of 1872, the Mining and Minerals Policy Act of 1970, the Federal Land Policy Management Act of 1976, and the National Materials and Minerals Policy Research and Development Act of 1980.

(Continued over ☞)

What is the National Environmental Policy Act (NEPA)?

NEPA is an Act passed by Congress in 1970 that requires public review and involvement in the analysis of potential environmental impacts that would result from a federal action. The land exchange, BLM's authorization of the MPO, and the U.S. Army Corps of Engineers' issuance of a Section 404 permit (described below) would be federal actions subject to NEPA. NEPA requires that the impacts resulting from the land exchange and mining under the MPO be disclosed to the public through a public environmental document, such as an Environmental Impact Statement (EIS). Preparation of an EIS is the responsibility of the federal agency making the decision (in this case, the BLM), with the U.S. Army Corps of Engineers participating as a cooperating agency.

What is the U.S. Army Corps of Engineers' role in this project?

The U.S. Army Corps of Engineers (COE) administers the Clean Water Act Section 404 permitting program in Arizona. Congress enacted the Clean Water Act to "restore and maintain the chemical, physical and biological integrity of the Nation's waters." Section 404 of the Clean Water Act regulates the discharge of dredged or fill material into waters of the U.S. and establishes a permit program to ensure compliance with environmental requirements.

Because some of the washes that traverse the lands that PD plans to mine are likely to be considered waters of the U.S., PD is required to obtain a Section 404 permit from the COE in order to implement the mining activities proposed in the MPO. Prior to issuing this permit, the COE must also analyze potential impacts of these activities and is a cooperating agency with the BLM in preparing the EIS. It should be noted that the COE has no jurisdiction over the proposed exchange.

What issues will be considered in the EIS ?

Issues and concerns that are typically analyzed in an EIS include, but are not limited to: vegetation, wildlife, threatened and endangered species, water and air resources, socioeconomic and community resources, cultural resources, and mineral resources. Any other substantive issues for this project that arise during the public comment period will be considered in the EIS.

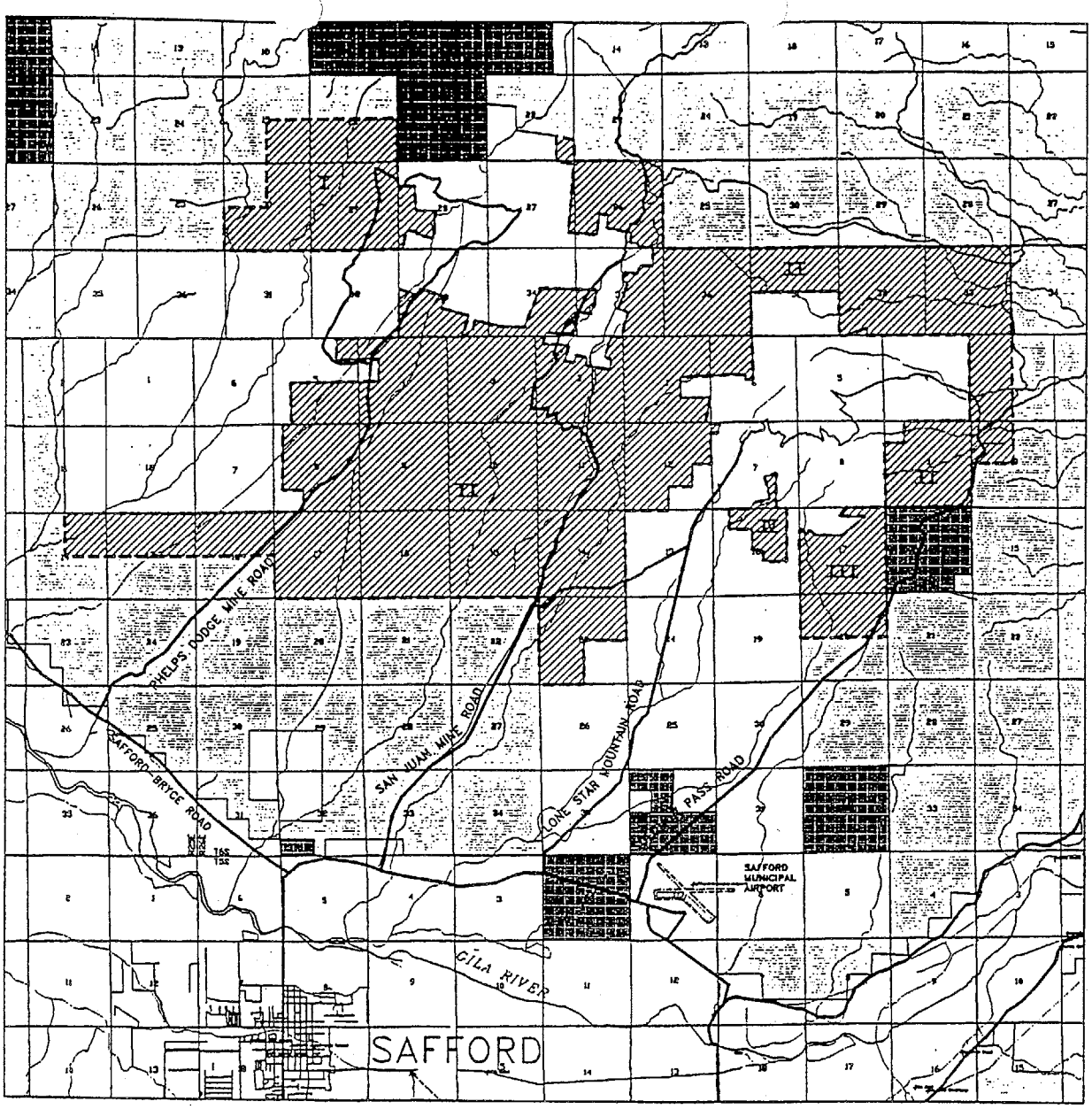
Issues to be analyzed in the EIS are identified by several sources: the general public, including private citizens, elected officials, and special interest groups; Indian tribes; the lead and cooperating federal agencies; an interdisciplinary team composed of agency resource specialists; and other federal and/or state agencies. The BLM and COE seek input from these sources on their concerns about the project throughout the scoping process.

How can I comment on the project?

You have two major opportunities to comment on this project during the NEPA analysis process: 1) during this initial public scoping period; and 2) during the public review/comment period when the Draft EIS is completed. Comments can be submitted in person or in writing at one of the three public meetings being held in Safford, Tucson, and Phoenix, or mail your comments to the BLM by October 12, 1996, using the pre-addressed comment forms (attached). Comments will be compiled and all substantive comments will be considered in the Draft EIS. When the Draft EIS is completed, you will have the opportunity to review it and make additional comments at that time. There are also public review and protest/appeal periods for the Final EIS and the Records of Decision, respectively. A display board depicting the NEPA process outlines these public comment periods and gives projected dates for completion of the Draft and Final EISs.

Contact for more information: Tom Terry, BLM Project Leader, Safford District, (520) 428-4040 or Tina Lee, SWCA Environmental Consultants, (520) 325-9194.

Se puede obtener información acerca de la propuesta en español, llame a Scott Evans del Departamento de Administración de Tierras, (520) 428-4040.



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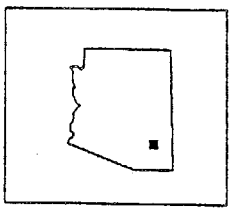


LOCATION MAP

DRAINAGES

ROAD

ROAD (4WD)

BLM LAND

STATE LAND

PRIVATE LAND

SELECTED LAND

Scale

0 1 2

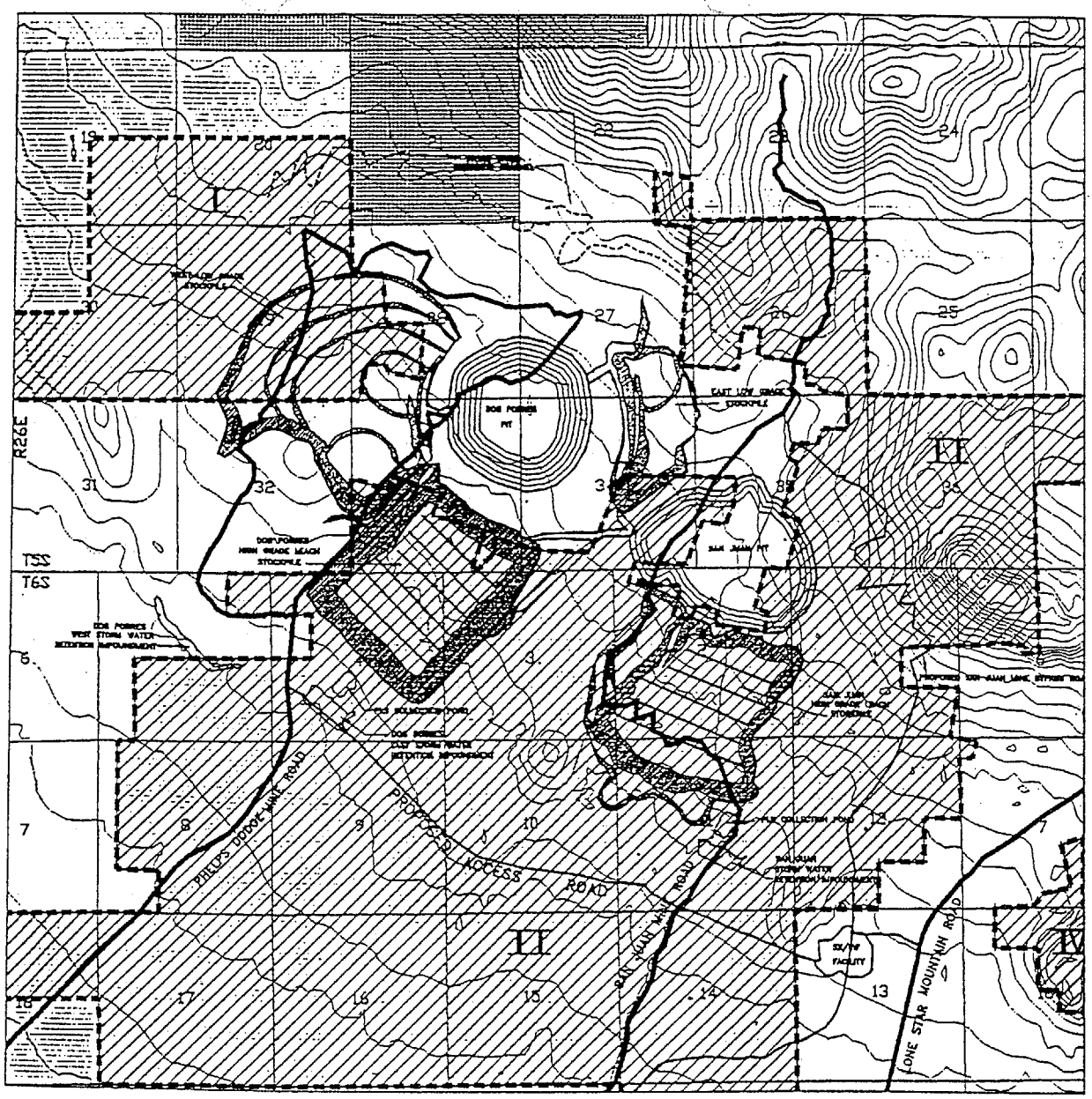
MILES

BLM-PHELPS DODGE SAFFORD LAND EXCHANGE/MPO/404 PERMIT ENVIRONMENTAL IMPACT STATEMENT

FIGURE 1. SELECTED LANDS LOCATION MAP SHOWING LAND OWNERSHIP.

SWCA Inc. Environmental Consultants

JOB NUMBER 28-94854	DRAWN BY RCV	DATE 3-29-96
FILE NAME: info	CHECKED BY TL	REV. DATE 7-10-96



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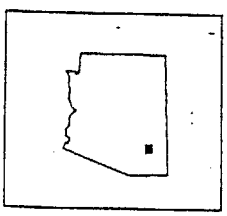
LOCATION MAP



CONTOUR
EXISTING ROAD
PROPOSED ROAD
DIVERSION CHANNEL

BLM
STATE
PRIVATE
SELECTED LAND BOUNDARY

Scale

0 1/2 1

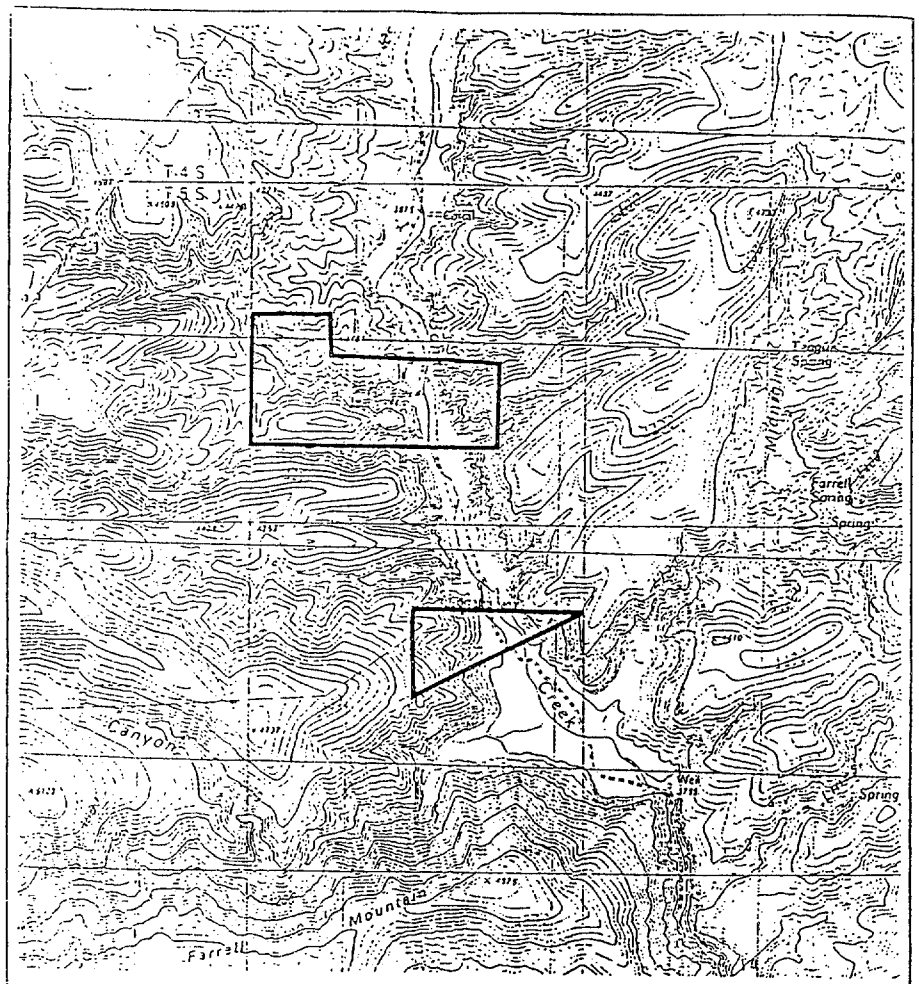
MILES

CONTOUR INTERVAL 100 FEET

SWCA Environmental Consultants	JOB NUMBER 29-944234	DRAWN BY RCV	DATE 5-29-96
	FILE NAME: INFO	CHECKED BY TL	REV. DATE 7-17-96

BLM-PHELPS DODGE SAFFORD LAND EXCHANGE/MPO/404 PERMIT ENVIRONMENTAL IMPACT STATEMENT

FIGURE 3. MINING PLAN OF OPERATIONS FOR SAN JUAN/ DOS POBRES MINES.



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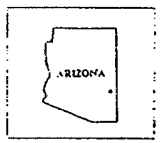
CONTOUR INTERVAL 40 FEET



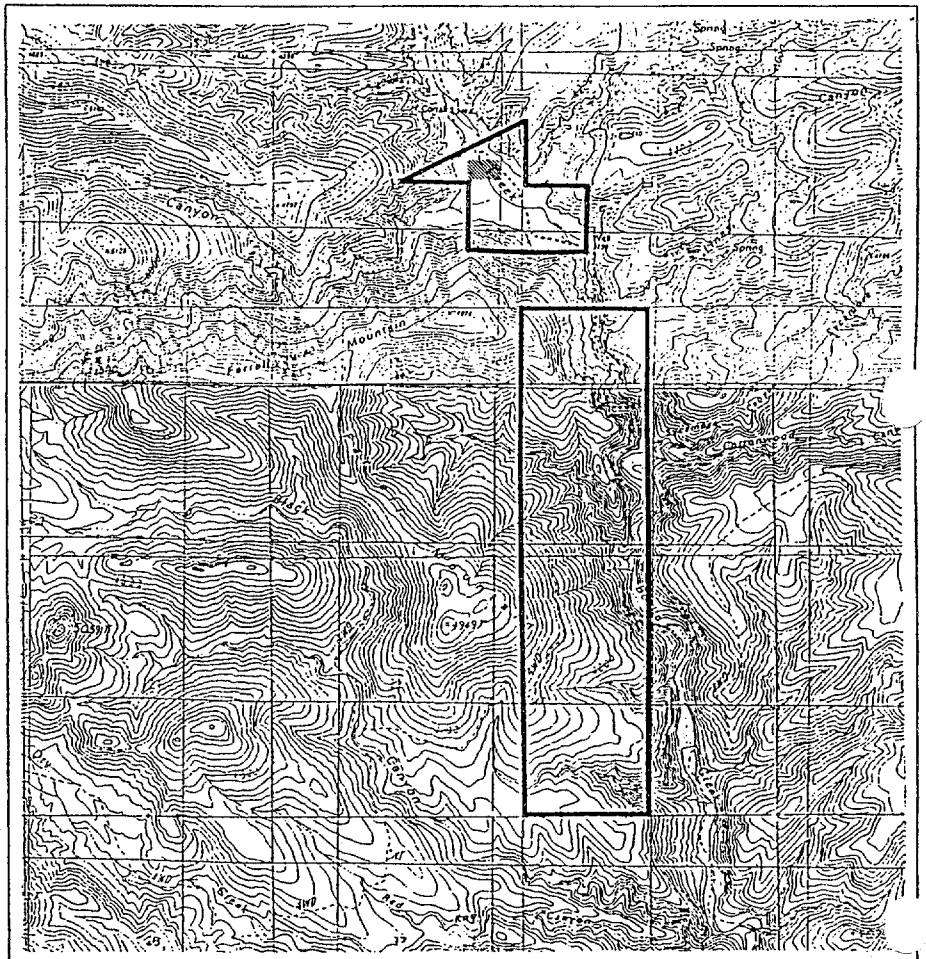
BONITA SPRING
1969

SAFFORD LAND EXCHANGE EIS

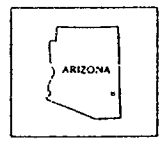
FIGURE 1b. BONITA CREEK PARCELS - AMADO PROPERTY

SWCA Environmental Consultants

JOB NUMBER	DRAWN BY	DATE
FILE NAME	CHECKED BY	REV. DATE



Scale
0 1000 2000
FEET
CONTOUR INTERVAL 40 FEET



LONE STAR MTN./
BONITA SPRING
1963/1969

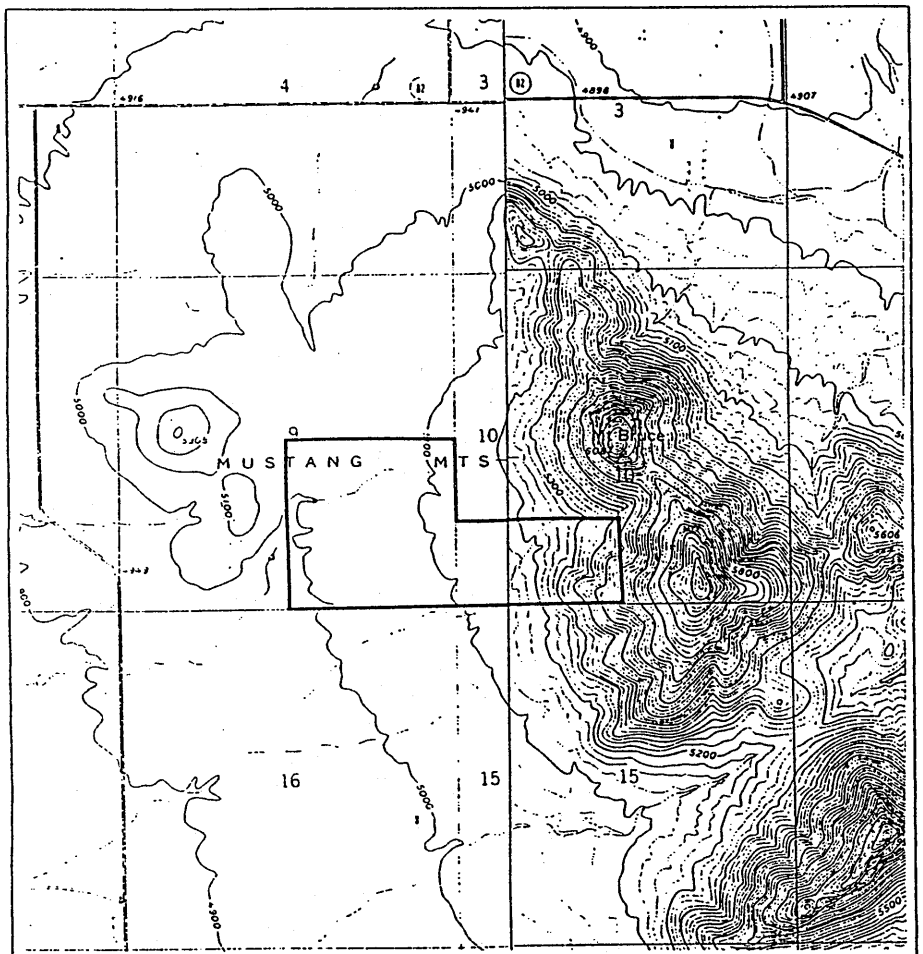
LEGEND
5-ACRE EXCLUSION AREA

SAFFORD LAND EXCHANGE EIS

FIGURE 1a. BONITA CREEK PARCELS - CURTIS PROPERTY

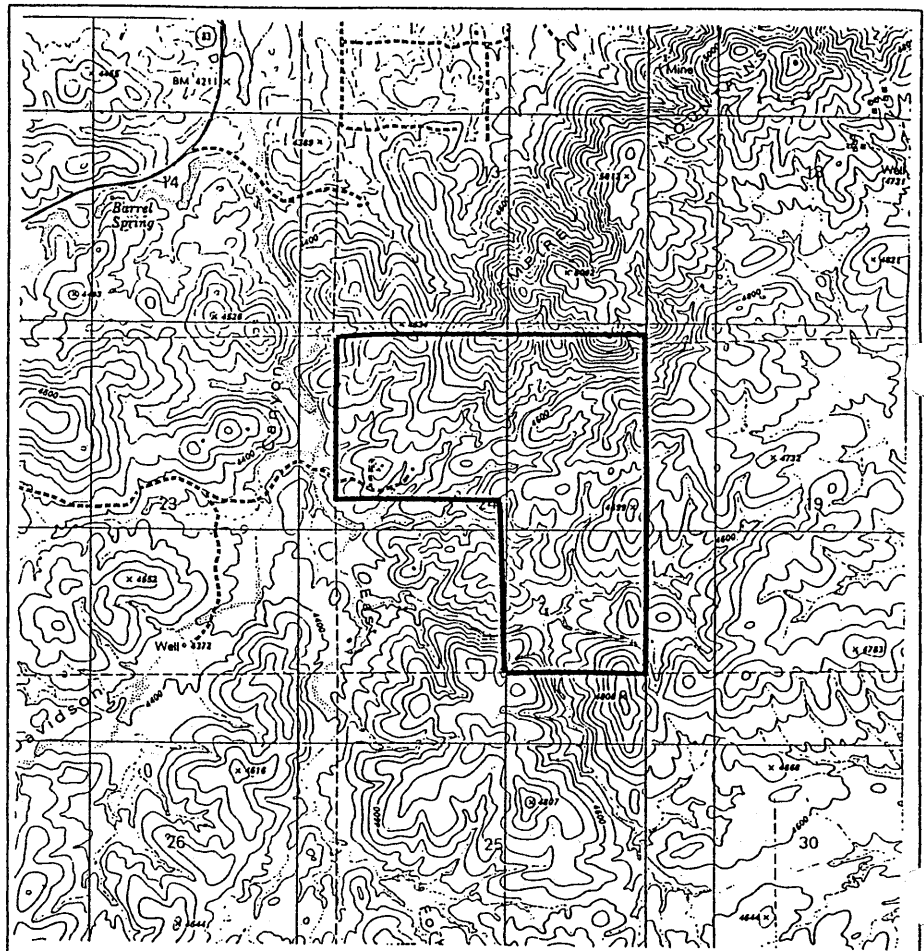
SWCA Environmental Consultants

JOB NUMBER	DRAWN BY	DATE
FILE NAME	CHECKED BY	REV. DATE



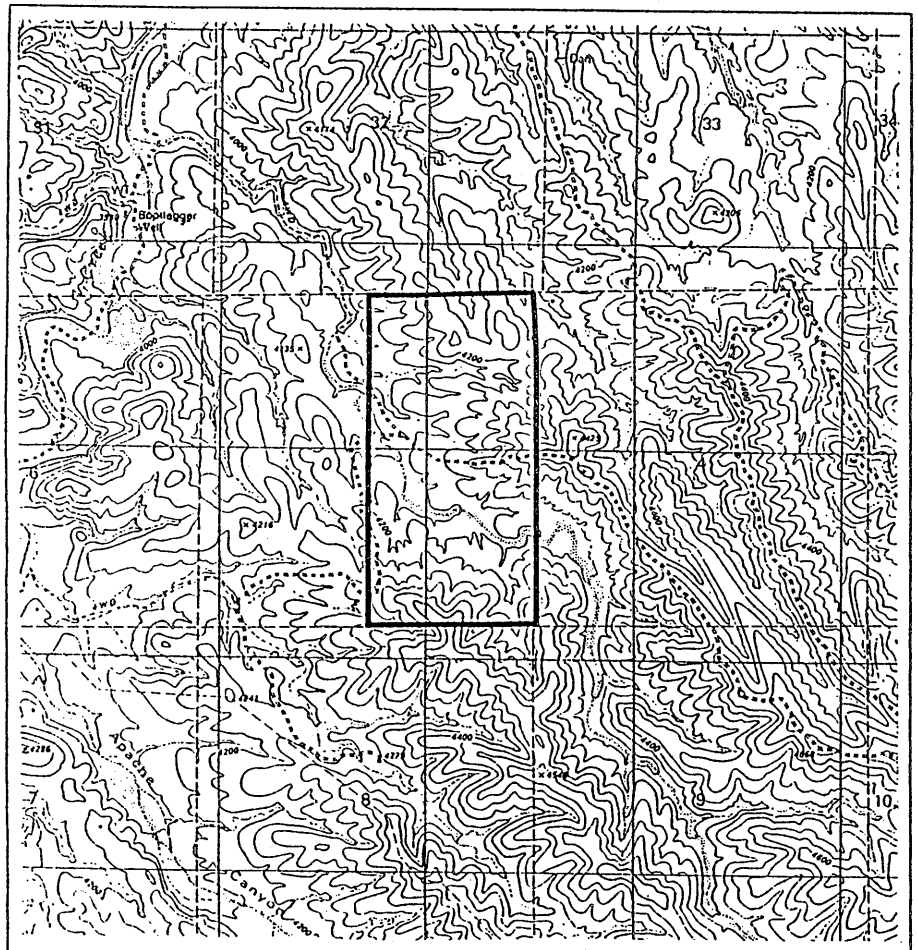
SAFFORD LAND EXCHANGE EIS

FIGURE 2. SCHOCK PARCEL



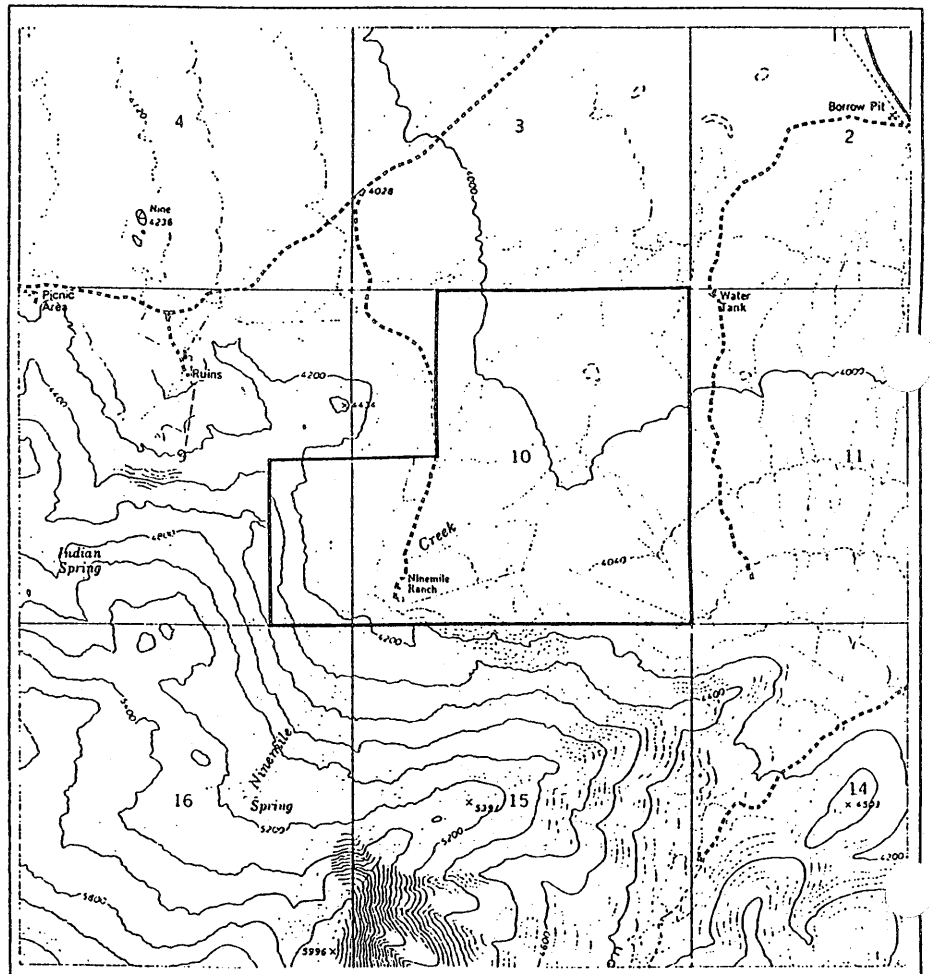
SAFFORD LAND EXCHANGE EIS

FIGURE 3. DAVISON RANCH PARCEL



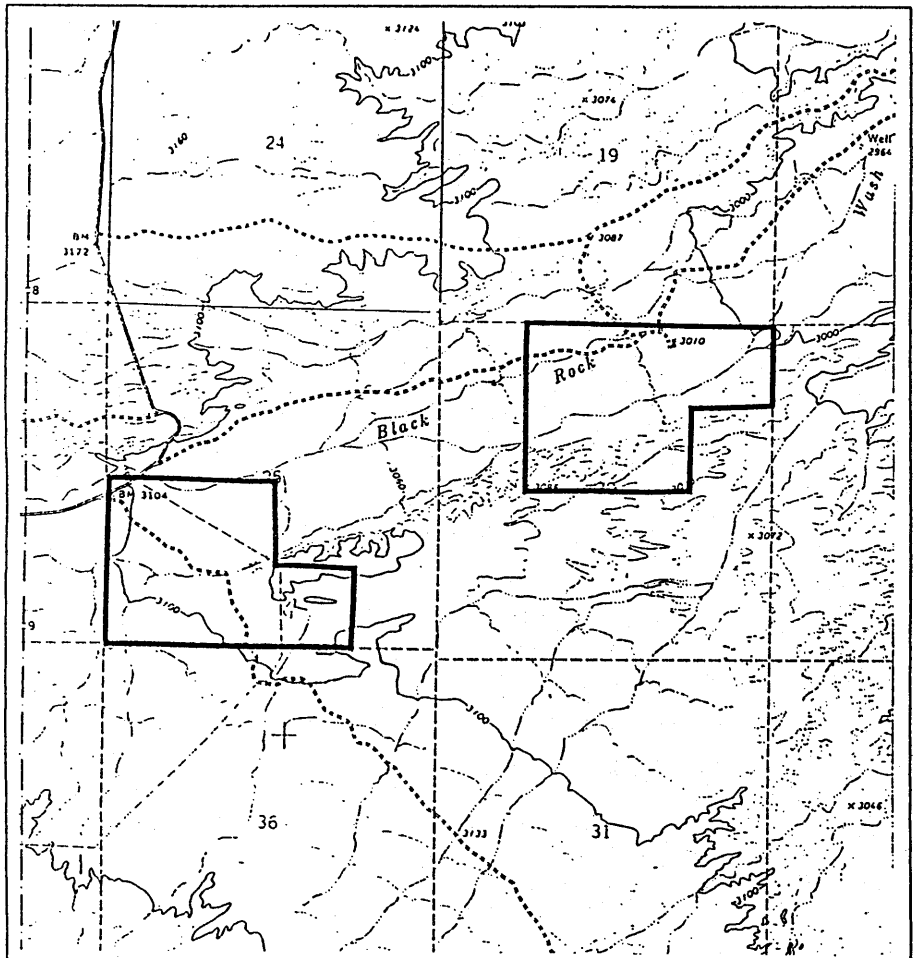
SAFFORD LAND EXCHANGE EIS

FIGURE 4. FEULNER PARCEL



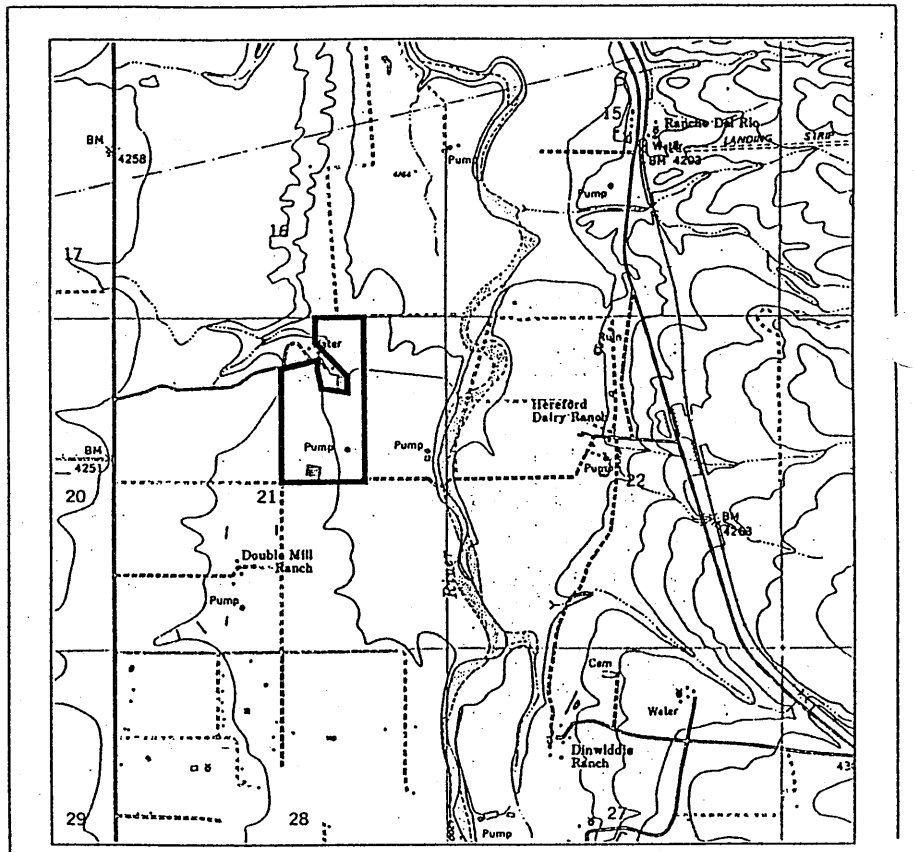
SAFFORD LAND EXCHANGE EIS

FIGURE 5. MUSNICKI PARCEL



SAFFORD LAND EXCHANGE EIS

FIGURE 6. NORTON PROPERTY

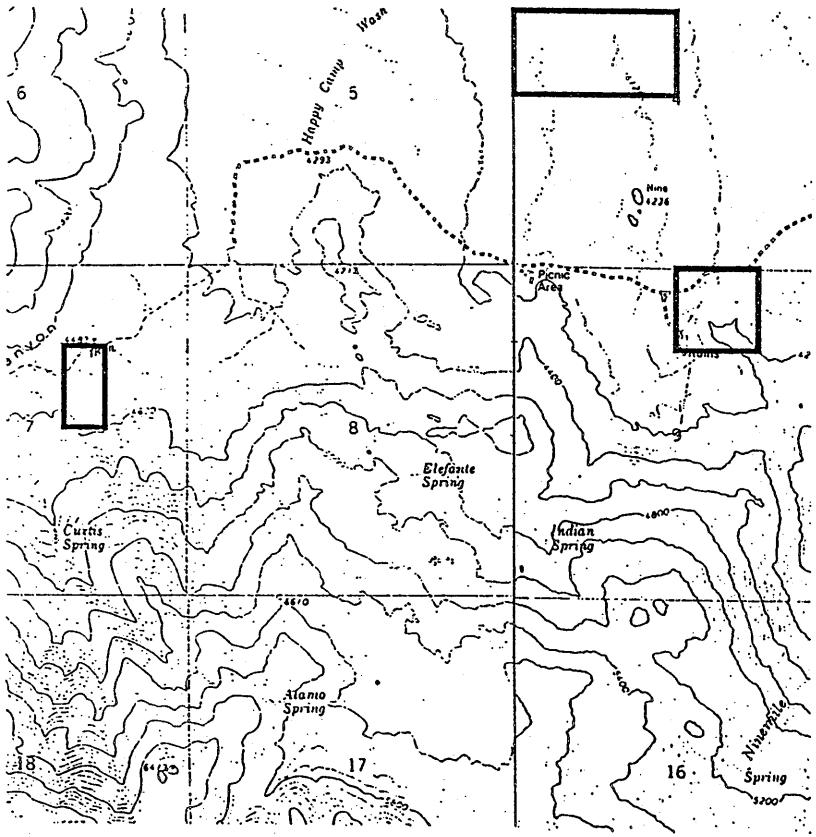


SWCA Environmental Consultants Inc.
343 S. Scott Avenue
Tucson, Arizona 85701
Phone (520) 325-9194
FAX (520) 325-2033

JOB NUMBER	DATE
FILE NAME	REV. DATE

SAFFORD LAND EXCHANGE EIS

FIGURE 7. LEHNER PARCEL



N

Scale

0 1000 2000

FEET

CONTOUR INTERVAL 40 FEET

DOS CABEZAS/
BOWIE MTN. NORTH
1978/1979

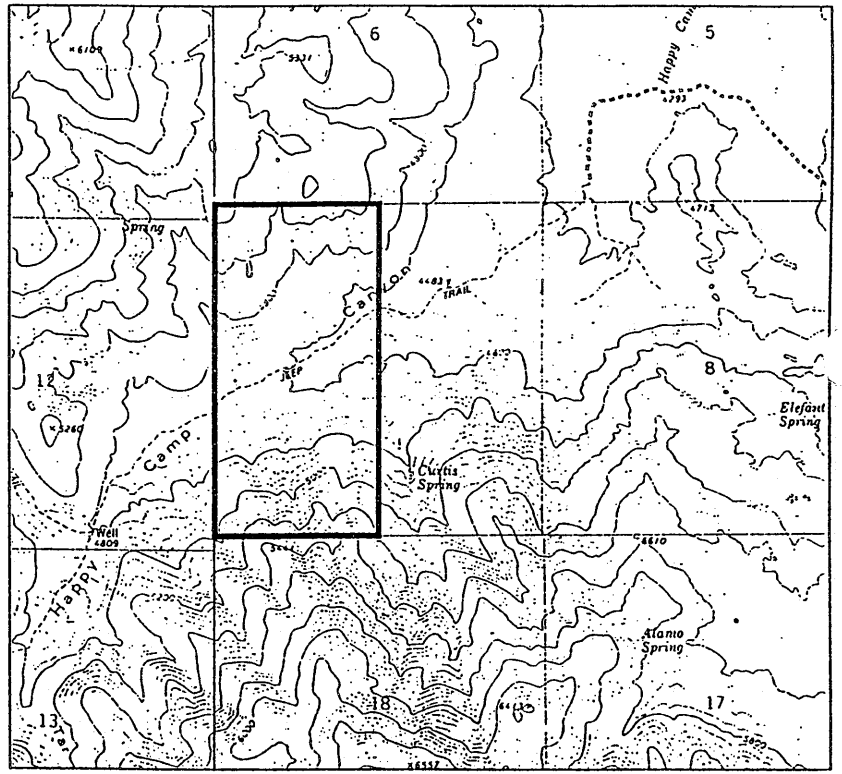
SAFFORD LAND EXCHANGE EIS

FIGURE 8. FREELAND PARCELS

SWCA Inc. Environmental Consultants
343 S. Scott Avenue
Tucson, Arizona 85701
Phone (520) 325-9194
FAX (520) 325-2033

JOB NUMBER | DATE

FILE NAME | REV. DATE



N

Scale

0 1000 2000

FEET

CONTOUR INTERVAL 40 FEET

DOS CABEZAS

1978

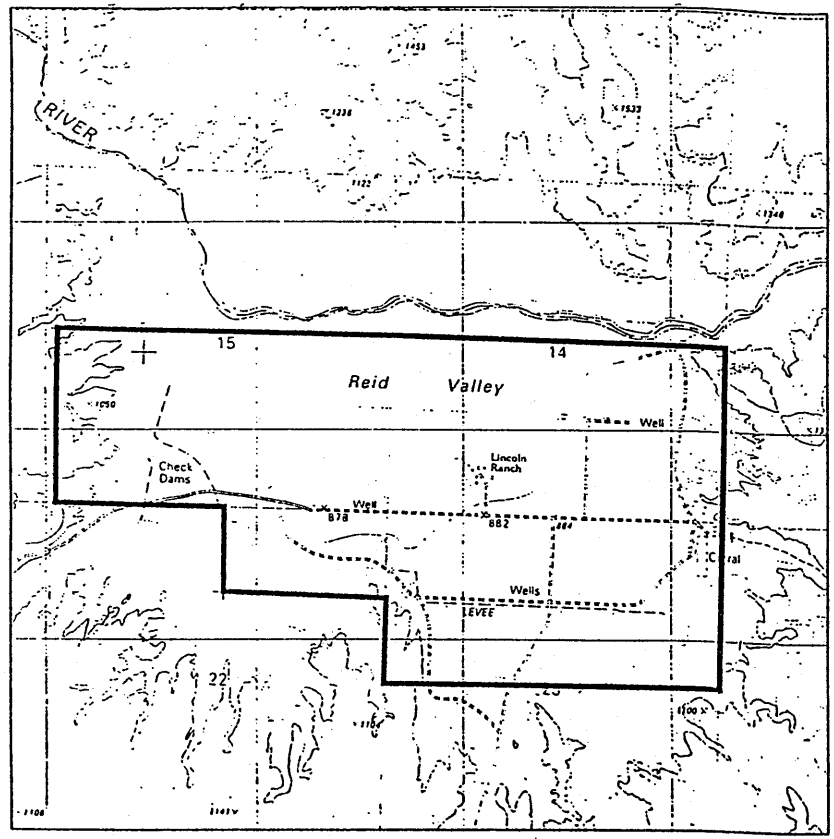
SAFFORD LAND EXCHANGE EIS

FIGURE 9. BUTLER-BORG PARCEL

SWCA Inc. Environmental Consultants
343 S. Scott Avenue
Tucson, Arizona 85701
Phone (520) 325-9194
FAX (520) 325-2033

JOB NUMBER | DATE

FILE NAME | REV. DATE



N

Scale

0 1000 2000

FEET

CONTOUR INTERVAL 40 FEET

REID VALLEY

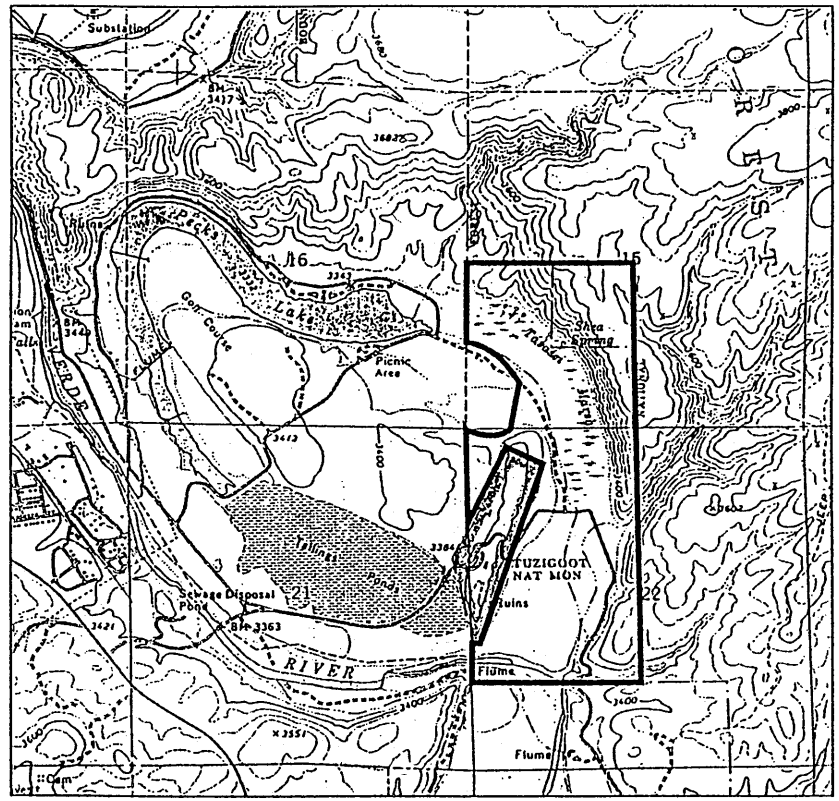
1990

SAFFORD LAND EXCHANGE EIS

FIGURE 10. LINCOLN RANCH PARCEL

SWCA Environmental Consultants Inc.
343 S. Scott Avenue
Tucson, Arizona 85701
Phone (520) 325-9194
FAX (520) 325-2033

JOB NUMBER	DATE
FILE NAME	REV. DATE



N

Scale

0 1000 2000

FEET

CONTOUR INTERVAL 40 FEET

REID VALLEY

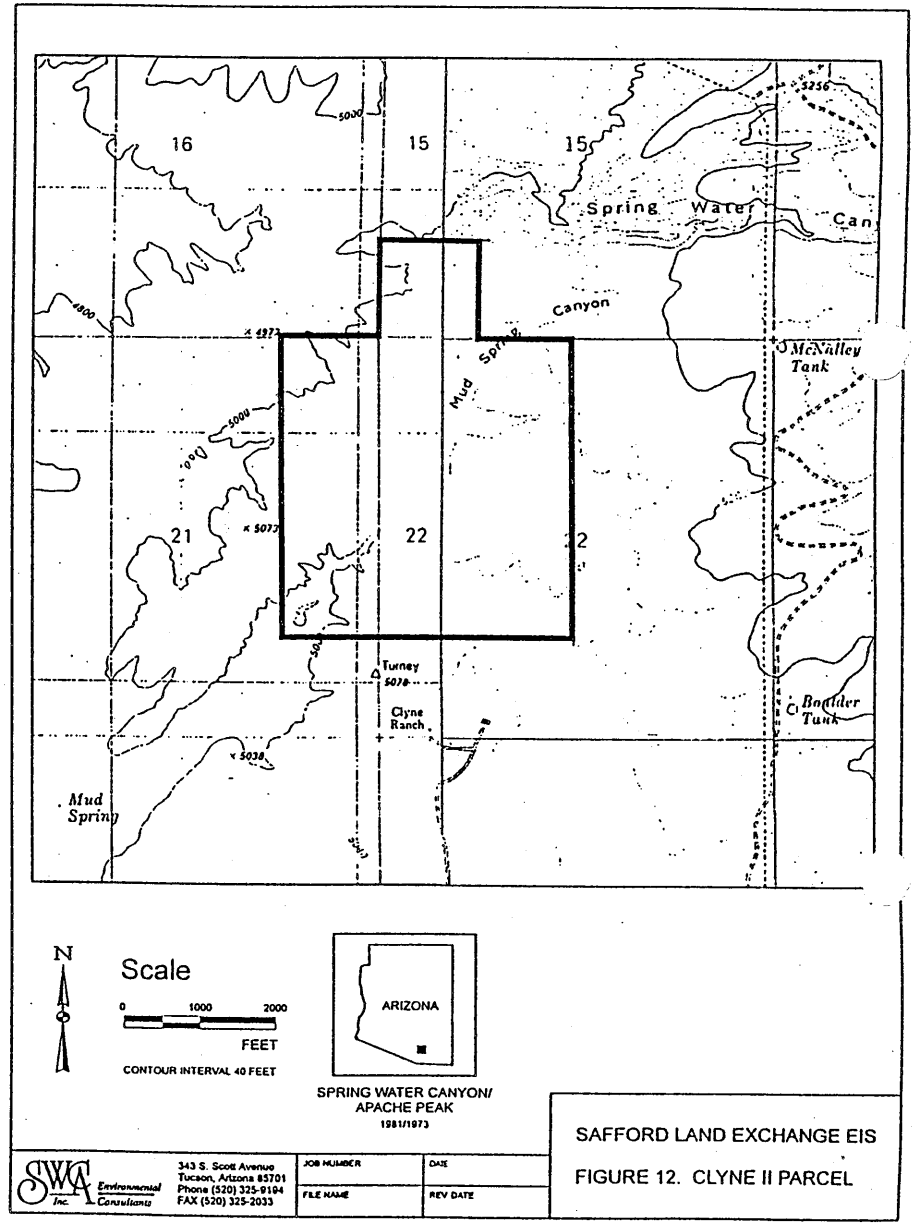
1990

SAFFORD LAND EXCHANGE EIS

FIGURE 11. TAVASCI PARCEL

SWCA Environmental Consultants Inc.
343 S. Scott Avenue
Tucson, Arizona 85701
Phone (520) 325-9194
FAX (520) 325-2033

JOB NUMBER	DATE
FILE NAME	REV. DATE



SWCA Environmental Consultants Inc.
343 S. Scott Avenue
Tucson, Arizona 85701
Phone (520) 325-9194
FAX (520) 325-2033

JOB NUMBER	DATE
FILE NAME	REV DATE

SAFFORD LAND EXCHANGE EIS

FIGURE 12. CLYNE II PARCEL

PUBLIC SCOPING COMMENT SHEET

Please share your ideas, comments and concerns in the space provided below. You may submit your comments at the meeting or return this self-addressed form by **October 12, 1996** (postage required).

Thank you for your time and input. Your comments are greatly appreciated.

Do you wish to remain on the mailing list for this project? **[ ] Yes** **[ ] No**

Name: _____
Organization: _____
Mailing address: _____
_____

Please check one:

[ ] Government
__ Federal
__ State
__ Local
__ Tribal

[ ] Private citizen
[ ] Non-government
[ ] Media
[ ] _____ (Please specify)

Postage
Required

Margaret Jensen, Gila Resource Area Manager
Bureau of Land Management
Safford District Office
711 14th Avenue
Safford, Arizona 85546

RE: Safford Land Exchange and MPO

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

VERBAL INFORMATION SUMMARY (SHORT FORM)
May be Reproduced
May Be Inserted Into Mine File Or Added To "Rumor Page"

1. **Information from:** Mr. Alf Claridge

   Address: E. Highway 70 - Safford, AZ

2. **Phone:** 428-1789

3. **Mine:** San Juan

4. **ADMMR Mine File:** SAN JUAN MINE

5. **County:** Graham

6. **MILS Number** 94A

7. **Operational Status:**

8. **Summary of information received, comments, etc.:**

Mr. Claridge has the controlling ownership of the San Juan. The estates of two deceased partners, Gary Anderson & L.L. Maloy, also retain an interest. The owners would like to sell or lease the property. Mr. Claridge usually sends interested parties to Grover Heinrichs, consulting geologist in Tucson for geological data. Mr. Heinrichs worked on development at the mine for Essic International a number of years ago. Producers Minerals no longer has any share in the property.

Date: December 1988 H. Matson

(signature) ADMMR

PEACOCK MINE GRAHAM COUNTY

Mine visit at the Peacock mine of Producers Minerals. Company address is P.O. Box 9733, El Paso, 79987, (915) 778-8363. President - Art Parton, Vice President; C.R. Warren, Manager; Ira Couch, Chief Chemist - Mr. Boss. Information from Mr. Boss. They are still producing cement copper for shipment to McGill, Nevada. GWI WR 10/22/73

SAN JUAN MINE GRAHAM COUNTY

Visited the San Juan Mine on Phelps Dodge holdings. No one around. GWI WR 6-11-66

Active Mine List April 1967 - 8 men
Active Mine List Nov. 1967 - 11 men

Visited San Juan Mine north of Safford, mining and leaching. Scruggs mining. GWI WR 10-1-67

Producers Mine, the gate locked even though the mine is operating. GWI WR 10/13/76

Now owned by Cochise Mining Corporation, (see 1978 Active Mines Directory), George Ward, President. 12/78 a.t.

Mineralogy of Arizona p. 16

KAP WR 1/9/81: A report was received from officials at Phelps Dodge, Safford Bramch, that Cochise Mining Company has shut down operations at the San Juan Mine in Lone Star District, Graham county.

MG WR 4/17/81: Discussed file information on the San Juan Mine in Graham County with Harold Yde, Manager of Projects, Martin Trost Associates, 1510 Washington, Golden Colorado 80401. He reports that the property, owned by the Cochise Mining Corporation, is for sale.

MG WR 4/23/82: Nartex Min & Chem (exact name unknown), % P.O. Box 226, Safford, AZ 85546, on behalf of Producers Minerals Corp (now Cochise Mining Co.), located the Paragon Group of Claims 1-286. These claims are in the vicinity of Galeyville in the California Mining District of Cochise County. The property is in T17S R30 & 31E and Ta6S R31E.

RRB WR 5/20/88: Visited the San Juan Mine (file) Sec 2, T6S R26E and Sec 35, T5S R26E, Graham County. Found remains of heap leach-cementation operation and open pit mine. Took pictures for file.

PEACOCK MINE GRAHAM COUNTY

Mine visit - Producers Minerals. GWI WR 4-19-71

Mine visit - Producers Peacock mine. GWI WR 6-14-71

The Peacock mine of the Producers Minerals Company is still producing approximately 4,000 tpd that goes to the leach piles. The copper precipate is being shipped to McGill Smelter of the Kennecott Copper Corp. GWI QR 6-30-71

The Producers Minerals Company has an option and has been drilling on the Polly Anne, Daniels Camp, 4th of July and other claims belonging to Ben Billingsley. These claims are in Daniels Camp Canyon near the New Mexico border about 6 miles east of Apache Grove. GWI QR 6-30-71

Directory of Mining - August 1971 - 110 men.

Mine visit. Producers Peacock Mine 28 men. 7 Tons Cu per day from 1200 tons. GWI 10/19/71

The Producers Minerals Corp. has curtailed operations at their Peacock Mine. Employees are down from 100 or so to about 25. Production in tons from 4000 TPD to 1200 TPD. The pre-ipates are being shipped to McGill Nevada by truck at a cost of $22.00 per ton. This appears to be about 7 tons of Cu per day, which would make the approximate assay of the heads at .4Cu. GWI QR 9/71

Little change from last report except that Producers have not decided their program at Daniels Camp at the end of this period. GWI QR 9/71

Producers Minerals continued as the only area producer, but appear to have financial difficulties, as production and employment was reduced. GWI QR Oct-Dec '71

Mine visit. Producers Minerals Co. GWI WR 2/15/72

Essex Int. has picked up several claims around PD and are reported to be trying to acquire the San Juan property of Producers Minerals (Peacock). GWI QR Jan.-March'72

Producers Minerals, Peacock Mine appears to be nearly closed. With perhaps 3 or 4 employees watching the property. The water supply from PD has been stopped. GWI 4 ¼ '72

Guy Anderson and Essex International have entered a suit against Producers. GWI 4 ¼ '72

Grover Heinrichs, EXXEX International, called regarding the status of Producers Minerals and the San Juan mine in Graham County. He said that it should go to court soon. GWI WR 9/27/73

PEACOCK MINE GRAHAM COUNTY

Producers Minerals started shipping precipitates to Inspiration, a six inch line was run up from the Gila River for water supply. Water will also be obtained from Phelps Dodge project. The Sundt Construction company is doing the drilling and blasting in the pit. The ore is mined, crushed and piled into 20' high heaps, after leaching is completed within certain limits, the heap is raised another 20' and the leaching resumed with the solutions going thru the old leached out material also. Construction work is continuing on the precipitation plant also. GWI QR 4-1-70

Active Mine List May 1970 - 50 men - Clem Chase, Gen. Mgr.

Producers Minerals were shipping precipitates from their Peacock mine. At present they are obtaining water from Phelps Dodge, along with water pumped thru the pipeline from the Gila River. GWI QR 6-30-70

Producers Minerals Peacock mine continues producing precipitates. GWI QR 10-1-70

Visited the Peacock mine - over 4000 tpd being mined. GWI WR 6-13-70

Active Mine List Oct. 1970 - 44 men - J.E. Mitchell, Gen. Mgr.

Production has continued at the Peacock mine of the Producers company. Some difficulties have been encountered that have at times forced reduction in personnel. A county road has been constructed around the mine and plant. GWI QR 12-31-70

Mine visit - Producers mine. (Peacock) formerly San Juan. GWI WR 2-16-71

Peacock mine of the Producers Minerals Company, continues their leaching operations with a reported mine production of 4000 tpd and approximately 90 men employed in the mine and leach plant. GWI QR 4-1-71

PEACOCK MINE
(Formerly San Juan)

GRAHAM COUNTY

The San Juan Mine has been taken over by Producers Minerals, the name has been changed to the Peacock Mine, a staff with a VP&GM, chief engineer, chief geologist, and plant supt. have taken charge, new equipment is being purchased and it appears that a well financed and planned operation of this property has commenced. It now appears that planning by knowledgable people is done in advance of operations.
GWI Quarterly Report 2/27/70

SAN JUAN MINE GRAHAM COUNTY

The San Juan Mine of the Scruggs Mining Co. was encountering trouble with their water supply, and as a consequence production was much less than anticipated. Anaconda has been doing some geophysical work in this area.

GWI Quarterly Report 4/1968

Active Mine List April 1968 - 12 men

Field interview with Bill Denton about work at Ash Peak Silver. Said that Scruggs was hauling water to the San Juan.

GWI WR 6/30/68

The Scruggs Mining Co is still mining at their San Juan Mine, having installed a crushing plant. Their water supply gave out and they have been forced to haul water for their leaching operations. The Anaconda Company has been doing geophysical work and mapping the property over the past few months.

GWI Quarterly Report 6/1968

Active Mine List Oct. 1968 - 15 men

✓ BTB

ARIZONA DEPARTMENT OF MINERAL RESOURCES
Mineral Building, Fairgrounds
Phoenix, Arizona

1. Information from: Mine Visit
   Address:
2. Mine: Peacock
3. No. of Claims - Patented
   Unpatented
4. Location: ~~Con~~ Northof Safford
5. Sec Tp Range
6. Mining District Lone Star
7. Owner: Producers Mineral Corp
8. Address: Box 226 Safford
9. Operating Co.: Same
10. Address:
11. President:
12. Gen. Mgr.: ~~Wm Peterson~~ Wm Mitchell
13. Principal Metals:
14. No. Employed: 110
15. Mill, Type & Capacity:
16. Present Operations: (a) Down ☐ (b) Assessment work ☐ (c) Exploration ☐
    (d) Production ☐ (e) Rate 4000 tpd. ?
17. New Work Planned:
18. Miscl. Notes:

4-13-71

(Signature)

(Field Engineer)

BSH

ARIZONA DEPARTMENT OF MINERAL RESOURCES
Mineral Building, Fairgrounds
Phoenix, Arizona

1. Information from: Ralph Morrow (Mine Supt.)

   Address: Box ~~266~~ 226 Safford.

2. Mine: P E A C O C K 3. No. of Claims - Patented ____

   Unpatented ____

4. Location: North of Safford next to PD project.

5. Sec S10 Tp 6S Range 26E 6. Mining District Lone Star

7. Owner: ____

8. Address: ____

9. Operating Co.: Producer's Minerals Corp.

10. Address: ~~266~~ 226 (Gen'l mgr. correct) Box Safford

11. President: ____ 12. Gen. Mgr.: Clem Chase

13. Principal Metals: Copper 14. No. Employed: 50

15. Mill, Type & Capacity: 3000 TPD crushed rock for leaching.

16. Present Operations: (a) Down ☐ (b) Assessment work ☐ (c) Exploration ☐
    (d) Production ☒ (e) Rate 3000 tpd.

17. New Work Planned: Work on leaching facilities continuing.

18. Miscl. Notes: Ore is stacked in 20' lifts and leached by solutions. After most of the copper is leached, another 20' lift is added and the process repeated.

Date: 4? 7-14-70

GW Dunn
(Signature) (Field Engineer)

ONA DEPARTMENT OF MIN RESOURCES
Mineral Building, Fairgrounds
Phoenix, Arizona

1. Information from: Tom White Plant Supt.

   Address: Box 226 Safford.

2. Mine: Peacock formerly San Juan 3. No. of Claims - Patented ____

   Unpatented ____

4. Location: ____

5. Sec ____ Tp ____ Range ____ 6. Mining District Lone Star.

7. Owner: ____

8. Address: ____

9. Operating Co.: Producers Minerals Corp.

10. Address: Box 226 Safford

11. President: ____ 12. Gen. Mgr.: J. E. Mitchell, Oct, 1970 B. G. Robertson (Temp)

13. Principal Metals: Copper 14. No. Employed: Tom White-Plant Supt. Ralph Morrow Mine Supt.

15. Mill, Type & Capacity: Leach plant 4000 tpd crushing plant

16. Present Operations: (a) Down ☐ (b) Assessment work ☐ (c) Exploration ☐
    (d) Production ☒ (e) Rate 4000 tpd.

17. New Work Planned: ____

18. Miscl. Notes: Ore crushed to minus 2 mesh, piled in 20' high level dumps, and solution sprayed on or ran into furrows. After completion of economic leaching another 20' are added etc.

Date: 6-11-70

GW Irwin
(Signature) (Field Engineer)

852

ARIZONA DEPARTMENT OF MINERAL RESOURCES
Mineral Building, Fairgrounds
Phoenix, Arizona

1. Information from: Personal visit

   Address:

2. Mine: PEACOCK 3. No. of Claims - Patented

   Unpatented

4. Location: Old San Juan mine. Lone Star Dist. north of Safford

5. Sec 2-3-14 Tp 5-6S Range 26E 6. Mining District Lone Star

7. Owner: Producers #### Mineral Corp

8. Address: Box 226 Safford

9. Operating Co.: same

10. Address: same

11. President: 12. Gen. Mgr.: VP & Clem Chase

13. Principal Metals: Copper 14. No. Employed: 39

15. Mill, Type & Capacity: Leaching plant not completed or to full capacity.

16. Present Operations: (a) Down ☐ (b) Assessment work ☐ (c) Exploration ☐
    (d) Production ☒ (e) Rate ? tpd.

17. New Work Planned:

18. Miscl. Notes: Ralph Morrow, #### Mine engineer, Al Kent Accountant.
    Sundt drilling & Blasting the ore and have 6 men working
    Two truckloads of precipitates have been shipped to Inspiration.

Mine Visit to Peacock mine - no one around GWI WR 3/7/70

Date: 2-10-70

(Signature) (Field Engineer)

B31

ARIZONA DEPARTMENT OF MINERAL RESOURCES
Mineral Building, Fairgrounds
Phoenix, Arizona

1. Information from: Clem Chase, V.P. & G.M.
   Address: Box 226 Safford
2. Mine: Peacock Formerly San Juan 3. No. of Claims - Patented 10
   Also known as the Horseshoe Group. Unpatented 70
4. Location: S 1-2-3 in T6S R26E & S34-35 in T5S R26E (Safford Quadrangle Map)
   (The above information is from the patented claim map).
5. Sec____ Tp____ Range____ 6. Mining District Lone Star
7. Owner: Guy Anderson & Associates.
8. Address: Safford, Arizona
9. Operating Co.: PRODUCERS MINERALS CORP. A subsidiary of Producers Chemical N.Y.City.
10. Address: Box 226 Safford
11. President: ____ 12. Gen. Mgr.: Clem Chase
13. Principal Metals: Copper 14. No. Employed: 30
15. Mill, Type & Capacity: 2000 TPD leach
16. Present Operations: (a) Down ☐ (b) Assessment work ☐ (c) Exploration ☒
    (d) Production ☐ Construction x (e) Rate____ tpd.
17. New Work Planned: Plan to install pipe line from Gila Valley for water.
    Plant Supt-Thomas G. White, Chief Geologist-John Snell formerly Pima mining co.
18. Miscl. Notes: (Would like to obtain maps of underground workings to prevent a hazard to open pit operations.)

Date: 12-9-69

(Signature) (Field Engineer)

B50

ARIZONA DEPARTMENT OF MINERAL RESOURCES
Mineral Building, Fairgrounds
Phoenix, Arizona

1. Information from: Joe Regnier
   Address: Box 266 Safford
2. Mine: San Juan 3. No. of Claims - Patented
   Unpatented
4. Location: 8 miles NE of Safford
5. Sec 2 & 3 Tp 6 S Range 26 E 6. Mining District Lone Star
7. Owner: Producers Chemical Co.
8. Address: El Paso & Dallas Texas
9. Operating Co.: El Paso 6854 Market Street
10. Address:
11. President: Reuben Moulds 12. Gen. Mgr.:
13. Principal Metals: Cu. 14. No. Employed: 9
15. Mill, Type & Capacity: Leaching
16. Present Operations: (a) Down ☐ (b) Assessment work ☐ (c) Exploration ☐
    (d) Production ☐ (e) Rate tpd.
17. New Work Planned:
    Scruggs interest taken over. Company working on plans
18. Miscl. Notes:
    Cecil Warren at El Paso Acid Plant 778-8362
    Fred Tears Chief eng. Dallas Tex 369-8483

(GWI Quarterly Report 9/1969) Scruggs Mining Company sold their interest in the San Juan to Producers Chemical Company of El Paso and Dallas, Texas. No announcement by end of quarter as to their plans.

Date: 10-14-69

(Signature) (Field Engineer)

BLM

ARIZONA DEPARTMENT OF MINERAL RESOURCES
Mineral Building, Fairgrounds
Phoenix, Arizona

1. Information from: Personal Visit
   Address: Box 869 Safford
2. Mine: San Juan. 3. No. of Claims - Patented
   Unpatented
4. Location: 12 miles North of Safford.
5. Sec 8-17 Tp 6S Range 27E 6. Mining District Lone Star.
7. Owner: Scruggs Mining Co
8. Address: Safford Ariz
9. Operating Co.: Scruggs Mining Co
10. Address: Safford.
11. President: Ted Scruggs 12. Gen. Mgr.: Verne Teeters Supt.
13. Principal Metals: Copper. 14. No. Employed: ?
15. Mill, Type & Capacity: Reported 1200 T. RD. Leach
16. Present Operations: (a) Down ☐ (b) Assessment work ☐ (c) Exploration ☐ ?
    (d) Production ☐ (e) Rate tpd.
17. New Work Planned:
18. Miscl. Notes: No one around (reported to be working in a desultory fashion)

Date: 6-3-69

(Signature) (Field Engineer)

248

RIZONA DEPARTMENT OF MIN AL RESOURCES
Mineral Building, Fairgrounds
Phoenix, Arizona

1. Information from: Verne Teeter
   Address: Box 869 Safford
2. Mine: San Juan
3. No. of Claims - Patented 10
   Unpatented 65
4. Location: 12 ~~1/2~~ miles North of Safford
5. Sec 8-17 Tp 6S Range 27E
6. Mining District Lone Star
7. Owner: Scruggs Mining Co.
8. Address: as above
9. Operating Co.:
10. Address:
11. President:
12. Gen. Mgr.: Verne Teeter~~s~~ Supt.
13. Principal Metals:
14. No. Employed:
15. Mill, Type & Capacity: Reported 1200 tpd leaching capacity
16. Present Operations: (a) Down ☐ (b) Assessment work ☐ (c) Exploration ☐
    (d) Production ☒ (e) Rate ? tpd.
17. New Work Planned:
18. Miscl. Notes: R. McColly accompanied engineer on this trip/

Active Mine List April 1969 - 9 men

Date: 4-1-69

(Signature) (Field Engineer)

BM

ARIZONA DEPARTMENT OF MINERAL RESOURCES
Mineral Building, Fairgrounds
Phoenix, Arizona

1. Information from: Verne Teeters, supt.

   Address: Box 869, Safford 85546

2. Mine: San Juan 3. No. of Claims - Patented 10
   Unpatented 65

4. Location: 12 Miles north of Safford

5. Sec 8-17 Tp 6 S Range 27E 6. Mining District Lone Star

7. Owner: Scruggs Mining Co. Optioned from Guy Anderson of Safford

8. Address: as above

9. Operating Co.: Ted Scruggs (Scruggs Mining Co)

10. Address: same.

11. President: 12. Gen. Mgr.: Verne Teeters Supt/

13. Principal Metals: 14. No. Employed: 5

15. Mill, Type & Capacity: Reported 1200 tpd leaching capacity.

16. Present Operations: (a) Down ☐ (b) Assessment work ☐ (c) Exploration ☐
    (d) Production ☒ (e) Rate tpd.

17. New Work Planned: Installing two new wood ~~####~~ tanks. for acid solutions.

    Clark Arnold, Julio Barranco and Tom Heidrick were on property mapping for Quintana. Mr. A. Zinkle had been there the week before for a company based in ~~Moab, Utah. Anaconda has looked at and is interested in the property.~~

18. Miscl. Notes: Note: Mr. Guy Anderson accompanied engineer on this trip.

Date: 2-4-69

G. W. Dunn
(Signature) (Field Engineer)

BHO

ARIZONA DEPARTMENT OF MINERAL RESOURCES
Mineral Building, Fairgrounds
Phoenix, Arizona

1. Information from: Employee at mine.
   Address: Verne Teeters Supt. Box 869, Safford 85546
2. Mine: San Juan
3. No. of Claims - Patented 10
   Unpatented 65
4. Location: 12 miles north of Safford
5. Sec ## 8-17 Tp 6S Range 27E
6. Mining District Lone Star
7. Owner: Scruggs Mining Co. (Optioned from Guy Anderson of Safford)
8. Address: as above
9. Operating Co.:
10. Address:
11. President: Ted Scruggs
12. Gen. Mgr.: Verne Teeters, Supt.
13. Principal Metals:
14. No. Employed: 4
15. Mill, Type & Capacity: Leaching 1200 TPD reported.
16. Present Operations: (a) Down ☒ (b) Assessment work ☐ (c) Exploration ☐
    (d) Production ☐ (e) Rate _____ tpd.
17. New Work Planned: Was informed that they would probably shut down.
18. Miscl. Notes: The water for the leaching plant is hauled from the valley by truck. The ore is mined from an open pit oxide ore body, hauled by truck to the crusher nearby, where it is crushed to 2" or smalled and piled in the leach tanks from the conveyor, by truck or drag line which ever is most convenient.

Date: 12-3-68

G. W. Irvin
(Signature) (Field Engineer)

BLS

RIZONA DEPARTMENT OF MIN AL RESOURCES
Mineral Building, Fairgrounds
Phoenix, Arizona

1. Information from: Verne Teeters, Mine Supt.
   Address: Box 869 Safford
2. Mine: San Juan
3. No. of Claims - Patented 10
   Unpatented 65
4. Location: about 12 miles north of Safford
5. Sec 8-17 Tp 6S Range 27E
6. Mining District Lone Star
7. Owner: Scruggs Mining Co.
8. Address: As above.
9. Operating Co.:
10. Address:
11. President: Ted Scruggs
12. Gen. Mgr.: Verne Teeters
13. Principal Metals: Copper
14. No. Employed: 12
15. Mill, Type & Capacity: 1200 TPD leach plant
16. Present Operations: (a) Down ☐ (b) Assessment work ☐ (c) Exploration ☐
    (d) Production ☒ (e) Rate 1200 tpd. indicated
17. New Work Planned:
18. Miscl. Notes: A new portable crushing plant is being use. The rock (ore) is crushed to approx 2" or smaller and removed from the crusher by a movable belt, and the ore pile directly onto the leach bed, where it can be leveled with a D-8 cat. The solutions, # Sulfuric acid water etc. or sparayed over the ore thru plastic pipe. The solution is colleced into a pond below the dump and returned after passing over detinned scrap.

Date: 2-6-68

(Signature) (Field Engineer)

BLM

ARIZONA DEPARTMENT OF MINERAL RESOURCES
Mineral Building, Fairgrounds
Phoenix, Arizona

1. Information from: Verne Teeters Supt. Scruggs Mining Co.
   Address: Box 869 Safford (Same as Horseshoe)
2. Mine: San Juan
3. No. of Claims - Patented 10
   Unpatented 65
4. Location: About 12 miles north of Safford
5. Sec 8-17 Tp 6S Range 27E
6. Mining District Lone Star
7. Owner: Scruggs Mining Co.
8. Address: As above
9. Operating Co.:
10. Address:
11. President: Ted Scruggs
12. Gen. Mgr.: Verne Teeters (Supt.)
13. Principal Metals: Copper
14. No. Employed: 11
15. Mill, Type & Capacity: Leaching Plant reported 1000 tpd. (Doubtful)
16. Present Operations: (a) Down ☐ (b) Assessment work ☐ (c) Exploration ☐
    (d) Production ☒ (e) Rate ______ tpd.
17. New Work Planned:
18. Miscl. Notes: The broken rock is hauled from the pit to the nearby leach piles, leached with water to which sulfuric acid has been added 5 grams per liter. After circulation the solution is precipitated.

Date: 12-5-67

(Signature) Glen Irvin (Field Engineer)

PUB

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine	Horse Shoe (Until a notice of change)	Date	December 14, 1966
District	Lone Star	Engineer	G.W. Irvin

Subject: Development project

Phelan Sulfur Co., 1226 American Building, Houston, Texas 77002, John Phelan, President, Marvin E. Weaster, V.P. & Treasurer.

Have optioned over 100 claims including the Horse Shoe, San Juan, and Knob Hill groups, from O.L. Hill, Guy Anderson and others.

The Bechtel Corp. of San Francisco, have contracted to make a feasibility study with the possibilities of opening a large leaching operation in the neighborhood of 400,000 pounds per day capacity of copper.

Information for the above, from Mr. Hill, and Mr. Anderson.

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STATE OF ARIZONA
DEPARTMENT OF MINERAL RESOURCES
MINERAL BUILDING, FAIRGROUNDS
PHOENIX 7, ARIZONA

Tucson, Arizona,
Nov. 5, 1963

MEMORANDUM

To: Frank P. Knight, Director,

From: Axel L. Johnson, Field Engineer,

Re: Exploration work on San Juan Mine, north of Safford.

The following information was received from Matt Danenhauer on Oct. 8, 1963:

The San Juan Mine, about 12 miles NE of Safford, the ownership of which has been under litigation for some time, is now being explored by Guy Anderson and Al Claridge of Safford, who are now in possession of the property.

Mr. Anderson and Mr. Claridge are now doing diamond drilling on the property for the purpose of exploration and also to take care of the assessment work on the unpatented claims.

They are using their own diamond drill, which is operated by Agie Greenwood of Safford.

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DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine San Juan Date October 6, 1960

District Lone Star District, Graham Co. Engineer Axel L. Johnson

Subject: Field Engineers Report. Information from Annan Cook.

References: Report of Jan. 8, 1959 and previous reports.

Location: About 12 miles NE of Safford.

No. of Claims: 10 patented, 65 unpatented

Owners: Tuab Mineral Corp., Box 617, Safford.
John W. Bibb, Pres. - address as above.
Corporation share holders are John W. Bibb, Guy Anderson, Mr. Claridge, et al (Chas. Steen of Moab, Utah is no longer a share holder in the corporation).

Principal Minerals: Copper

Present Mining Activity: None. Property is idle.

Review of Recent Operations: McClintock Drilling Co. drilled one drill hole to a depth of about 1000 ft. some time ago. It is understood that results were not particularly encouraging, although some ore was found at a depth of 300 to 400 ft. and also near bottom of the hole.

Proposed Plans: Additional drilling is being considered.

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DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine San Juan Date Jan. 8, 1959

District Lone Star District, Graham Co. Engineer Axel L. Johnson

Subject: Field Engineer's Report - Information from Albert Spalding. No visit.

References: See report of November 6, 1958, and previous reports.

Location: 10 patented, 65 unpatented.

Owners: Tuab Mineral Corp., 1218 6th Ave., Safford, Ariz.
John W. Bibb, Pres., same address as above.

Status: Was informed by Albert Spalding that the Bear Creek Mining Co. has given up the option on the San Juan property.

Additional: Mr. Spalding also informed me that the Bear Creek Mining Co. has also given up their options on the following additional properties:

(1) Don Adams lease
(2) Corbett Talley lease
(3) Esperanza lease from Harold Elmer.

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(A) K

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine San Juan ✓ Date November 6, 1958

District Lone Star, Graham County Engineer Axel L. Johnson

Subject: Present status. Information from Albert ✓ Spalding, Safford, Arizona.

Location: About 12 miles NE of Safford.

No. of Claims: 10 patented, 65 unpatented.

Owner: Tuab Mineral ✓ Corp., 1218 6th Ave., Safford, Arizona.
✓John W. Bitt, Pres., same address as above

Option to Purchase: Bear Creek ✓ Mining Company, 506 3rd Ave., Safford, Arizona, has an option to purchase, this option expiring July 1, 1961.

Principal Mineral: Copper ✓ ore.

Present Mining Activity: Diamond drilling on contract with Boyles Drilling Company. Four diamond drills and 1 or 2 rotary drills are drilling at the property at the present time. The holes are started with the rotary drill, which drills from the surface down to a point where it is required to take samples. From that point on the remainder of the hole is drilled with a diamond drill.

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DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Not for publication

Mine San Juan Mine — Date Nov. 7, 1957 & Sept. 5, 1957

District Lone Star District, Graham Co. — Engineer Axel L. Johnson

Subject: Present Status. Information from Albert Spalding & John W. Bibb.

References Report on this property under date of June 5, 1957.

Location About 12 miles NE of Safford.

Number of Claims 10 patented claims and about 65 unpatented claims.

Owners Tuab Mineral Corp., 1218 - 6th Ave., Safford, Ariz.
See report of June 5, 1957 for individual owners of the corporation.

Option to purchase Bear Creek Mining Co. is reported to have acquired an option to purchase the above described property.. This option is reported to have been taken out as of July 1, 1957, the option being for 4 years, expiring on July 1, 1961. The option is reported to provide for a definite purchase price, with a small monthly payment per claim per month during the life of the option.

Principal Minerals Copper ores.

Present Mining Activity None at present. No drilling or other work has been done by Bear Creek Mining Co. to date.

Other Information See report on this property under date of June 5, 1957.

Special Information John W. Bibb, although admitting that the Bear Creek Mining Co. has taken an option on the property, seems reluctant to discuss the matter further. Evidently, he is committed to treat the matter as confidential information.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Not for publication

Mine San Juan Mine   Date June 5, 1957

District Lone Star District, Graham Co.   Engineer Axel L. Johnson

Subject: Field Engineers Report. Information from John W. Bibb, one of the owners.

References None. No previous report on the property.

Location About 12 miles NE of Safford.

Number of Claims 10 patented claims and 65 unpatented claims.

Owners Tuab Mineral Corporation, 1218 - 6th Ave., Safford, Arizona.
John W. Bibb, 1218 - 6th Ave., Safford, Arizona,
Bert Gibbs, 4117 E. Waverly St., Tucson, Arizona,
John Higgins, Safford, Arizoma (Secretary-Treasurer)
Note: Chas. Steen, Moab, Utah was formerly associated in this partnership, but is reported to have no further interest.

Principal Minerals Copper ores.

Present Mining Activity Idle. Rare Metals, subsidiary of El Paso Natural Gas, who had an option on the property (taken out about Mar. 1, 1957) discontinued drilling operations on May 31, and presumably is dropping this option.

Geology and Mineralization A relatively large body of oxidized copper ore, mostly chrysocolla, is exposed on the surface near the old San Juan Mine shaft and open cut workings. It is believed by the owners that a large body of low grade copper ore underlies this and the remaining area of the mine, and that diamond drilling will disclose such a deposit, if enough drill holes are put down and the diamond drilling is carried on to a considerable depth.

Ore Values According to an estimate by John W. Bibb, the diamond drilling that was done by Rare Metals proved up an ore body of several million tons, which he said averaged about 0.55 % copper. The drill holes, which bottomed at about 1,000 ft. (the deepest 1,034 ft. on incline) still showed mostly ozidized copper ores at the bottom of the drill holes. He stated that he did not believe the drilling was deep enough to get down to the main part of the deposit and the secondary enrichment zone.

Ore in Sight and Probable No estimates made on same.

Milling and Marketing Facilities None. A mill would be required, or a leaching plant for treatment of the oxidized ore.

Past History and Production
(1) Considerable old production. Arizona Bureau of Mines Bulletin No. 140, Arizona Metal Production, shows a production for the San Juan Mine for 1907 of 110,000 lbs of copper of a value of $ 25,000. This may be only a part of the copper ore produced from this mine.
(2) Owned by Pfeffer Estates, Valley National Bank, Phoenix, adm. for a number of years.
(3) Purchased by Tuab Mineral Corporation, present owners, some time during the summer of 1955.
(4) An option to purchase was acquired by Rare Metals, a subsidiary of El Paso Natural Gas, about March 1, 1957.
(5) Exploration work by means of diamond drilling by Rare Metals from

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DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Not for publication

Mine San Juan Mine (continued) Date June 5, 1957

District Lone Star District, Graham Co. Engineer Axel L. Johnson

Subject: Field Engineers Report (continued)

Past History and Production (continued)

March 1, 1957 to May 31, 1957. 13 diamond drill holes were put down on the San Juan property by the Rare Metals, Sprague and Henwood Co. doing the drilling ~~xx~~ on contract with 4 drill rigs. A total of 11,870 ft. of hole was put down, the holes averaging about 913 ft. in depth, the deepest hole being 1,034 ft. deep on the incline. It is believed by the owners of the San Juan (Tuab Mineral Corp.) that the drilling was too shallow to cut the secondary enrichment zone and the main part of the ore body. In addition to the holes put down on the San Juan, two drill holes were put down on the Arrowhead, an adjoing property, to depths of 500 ft. and 630 ft. respectively.

(6) Exploration activities were discontinued on May 31, 1957, and ~~the~~ Rare Metals is reported as dropping the option. Mr. Bibb states that Rare Metals has turned over the drill cores to him, and will shortly turn over a complete report on the exploration work, including all assays of drill cores. He further promised to send a copy of same to the office of the State Dept. of Mineral Resources for their files.

Old Mine Workings and Condition
One old main shaft on the property with several levels. Old workings are caved in and are inaccessible. Besides there are several old open cuts on the property, exposing a considerable quantity of low grade oxidized copper ore, mostly chrysocolla.

New Mine Workings None, except a number of new location shafts.

Present Mining Operations None.

Proposed Plans To sell, lease or option the property to another company, who is willing to do exploration work and explore the property in additional depth. Lack of finances prevents the Tuab Mineral Corp. from doing exploration work on the property themselves.

Terms of Sale or Lease Subject to negotiations with the owners.

May 11, 1951

SAN JUAN MINE

Graham County, Arizona

SUMMARY: San Juan Mine is located in Graham County, Arizona within 9 miles of the railroad with a short haul to several copper smelters. Water is scarce but it is believed that it can be developed within 5 miles of the mine. Mining conditions are such that a combination of underground and open pit mining can probably be used. It might also be possible to cave the surface ores after removing the sulphides, and then leach the mixed sulphides and carbonates in place.

A plug of quartz monzonite porphyry protrudes thru flat lying volcanics and remnants of old sediments. The porphyry and surrounding rocks are mineralized by copper carbonates, oxides and sulphides which are in shears, veins, veinlets, and thinly disseminated thru the rocks. There are two strong shear systems one running Northeast and dipping from 55 degrees to vertically, and the other striking Northwest and dipping from 55 to 65 degrees Southwest.

On the surface the rocks assay from 1.5% to 2.5% copper. Drill results below the surface show an oxidized zone containing mixed oxides and sulphides about 50 feet deep and assaying 1.0% copper; and below the oxides a sulphide zone which assays 1.09% copper. The thickness of this latter zone has not been proved. Two holes were drilled to depths of 150 feet. The sulphide zone of one, Drill Hole "B", was 75 feet thick and averages 1.5% copper; the bottom sample assayed 0.92% copper. The sulphide zone of Drill Hole "C" was 75 feet thick and averaged (0.09% ?) copper. This hole, however, was low grade throughout the sulphide zone. The two other holes, unfortunately, were stopped at a depth of 100 feet and in material which assayed 1.47% and 1.63% copper. A fifth hole drilled into loose rock at a depth of 90 feet, probably an old stope, so nothing definite was gained from it.

The drilling to date indicates a low grade copper deposit with shoots or veins of higher grade. The high grade ore could be mined and shipped direct to one of the smelters.

Additional drilling should be done along the southeast contact between the porphyry and volcanics, and where the Southeast Northwest fractures intersect the northeast fracture which parallels the Southeast contact. About 5 holes would prove the area.

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INTRODUCTION

LOCATION: San Juan Mine is located at an elevation of 3800 feet 9 miles northeasterly from Safford, Arizona, a shipping point on the Southern Pacific Railroad. Specifically the claims are situated in the Lone Star Mining District, Section 2 Town. 6 South, Range 26 East, and Section 35, Town. 5 South, Range 26 East, Gila and Salt River Meridian, Graham County, Arizona.

PROPERTY: The property consists of ten patented claims, Poorman, Richman, Lawyer, Intermountain, Beggarman, Hole Brook, Lucky Joe, Outlaw, Esperanza and Bill Nye. The titles are in the name of Ralph H. Pfeffer.

TOPOGRAPHY: The mine lies in the foothills of the Gila Mountains which are north of the Gila River. The surface rises very gradually from the Gila River to the foot hills, about 1000 feet in 8 miles. The claims cover some small hills cut by dry arroyos. The main mountain range rises abruptly one mile north.

MINING FACILITIES: Water: Water for drilling is hauled from Safford by tank truck. There is a small spring about one mile north of the property and it might be developed to supply water for mining purposes. Water for milling will be a problem but there is some hot underground water within five miles of the property which might be used.

POWER: Graham County Power Company has 500 Horsepower available at the following rates: $6.00 per horsepower year standby change, First 1000 KWH at 2 cents per KWH, Second 1000 KWH at 1.5 cents per KWH, all over 2000 KWH at 1 cent per KWH. It would be necessary to build 12 miles of power line. Of a small installation were made, it would be more economical to use diesel.

CLIMATE: The climate at this elevation is mild with no great extremes of temperature.

TRANSPORTATION: The road from Safford to the mine is paved for two miles. The balance is graded and easily maintained as it is mostly gravel. There is a down grade to the railroad. The cost of trucking to Safford would be 50 cents per ton.

The following are rates from Safford to Miami and El Paso.

Value in Dollars;	15-20	20-30	30-40	40-50	50-75	75-100	100-125
To Miami	$1.76	2.12	2.48	2.84	3.56	4.28	5.00
To El Paso	$2.40	2.70	3.00	3.30	3.90	4.50	5.10

For freight valuation copper is priced at 14 cents per pound

LABOR: Safford has a population of 2000; the mining centers of Globe, Douglas, Miami and Morenci are within a radius of 125 miles. It should be possible to secure experienced miners from these places.

HOUSING: It would be advisable to house the workers at Safford and haul them to the property by bus.

GENERAL GEOLOGY

A plugof quartz monzonite prophyry has invaded flat lying volcanics, and possibly remnants of old sediments. In several places are areas of highly silicified rocks which have the appearance of old quartzites. The porphyry body has a long axis Northeast and Southwest of 1200 feet but may extend in both directions under the debris which covers the surface. Its dimension in a Northwest Southeast direction is from 200 to 400 feet.

The porphyry and surrounding rocks have been shattered by two systems of fractures. One system strikes Northeasterly and dips from 55 degrees Southeast to vertical; the other strikes Northwesterly and dips from 55 degrees to 65 degrees Southwest. The fractures are from knife blades to 10 feet in width. Copper is found along the fractures.

On the surface the ore consists of chrysacolla and chalcocite in fractures and veins which have widths from a few inches to 10 feet. The larger veins are filled with gouge and breccia and partially cemented by the copper minerals. There is some copper mineralization disseminated thru the porphyry however, any mineable ore will have to consist of mineralized shears or veins spaced close together.

The grade of the material has not been determined definitely. Many samples of dumps and open cuts have been made. These run from 1% to 2% copper. Samples taken from the ore in place on the surface assayed 2.48% copper. Five churn holes were drilled during the spring of 1951 and gave average of 1.09% copper, but showed some higher grade zones as follows:

Hole A 15' - 4.94% Copper
Hole B 10' - 3.68% "
Hole D 20' - 5.29% "

The higher assays in A and B were found where the holes cut known veins as illustrated in sections accompanying. The higher grade in "D" has not been found on the surface.

There are two highly mineralized surface areas which have not been drilled or tested. One area is along the Southeast contact where Northeast striking vein would intersect the Northwest shear system. Another is along the Southeast contact where it is crossed by the South side line of the Richman Claim. At this point a strong shearing comes in from the Southeast, possibly from the Lone Star Mine.

The claims lying to the West of the Poorman are in a low area between two arroyos and are covered by debris. Shafts sunk for location work and assessment work show some mineralization. This area warrants further prospecting and probably drilling.

THE MINE: The mine is flooded and inaccessible except for surface openings, cuts etc. Maps made in 1915 show the mine to contain a vertical shaft with two levels, one at 130 feet and the other at 230 feet. The 130 level contains 700 feet of drifts and cross cuts while the 230 contains 320 feet of drifts and crosscuts. In addition to these are some incline shafts and stopes along the Southeast contact.

RECOMMENDATIONS

The dhurn drilling that has been completed recently indicates that the San Juan Mine has ore deposits which can be shipped direct to the smelter, and that there is a possible large sized low grade body which might be caved, or mined by open pit methods. Additional drilling is necessary, and this should be accompanied or followed by underground exploration from the old workings.

The following work should be done:

1. Along the B-A line of holes, drill a hole "F" at a point 150 feet S73E of drill hole "A".

2. At a point 50 feet S73E of "F" Drill hole "G".

3. At a point 100 feet N17E of "F" drill hole "H".

4. At a point 100 feet S73E of "H" drill hole "I".

5. At a point 100 feet N73E of "H" drill hole "J". Drill all holes to a depth of 200 feet.

6. If holes "F", "G", and "H" show ore, rehabilitate the vertical shaft, unwater the 130 Level and sample it.

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RECOMMENDATIONS

7. From the 130 Level cross cut N60W 150 feet to test the mineralized area which shows on the surface.

8. From 130 Level cross cut S70E to the Southeast contact and follow at Northeast 300 feet.

9. The results obtained will decide whether the mine will be opened as an open pit or an underground mine. The program will cost about the following and will have the following time schedule:

Step One - Five Months		
1000 feet churn drilling	$10,000	
Engineering	1,000	
Rehabilitate Shaft and unwater 130 Level	10,000	
Equipment Rental	5,000	$26,000
Step Two - Seven Months		
Rehabilitate 130 Level, pipe rails, etc.	4,200	
150 feet Cross cut Northwest	3,000	
200 feet Cross cut Southeast	4,000	
300 feet drift Northeast along Southeast contact	6,000	
2 raises to surface 130 ft.each	20,000	
Purchase equipment	15,000	$52,200
		$78,200

CONCLUSION

The San Juan Mine has an impressive surface showing, samples from the surface averaged 2.48% copper; it has had some production from surface and underground workings; 5 drill holes bored from the surface in 1951 show a low grade copper deposit with areas, probably veins or vein intersections, or ore that assays from 3% to 8% copper.

It is possible to develop 1,130,000 tons of low grade ore per 100 feet of depth below the mineralized area outcropping on the Poorman Claim. Drilling and prospecting may extend the known mineralized area both to the east and west.

Without additional prospecting it is impossible to estimate the amount of 3 to 8% copper present. Twenty six thousand dollars spent in additional drilling and rehabilitation of old workings will probably indicate enough ore to warrant putting the mine in production.

Signed H. Grattan Lynch
H. Grattan Lynch

BM

Assay Certificate -San Juan Mine-February 7,1951

HOLE D

Depth			Per Cent Copper
0	-	5	1.98
5	-	10	1.81
10	-	15	1.56
15	-	20	1.42
20	-	25	1.33
25	-	30	1.22
30	-	35	1.17
35	-	40	1.22
40	-	45	1.22
45	-	50	1.33
50	-	55	1.46
55	-	60	1.36
60	-	65	1.20
65	-	70	1.20
70	-	75	1.44
75	-	80	4.51
80	-	85	3.46
85	-	90	7.78
90	-	95	9.43
95	-	100	2.63

Assay Certificate-San Juan Mine - March 17, 1951

HOLE E

Depth			Per Cent Copper
0	-	15	2.65
20	-	30	2.36
30	-	35	3.11
35	-	40	3.31
40	-	45	2.57
45	-	50	1.33
50	-	55	1.80
55	-	60	1.84
60	-	65	1.49
65	-	70	1.48
70	-	75	1.46
75	-	80	1.47
80	-	85	1.44
85	-	90	1.78

SAN JUAN COPPER PROPERTY

Graham County, Arizona

INTRODUCTION AND SUMMARY

The ten patented claims and the 62 unpatented claims now comprising the San Juan Group were inspected by the writer, Mr. W. D. Roper, and Mr. J. J. Nixon on November 29, 30, and December 1, 1955.

The claims are easily accessible in the low foothills of the Gila Mountains, nine miles north of Safford, Graham County, Arizona. The patented group consists of the Holebrook, Outlaw, Espranza, Beggerman, Richman, Poorman, Intermountain, Lucky Joe, Lawyer, and Bill Nye, all of which are under option to purchase by John Bibb, Jr. and B.A. Gibbs of Tucson, Arizona.

Copper ores have been mined selectively from a series of fissures in a monzonite porphyry plug which has penetrated earlier volcanics. The greatest concentration of copper bearing fissures and fractures is within the main mass of porphyry which is exposed over an area of approximately sixteen hundred feet by five hundred feet. The surrounding volcanics are fractured to a lesser extent and exhibit considerable copper mineralization along the more extensive fissures which have produced copper-silver-gold ores.

Development and production with the exception of the small scattered prospects of the volcanics has been confined to the Poorman claim. Ore was mined from surface trenches following the vein cropings and from the drift and stopeing operations at depth. The main shaft, reported to be 370 feet in depth, is filled with water to a point approximately 50 feet below the collar. The exposed walls appear to be holding well with little sluffing or caving. Maps of the early underground workings are not available.

Prior to World War I, the ore was treated or concentrated on the property. However, no production records are available. Judging from the size and depth of the badily eroded tailing pond, several thousand tons of select ore was milled.

The results of five groups of samples taken by five engineers over a period of several years, indicate an average of 2.9 per cent copper in the oxidized zone. Assay results from five churn drill holes (accompanying this report) indicate a zone of secondary enrichment averaging 4.7 copper. Details of this work may be noted in the reports of H. Gratten Lynch, and Frank L. Metler, which are available.

B2C0 6.

The sampling and drilling accomplished to date have been so limited in scope that an accurate estimate of grade for the reserve tonnage is difficult to calculate. The writer believes that with detailed mapping followed by a program of drilling, a measured and indicated reserve in excess of ten million tons containing two per cent to four per cent copper will be easily established.

LOCATION AND ACCESSIBILITY

The 72 claims are contiguous and are 9 road miles north of Safford, Arizona. They are in the Lone Star Mining District, Section 2, Township 6 South, Range 26 East, and Section 35, Township 5 South, Range 26 East, Gila and Salt River Meridian, Graham County, Arizona.

The property is accessible from Safford by 2 miles of blacktop road and 7 miles of easily maintained dirt and gravel road. There are no steep grades, but a gradual descent into Safford on the Gila River Valley

Supplies and equipment may be obtained at Safford. Heavy mining equipment can be shipped by rail to Safford via the Southern Pacific Railroad. Housing and labor are available in and around Safford. The mine is within commuting distance of the town.

Electric power is not available on the property. Approximately 10 miles of line will be necessary to connect with existing sources of power.

TOPOGRAPHIC AND PHYSICAL FEATURES

The claims are in the low foothills of the west slope of the Gila Mountains. Gravel beds, volcanics, and scattered monzonite plugs have been eroded into rolling hills and ridges separated by dry washes of low gradient. Most of the ground within the claims is covered by deposits of gravel, however, exposures of solid rock may be observed in most of the dry washes.

The climate is arid, resulting in sparse vegetation and no flowing water in the gulches. W.D. Roper indicated that water rights may be obtained to pump water from the Gila River. Nearby springs have dried up to the extent that sufficient water for milling purposes is not available from surface sources. Water for drilling probably will have to be hauled from Safford, although, with proper equipment it can be pumped from the main shaft.

JB03

DESCRIPTION OF THE DEPOSIT

The greatest concentration of copper mineralization thus far discovered appears to be confined to the monzonite porphyry plug which is well defined on the Poorman claim. Surface workings have exposed two groups of major intersecting fractures which were filled with ore grade material ranging in thickness from several inches to forty feet. The rock between and around the major fractures is completely shattered and contains innumerable small veins and veinlets of copper oxides and sulphides. The copper mineralization appears to be disseminated throughout the porphyry.

The highly mineralized zone has been developed over an area of approximately 1000 feet by 500 feet. Surface indications are such that strong mineralization will extent for twice the above length. Since the deposit has been mined selectively, only pillars of the higher grade ore remain in the oxidized zone. The pillars show strong copper oxide mineralization enclosing stringers of copper sulphides.

The depth of the deposit is unknown. Surface sampling can be done to a maxium depth of 30 feet and drill holes to be sampled has been conducted to an average depth of 138 feet (drilling stopped in ore, easily establishing more ore below) in 5 holes for which records are obtainable. Since the shafts, drifts, and stopes are inaccessible with one exception, no deep sampling has been possible for 30 or 40 years. Mining is reported to have been done from a 130 foot level and from a 230 foot level, consequently, it is certain that higher grade mineralization extended to those depths.

The recently located Blue Bird claims (September, 1955) surround the original San Juan patented group on all sides except for the length of the Beggarman claim on the north and are in turn surrounded on all sides except on the northwest by claims of Bear Creek Mining Co., a subsidiary of Kennecott Copper Co. These claims include known and probably unknown veins and fractured zones within the volcanics. Most of the veins show strong copper mineralization and in some instance are reported to contain small amounts of gold and silver. The stronger fissures or veins strike northeast and with two exceptions dip to the southeast. They range in thickness from several inches to a maxium of 20 feet, and have been exposed by shallow cuts and shafts driven by early-day prospectors. Little or no production has come from these deposits.

Fissure veins were observed on the Blue Bird Nos. 3,5,8, 24,31 and 36. The remaining unpatented claims are either covered by gravel or show indications of copper. The Blue Bird No. 8 claim contains the most favorable appearing vein in the group. It is 20 feet in width and was developed by a shallow shaft, now caved. The dump and vein cropping show strong copper mineralization, and a small amount of ore grade material is stockpiled on the dump. In the southern portion of the Blue Bird No. 8, a highly fractured zone in the volcanics

contains considerable copper mineralization and is worth investigating at depth.

The most favorable appearing spot for exploration outside the monzonite plug is a breccia plug near the northwest cornor of the Beggerman claim. The exposed portion of the plug covers an area of approximately 200 by 400 feet and rises abruptly to a peak above the surrounding rocks. The breccia is extremely porous and contains considerable copper oxide and large amounts of copper sulphides in the vugs. Copper mineralization is more evident towards and at the center of the plug. The breccia will be worth testing at depth for secondary enrichment.

A wide, highly silicified band of monzonite porphyry extends wouthwest from the main monzonite plug on the Poorman claim and crosses the Espranza claim diagonally. Copper mineralization is very strong in the exposed protions of the band, particularly in the southwest portions of both the Poorman and Espranza claims. Testing of this zone at depth is justified.

DEVELOPMENT AND PRODUCTION

Nearly all the development and production on the San Juan claims reportedly took place prior to World War I. Apparently there is one main shaft, reported by W.D. Roper, to be 370 feet in depth, and at least four additional shafts or holes of unknown depth. According to a report prepared in 1951 by H. Grattan Lynch, a 1915 map shows a 130 foot level with 700 feet of drifts and crosscuts and a 230 foot level with 320 feet of drifts and crosscuts. There is a well preserved 140 foot crosscut entering the hill about 50 feet north of the mill site. It was drived on an easterly bearing to cut the ore body at depth, however, work was abandoned just as higher grade copper mineralization was encountered. A cample cut across the face of the crosscut by W.D. Roper contained 3% copper. Visual inspection indicated that this grade is maintained for a distance of five feet back from the face.

The surface development consists of a mass of interlocking trenches and pits in addition to open stopes that were worked to the surface from below. The rich surface croppings of the stronger veins were stripped to a depth ranging from 5 to 30 feet, and where major vein intersections occured the wall rock was mined, resulting in irregularly shaped pits. The under-ground workings probably developed two or three major veins and the surface workings probably developed at least a dozen smaller veins. The type and capacity of the mill that operated on the property isunknown, however, the workings and the remaining portions of the tailing pond indicate a production and treatment of many thousands of tons of selectively mined ore over a period of several years.

At present there are no facilities or equipment on the property.

ORE RESERVES

In recent years at least five attempts have been made to sample the exposed portions of the oxidized zone, and one drilling project of 5 churn drill holes (with this report) sampled the deposit to a depth of only 150 feet. As nearly as can be determined, the surface sampling was confined to the trenches, pits, and shallow shafts along the veins, and therefore , is not representative of the deposit as a whole if block caving or open pit mining is to be considered. Also, since the major and minor veins, as well as the countless veinlettes are steeply dipping or are verticle, the five vertical drill holes possibly cut an exaggerated thickness of copper mineralization in each vein or stringer encountered. However, with the impressive showing, it is possible to accept the past sampling and estimates of the grade of ore reserves as basically sound and probably conservative.

Frank L. Metler, Mining Engineer, in a report dated December 14, 1950, estimates for the oxidized zone a measured or proven ore reserve of 267,000 tons, containing 2.05% copper, and a proven reserve in the secondary zone of 864,000 tons containing 3.7% copper. The combined estimates total 1,131,000 tons, averaging 3.31% copper. He indicates additional drilling will undoubtly multiply the reserve several times.

H. Grattan Lynch, in a peport dated May 11, 1951 estimates 1,130,000 tons of ore can be developed per 100 feet of depth on the Poorman claim. I concur with him on this statement.

With detailed mapping and angle core drilling, Metler's estimates of grade probably will be raised and the tonnage estimates of both men probably will be multiplied at least seven times.

It is positive that the Blue Bird claims will add materially to the ore reserves, large lots of selectively mined ore can be produced from the No. 8 claim.

CONCLUSIONS AND RECOMMENDATIONS

It is concluded that there is sufficient copper mineralization and indicated reserves on and in the immediate vicinity of the Poorman claim to justify additional exploration and development work on the property. A program of detailed mapping, followed by core drilling probably will indicate a reserve of over 10 million tons of ore, averaging between 2% and 4% copper.

The following recommendations are submitted:

1. The area enclosed by the Outlaw, Espranza, Beggerman, Richman, Poorman, Intermountain, Lawyer, and Evelyn King be mapped geologically and topographically on a scale of 100 feet to the inch with a five-foot contour interval.

2. At the completion of the mapping, lay out a core drilling program best suited to cut across the steeply dipping trends of mineralization at depth rather than to drill vertically and risk obtaining exaggerated mineral content in the core. At least 5 holes should be drilled to depths of no less than 200 feet to test the oxidized zone in the vicinity of the workings. At least 4 holes should be drilled to test the ground 100 feet or more below the workings as well as to determine the width and length of the copper bearing portion of the monzonite plug. This information can best be determined with angle holes starting either in the porphyry and drilling out towards the volcanics, or starting in the volcanics and drilling into the porphyry. To avoid old workings the safest method would be to start in the volcanics and drill as deeply as advisable into the porphyry.

3. Drill at least one hole 200-250 feet in length to test the breccia plug in the northwest corner of the Beggerman claim. This should be drilled at a minus 45°.

4. Pump out the workings, either prior to drilling, or while drilling is in progress to enable mapping and sampling to be completed as soon as possible.

5. Plan a mining program based upon the combined results of the mapping, drilling and sampling.

Drilling costs will depend largely upon the skill of the driller, however, by starting with NX and reducing to BX, the over-all cost probably will be no less than $12.00 per foot. Starting with BX and reducing to AX, the cost probably could be held to $10.00 per foot. These costs are based upon personally supervised projects drilling in similar ground and maintaining sludge recovery at all times, either by utilizing casing or cement.

As for drilling the Blue Bird claims (unpatented group), it is not necesssary at this time as sufficient ore is obtainable on the patented group. These claims will be of value at this time to prevent crowding by other locators, when the operation commences on the patented group.

R. R. McLellan

R.R. McLellan

Report consisting of seven pages.

BIB 14

C O P Y

INTERNATIONAL SMELTING & REFINING CO.
MIAMI PLANT

Assay Certificate-San Juan-Mine-January 31,1951

HOLE A

Depth			Per Cent Copper
0	-	5	1.15
5	-	10	1.24
10	-	15	1.25
15	-	20	1.37
20	-	25	1.49
25	-	30	1.38
30	-	35	1.39
35	-	40	1.37
40	-	45	1.33
45	-	50	1.49
50	-	55	2.29
55	-	60	1.88
60	-	65	1.76
65	-	70	2.27
70	-	75	1.69
75	-	80	2.14
80	-	85	5.46
85	-	90	5.45
90	-	95	6.92
95	-	100	2.47

Assay Certificate-San Juan Mine-March 2,1951

HOLE B

Depth			Per Cent Copper
5	-	10	1.65
10	-	15	1.70
15	-	20	1.78
20	-	35	3.04
35	-	40	2.51
40	-	45	2.16
45	-	50	2.28
50	-	55	2.59
55	-	60	2.79
60	-	65	2.02
65	-	70	2.13
70	-	75	1.96
75	-	80	2.32
80	-	85	2.40
85	-	90	2.11
90	-	95	2.25
95	-	100	2.22
100	-	105	2.10

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HOLE B (Cont.)

Depth			Per Cent Copper
105	-	110	6.07
110	-	115	3.17
115	-	120	2.50
120	-	125	2.18
125	-	130	1.96
130	-	135	1.87
135	-	140	1.86
140	-	145	2.11
145	-	150	1.92

Assay Certificate-San Juan Mine- February 14, 1951

HOLE C

Depth			Per Cent Copper
0	-	5	3.84
5	-	10	2.58
10	-	15	3.16
15	-	20	3.85
20	-	25	3.00
25	-	30	2.33
30	-	35	1.51
35	-	40	4.26
40	-	45	1.89
45	-	50	1.46
50	-	55	2.45
55	-	60	2.09
60	-	65	1.44
65	-	70	1.31
70	-	75	1.28
75	-	80	1.14
80	-	85	1.11
85	-	90	1.07
90	-	95	1.09
95	-	100	1.10
100	-	105	1.13
105	-	110	1.10
110	-	115	1.10
115	-	120	1.13
120	-	125	1.08
125	-	130	1.08
130	-	135	1.07
135	-	140	1.06
140	-	145	1.06

Miami, Arizona
April 25, 1940

Mr. J. S. Coupal, Director
Department of Mineral Resources
Phoenix, Arizona

Dear Mr. Coupal:

I am enclosing the letter you sent me concerning the Lone Star district.

You have been very kind and considerate with me, and I thank you very much for the information you have sent.

Yours Sincerely,
Wayne Briggs

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24 April 1940

Mr. W. G. Briggs,
Miami,
Arizona.

Dear Sir:

With further reference to your letter of April 2, I am enclosing herewith a letter from Mr. Albert Spalding, Safford, Arizona, giving detailed information on the Lone Star Mining District.

I shall appreciate your return this letter to me when you have read it.

Trusting that this information may be helpful to you, I am

Yours very truly,

J. S. Coupal
Director

JSC-jrf

encl.

17 April 1940

Mr. W. G. Briggs,
Miami,
Arizona.

Dear Mr. Briggs:

Replying to your letter of April 2, I beg to advise that I have no information on the Lone Star Mining District or the San Juan Mine. However, I am today writing to Mr. Albert Spaulding, Safford, Arizona, asking him to furnish me with any information he may have on the same.

As soon as I hear from him, I shall write you again.

With best wishes, I am

Yours very truly,

J. S. Coupal
Director

JSC-jrf

CC - Albert Spaulding

17 April 1940

Mr. Albert Spaulding,
Safford,
Arizona.

Dear Albert:

I have had an inquiry for information on the San Juan Mine and the Lone Star Mining District. I should appreciate any information you may have on this property, particularly the name of the owner and the work that has been done on the property, and its location.

The San Juan Mine was operated prior to about 1917.

With best wishes, I am

Yours very truly,

J. S. Coupal
Director

JSC-jrf

encl.

Seligman, [illegible]
Apr. 27th [illegible]

Mr. Stein [illegible], Director
Dept. of Mineral Resources
[illegible]

Dear Sir:

Replying to your letter of Apr. [illegible], I would like to state [illegible], that in [illegible] District, there are two properties that [illegible] [illegible] mining [illegible] [illegible] property, [illegible] your [illegible] [illegible] [illegible] [illegible] [illegible] the [illegible] [illegible], I think [illegible] the [illegible].

[illegible] I [illegible] have [illegible] property, [illegible] [illegible] [illegible].

At the [illegible] working [illegible], 1906 to 1907, [illegible] was [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

(over)

2/

[illegible] Mr. Hoole of course would not consider such a transaction and [illegible] another good chance, Mr. Hoole [illegible] and [illegible] the [illegible] [illegible] all on, [illegible] Shaft [illegible] between 3 & 7 % copper with an occasional car of high grade. All the [illegible] workings [illegible] [illegible] of low grade copper - All machinery and dwellings are [illegible], what is left has been stripped and of course is all out of date. My suggestion on this, would be to [illegible] [illegible] price [illegible] if it would be possible [illegible] to supply you with [illegible] of all these operations, I believe they would [illegible] accommodate you.

[illegible] you [illegible] the Lone Star District must be the Lone Star mine. There are of course several properties in there, but all are in the Lone Star [illegible] District. You have in your [illegible] now copies of everything I have on [illegible] [illegible]. A. J. [illegible] Report & a letter [illegible] of the early history of the Lone Star mine individually - and of course all company officials have

plenty other & much more [redacted]
ear these, that you tried to [redacted] when in
Boston, and I have tried [redacted] times, having
seen the property yourself [redacted] help greatly.

Our Kirtland Hill area [redacted] not covered by any reports or other data. I [redacted] however, outlined its history briefly on [redacted] the questionnaire sent out by the Dept. of Mineral Resources, and also by Ernest Walcott's statement. I don't know what else I could add that would help beyond all what you have.

Now a little personal information for you. Last Wed. afternoon, one of my associates went out to Tom Torquay's property to take a box of groceries. Things didn't appear natural he said when he reached the cabin. He opened the door & got the shock of his life - There stretched across the bed in his underwear, lay Tom - dead. According to the doctors report - he died of heart trouble of which he had been treating for some time. There was no indications of a struggle at all. A week ago last Fri, Tom came in the plant to see me & gave me 2 new A.S.M.O.A. members. Very pert & jolly he walked out & an hour later he brot in 3 more, guess noon he had given me 8. I never saw anybody

3/

Glancing over your lett[redacted] note you asked about the work done [redacted] has been done by the owner.

There has been considerable [redacted] done ins-by shaft & open pit & cuts. Cons[redacted]ble drilling ~~stoping~~ underground. They are [redacted] a depth of 300 ft. & there are several oth[redacted].

The owner is Mr. Whitney of N.Y. a stock ~~manipulator~~ I believe. Anyway he manipulated himself into prison & so that will be his address.

Mr. G. A. Golding Safford Ariz. is in charge ~~looking after~~ the property. You may get in touch with him.

O.T.S.

Please pardon me for the pencil but I'm writing this while at work in the plant—

COPY

Safford, Arizona

Apr. 21, 1940

Mr. Sam Coupal, Director,
Dept. of Mineral Resources
Phoenix, Ariz.

Dear Sir:

Replying to your letter of Apr. 17, I would like to state here, that in the "Lone Star Mining District", there are two properties that have seen anything like mining operations. They are the Lone Star property, or formerly call such, Now split up into several smaller operations, one of which includes my own. The other, was the old San Juan mine, 3 miles to the N.W. I am sorry I do not have anything on this property, but will give you a brief outline of it's history as I remember it.

At the time the Lone Star mine was working at it's best, 1900 to 1907, the San Juan was also going great. Some where along there a 50 ton Mill was installed. Considerable success was attained - To what extent I cannot say. These operations were carried on for several years. The Co. then ran into various difficulties which in the end, resulted in the property being jumped by four local men. After long court proceedings, a decision was handed down in favor of the jumpers. These 4 men sold the property to a Co. called the Atlas Mining Co. Thru these operations, 3 churn drills were put to work & an extensive drilling campaign was carried on. As a result of these holes, a considerable ore body was developed & mined. Three cars per week was sent over to the Douglas Smelter - This was during the war days of 1915 to 1918. At one time I had in my possession, copies of all these settlement sheets, assay reports, dozens of letters and other valuable data regarding this period of operations. I was corresponding with Arthur Houle of Tucson, who I used to work for in the Shattuck Mine at Bisbee. Mr. Houle was intensly interested and kept calling for more data - Finally he asked for copies of the drill holes assays. These I could not get but did succeed in getting the samples themselves, a whole box of them put up in small envelopes. I sent these to him and then he was ready & willing to negotiate a deal. The owner Mr. Whitney of New York who as you know now, is in prison, refused to deal only by cash consideration. Mr. Houle of course would not consider such a transaction and away went another good chance. Mr. Houle did not return any of the data sent him, consequently I am left flat - nothing at all on this property. As I remember, those settlement sheets ran between 3 & 7 % copper with an occasional car of high grade. All the surface workings show a solid body of low grade copper - All machinery and dwellings are gone - stolen, what is left has been stripped and of course is all out of date. My suggestion on this, would be to write the Douglas people asking them if it would be possible for them to supply you with copies of all these operations, I believe they would gladly accommodate you.

What you mean by the Lone Star District must be the Lone Star Mine. There are of course several properties out there, but all are in the Lone Star Mining District. You have in your office now copies of everything I have on the property. A. E. Almind's report - & a letter descriptive of the early history of the Lone Star Mine individually - and of course old company officials have plenty other & much more valuable information on this, that you tried to recover while in Boston, and I have tried many times. Having seen the property yourself should help greatly also.

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Our Kirkland Hill area is not covered by any reports or other data. I have however, outlined it's history briefly on one of the questionnairs put out by the Dept. of Mineral Resources, and also by Newt Walcott's statement. I don't know what else I could add that would help beyond all what you have.

Now a little personal information for you. Last Wed. afternoon, one of my associates, drove out to Tom Norquay's property to take a box of groweries. Things didn't appear natural he said, when he reached the cabin. He opened the door & got the shock of his life - There stretched across the bed in his underwear, lay Tom - dead. According to the doctors report - he died of heart trouble of which he had been treating for some time. There was no indications of a struggle at all. A week ago last Fri., Tom came in the plant to see me & gave me 2 new A.S.M.O.A. members. Very pert & jolly he walked out & an hour later he brot in 3 more, & by noon he had given me 8. I never saw him feeling any better or looking better. That afternoon Jack Folks, the one that found him dead, tookhim out to the mine. Then last Monday, Jack took him a load of ties & timbers so he could collar his shaft he was working in. Jack carried them over to the shaft for him. We went up yesterday to get his belongings & noticed he had done considerable work on the timbers, figuring he had over worked & over heated himself resulting fatally. Tom was our local councils chairman you know.

Now for a problem you might help us out on. Last week we took in a fourth partner on our mine. In return he is fixing up this old homemade compressor & going to finance all the expense of getting out a car load of that rich lead-silver ore. We none of us have any confidence in the compressor, but he is willing to buy a second hand one if he can locate one pretty cheap. Know where we can pick up one? We're going to put two miners out there & what chalk line do we have to walk? Is insurance on them necessary at present? Let me hear from you soon, and by the way, if you see Walcott or write him, please tell him about poor old Tom, will you?

Hope the information I have given will suffice.

With best wishes, I am,

Yours very truly,

ALBERT SPALDING

P. S.

Glancing over your letter I note you asked about the work that has been done & the owner.

There has been considerable work done there,by Shaft & open pit & cuts. Considerable drifting & stoping underground. They are to a depth of 300 ft. & there are several shafts.

The owner is Mr. Whitney of N. Y. a Stock Manipulator I believe - Anyway he manipulated himself into prison & so that will be his address.

Mr. G. A. Golding - Safford Ariz. is in charge of looking after the property. You may get in touch with him.

A. F. S.

Please pardon me for the pencil but I'm writing this while at work in the plant.

Miami, Arizona
April 2, 1940

Arizona Dept. of Mineral Resources
Capitol Building
Phoenix, Arizona

Gentlemen:

I have been unable to find any information on the Lone Star Mining district or the San Juan mine which operated in that area for several years prior to about 1917. If you can give me any help, I will be very grateful to you.

Yours truly,
W. G. Briggs

B5

LONE STAR CONSOLIDATED COPPER COMPANY

Graham County, Arizona.

Charles H. White, Hobart Building, San Francisco, offers a lease and option on the 68 claims owned by the Lone Star Consolidated Copper Co. about 10 miles northeast of Safford on the southwestern slope of the Gila Range. This range is capped by recent basaltic lava flows which have a flat dip to the northeast and cover the most northeasterly claims. Below the basalt and exposed in a band about 1500 to 2000 feet wide towards the southeast is a considerable thickness of light colored bedded volcanic agglomerate and rhyolite with a variable but much steeper dip in the same direction. Irregular intrusions of quartz, porphyry cut these earlier volcanic rocks. A large area of dark greenish gray diorite porphyry, sometimes quite coarse but with fine grained phases, covers the greater part of the property. The more southwesterly claims are mainly covered with loose gravel and float material.

Cutting all the formation but the basalt capping are prominent though usually very narrow veins. The predominent strike is N 65° E and the dip varies only a few degrees from the vertical. They are marked on the surface by abundant iron stain, some quartz and occasionally copper stain. Some very rich malachite and chalcocite ore has been mined from these veins. The rich ore is without exception in narrow seams from a knife edge to a few inches in width but lower grade material is sometimes found across a width of as much as 3 feet. Some of these veins can be traced for upwards of 1000 feet and several shafts have been sunk on them, one to a depth of 500 feet.

Over an area of about 15 acres the volcanic agglomerate, rhyolite and quartz porphyry are heavily iron stained. Less pronounced mineralization is found sporadically over a much larger area. The mineralization continues up to the contact with the overlying basalt and probably extends on for some distance below it. Only very occasionally can faint copper stain be found in this area. The oxides of iron occur in narrow seams and scantily disseminated in the rock mass but otherwise the rock is quite fresh and as a rule very hard and tight.

#2 - Lone Star Consolidated Copper Co.

No work has been done in the small, highly iron stained area but two shafts, both inaccessible, have been sunk to depths of 220 and 500 feet not far from this zone. A tunnel, starting on a narrow vein of chalcocite, runs in a N 65° E direction for 250 feet. The surface both around the shafts and over the tunnel is considerably iron stained. The rock on either wall of the vein in the tunnel is somewhat pyritic but very hard and tight. The dump of the 220 foot shaft, the Elsie, shows this same pyritic material with insignificant copper contents.

The main shaft, the Clara, is said to be 500 feet deep and to have on the 225 foot level a 300 foot cross-cut to the southeast. While this work is inaccessible, the former Superintendent says that for 240 feet the rock was fresh, hard and somewhat pyritic. A sample of pyritic material with slight chalcocite enrichmenttaken from the dump showed 1.16% copper. At this point a vein was encountered with a few inches of good ore. A little chalcocite was scantily distributed through about 5 feet, some of it on very narrow seams and some as a coating or replacement of disseminated pyrite. A sample of the disseminated ore from the dump assayed 3.28% copper, .10 oz. silver and a trace of gold, while that with chalcocite seams yielded 6.04% copper, 1.22 oz. silver and .02 oz. gold. Beyond this vein the rock is said to be oxidized and softer.

While more good ore is sure to be found in these narrow veins it is very irregular and very narrow. There is some chance that a layer of enriched chalcocite ore could be developed under the more thoroughly leached and iron stained areas, but considering the impervious character of the rock and the low copper tenor of the primary pyrite no very important enrichment can be expected. The property does not promise either large enough or rich enough orebodies to justify its development at this time.

Philip D. Wilson

Warren, Arizona,
February 8, 1918.

SAN JUAN MINE

of the ATLAS COPPER CO.

Graham County, Arizona.

The San Juan Property lies in the foothills of the Gila Range in the Lone Star Mining District north of the Gila River about 9 miles northeast of Safford. Patent has been applied for on 10 of the 15 claims comprising the group. The Gila mountains consist fundamentally of rather gently dipping lava flows of various types. On the San Juan ground an irregular stock of granite porphyry invades andesite. The porphyry is jointed and cut by ill defined, steeply dipping fissure zones of two systems, one of which trends N 60° E, the other N 70° W. Along these indefinite zones, varying from a few inches to 15 feet or more in width, chrysocolla, malachite and to a lesser extent chalcocite occurred in seams and bunches and as encrustations along the joint planes. The copper mineralization was most abundant at and near the intersections of the two systems of joints. Open cuts, trenches and surface stopes mark the location of the richer ore, all of which has been mined. Iron stain, even in the fracture zones, is not plentiful. The values are almost entirely confined to the seams and cleavages. The rock mass itself is fresh and hard with no evidence of disseminated mineralization. Between the major fracture zones and throughout the area of the porphyry the joints and cleavages are often superficially green stained but the copper mineralization does not penetrate the fresh rock material and the copper content of the entire mass is very low.

The porphyry area has been prospected by seven churn drill holes, the records of four of which show significant copper values. A vertical shaft was sunk 529 feet with extensive workings on the 130 foot level and a little development at 230 feet. Water stands within 50 feet of the surface so that none of the underground workings could be inspected. An assay map of the 130 foot level indicates that the important copper values there as on the surface were confined to the fracture zones of the two systems which, however, were neither so wide nor so rich on this level as on the surface. It is highly probable that the churn

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drill values came from the steeply dipping fracture zones and the apparent vertical thickness of the ore was exaggerated through salting from the ore above.

Two stopes, each 50 feet or so in length, were opened on the 150 foot level. It is said that about 7000 or 8000 tons of ore have been shipped from both surface and underground to Douglas and El Paso between 1916 and 1919. 1359 tons were received during 1916 by the C. & A. Smelter. This averaged 6.44% copper, 0.015 oz. gold, 0.42 oz. silver, 61% silica, 12.8% alumina, 5.6% iron, 0.7% lime and 1.7% sulphur. This ore, as well as that mined later, was closely sorted. The rejected material, of which there is 7000 or 8000 tons on the surface, will average perhaps 1.5% copper. The copper in the dump material is almost entirely in the form of chrysocolla, malachite and chalcocite. A few specimens of pyrite but no primary copper minerals were found. By far the greatest part of the rock which came from the underground workings is fresh, blocky, unmineralized granite porphyry.

Although the examination was most unsatisfactory owing to the fact that all the important and significant workings were under water, it is certain that there is no such possible tonnage that concentrating could be considered. From the assay maps and drill records it is likely that a few thousand tons of 3% copper ore, carrying more than 60% silica and over 70% insoluble, could be mined from the narrow, irregular fracture zones. The grade could probably be increased by careful sorting. The mineralized zones have no well defined walls and the ore is sure to be irregularly distributed both vertically and horizontally, so that mining would be fairly expensive. With a charge per ton of $3.00 for hauling and $3.20 for freight to Douglas no profit could be expected with copper at 13 cents. The margin of profit on any reasonable metal market would be narrow and the price of $75,000 seems high. If some arrangement to mine the ore on a profit sharing basis could be agreed upon the fact that the smelter needs this character of ore might warrant the expenditure of the necessary $1000 or $1500 to unwater the mine so that its possibilities could be properly determined.

Philip D. Wilson

Warren, Arizona,
Feb. 27th, 1922.

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