



CONTACT INFORMATION

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

The following file is part of the

Arizona Department of Mines and Mineral Resources Mining Collection

ACCESS STATEMENT

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

CONSTRAINTS STATEMENT

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

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

QUALITY STATEMENT

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

06/24/97

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: HELVETIA EAST

ALTERNATE NAMES:

ROSEMONT
HELVETIA
EAST HELVETIA
HELVETIA-ROSEMONT

PIMA COUNTY MILS NUMBER: 866

LOCATION: TOWNSHIP 18 S RANGE 15 E SECTION 36 QUARTER NE
LATITUDE: N 31DEG 49MIN 57SEC LONGITUDE: W 110DEG 45MIN 29SEC
TOPO MAP NAME: SAHUARITA - 15 MIN

CURRENT STATUS: EXP PROSPECT

COMMODITY:

COPPER SULFIDE
COPPER OXIDE
SILVER
MOLYBDENUM SULFIDE
GOLD
STONE MARBLE
CALCIUM MARBLE

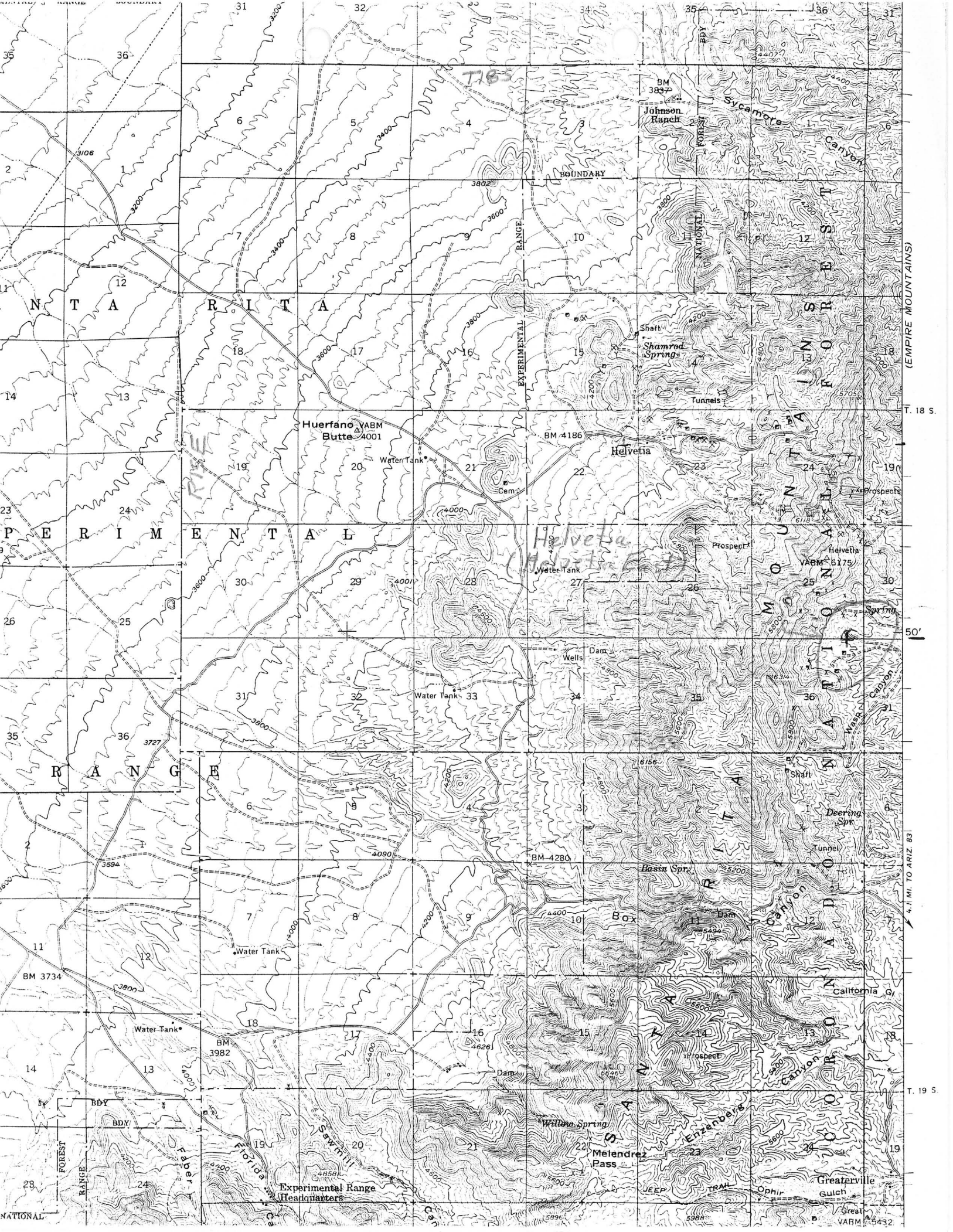
BIBLIOGRAPHY:

ANAMAX MINING CO., AN ENVIRONMENTAL INVENTORY
OF THE ROSEMONT AREA IN SOUTHER ARIZ.,
CONTRACT STUDY BY U. OF A., R. DAVIS &
J.R. CALLAHAN, EDITORS, 1977, 2 VOLUMES,
341 PP.
AZ. PAY DIRT. USFS WORKING ON ANAMAX I AND
SWAP AT ROSEMONT, OCT. 1977, P. 57
LOWELL, J.B., MINING OCT. 1976, P. 56-57
BENNET, H.J, L. MOORE, L.E. WELBORN & J.E.
TOLAND, AN ECONOMIC APPRAISAL OF THE SUPPLY
OF COPPER FROM PRIMARY DOMESTIC SOURCES,
USBM RI 8598, 1973, P. 156
BOWMAN, A.B., HISTORY, GROWTH, & DEVELOPMENT
OF A SMALL MINING CO., MIN. ENG., JUN. 1963,
P. 42-49
WORLD MINING, FEB. 1977, P. 67

CONTINUED ON NEXT PAGE

CONTINUATION OF HELVETIA EAST

- CATERPILLAR TRACTOR CO., CATERPILLAR PERFORMANCE HANDBOOK, 9TH ED., CAT PUB. OCT. 1978
592 PP.
- CUMMINS, A.B., & I.A. GIVEN, SME MINING ENGR. HANDBOOK, A.I.M.E., NEW YORK, 1973, 2 VOLS., PP. 17-1 TO 17-180, 18-1 TO 18-90
- PAY DIRT, AUG. 24, 1970, P 3-4
- WORLD MINING, SEPT. 1977, P. 110
- DREWES, H., CENOZOIC ROCKS OF THE SANTA RITA MTNS, SE OF TUCSON, AZ., USGS PP 746, 1972, 66 PP.
- DREWES, H. GEOCHEMICAL RECONN. OF THE SANTA RITA MTNS, SE OF TUCSON AZ. USGS BULL. 1365, 1973, 67 PP.
- DREWES, H. USGS PP 748, 1972, 35 PP.
- GEO FILE- MIERITZ, RICHARD, 1970 (ANACONDA)
- DREWES, H.L. & T.L. FINNELL, S. AZ. SOCIETY GUIDEBOOK III, 1968, P. 315-324
- ENG & MNG. JRNL. JUN. 1975, P 301
- HOPKINS, W.R. & A.J. LYNCH, AIME REPRINT, 1976 SME-AME FALL MEETING, 1976, 30 PP.
- KEITH, S.B., AZBM BULL. 189, 1974, P. 29-31, 95, 123-129
- ADMMR HELVETIA FILE
- LOVERING, T.G. & J.R. COOPER, H. DREWES, & G.C. CONE, USGS PP 700-B, 1970, 1971, P. B1-88
- PAY DIRT, JUNE 30, 1975, P 73-74
- PFLEIDER, E.P., AIME NEW YORK 1968, 1061 PP.
- RAMPACEK, C & J.T. DUNHAM, MIN. CONG. J. FEB. 1976, P 43-50
- SEE ADMMR SANTA MARIA MOLYBDENUM MINE FILE
- SCHWARTZ, G.H., U. OF A. PRESS, 1966, P 41-50
- SKILINGS MINING REVIEW, JAN. 18, 1975, P.16
- WORLD MINING, AUG. 1970, P. 47
- USBM CONTRACT NO. J0255026, STRAAM ENGR. 1977 374 PP.
- BANNER MINING CO. PROXY STATEMENT APRIL 13, 1973, 70 PP.



N T A

R I T A

S Y C A M O R E
C A N Y O N

P E R I M E N T A L

Helvetia

M O N T A N A

R A N G E

T A

N A T I O N A L

Experimental Range Headquarters

Melendrez Pass

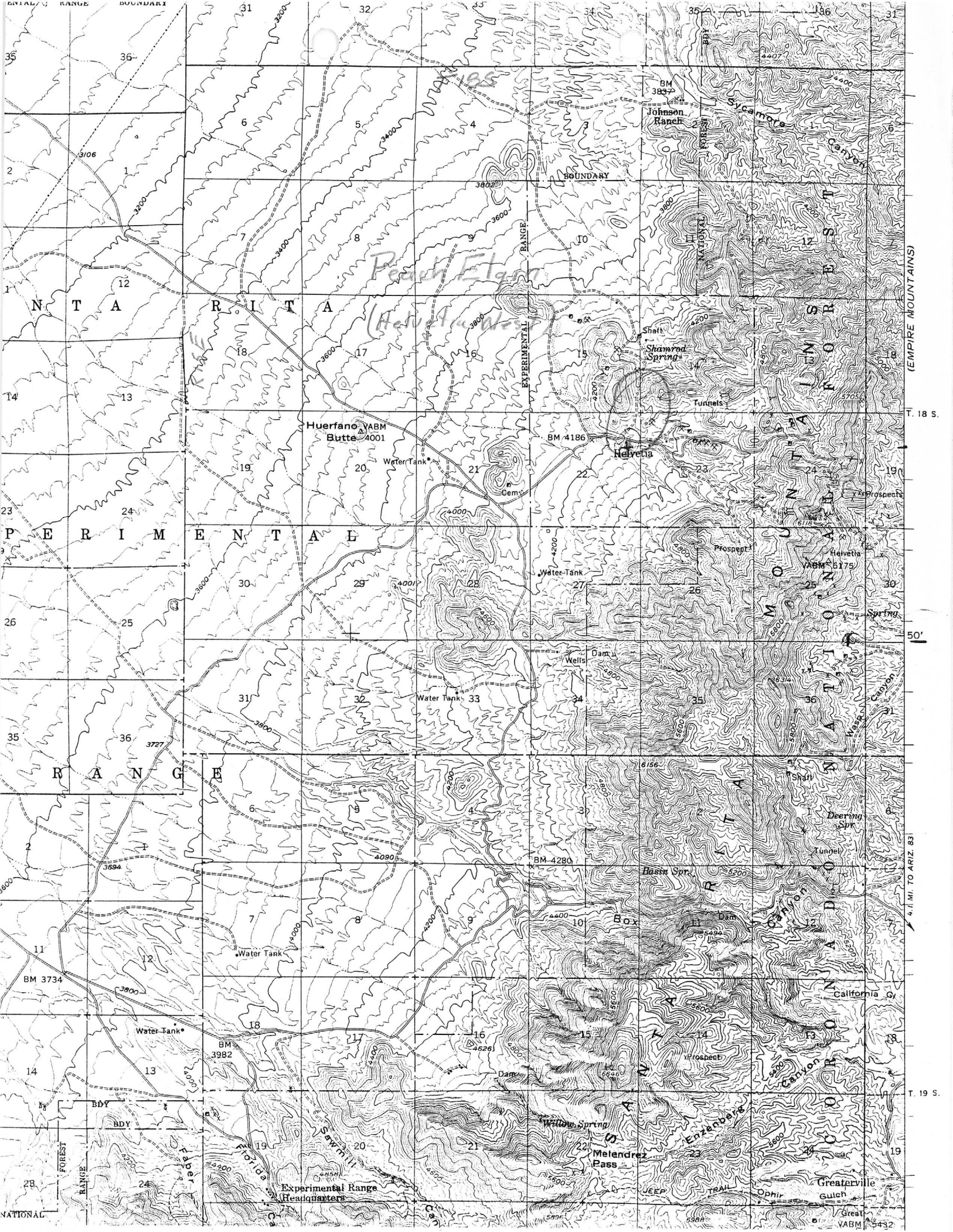
Greatville Guich

(EMPIRE MOUNTAINS)

4.1 MI. TO ARIZ. 83

T. 19 S.

50'



HELVETIA MINING & MILLING CO.

PIMA COUNTY

USGS Bull. 1027 p. 315

HELVETIA DIST.
T18S, R16E, Sec 19

RI 5650 p. 109

Gunsight Project (file)

SEE: ABM # 148 p. 36

Anamax (file) ACTIVE FILE

MAPS - Upstairs in the ABM rolled file boxes - Under Helvetia Copper co. - shows underground plans for Isle Royal, Copper World, Old Dick and Leader plus several smaller working on individual claims.

USGS Bul. 582 - several places in bulletin - p. 25, 98, 99, 110, 115, 154

USGS Bul. 430 - p1 154

Arizona Mining Journal 12/1/22, p. 16-18

Economic Geology, Volume 78, June-July 1983, Number 4, "Remote Sensing for Porphyry Copper Deposits in Southern Arizona", by Michael J. Abrams, David Brown, Larry Lepley, and Ray Sadowski; Pg. 591

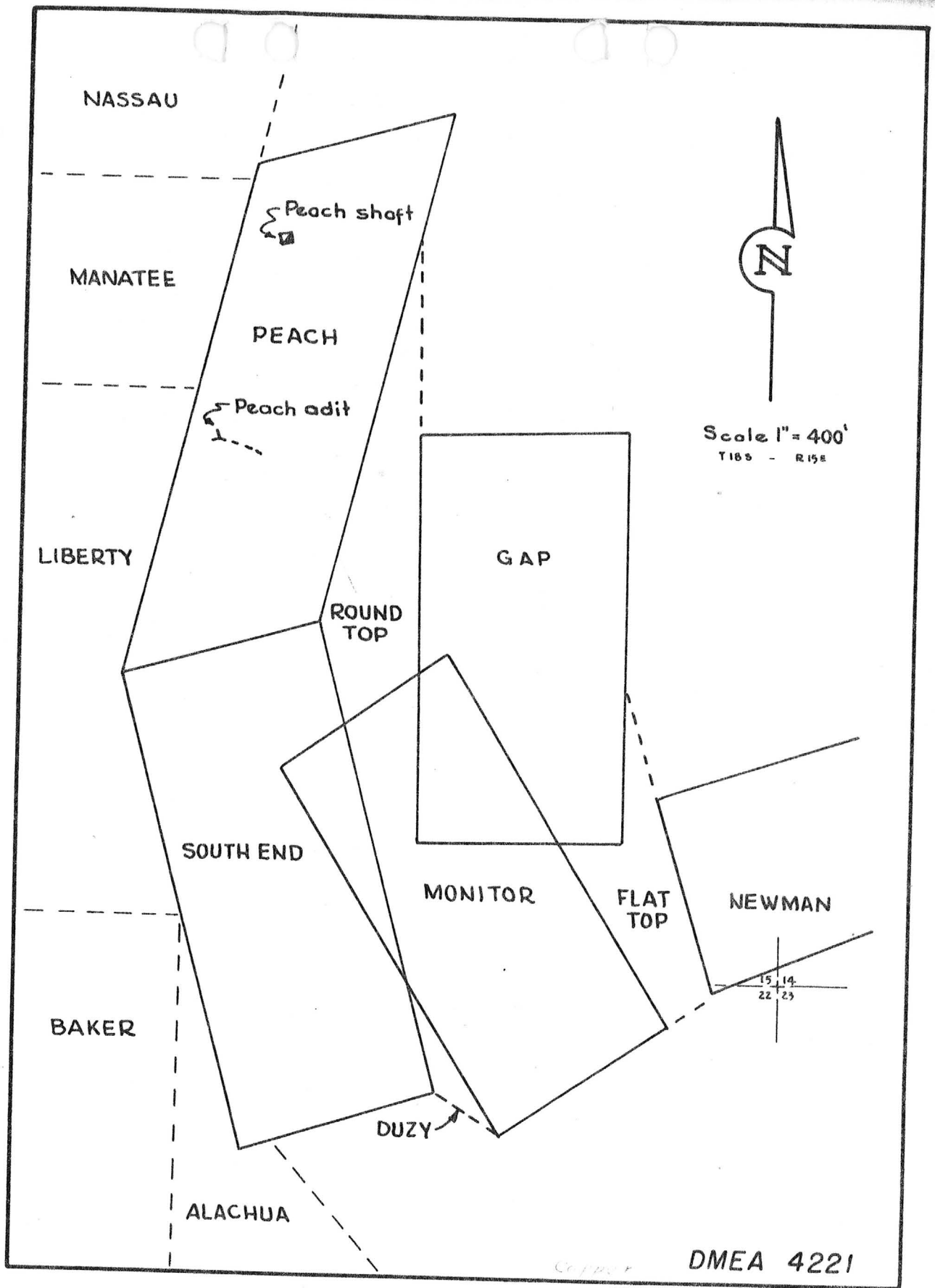


FIG. 2 CLAIM MAP , LEWISOHN COPPER CORP.
 PIMA COUNTY, ARIZONA

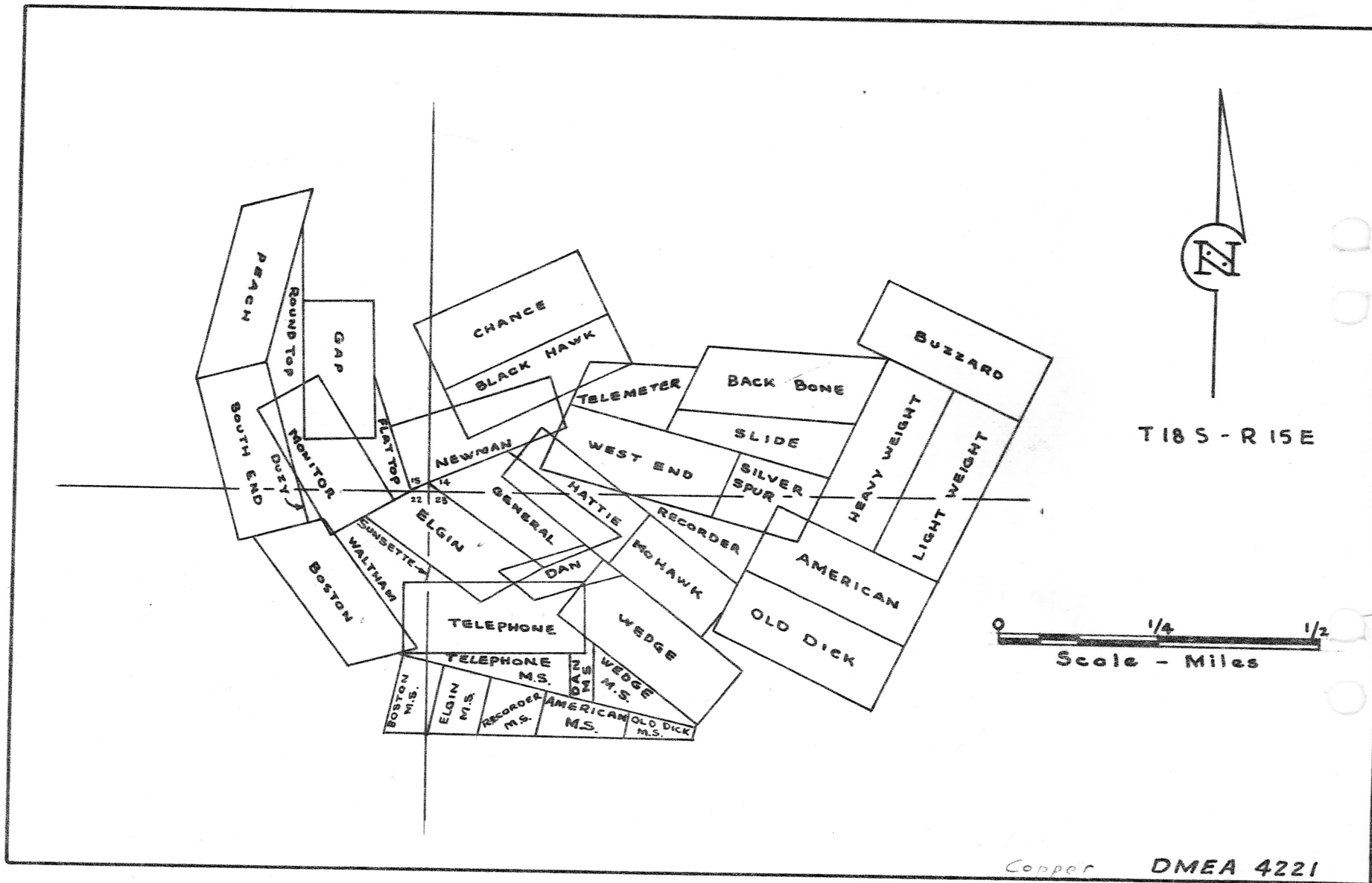


FIG. -2A- REVISED CLAIM MAP, LEWISOHN COPPER CORP.
PIMA COUNTY, ARIZONA

Arizona Daily Star®

www.dailystar.com® www.azstarnet.com®

Published: 01.09.2005

HELVETIA (A) PIMA CO.

County asked to pay \$11.5M for ranch

By Tony Davis

ARIZONA DAILY STAR

Pima County is being asked to pay \$11.5 million to keep 2,760 acres in the heart of the Santa Rita Mountains from becoming a copper mine site or a collection of small ranches.

A Tucson developer is offering to sell the county what's called the Rosemont Ranch, a collection of juniper, mesquite, prickly pear and oak-covered rolling hills that officials say contain 10 of the 55 imperiled plant and animal species that the Sonoran Desert Conservation Plan would protect, including four that are federally protected. It would preserve a scenic backdrop along Arizona 83 from Tucson to Sonoita and offers 17 types of recreation, including hunting and camping.

But because the asking price is nearly triple what the developer paid for it last June, critics are questioning this proposal even before it starts a lengthy county review. They're raising concerns about whether other parcels are more deserving of purchase, and casting a skeptical eye at its prospects as a mine site.

They also aren't thrilled that its purchase could require amending the 2004 county bond ordinance because this land was not included in the \$174 million open space bond package. Many bond supporters wish to avoid that, to keep the trust of voters who approved the open space proposal.

"I think it's very expensive. That's going to set a precedent. Everyone will be thinking, 'I can get that much money for mine,'" said Wanda Shattuck, an environmentalist on the County Conservation Acquisition Commission, which with the Board of Supervisors must approve open space bond purchases.

Shattuck is one of three commission members, including chairman Bill Roe and Helen Wilson, who question the proposal, along with Carolyn Campbell, director of the Coalition for Sonoran Desert Protection.

The site was the scene of a conflict in the late 1990s over a proposed federal government land exchange with mining giant Asarco that fell apart in the face of public opposition.

Another mining company recently made a \$12 million offer on the property.

If that falls through, the developers say they will sell the land off as 40-acre parcels that would be filled with luxury homes.

"I think that strategically it's probably fairly important," County Administrator Chuck Huckelberry said. "It's all going to have to go back to the county's Science-Technical Advisory Team before it could ever be recommended. But on its face, preserving it as open space is certainly favorable to a mining scenario."

The idea of saving this rugged country lying almost wholly within Coronado National Forest boundaries will go before the acquisition commission next month.

Shattuck said there are other properties the county should buy first, including the Sopori Ranch, south of Green Valley, and land in Altar Valley. "I'd much prefer to go after that before going after a pig in a poke like this that's not on the map," she said.

But if saved, Rosemont could form part of an unofficial urban growth boundary on the far Southeast Side, supporters say.

In a new report with a cover showing a pink cactus blossom and backpackers trudging through yucca-covered grasslands, Huckelberry's staff wrote that conserving this parcel offers the best chance for keeping the landscape whole and preserving water running through the area's intermittent and perennial streams.

It will also protect a biological link between the Santa Rita and Rincon mountains.

The key issues:

- At \$11.5 million for 2,760 acres and accompanying water rights and mining claims, the Rosemont Ranch will cost Pima County \$7 million more than developer Triangle Ventures LLC paid Asarco for 2,960 acres there six months ago. Triangle paid Asarco another \$300,000 for cattle and associated equipment.

One of its partners, Yoram Levy, is prominent developer Don Diamond's son-in-law, but Levy and Diamond Ventures spokesman Linda Cohen said Diamond and his company are not connected to this project. Under its proposal, Triangle would keep 200 acres as a base property for cattle grazing operations on private, state and federal land.

Levy said he would prefer to sell Rosemont to the county but can only wait so long with another offer pending: "I'm just trying to do something good for the community."

The developer's real-estate broker, Leonard Reichardt, said the land is worth more than \$4 million because Asarco paid \$6 million for 1,640 acres there in 1987. Reichardt said Asarco unloaded it for less as a "fire sale" because the company needed cash.

Asarco's real-estate manager Jack Gracie declined to comment except to say, "It was not a fire sale."

Numerous other private parcels selling in neighboring Santa Cruz County are fetching \$5,000 to \$16,000 per acre, compared with \$4,166 per acre sought for Rosemont, Reichardt said. But those smaller parcels, ranging from 20 to 240 acres, typically bring more per acre than larger ones.

- Last month, Augusta Capital Corp. offered Triangle \$12 million to buy 2,000 acres of Rosemont for mining, according to a letter in county files. That comes nearly seven years after public opposition forced Asarco and the U.S. Forest Service to kill a land exchange proposal to add 13,000 acres of adjoining public land to the private land for mining.

This time, a mining company will not try to pull off a land exchange; it will use 850 unpatented mining claims on adjoining federal land, Reichardt said.

But to get that approved by the federal government requires a complex environmental review that typically takes years, Forest Service officials said.

"The idea of taking anything out of Rosemont in the next 20 years is unrealistic. I will be long dead before anything happens there," said the 72-year old Michael Rieber, a retired University of Arizona mining economist. "There is no shortage of copper worldwide, mines elsewhere in the world are being opened, and this site is not unknown. Asarco didn't do this mine because of opposition. You think that is going to fade away?"

But until the mining claims are retired, a threat of mining will always exist, said Lainie Levick, a leader of the group Save the Scenic Santa Ritas that fought the exchange. "It will either be a copper mine, luxury ranchettes or protected for conservation. So clearly I would prefer it be protected."

- This land fell through the cracks twice when authorities were deciding what to put before voters last year for protection.

Scientists didn't study it for the open space bond because it's within forest boundaries. That raised the possibility of seeking federal money, said Rob Marshall, Nature Conservancy science director: "It was just a cutoff we made to try to come up with priorities."

The Rosemont site is archaeologically rich, containing 621 prehistoric and historic Indian sites going from 10,000 B.C. through the Hohokam era to the late 19th century American territorial period.

But only one of those sites, containing ruins of the Helvetia mining settlement, made it onto the county's successful \$19.9 million cultural resources 2004 bond package.

"When I looked at the private land in there, it didn't occur to me to investigate those as possible acquisitions," said Linda Mayro, the county's cultural resources manager. "I thought they were sewn up with mineral uses, or perhaps assumed that because they were in forest boundaries, perhaps someday they would go to the national forest."

But federal purchase is not immediately likely.

A 1986 Coronado National Forest plan lists this site as "undesirable for acquisition." Until someone makes a formal proposal on that property, "that is what our position is," said Sue Kozacek, a deputy Coronado Forest supervisor.

- Contact Tony Davis at 807-7790 or tdavis@azstarnet.com.

Mining in the West

ASARCO puts Rosemont Ranch on hold, a victim of low copper prices

Plans for the **Rosemont Ranch** copper mine near the town of Sonoita in the Empire Mountains on the north end of the Santa Rita Range in southeastern Arizona, have been put on hold, a victim of low prices in the copper industry.

New York-based **ASARCO** says it must spend money on current operations rather than on future development. The company had planned on bringing Rosemont on stream around 2012.

Asarco told Coronado National Forest officials it was deferring for at least a few years a proposed swap of parcels around Arizona for forest land next to Asarco's Rosemont project. Asarco considers Rosemont a potential replacement copper mine when reserves at its Mission Complex near Green Valley are depleted in perhaps 22 years.

"We're not giving up on the idea, we're just postponing it because of market conditions," said John Low, Asarco's Mission Complex general manager.

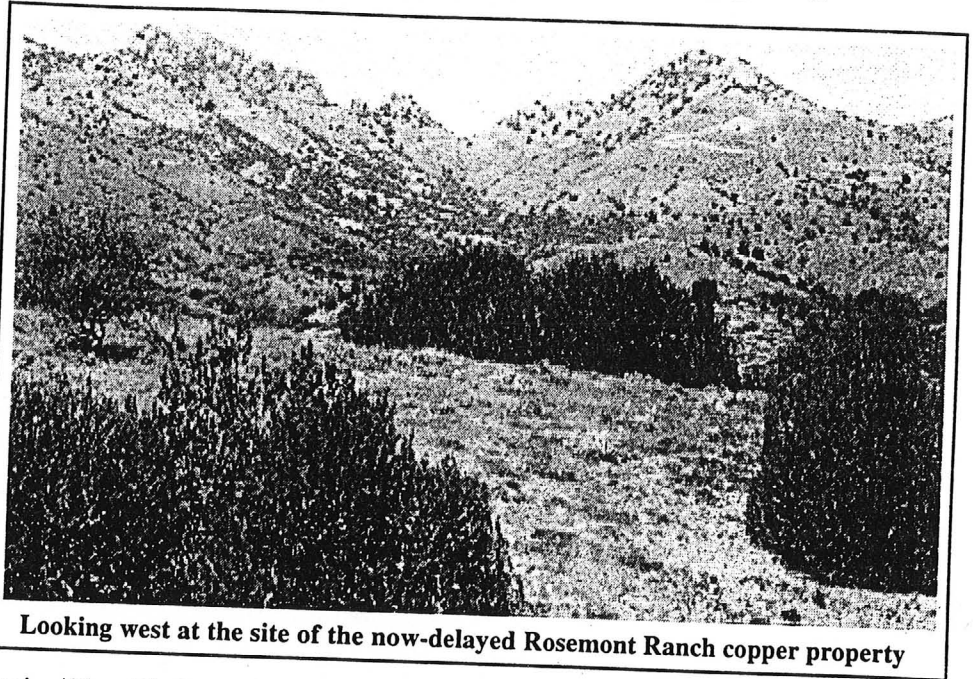
Copper prices that averaged \$1.04 per pound are now down around 76 cents (as of Jan. 21.)

Asarco holds patented mining claims covering more than 2,000 acres at Rosemont. However, it sought a land exchange to add to its holdings, to provide additional area for mining operations and as a buffer from surrounding property.

Groups opposed to mining in the area objected when the land exchange was proposed in July 1995. Apparently, they're still not happy.

"The deferral sounds good, but it raises more questions," said Jon Tate, president of Save the Scenic Santa Ritas, a Sonoita-based group formed to oppose Asarco's plans.

Tate said the group believes the company cannot suspend its plans and must start over



Looking west at the site of the now-delayed Rosemont Ranch copper property

again with public hearings and comment, if it renews efforts to swap land and develop a mine. Because of delays, his group and the National Wildlife Federation already were preparing a lawsuit.

In that vein, Steven Christiansen, the Forest Service's Rosemont project manager, said Coronado Forest supervisor John McGee is leaning toward ending its agreement with Asarco.

"Either party can terminate the agreement for cause with 30 days notice," Christiansen said. "Two years' delay would take us to a different world — that probably would give us cause."

Christiansen said McGee will not act until he discusses the issue with Asarco officials. McGee already had suspended a September 1996 agreement because the mining plan for which it called hadn't been filed

more than 10 months later. "Without a mining plan, we were left with nothing to operate on," McGee said.

Asarco's proposed land exchange offered 23 land parcels totaling 2,222 acres in Madera Canyon, Cochise Stronghold, the Chiracahua Mountains, the White Mountains and a scenic area near Payson.

Asarco sought 13,272 acres near Rosemont Ranch. The company said 1989 appraisals valued the exchange parcels at \$5.32 million and the Rosemont area parcels at \$5.13 million.

The company said a proposed copper mine at Rosemont could employ 650 people, would cost \$300 million to \$500 million to develop and could yield 1.5 billion pounds of copper. The Mission Mine near Tucson now employs 980 people. □

(From an AP wire story)

SOUTHWEST'S LARGEST SUPPLIER OF MINING LUBRICATION EQUIPMENT

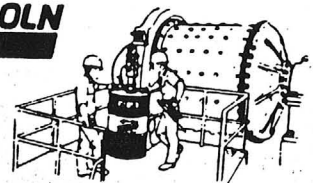
Complete Service
and Repair Facility

- Shovel and Drill Auto-Lube Systems
- Centralized Grease and Oil Installations
- Open Gear Spray Systems

Wiggins Fast Fueling
Equipment

Whitmore's
Mining Lubricants

LINCOLN



LUBRICATION EQUIPMENT & SUPPLY COMPANY

3526 East Broadway • Phoenix, Arizona 85040 • (602) 437-1245

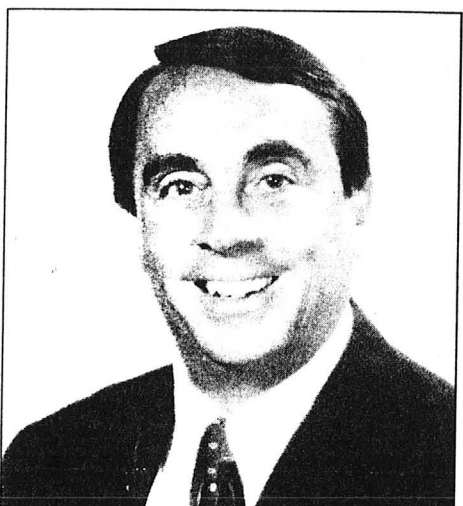
Abstract P1 -> cont. P4

Ann
HMC

AMIGOS MEMO

Arizona Mining and Industry Get Our Support • SEPTEMBER '96

Helvitia Mine file
Guest column...



Dale Dixon is the manager of Development Project Services, Copper Operations, for ASARCO, Inc. The following is a reprint of his column that appeared in the Tucson Citizen. In it he corrects the misinformation contained in a guest editorial by George Trigaux that was printed in the Citizen. We are printing it so that AMIGOS members will be armed with the facts relating to the proposed Rosemont mine:

Misinformation being dug up about Sonoita mine

By Dale Dixon

The concerns of Sonoita Crossroads residents about a potential Rosemont mine are understandable. Many of these concerns will be addressed in the Environmental Impact Study process and in subsequent public hearings

required by law before a spadeful of dirt is dug.

The issue of visual impact is a sensitive one, and ASARCO is sensitive to it. The site is nine miles from Sonoita Crossroads and not visible from there. A Rosemont mine and its waste rock piles would be visible for less than three miles midway in the half-hour drive from Interstate 10 to Sonoita. As now planned, tailings would not be visible from Highway 83.

In no case would there be 13,000 acres of waste rock and tailings. Waste rock and tailings at the mission Mine, clearly visible from I-19, cover 6,400 acres after 40 years of operation. Most of the land for the Rosemont mine would appear as it does today.

Mining practices that produced problems in the 19th and early 20th centuries are indeed a thing of the past. Today, mining is heavily regulated by both federal and state laws. Air emissions, including dust, are regulated by the federal Clean Air Act. Surface water is regulated by the federal Clean Water Act and ground water by the Arizona Aquifer Protection Program. Mines may not release contaminated runoff onto adjacent land, into streams, or into the aquifer. These matters are central to the Environmental Impact Study process, every step of which is open to public review.

ASARCO expects to use the water source now being used by the Mission Mine, if a Rosemont mine is developed. This source could be either ASARCO's extensive water rights in the Santa Cruz Basin or water from the Central Arizona Project. In either case, there would be no impact on water users in the Cienega

Basin, where the operation would be located, and the watershed flow from there toward Tucson would be undisturbed.

Social impacts on the closest communities of Sonoita or Vail are difficult to predict 20 years out. There are more than 2,000 mine workers employed at Tucson-area mines living in Tucson. The typical pattern now for mine workers is to live in Tucson and carpool to work. This pattern would probably continue. If mine workers choose to live closer to work, the community of Vail is about the same distance from the proposed Rosemont mine as Sonoita and, today, offers more to families in the way of access to shopping, entertainment, youth activities, secondary employment, and schools.

In any case, mine workers are the highest paid workers in the state, averaging about \$40,000 a year. Their spending power is an asset to their communities.

Where should copper be mined? First and foremost, it can only be mined where it occurs and Arizona is one of

Continued on page 4

INSIDE

Find out about:

- AMIGOS Online!
- Face-to-face with Jeff Clevenger
- PAC Report
- New Speaker's Bureau
- MORE!!!

Guest column by

Dale Dixon continued...

those places. If Arizona were a country, it would have been second in production in 1995 as a nation, after Chile, with an all-time high production record of 1.3 million tons.

The importance of copper to Arizona's economy may be subject to some debate, but the role of the state in U.S. and worldwide copper production is not. Arizona produces about 65 percent of U.S. copper and 11 percent of world copper.

Why do we need copper? People generally don't buy copper directly. But copper is critical in many of the things that provide each of us with the comforts we all enjoy, such as cars, homes, air conditioning, heating, lighting, electronic equipment and airplanes. It is an essential industrial and building material in the places that we all work and in the tools that help protect the environment we all are concerned about.

The United States produces about 20 percent of world copper but it is a net importer of refined copper needed for those industrial, building and consumer products. To suggest that the U.S. look to other nations for its copper needs would leave us increasingly dependent on them for a critical material. Such a situation could have far-reaching economic and national security effects. Furthermore, if the suggestion is for the U.S. to export environmental issues to other nations, such exportation has been debated and characterized, in its kindest terms, as deceptive environmental policy.

A decision to proceed or not proceed with a mine is a decision separate from a land exchange ASARCO has proposed to the Forest Service. Such decision, when made, would commit ASARCO to an environmental permit process independent of the Environmental Impact Study required by the Forest Service. The environmental permit

process is expected to take five to seven years.

The Environmental Impact Study process is designed to involve affected and interested people in an ongoing dialogue to produce the best possible final project. We are pleased with the input we have received so far, and look forward to working with interested people as the Environmental Impact Study process goes forward.

AMIGOS members urged to take advantage of Arizona Employers' Council *A \$600 value to all member companies*

Since 1992, all AMIGOS members throughout the state of Arizona have had the opportunity to receive human resource advice and assistance from the Arizona Employers' Council as an additional benefit of membership in AMIGOS. The staff of the Arizona Employers' Council are experts in helping employers wade through the complexities of personnel and employee relations. AMIGOS members, their management and supervisory staff, are entitled to a broad spectrum of services and benefits under the Council's "Fee-For-Service" membership package. This is a \$600 value for every AMIGOS member company.

This service arrangement allows your company to receive one hour of professional assistance per month on any personnel or employee relation situation. Any time used thereafter is billed on a pro-rated basis at the Council's current billable rate. Most AMIGOS members who use the service get their needs taken care of within the one hour per month that AMIGOS membership covers. Many members take full advantage of this service by calling the Employers' Council on such issues as hiring procedures, disciplinary actions and/or personnel policy issues. Often members already have in-house expertise and merely want the Council to look over possible options or alternatives to certain personnel management situations. Other members have had the Council conduct a series of in-house management educational programs based on their specific needs.

Gene Roinick, Administrative Human Resource Manager at United Fire Equipment said after using the service, "The Arizona Employers' Council was great! I got a quick response and correct information. They did the research, faxed us the results and helped us to quickly resolve a complex issue. It was very cost effective -- a lot less than paying a labor attorney."

Because of this unique relationship between AMIGOS and the Employers' Council, members also have the opportunity to participate in all of the briefings, luncheons and training programs sponsored by the Arizona Employers' Council.

We encourage you to take full advantage of the many services and benefits the Employers' Council offers. Representatives from the Council will be available at the next Face-to-Face Luncheon to answer any questions you may have. In the meantime, if there is someone else in your company who deals with human resource matters who should be aware of the services included in AMIGOS membership, please pass this important phone number on to them:

The Arizona Employers' Council can be reached at (602) 258-2681 or toll free at 1-800-437-9262.

CLAY-COMMON**Summitville Tiles, Inc.****Plant, near Glen Alpine, NC.**

Summitville Tiles, an Ohio-based manufacturer of commercial and residential tile, broke ground in August for a new 160,000-square-ft plant in western North Carolina near Glen Alpine, Burke County. The plant, scheduled to be in operation by late 1989, is designed to produce 21,000 ft/d of glazed tile. Initially, 50 workers will be employed, and unofficial reports indicate the plant could provide 150 jobs when completed.

CHROMIUM**Chrome Corp. International,
subsidiary of Boulder Gold NL
of Australia.****Smelter, near Columbus, MT.**

Boulder Gold NL of Australia, through its wholly owned subsidiary, Chrome Corp. International of Denver, CO, plans to construct a 60,000 mt/yr ferrochromium smelter near Columbus, MT. The smelter will utilize the Coal Ore Direct Iron Reduction (CODIR) process for chromite, developed by Krupp Industrietechnik of the Federal Republic of Germany. Krupp has completed pilot plant testing and is preparing a range of performance guarantees. Boulder Gold anticipates ordering from Krupp by no later than yearend, which would allow Krupp to complete construction by 1991. Smelter feed for the Montana operation initially would come from an existing 600,000 mt chromite stockpile at Columbus. Later operations would require reopening of the Mouat chromite mine, above the Stillwater Mining Co.'s platinum-group metals operation in the Stillwater Complex. The smelter also would consume about 100,000 mt/yr of local Montana coal.

COPPER**ASARCO Incorporated.****Copper deposit, Helvetia, AZ.**

ASARCO Incorporated announced on August 19 that it had acquired from Park Corp. the Helvetia copper deposit, near the Santa Rita Mountains for \$1 million plus an exchange of about 1,200 acres of land in Avra Valley, Pinal County, AZ. The deposit, formerly owned by ANAMAX Mining Co., a 50-50 joint venture of AMAX Inc. and Anaconda Minerals, was sold in 1986 to the Park Corp., a real estate trust in West Virginia, and then leased to Cyprus Minerals Co. in March 1988. Located about 15 miles east of Asarco's Mission complex, the company had no immediate plans for developing the property. Asarco reported sulfide mineral reserves of 280 million mt containing 0.62% copper and 0.016% molybdenum and 23 million mt of copper oxide containing 0.78% copper.

Phelps Dodge Corp.**Phoenix, AZ.**

Phelps Dodge Corp. has separated its copper business from the company's other operations, creating two new divisions. Phelps Dodge Mining Co. will manage foreign and domestic operations for the exploration, production, and sales of copper. Manufacturing interests will be handled by Phelps Dodge Industries, including Columbian Chemicals Co.; Accuride Inc., a manufacturer of truck wheels and rims; and Phelps Dodge International Corp., which oversees its wire and cable businesses outside the United States.

DIAMOND**Crystal Exploration, Inc.****Crystal Falls, MI.**

In August, Crystal Exploration purchased for an undisclosed sum, Dow Chemical Co.'s diamond exploration project, including leases and data, in Michigan's Upper Peninsula. Crystal Exploration is a Colorado-based subsidiary of Restech International Ltd., of Sydney, Australia. Dow had been actively searching for diamonds in the area since 1981 when a kimberlite pipe was first described there by the U.S. Geological Survey. Subsequently, Dow found six more kimberlite pipes, all in a 40-mi radius around Iron Mountain and Crystal Falls. Dow found microdiamonds in its search, and Crystal Exploration will continue sampling the already discovered pipes and searching for more kimberlite formations.

Asarco gets patents, Babbitt rhetoric

ASARCO Inc. received patents from the U.S. Department of the Interior on four parcels near its Rosemont Ranch, about 35 miles southeast of Tucson.

The patents include 21 lode claims totaling 347 acres.

They also came with Interior Secretary Bruce Babbitt's usual diatribe about public giveaways to the mining industry.

The patents were initiated by the previous property owners and have been in progress for about 20 years, said Dale Dixon, Asarco spokesman.

During that time, about \$15 million was spend on discovery and exploration work -- that works out to about \$43,000 per acre, Dixon said.

Asarco owns and controls about 15,000 acres in the area around the newly patented property, including 111 previously patented lode and mill site claims, 730 acres of other fee land and 875 unpatented lode claims.

These properties were purchased by Asarco in 1989 for about \$2 million.

There are about 100 mining-related sites in this area, including old dumps, adits, mill sites and declines which represent mining activities from before the turn of the century up to the present day.

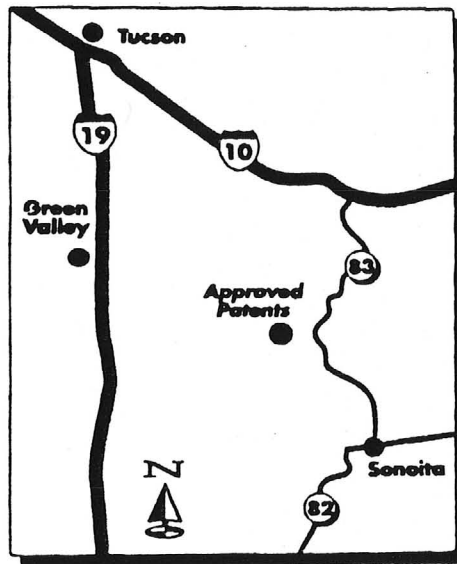
The 347 acres recently patented contains about 3 billion pounds of copper, but only about half of that could be recovered by a mining operation, should it be developed.

The cost of developing such a mine would be from \$300 million to \$500 million.

The operating cost for recovering copper from similar mines today is 65 to 75 cents per pound, Asarco said. That would be a total of about \$1 billion to mine the 1.5 billion pounds of copper.

Such a mine would employ about 500 local workers and generate taxes and business for local suppliers.

Asarco's current properties in Arizona employ more than 2,500 workers, have an annual payroll of more than \$100 million and contribute more than \$51 million in taxes and royalties each year to state, county and lo-



cal governments and to an Indian nation.

Babbitt, of course, used the signing of the patents -- required by law -- as another chance to hit the mining industry.

"In the spirit of the Christmas season, I'm delivering a gift to the mining industry," he said.

Asarco also is in the midst of a proposed land trade, to acquire more than 13,000 acres of public lands in the area. It has offered to trade 2,222 acres of private land in 23 parcels around the state for the property around the proposed Rosemont mine. The trade land contains no mineral rights, but would make building a mine easier.

Mines and Miners

Patterson is project engineer at Asarco's copper operations

Amy Patterson has been named project engineer for copper operations at ASARCO Inc.'s Tucson office. Her responsibilities include construction and project management.

She will serve as liaison for construction activities at the Santa Cruz in situ copper mining research work, for general copper operations construction project management and design, consulting on operations and serving as a member of the property-acquisition team.

Prior to her transfer to Arizona in May 1995, she was a process engineer in the company's refinery tank house in Amarillo.

Patterson earned a bachelor's in chemical engineering in 1993 from the South Dakota School of Mines and Technology.



NMA's Lawson blasts Babbitt's latest comments

From MiningWeek
Dec. 11

Secretary of the Interior Bruce Babbitt again turned a mineral patent-signing ceremony into a media bonanza this month, characterizing it as another "billion-dollar rip-off," and leveling another attack on the "antiquated Mining Law."

He signed a patent conveying 347 acres in the Coronado National Forest near Tucson to ASARCO Inc. on Dec. 1, calling it a "gift" from the American taxpayer.

National Mining Association President and Chief Executive Officer Richard Lawson responded that it is absurd to say the federal government is giving away natural resource. "The only gift Secretary Babbitt is giving by signing these patents is economic development to local communities and millions of dollars in future federal tax revenue generated by the mining operation," Lawson told the press.

In his zeal to convince the American public that mining companies are getting something for nothing, Lawson continued, Secretary Babbitt "consistently refuses to acknowledge the fact that the U.S. mining industry pays hundreds of millions of dollars in federal, state and local taxes each year."

Lawson called particularly disturbing that the Secretary continues to perpetuate the myth of the "billion-dollar rip-off" when he knows this is not true.

Minerals that lie undiscovered somewhere in the hundreds of millions of acres of unused land controlled by the federal government only attain value after they are discovered and produced, Lawson pointed out.

"And they won't be produced unless it is by the significant investment and financial risk undertaken by the mining industry."

He continued: "The Interior Department doesn't know where the minerals are until the mining industry has invested tens of millions of dollars to discover them."

Lawson said that the timing of Secretary Babbitt's latest publicity stunt is "yet another calculated attempt to derail ongoing congressional efforts to reform the Mining Law," legislation that would impose a 5 percent royalty on hardrock minerals and require companies to pay fair market value for public land used for mining.

TBM work completed . . .

manance-enhancing modifications.

Success was earned after boring more than 32,000 feet of tunnel (including 7,800 feet of curves), battling ground and suffering through heat, all on a 365-day-per-year, 24-hour-per-day schedule.

This ambitious application of tunnel-boring technology has posed many difficult challenges, all of which have been conquered by the solid team of mining professionals.

From the locomotive operator to the project controller, the men and women working on this job have helped set a new milestone for the application of tunnel-boring technology in underground mining.

MINING

**1996
Mine
Directory**

**Coming
Soon!**

**For Advertising
Information:
Call 602-258-1641**

**ASARCO files land
exchange application**

Land exchange with Coronado National Forest Service Feasibility study underway

ASARCO Incorporated, Tucson, AZ, is studying the feasibility of exchanging land with the Coronado National Forest Service.

The land exchange would give the Forest Service 23 privately-owned land parcels in national forests throughout the state in exchange for land near Rosemont Ranch, 35 miles southeast of Tucson. ASARCO holds patented mining claims on a copper ore reserve in the area. The land exchange would facilitate the potential development of the ore reserve.

Mining in the area dates back to the turn of the century and the area contains more than 100 mine-related sites. The patents in the area have been in place since the 1960s. More recently, the company has worked with the Coronado Na-

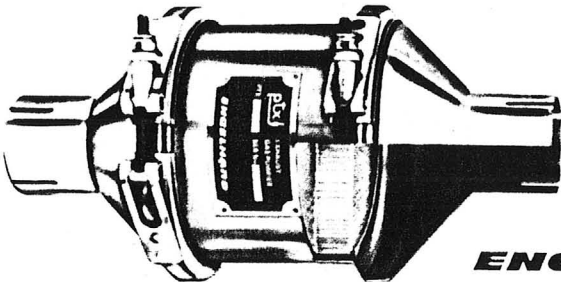
tional Forest to begin the exchange process by evaluating parcels for exchange that have priority interest to the Forest Service and the public.

The parcels that the Forest Service would acquire include land in Madera Canyon, Happy Valley, Rucker Canyon and Cochise Stronghold, among others. Forest Service officials advised that the next step is preparation of a formal environmental impact statement to determine the feasibility of the exchange.

The area that the Forest Service would receive covers 2,222 acres with an appraised value of \$5.3 million. The Rosemont Ranch parcel that ASARCO seeks is appraised at \$5.1 million and covers 13,272 acres. ■

INDOORS • UNDERGROUND

IS YOUR EXHAUST KILLING YOU?



ENGELHARD

COLORADO
Diesel & Purifiers, Inc.

1-(800)-383-7037

Colorado (303) 761-5135

Fax (303) 761-5139

MEET OSHA, EPA & MSHA REQUIREMENTS FOR THE REDUCTION OF CARBON MONOXIDE AND OTHER HARMFUL EMISSIONS FROM DIESEL, GAS OR LP POWERED EQUIPMENT OPERATED IN CONFINED AREAS. CALL TODAY FOR MORE INFORMATION.

2061 West Hamilton Place Englewood, CO 80110

HELVETIA (P)

Asarco buys large copper reserves in Helvetia-Rosemont area

By Karen Walenga
Staff Reporter

ASARCO Inc.—in a move that boosts its long-term copper reserves—is the new owner of the historic Helvetia copper property in southern Arizona.

The firm has no immediate plans to develop a new copper operation at the site, which is located 25 miles southeast of Tucson near the Santa Rita Mountains, but instead considers it a long-term copper reserve.

Asarco said in mid-August it purchased the Helvetia copper deposit for \$1 million in cash and also exchanged approximately 1,200 acres of land in Arizona that lacks any mineral reserve potential. That acreage consists of several parcels of land in Avra Valley, just to the northwest of Tucson, according to Tom Scartaccini, general manager of Asarco's Southwestern Mining Department.

The Helvetia property now owned by Asarco covers several thousand acres of both patented and unpatented mining claims, Scartaccini told *PAY DIRT* August 30th.

The property, 15 miles east of Asarco's Mission copper complex, is comparable in size to Mission, he pointed out. Helvetia reserves are estimated at 280 million tons of sulphide ore grading 0.62 percent copper and 0.016 percent molybdenum. In addition, there is an estimated 23 million tons of oxide ore grading 0.78 percent copper, according to the company.

The sulphide and oxide ores are separate, Scartaccini noted. "It's one property with two separate areas of mineralization," he explained, adding that some silver byproduct is expected as well.

The property had been owned by Anamax Mining Company, which sold it in January 1987 to a real estate trust that in turn sold it to Asarco. As previously reported, the acreage includes two mineralized areas—the Helvetia and Rosemont, with the combined property referred to as the Helvetia.

Simply adding to reserves

According to Asarco, it "has acquired the property as a long-term copper reserve and has no current plans to develop it." Scartaccini explained that the copper industry is under going much restructuring, and companies that remain in the copper business are picking up assets that fit their long-range plans. Helvetia fits in with Asarco's plans, just like the Ray copper operation in Arizona

that Asarco purchased in late 1986 from Kennecott, he noted.

Any future copper operation at Helvetia will depend on copper markets, Scartaccini said, and Asarco has no immediate development plans for the site.

However, in terms of future development, the firm does consider the property "very promising," he acknowledged.

The manager noted the property surrounding Asarco's land at Helvetia is sparsely populated and primarily used for ranching. Also, there are several sites on the company's property that could be suitable for a mill. Water, he said, "is always a consideration."

In addition to the Helvetia acreage, Anamax also had owned the nearby Empire-Cienega ranch properties, which were a potential source of water for a copper operation at Helvetia. Now, however, that property is under the jurisdiction of the Bureau of Land Management.

The recorded mining history of the Helvetia area dates back to the 1800s. According to reports, prospectors were in the Helvetia Mining District for a number years, possibly dating from the Civil War era.

It was in the 1890s and early 1900s when the copper camp of Helvetia developed into one of the most successful mining communities in the Arizona Territory. A number of mines were developed, and the settlement included a general store and an adjacent one-room school.

However, the community eventually was deserted when the mining methods and tools of the period reached their limit and the ore appeared to be exhausted.

According to reports, the Helvetia district

did produce several hundred thousand tons of copper ore during both World Wars.

Leased by Anaconda in 1960s

In the late 1940s, Banner Mining Company became interested in the district and was able to assemble a large group of claims in the area. The Anaconda Company leased all of Banner's Pima County mineral properties in the 1960s, which led to development of the Twin Buttes copper mine south of Tucson. Anaconda's Chilean copper properties were being expropriated and it needed to develop a large copper operation in the U.S..

Anamax was later formed as a joint venture between Anaconda and AMAX Inc. As part of that deal, AMAX bought out all Banner stock in the 1970s and provided the money to build a solvent extraction-electrowinning plant to recover copper from Twin Buttes' large oxide ore reserves.

As previously reported, Banner Mining Company figures for proven ore reserves at Helvetia had been listed as 320 million tons of sulphide grading 0.64 percent copper with a 0.30 percent cut off; 20 million tons of oxide grading 0.55 percent copper with a 0.40 percent cut off; and 23 million tons of mixed ore grading 0.75 percent copper, located two miles from the other Helvetia ores.

Although Anamax never developed a copper project at Helvetia, the Twin Buttes operation started up in December 1969. Anamax permanently closed the project in October 1985 and proceeded to sell its land holdings in the state. The Twin Buttes property was sold to Park Corporation, which subsequently leased it to Cyprus Minerals Company this past March.

BP Minerals pursues new copper mine

By Karen Walenga
Staff Reporter

BP Minerals America is pursuing development of a new copper mine in north-central Wisconsin.

The project to develop and mine the Flambeau deposit, located near Ladysmith in Rusk County, currently is in the permitting phase, according to Frank L. Fisher, director of communications and public affairs for the company at headquarters in Salt Lake City.

BP Minerals (formerly Kennecott) has received local approval for the project and now is working to gain state permits, Fisher told *PAY DIRT* August 25th.

The firm is planning to develop a small openpit mine at the Flambeau deposit, with operations coming on line by 1990 or thereafter.

The project would have an approximate 8-year life, with about one year for development, six years of mining, and two years for reclamation. The site would be "totally

reclaimed," Fisher said, explaining that the openpit would be refilled.

Approximately 1.5 million tons of ore would be mined during the life of the operation at a rate of 1,000 tons daily. BP Minerals plans on an approximate 35-member work force.

In addition to openpit mining, primary crushing of the ore is planned at the operation. However, no other ore processing facilities will be built at the Wisconsin site, Fisher pointed out.

Instead, the crushed ore will be transported by trains to other processing plants at a location yet to be determined, he said. Possibilities include Canada, Michigan and the western United States.

The company has owned the copper property for a number of years, with the discovery of the Flambeau deposit made by Kennecott in 1968, according to Fisher. The currently proposed project would be the first to extract copper ore from the site, he added.



METALS WEEK

RECEIVED

AUG 30 1988

DEPT. OF MINES & MINERAL RESOURCES

August 29, 1988

COPPER

Carabia sold for \$86.2-million

The Brazilian government's National Economic and Social Development Bank (BNDES) sold controlling interest of Caraiaba Metais, Brazil's only copper refinery, for the equivalent of \$86.2-million to a consortium of three private conglomerates. The consortium is made up of Paraibuna de Metais (CPM), Banco da Bahia Investimentos (BBI), and Arbi Group, which controls Marvin Metals.

BNDES conducted the auction of 67% of voting stock in Caraiaba Metais on Aug. 24 on the Rio Stock Exchange, along with 64.95% of nonvoting preferred shares. The government agency had a reserve price of \$69-million. The remaining shares will remain in BNDES' hands. Prior to the auction BNDES chose three bidders—Paulista de Metais Co., Parisa Participacoes S.A., and the winning group.

Both Marvin and CPM are major consumers of Caraiaba's production, and each had announced plans for a refinery in the last 18 months. The Mariani or BBI group, as well as its bank, are deeply involved in the Camacari petrochemical complex, which also houses the copper plant.

A group of metal consumers represented by the Brazilian Copper Assn. (ABC) and the Copper and Wire Industry Union (Sindicel), who joined forces for the effort, had been the favorites to get the 160,000-mtpy refinery, but dropped out shortly before the auction and unsuccessfully attempted legal action to stop it. Faced with the prospect of the sole domestic supply of metal belonging to their competition, ABC and Sindicel are now thought to be working on a contingency plan.

There have been plans to increase capacity at the refinery, which imports its feed from Chile and Peru, to 250,000 mtpy.

Total boycott of Outokumpu planned

AKT, the Finnish trade union opposed to plans by Outokumpu to import copper concentrates from Chile's Escondida project, is now threatening to refuse to handle any Outokumpu shipments—including all concentrates imports and metal exports—unless the company agrees to withdraw from the deal. Affected by such a boycott would be the company's copper, nickel, and zinc operations.

The latest threat surfaced last week after the union's executive board expressed disappointment with Outokumpu for failing to "do the right thing" and break its deal to buy feed from Escondida. "The union can see no real economic justification for Outokumpu having to import copper from Chile," said union chairman Risto Kuisma. "The company's claim that the Harjavalta smelter might have to close if the agreement fails does not hold water. The truth is that copper refining and smelting at Harjavalta are not viable in the long-term and if anything the company more urgently needs long-term nickel agreements to keep the nickel operation going, than it does copper."

For its part, Outokumpu has imposed a media blackout on the issue after being lambasted in the Finnish press. And the company announced that it is reorganizing and would form a new independent company, Outokumpu Copper Oy, as a new company as of Jan. 1, 1989.

The Finnish government has come under pressure to change its stance in allowing the deal to go forward. However, under Finnish law, the trade unions can be banned from holding strikes when they endanger the national economy. The question is whether a boycott falls under this law and if the government would even try to impose it.

Kennecott tenders excess concentrates

Kennecott has tendered 100,000 to 200,000 tons of copper concentrates with 25,000 to 50,000 tons of contained copper for delivery through the end of 1989. The excess copper is the result of the company's decision to run the old concentrators at its Bingham Canyon, UT, mine and mill, instead of shutting them in June when the new concentrators started up. In addition, the company does not anticipate needing the concentrates it stockpiled in case of problems with the new concentrator. "With prices strong, it would be crazy for Kennecott not to maximize its output," one insider noted.

The company is talking with Japanese copper smelters—Nippon Mining, Mitsubishi Metal, Mitsui Mining & Smelting, and Sumitomo Metal Mining—on the possibility on a three-year agreement for the excess concentrates. The exact quantity and price terms have not been disclosed, but analysts believe the treatment charge will be around \$65 per mt and 8.5¢-per-lb for refining charges.

Elsewhere in copper . . .

Even though workers at its Cujajone and Toquepala mines returned to work on Aug. 23, SPCC declared a *force majeure* under which the equivalent of approximately 75% of each customer's cathode quota for one month will be canceled. However, the Peruvian company lifted the Aug. 6 *force majeure* on shipments of blister copper from the Ilo smelter to Mineroperu's Ilo refinery. SPCC's mines were struck on July 17, the smelter on July 27.

Even though it has no plans to develop it, Asarco purchased the Helvetia, AZ, copper deposit for \$1-million in cash plus the exchange of approximately 1,200 acres of other Arizona land having no mineral reserve potential. The deposit has estimated reserves of 280-million tons of 0.62% Cu and 0.016% Mo. An additional 23-million tons of oxide reserves grading 0.78% Cu are included in the purchase. The deposit is located 15 miles east of Asarco's Mission mine complex.

The US Mint will not tender for 1,205,000 lb of copper for five-cent strip production, but will buy the material under an 8A setaside program.

Atlas Consolidated Mining and Development Corp. has announced plans to open its second open-pit mine at Toledo, Cebu Island, in the central Philippines. Atlas considers the project vital to its survival because reserves at its Carmen pit project are running low and are expected to be depleted in the near future. The cost of developing the new orebody is estimated at \$41.3-million and the company has asked the Philippines' Board of Investments (BOI) whether it is still entitled to incentives.

LATE NEWS

- Alcan supervisory personnel kept the company's 268,000-mtpy Kitimat, B.C., aluminum smelter running on Aug. 26 following a spontaneous walkout by union members, but negotiations on a new contract continued. Before the walkout, the membership had voted to begin strike action if talks failed to produce a settlement by Aug. 29. The walkout was legal, a union spokesman stated, because the required 72-hour strike notice had been given and had elapsed earlier in the talks.

Helvetia^(F) copper deposit^{or} is acquired by Asarco Inc.^{ll}

By Richard Ducote
The Arizona Daily Star

8/19/88

Asarco Inc. yesterday announced its acquisition of the historic Helvetia copper deposit east of Green Valley as a long-term reserve.

The company said it acquired claims on several thousand acres near the Santa Rita Mountains in exchange for \$1 million in cash and 1,200 acres of non-mineral land in Avra Valley.

The seller's identity was not disclosed, but the property was once held by Anamax Inc., a joint venture of two major mining companies that closed its operations at the Twin Buttes mine near Green Valley in 1985.

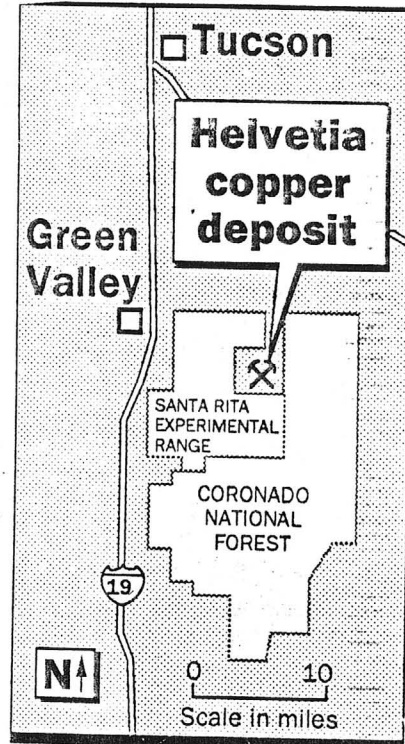
Twin Buttes has since been leased for resumption of mining by Cyprus Minerals Co.

Tom Scartaccini, manager of the Southwestern mining division for Asarco, said the company has no immediate development plans for the Helvetia deposit.

The size of the deposit is comparable to Asarco's Mission Complex about 15 miles to the northwest, he said. The size of the reserves "would support a fair-sized operation," he said.

Helvetia contains sulfide mineral reserves of 280 million tons of 0.62 percent copper and 23 million tons of oxide reserves grading 0.78 percent copper, Asarco said.

The purchase of the property is



Judy Margolls, The Arizona Daily Star

another sign of the restructuring of the copper industry, Scartaccini said. Surviving companies in the industry are purchasing assets of other firms if they find properties that fit in with long-term plans, he said.

Helvetia was an active mining community around the turn of the century.

Magma's new flash furnace was coming on line in early July

By Karen Walenga
Staff Reporter

Magma Copper Company's new flash furnace at San Manuel came on line at 5:26 p.m. Thursday, July 7th, with the first test tap during the night. The facility was continuing to operate satisfactorily the following morning as this issue went to press.

Smelting of the first copper concentrates marks successful completion of the \$130 million smelter project, which is coming on line slightly ahead of schedule and within budget, according to Frank Harris, Magma's public relations officer.

With the new, state-of-the-art flash furnace at the large San Manuel project, Magma will achieve "substantial cost-savings" through more efficient smelter operations and will be in full compliance with government air-quality standards, Harris pointed out.

The 3,000-tpd Outokumpu flash smelting furnace—the largest single unit smelting furnace in the non-ferrous industry in terms of metal production—has about the same capacity as the three old reverberatory furnaces it is replacing at San Manuel.

With the aid of its new design features and process technology, the furnace is considerably smaller in physical dimensions than a few other flash furnaces operating at similar smelting capacities, an Outokumpu Engineering official has pointed out.

Features of the San Manuel furnace include:

—The use of one concentrate burner designed for up to 185 tons per hour of total feed to the furnace.

—The latest sidewall cooling system design.

—Totally flat suspended refractories for the roofs of the settler, reaction shaft and uptake, with portions of the settler roof also panelized.

—And, a waste heat boiler incorporating screen tube pendant panels in the radiation section.

These and other features will maximize furnace availability and campaign life for the facility.

The smelter design and construction project was supervised by Magma and Newmont Mining Corporation engineers working with Davy McKee Corporation and Outokumpu personnel, according to Harris. The peak construction work force was between 200 and 300, he added.

As explained by the company, a warming and drying fire was started in the new furnace in mid-June. As production began, 75 tons per hour of concentrates were charged into the facility. That rate will gradually increase until full production is achieved.

Of the three old reverberatory furnaces at San Manuel, two were still in operation as the new facility was being completed. One of those two older furnaces was to be idled when

concentrate to the flash furnace was established. The last reverb will cease production as soon as flash furnace production is stabilized. Harris estimated that would take place by August or September, barring any unforeseen complications.

Magma, which employs a total of 3,875 workers at the San Manuel operations, expects no immediate change in the number of smelter employees, the director said. The company noted that 38 San Manuel workers received flash furnace training during May.

In conjunction with the startup of the new furnace, Magma also was set to bring on line in early July its new \$15 million oxygen plant at San Manuel. That facility, which was completed within budget at an earlier date, had under gone testing while flash furnace construction was finished up, Harris noted.

The company is "very pleased" with completion of both projects, the director said. Magma now will have an efficient smelting

operation and will be able to continue its underground copper mining operations as well as production of acid for its leaching project, he pointed out.

San Manuel's overall production costs will be reduced as a result of the new furnace, and Magma will be competitive "in any copper prices that might come along," according to the director.

"We look forward to operating as a world-class copper producer," he pointed out.

The new furnace also will result in cleaner air for the community, which will benefit Magma's real estate development plans for the San Manuel community, the director added.

The furnace construction project itself went well, coming in within budget and schedule, and the firm is pleased, Harris said. "We're eager to see it get into full production" and help propel the company into the future, he concluded.

HELVETIA MINE (F)

Of Mines And Men

BLM completes acquisition of Empire-Cienega ranch lands

More than 37,000 acres of the historic Empire and Cienega ranches in southeastern Pima and northeastern Santa Cruz counties in southeastern Arizona are now open for public use after finalization on June 8th of a land swap between the Bureau of Land Management and the Seven West Companies of Scottsdale.

"We put the signs up yesterday, and with the exception of ban on vehicles except on designated roadways, that is now public land," Dean Bibles, Arizona BLM director, said June 9th.

The area now is designated as the Empire-Cienega Resource Conservation Area.

The two ranches and leases to some 28,000 acres of state lands were formerly owned and controlled by Anamax Mining Company. They were acquired by a predecessor company, The Anaconda Company, in the 1960s, primarily for their water rights, when the mining company was contemplating development of two copper orebodies in the nearby Rosemont and Helvetia areas. These plans fell apart after the copper depression set in during the late 1970s and early 1980s.

After Anamax shut down its Twin Buttes mine, the company's massive land holdings—including the two ranches—were put on the market.

Pima County attempted to acquire the ranches and state leases for future recreational development. But when the deal bogged down in politics and money problems, Seven West, Anamax, members of Arizona's congressional delegation and the BLM began working together.

As a result, Seven West bought the proper-

ty from Anamax and then swapped it to the BLM for federal lands of equal value, principally west of Phoenix in Maricopa County, suitable for commercial real estate development.

The Empire and Cienega ranches are located near Sonoita, off Highways 83 and 82. The high-altitude grasslands, interspersed with native oaks and flowing creeks, are some of the most beautiful, unspoiled lands in the Southwest. The families that owned them for more than a century practiced conservative grazing policies and kept them as nearly original as possible. Anamax also protected the lands, leasing them out to ranchers who followed the same policies.

Now, they are under federal government protection that should continue "forever."

WAS TO BE MINE WATER SUPPLY

Peabody Coal names Sullivan NJN to Western Division office

Edward L. Sullivan Jr. has been named director of legal and public affairs by Peabody Coal Company for its Western Division in Flagstaff that operates five surface mines in Arizona, Colorado and Montana.

Sullivan joined Peabody in 1981 as a staff attorney in its Illinois Division. He was named legislative counsel of Peabody Holding Company in 1985 and transferred to its Washington, D.C. office, where he was promoted in January to counsel for legislative and regulatory affairs.

A native of Boston, he is a graduate of Saint Anselm's College in Manchester, New Hampshire with a BA in political science and received a JD degree from Saint Louis University School of Law.

Mining companies showing interest in former Anamax land

By Karen Walenga
Staff Reporter

Some undeveloped mineral properties in Arizona previously owned by Anamax Mining Company may have a future as mining operations.

Anamax, a 50-50 joint venture between Anaconda Minerals Company and AMAX Inc., permanently closed its Twin Buttes copper mine south of Tucson in October 1985 and has been selling its thousands of acres in the surrounding area since then.

While some of the land holds no possibility for future mining and likely will be used for commercial, business, residential or private ranch activities, some purchasers of Anamax property are finding an interest being expressed by mining companies in certain acreage.

Both Greaterville Partnership, which recently purchased more than 3,000 acres from Anamax in Pima County's Greaterville area, and two private investors and developers that earlier this year bought more than 2,000 acres in the nearby Helvetia-Rosemont area from Anamax, have found that several mining companies are interested in the property.

According to Scott Simonton of Greaterville Partnership, based in Tempe, the investment and development group paid \$3.6 million for just more than 3,000 acres of land Anamax owned in the Greaterville area.

Anamax controller Harold Metz confirmed that the mining company completed on May 1st the sale of the 3,057 acres to Greaterville Partnership, whose participants include investors and developers from Sunburst Capital Inc. in the Phoenix area.

That acreage was the last of Anamax's holdings in the Greaterville area, Metz told *PAY DIRT* May 26th.

According to Simonton, Greaterville Partnership's "number one alternative" for the Greaterville acreage had been a potential trade with the U.S. Forest Service for land in the Tonto National Forest north of Phoenix.

Will now consider mining

However, Simonton told *PAY DIRT* May 27th, the partnership now is open to the possibility of future mining at Greaterville.

Joint venture gold mining activities are a possibility, albeit not the group's main objective, he said.

"We're exploring several avenues," Simonton said, detailing the partnership's options as either simply holding the property at present, trading it with the Forest Service, pursuing the mining aspect of a gold orebody, or other development such as small, private ranches.

"We're keeping all options open," Simonton said. "We'll analyze them all and see which is most profitable."

He added that the partnership currently is

awaiting results from feasibility studies of the Greaterville acreage.

According to Metz, Anamax never conducted mining at the Greaterville property, but had held the acreage for a possible swap with the Forest Service in case Anamax developed the nearby Helvetia copper orebody, to the north of Greaterville.

In January this year, Anamax sold its 2,961 acres in the Helvetia-Rosemont area in two separate sales, Metz said.

The majority of that land (more than 2,000 acres) was acquired by two individual investors and developers represented by Leonard Reichardt of Tucson.

According to Reichardt, the sales price was \$800,000 and the purchasers initially planned to develop the property for other uses.

However, mining companies now have expressed an interest in the acreage and the buyers have yet to make a final decision on the land, which consists of 1,647 patented and 900 unpatented claims, plus two ranches.

This acreage includes two mineralized areas—the Helvetia and Rosemont—containing copper, molybdenum and silver, Reichardt told *PAY DIRT* May 27th. He added that the combined property is referred to as the "Helvetia."

According to Reichardt, feasibility studies and assessment work currently are under way and a final decision on the land is expected in a year, by next summer.

"It's a very frustrating situation" at present, he said, explaining that the land may contain about \$4 billion worth of minerals, but the Forest Service also would like to trade some of its nearby property near Arizona Highway 82 for the Helvetia acreage.

Such a trade would allow the two investors and developers to establish 40-acre parcels for private estates on the Highway 82 land, but then the Helvetia property would never be developed for mining activity, Reichardt said.

When asked which mining companies are interested in the Helvetia acreage, Reichardt said several firms have expressed interest but that Cyprus Minerals Company is the only one currently investigating the site.

Richard Hagman, manager of public, government and investor relations for Cyprus at headquarters in Colorado, said he personally had no knowledge of the Helvetia property and could neither confirm nor deny the report.

Has extensive ore reserves

According to *PAY DIRT* files, the Helvetia property formerly held by Anamax and originally owned by Banner Mining Company contains 320 million tons of proven sulphide ore reserves grading 0.64 percent copper, 20 million tons of proven oxide reserves grading 0.55 percent copper, and 23 million tons of

proven mixed reserves grading 0.75 percent copper.

When Anamax sold its 2,961 acres in Helvetia last January, about 950 acres were purchased by Palo Seco Corporation of Tucson, Metz said.

According to Palo Seco's Mark Myers, the firm now has that property in escrow to sell. It is likely that 40-acre "ranchettes" will be developed, he told *PAY DIRT* May 27th.

"We're in the process of selling" the property, Myers said, adding that the land will not be used for mining purposes. He explained some prospecting had been conducted years ago on the 949 acres, but apparently little or no mining ever was conducted.

However, that acreage is more level than most of the surrounding land and possibly could have been a site for a mill and other buildings, Myers noted.

He added that Palo Seco, a real estate investment firm, altogether has bought about 4,000 acres across Arizona from Anamax.

"We bought 22 (of those) parcels from Anamax for a trade with the Forest Service," Myers said, adding that the company is actively pursuing negotiations at this time with the Forest Service.

Palo Seco has solicited no mining interest in any of the properties it acquired from Anamax, he said, noting that increasing land values may preclude any future mining activity, given depressed conditions facing the industry at present.

According to Anamax's Metz, the mining company still has the 75,000-acre Empire-Cienega property southeast of Tucson for sale for \$35 million. In addition, "a couple of hundred acres" in the Sahuarita area, south of Tucson, have yet to be sold, although most of the company's acreage in that area already has been sold.

Stabilization work at the Twin Buttes copper mine site continues and should be completed later this year.

As previously reported, Park Corporation, based in West Virginia, last year bought for liquidation the Twin Buttes equipment, buildings and facilities, and was expected to purchase the Twin Buttes property also.

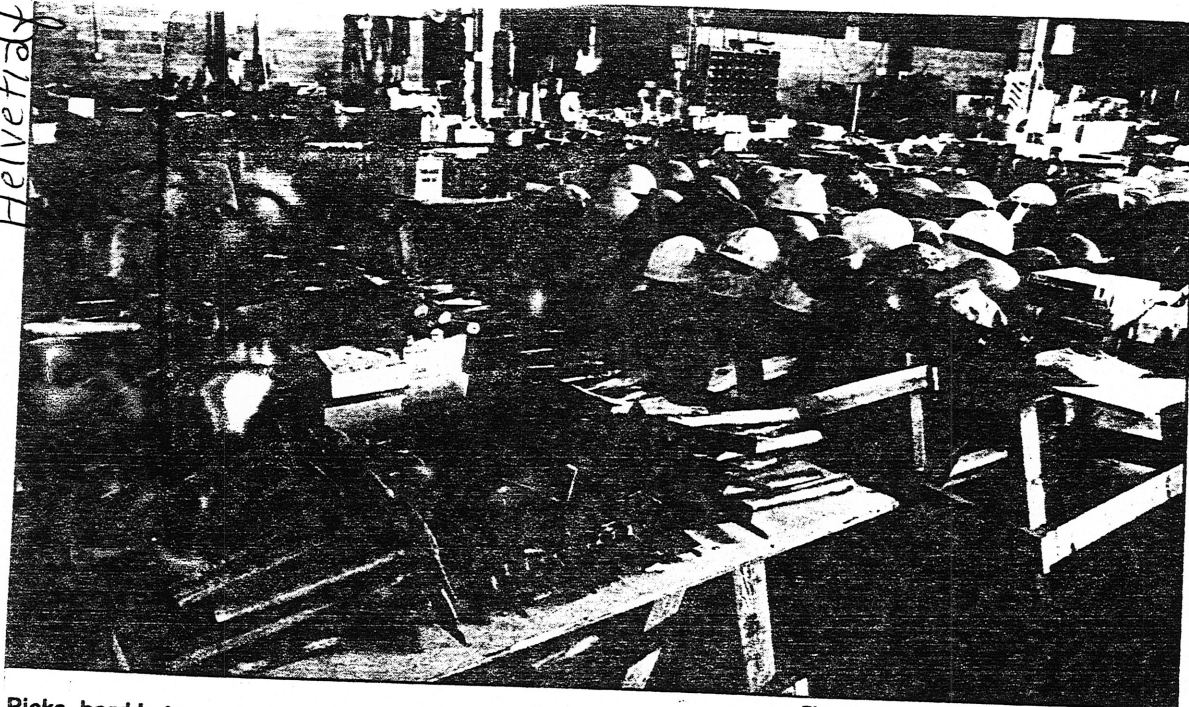
Other types of development unrelated to mining are anticipated on former Anamax land near Twin Buttes.

Of Mines And Men

UCD to boost Utah economy

When Kennecott's Utah Copper Division's modernized operations go into full production in the fall of 1988, the 1,800 permanent jobs will put \$65 million annually into the economy and add about \$190 million to Utah personal income through the multiplier effect, concluded a new study by the Bureau of Economic and Business Research.

Helvetia



Photos by David Sanders, The Arizona Daily Star

Picks, hard hats, work clothes and hydraulic jack oil are just a sampling of the goods for sale

Liquidator plans industrial-sized yard sale

By Richard Ducote
The Arizona Daily Star

Promoters are getting ready for a "yard sale extraordinaire" this weekend near Green Valley.

During the three-day event, shoppers can choose from such items as a typewriter, a desk, a swamp cooler or the odd jackhammer, hydraulic press or diesel generator.

Park Corp., a liquidation and development company based in South Charleston, W.Va., will open its yard sale for business Friday, Saturday and Sunday at the Anamax

Mining Co. 25 miles south of Tucson.

The "yard" is the 8,300-acre Twin Buttes Mine property, where copper production ended last year when the company decided it could not make a profit.

Hershel McGriff, a Park spokesman, said the company specializes in buying shut-down industrial plants, fixing them up and leasing them to new businesses. Raymond P. Park, the company's president, sometimes buys a property "without a total plan" for future development, McGriff said.

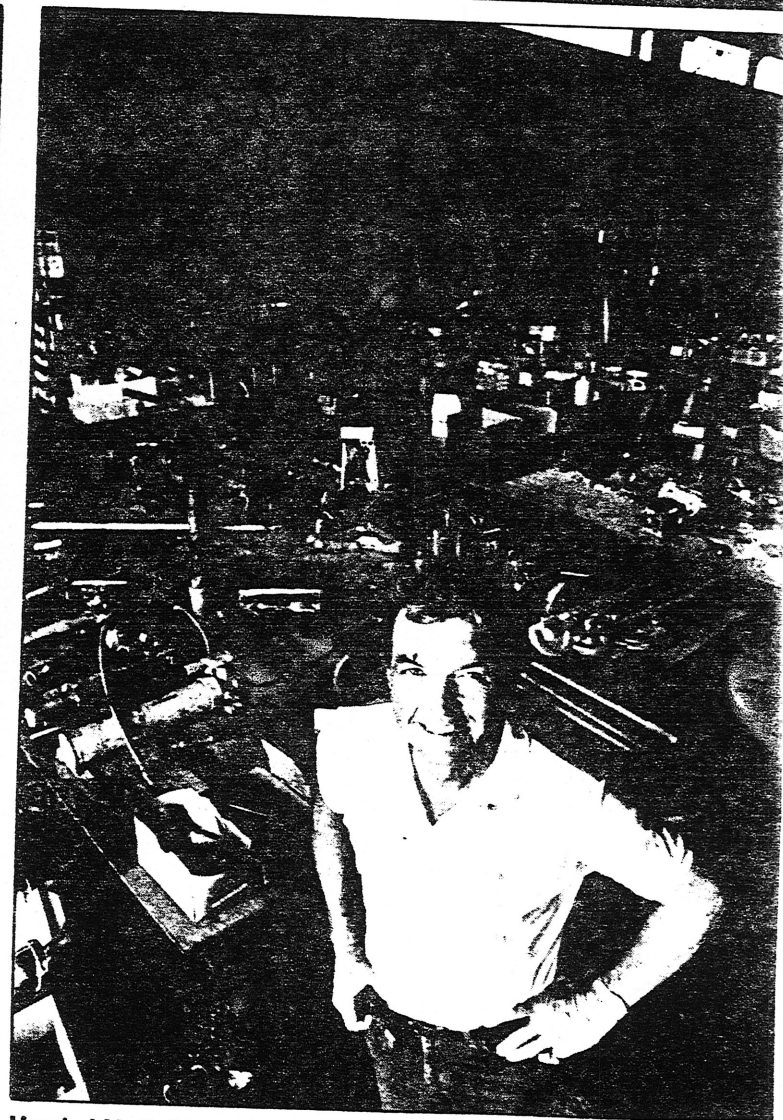
Park has been on the Anamax property

since February and now has 25 employees. The company has purchased the improvements and equipment at the operation, Park said.

The company plans to buy the mining company property after Anamax completes a multimillion-dollar project to cover its tailings ponds to eliminate a dust problem, which will also put a cap on copper-mining at the site.

Development of "an industrial park of

See INDUSTRIAL, Page 12B



Hershel McGriff of Park Corp. is supervising the yard sale

Helvetia

Industrial-sized yard sale scheduled for this weekend

Continued from Page 10B

some sort" may occur at the Twin Buttes site, McGriff said.

Park has turned old industrial plants into successful new operations in Cleveland, Pittsburgh and other cities, McGriff said.

The remaining Anamax staff consists of 10 people, said Frederic Ramseier, general manager. Industrial Constructors of Missoula, Mont., is working to "stabilize" the 1,200 acres of tailings with 12 inches of alluvium — a material finer than gravel that once covered the ore body at the mine.

The "capping" operation is due to be completed in October 1987, Ramseier said.

When Anamax ended copper production in November — a small vat-leaching operation — 157 hourly and salaried employees were laid off.

Anamax, a 50-50 partnership between Anaconda Minerals Co. and Amax Inc., is now selling its extensive land holdings in the area, including Bull Farm, 2,500 acres north of Green Valley; the Helvetia copper deposit in the Santa Rita Mountains; and the Empire and Cienega ranches, totaling 70,000 acres in the Sonoita area.

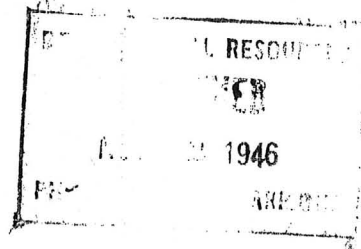
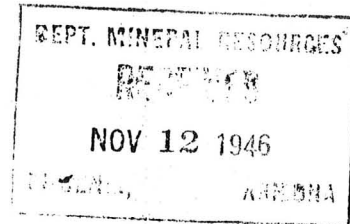
The Anamax mining operation began in the early 1960s and employed 2,100 workers at its peak about 10 years ago. The company invested about \$350 million in the operation.

CHILSON MINES

P. O. BOX 2729

TUCSON, ARIZONA

November 10, 1946



Department of Mineral Resources
304 Home Builder's Building
Phoenix, Arizona

Dear Mr. Dunning:

In answer to your circular letter of Nov. 7th re the Premium Price Plan, I am returning your form herewith and will discuss Item 5 more at length.

But first I would like to emphasize that from a producer's point of view it would be difficult to exaggerate the magnitude of the damage the uncertain tenure of the premium plan has caused to metal production.

I believe that it would be a sound statement to say, that we would have produced 400% more metal in the past four years and at considerably lower cost had the program been originally certified for five years.

Item 5 -- Five year Price Plan

- (a) Minimum 60,000 tons from Helvetia properties alone.
- (b) Expand exploration-development 400%
- (c) Such a plan would enable us to explore by deep drilling for years ahead instead of being limited to months, this would increase our reserves tenfold.
- (d) With five years for amortization, mining plant and mining programs could be designed for and governed by the ore deposit instead of planning for only a few months work at best.

It has occurred to me with amusement that the theme song of the Premium Price Plan should have been "Giv em five minutes more"

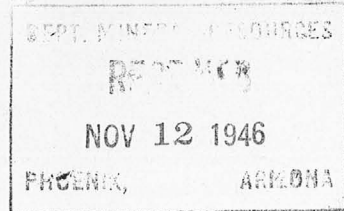
Very truly yours,

A handwritten signature in cursive script that reads "Richard L. Chilson".

Richard L. Chilson

NAME OF COMPANY CHILSON MINES

NAME OF MINE HELVETIA



(1) Production - January 1st to June 30, 1946, inclusive.

Producers shipping ore direct to smelters or to custom mills use Column No. 1; producers operating their own mill use Column No. 2.

COLUMN NO. 1				COLUMN NO. 2			
Tons	% Cu	% Pb	% Zn	Tons	% Cu	% Pb	% Zn
Crude Ore 15,000	2%	--	--	Copper Conc.			
				Lead Conc.			
				Zinc Conc.			

(2) Average Price Received for Metals in Above Production

This to be the total of the ceiling price plus premiums.

Copper	27	¢/lb. Conn. Valley as base
Lead		¢/lb. N.Y. as base
Zinc		¢/lb. East St. Louis as base

(3) What do you estimate your production would have been, January 1st to June 30, 1946, if the metal price had been:

Cu 14 3/8¢/lb. Conn. Valley; Lead 8.25¢/lb. N.Y.; Zinc 8.25¢/lb East St. Louis (with no premiums)

COLUMN NO. 1		COLUMN NO. 2	
Crude Ore	None	Tons	
		Copper Conc.	Tons
		Lead Conc.	Tons
		Zinc Conc.	Tons

(4) What do you estimate your production would have been, January 1st to June 30, 1946, if the metal prices had been:

Cu 16¢/lb. Conn. Valley; Lead 11¢/lb. N.Y.; Zinc 9.50¢/lb. East St. Louis (with no premiums)

COLUMN NO. 1		COLUMN NO. 2	
Crude Ore	None	Tons	
		Copper Conc.	Tons
		Lead Conc.	Tons
		Zinc Conc.	Tons

(5) If a metal Conservation Price Plan, similar to the present Premium Price Plan, were made permanent for at least five years,

- (a) What would your yearly production of ore or concentrates be?
- (b) Would such a plan cause you to expand your exploration-development program? If so, how much?
- (c) What effect would such a plan have in increasing your ore reserves?
- (d) In view of low tariffs, how would such a plan promote a healthy mining industry?

HELVETIA MINING & MILLING CO., Pima County, Arizona. Robt. Burney,
Operator, Tucson, Arizona.

This mine has recently been financed in a limited way by private capital and is productive at the rate of approximately 30,000 pounds of copper per week. Shipments consist of 12-15% shipping ore, and 25% concentrates from a 50 ton flotation mill which treats 3-4% mill heads.

Shipment of the high grade is limited by their ability to haul to Sahuarita, the rail point, over extremely poor roads which cross public domain and are not maintained. Three times present tonnage of raw ore could be shipped with the present equipment if the roads were improved.

A second 50 ton Marcy ball mill is ready to be installed but power is lacking. An REA line is 4 miles distant and could be utilized if power transmission line is made available. An alternative would be the installation of a diesel plant, for which government funds would be needed.

This group likewise is developing the Copper World, which adjoins. Between the two properties it is believed that a 200 ton mill could be operated at capacity with 3% plus mill heads. Concentrates would yield approximately 350,000 pounds of copper per month and shipments of raw ore another 75,000 pounds per month.

While building up to this peak production the relatively simple problem of roads could be corrected to obtain an immediate and appreciable increase to about 200,000 pounds per month.

Report by Earl F. Hastings, October 9, 1942, to Copper Branch,
War Production Board.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Helvetia Min. & Milling Co.

Date August 5, 1942

District Suaharita

Engineer George A. Ballam

Subject:

This property, consisting of 52 patented claims, is located about 14 mi. south-east of Suaharita. It has recently been taken over by Robt. Burney, John Gregory and Mrs. Blankenship of Tucson. The new owners have built a 75 ton flotation mill on the Leader Mine, and at present are milling near capacity, and in addition shipping about a car of high grade copper ore per week. Both concentrates and ore are shipped to the Hayden smelter.

The Leader ore is mined by tunnel and winze, or rather underhand stope which is in about eight feet of ore running 12 to 15% copper, recently discovered. The ore is in beds in the limestone-granite contact. The lower and more recently worked bed being the one described. An upper bed, separated by a garnetized zone of a few feet thick, is mill ore and constitutes the zone worked in past years and in the earlier activity of the present company. Five cars of ore have been shipped during the past month, ore left on the hanging wall being used to sweeten the lower grade mill-heads (3 to 4%).

The mill consists of Marcy ball mill, double rake classifier, 6 cells and Oliver filter. Grind-65 mesh, reagents pine oil and Z-4 (Na Xanthate) iron depressed by lime. Concentrate 25% Cu - 8 to 1 ratio of concentration. Power, hothead and belt drive. The mill was assembled under difficulties and is unsatisfactory and far below capacity warranted by possible production of mine. The owners are developing an adjacent property which has sufficient ore blocked to produce 100 tons per day of 3% Cu. On this account they are anxious to sept up capacity of present mill. They have another 50 ton Marcy ready to install but are faced with the following problems:

(1) They will install either a 200 HP Diesel plant or connect up with REA line 4 miles distant if,

(a) Transmission line is available on Allison property. This is in receivership and owned by Valley Bank. They are investigating possibility of securing this to make connection with power line.

(b) A suitable Diesel plant is available. They are investigating availability of DC equipment. The electrical equipment, generators, motors, etc. will be required in either event.

(c) They are toying with the idea of applying for an RFC loan to increase capacity of mill to approximately 200 tons to mill the ore available. About 10,000 tons broken above 200 on new property and immediately available. Large amount of good mill ore blocked out between 200 and 300, but shaft and workings at that level in bad condition, and about \$5000 required to open it up. Suggested preliminary development loan for this purpose, and with the greatly increased tonnage thus available, there should be no question of need for larger mill.

At present 36 men are employed. They would step up production of shipping ore but have a road problem. The road between Suaharita and the mine crosses flats which are flooded in wet weather. Today was my third attempt to get in to the mine, and on the way out this PM I ran into another cloudburst and had road. About 7 miles of Santa Rita Range Reserve is crossed, and here the road has at one time been graded, and is not so bad, but on either end there are

three or four miles of road crossing public domain which constitute a bottle neck. Burney said he would be shipping two or three times as much or if he could haul it. He is loading at the dock in Suaharita. They had heard nothing about the access road program, and will make application at once for aid in improving the road. Several families are now living at the camp, and it is expected all employees will be there by winter. They believe the demand for school transportation will be effective in getting the county to fix the lower end of the road.

This operation was made possible by private capital, and the owners do not want to wait until obligations are liquidated to make the proposed expansion. It would seem that with the increased production immediately possible they could qualify for both the prel. loan to open up the Helvetia Mine (Copper World) and a loan to expand the mill. The operators have only recently started the mill, and just a few weeks ago discovered a considerable body of high-grade shipping ore. Moreover, they started without any aid or advice, and seem to be completely ignorant of existing facilities for assistance. It would appear that the potential production of 100,000# of copper per week will be a good project to work on, especially since they are actually producing about one third of this amount at present.

Signed: George A. Ballam

August 5, 1942

SURVEY OF OPERATING MINES

DEPT. MINERAL RESOURCES

RECEIVED

HELVETIA MIN. & MILLING CO.

AUG 7 1942

PHOENIX

ARIZONA

To: Director, Dept. Mineral Resources
From: George A. Ballam

This property, consisting of 52 patented claims, is located about 14 mi. southeast of Suaharita. It has recently been taken over by Robt. Burney, John Gregory and Mrs. Blankenship of Tucson. The new owners have built a 75 ton flotation mill on the Leader Mine, and at present are milling near capacity, and in addition shipping about a car of high grade copper ore per week. Both concentrates and ore are shipped to the Hayden smelter.

The Leader ore is mined by tunnel and winze, or rather underhand stope which is in about eight feet of ore running 12 to 15% copper, recently discovered. The ore is in beds in the limestone-granite contact, the lower and more recently worked bed being the one described. An upper bed, separated by a garnetized zone of a few feet thick, is mill ore and constitutes the zone worked in past years and in the earlier activity of the present company. ~~The~~ Five cars of ore have been shipped during the past month, ore left on the hanging wall being used to sweeten the lower grade mill-heads (5 to 4%)

The mill consists of Marcy ball mill, double rake classifier, 6 cells and Oliver filter. Grind -65mesh, reagents pine oil and Z-4 (Na Xanthate) iron depressed by lime. Concentrate 24% Cu - 8 to 1 ratio of concentration. Power, hot head and belt drive. The mill was assembled under difficulties and is unsatisfactory and far below capacity ~~of~~ warranted by possible production of mine. The owners are developing an adjacent property which has sufficient ore blocked to produce 100 tons per day of 3% Cu. On this account they are anxious to step up capacity of present mill. They have another 50 ton Marcy ready to install but are faced with the following problems:

- (1) They will install either a 200 HP Diesel plant or connect up with REA line 4 miles distant if,
 - (a) Transmission line is available on Allison property. This is in receivership and owned by Valley Bank. They are investigating possibility of securing this to make connection with power line
 - (b) A suitable Diesel plant is available. They are investigating availability of DC equipment. The electrical equipment, generators, motors, etc. will be required in either event.
 - (c) They are toying with the idea of applying for an RFC loan to increase capacity of mill to approximately 200 tons to mill ~~ore~~ available. About 10,000 tons broken above 200 on new property and immediately available. Large amount of good mill ore blocked out between 200 and 300, but shaft and workings at that level in bad condition, and about \$5000 required to open it up. Suggested preliminary development loan for this purpose, and with the greatly increased tonnage thus available, there should be no question of need for larger mill.
- At present 36 men are employed. They would step up production of shipping ore but have a road problem. The road between Suaharita and the mine crosses flats which are flooded in wet weather. Today was my third attempt to get in to the mine, and on the way out this PM I ran into another cloudburst and bad road. About 7 miles of Santa Range Reserve is crossed, and here the road has at one time been graded, and is not so bad, but on either end there are three or four miles of road crossing public domain which constitute a bottle neck. Burney said he would be shipping two or three times as much ore if he could

haul it. He is loading at the dock in Suaharita. They had heard nothing about the access road program, and will make application at once for aid in improving the road. Several families are now living at the camp, and it is expected all employees will be there by winter. They believe the demand for school transportation will be effective in getting the county to fix the lower end of the road.

This operation was made possible by private capital, and the owners do not want to wait until obligations are liquidated to make the proposed expansion. It would seem that with the increased production immediately possible, they could qualify for both the prel. loan to open up the Helvetia Mine (Copper World) and a loan to expand the mill. The operators have only recently started the mill, and just a few weeks ago discovered a considerable body of high-grade shipping ore. Moreover, they started without any aid or advice, and seem to be completely ignorant of existing facilities for assistance. It would appear that the potential production of 100,000# of copper per week will be a good project to work on, especially since they are actually producing about one third of this amount at present.

George A. Ballan

Arizona Copper Reserves and Resources

Compiled by the Arizona Dept. Mines and Mineral Resources

Printed: 1/28/2005
Last Updated: 1/3/2005

HELVETIA

Alternate name(s):

Helvetia East (866), Rosemont

Company:

Asarco Inc.
2575 E. Camelback Road, Suite 500
Phoenix, AZ 85016-4240
602-977-6500
www.asarco.com

Location:

Township 18 S Range 15 E Sec. 36
Latitude/Longitude: 31.85 110.75
Twenty miles south of Tucson, west slope Santa Ritas.

Mineralization type and reserve/resource:

Type	Tons (millions)	Grade (%)	
Sulfide	362	0.61	CU
Acid Soluble	66	0.53	Cu

Reserve information and sources:

Sulfide reserve includes 0.25 oz/ton Ag.
Also includes 0.016% Mo & 0.0005 oz/ton Au. (Dresher, T.A., 1979)
Anzalone, S.A. and Brown, R.L., 1992, Geology of the Helvetia Copper Deposit - Arizona, SME Preprint 92-61.

Comments:

Additional mineralization occurs in Broadtop Butte and Copperworld areas. Total mineralization likely exceeds 500 MM tons. Land exchange process underway 1997. Reported sold to Rosemont ranch LLC in 2004. Group holds unpat. claims and patented land.

LEADER MINE

PIMA COUNTY

D. G. Chilson Copper

Visited sometime in 1946 by Truman H. Kuhn
Copper, some molybdenum, tungsten is known to exist but no production reported.
For this report only the tunnel level could be examined and it was not possible
to estimate probable ore. However, several promising areas are suggested for
exploration and development.

Banner Mining Company, Box 5605, Tucson, Arizona, has option to purchase this property.
9-6-61

Banner's Helvetia copper molybdenum deposits 20 miles east of Twin Buttes appears to be
quite extensive though deeper and of lower grade than Twin Buttes, says Allan Bowman,
general manager of Banner Mining Co. Denver Record 6-19-69

NJN WR 12/12/86: Hilton Cass (c) Forest Service Zone Office, provided copies of claim
maps of the claims that Anamax tried to patent at Helvetia (file) Pima County and
a brief description of the geology on them. These will be added to the files.

NJN WR 12/19/87: Provided general information on the Helvetia deposit (file)
Pima County to Mr. Dan Aiken of Cyprus Sierrita. Cyprus Minerals (card) is
reviewing data on the property because it is considering purchase.

HELVETIA

PIMA COUNTY

HEM WR 12/4/87: Mr. Harold Metz of Genesis Real Estate & Development Co., Tucson, was contacted by phone regarding his company's listing for sale of the Helvetia (file) copper deposit. Mr. Metz stated that not only was the Helvetia (Rosemont) deposit for sale, but also the Peach-Elgin and the Broadtop Butte deposits. The asking price for the package is \$6 million without a royalty agreement. Data on the deposits may be available for the department's files-subject to approval by the owner. Further discussions are planned.

MG WR 3/4/88: The Helvetia copper deposit (file) Pima County, including the Peach Elgin, is owned by Lauderback & Pioneer Trust No. 11778, Tucson, Arizona. Genesis Real Estate Co has an exclusive sales contract for the property; contact Mr. Harold Metz, 325-5932. At present a potential buyer (ASARCO?) has a 45 day option.

MG WR 6/24/88: It has been reported that ASARCO (file) is purchasing the Helvetia copper deposit (file) Pima County. Thus purchase would include the Peach Elgin deposit.

NJN WR 7/22/88: Susan Howell, Bur of M, reported that Palo Seco owns the area to the west that was to be the millsite for the Helvetia Mine (file) Pima Co. This area is currently being sold as ranchettes in parcels of 40 acres. The Cienga and Empire Ranches which were to have been the water surces for the mine now belong to the BLM through land exchanges eith private parties.

ROSEMONT RANCH LAND EXCHANGE

FACT SHEET

EXCHANGE FACTS

- ▶ In 1995, ASARCO Incorporated entered into a process of analysis and study with the Coronado National Forest to determine the feasibility of a land exchange.
- ▶ The land exchange would put into Forest Service ownership 23 privately owned land parcels totaling 2,222.45 acres in national forests in Arizona. Appraised value of this land is \$5,323,190.
- ▶ The land under consideration for transfer to the company is in the vicinity of the Rosemont Ranch about 35 miles southeast of Tucson, near State Highway 83, and totals 13,272 acres with an appraised value of \$5,125,000.
- ▶ Asarco is seeking the land exchange because it would facilitate the potential development of a mineral resource near Rosemont Ranch.
- ▶ The land exchange will involve an Environmental Impact Statement of the Rosemont acreage including public participation. The process is expected to take from four to six years.
- ▶ As soon as the exchange is approved, the offered parcels become part of the National Forest system lands and will be public property.
- ▶ In 1992, Asarco completed a land exchange which put into the public trust (Bureau of Land Management) more than 26,000 acres at the Empirita Ranch along Cienega Creek and 40 acres in the Waterman Mountains northwest of Tucson. Pima County received 360 acres at the Empirita and is working with BLM to create a regional park. The old ranch buildings are being converted into a visitors' center featuring an equestrian trail head.

ENVIRONMENTAL FACTS

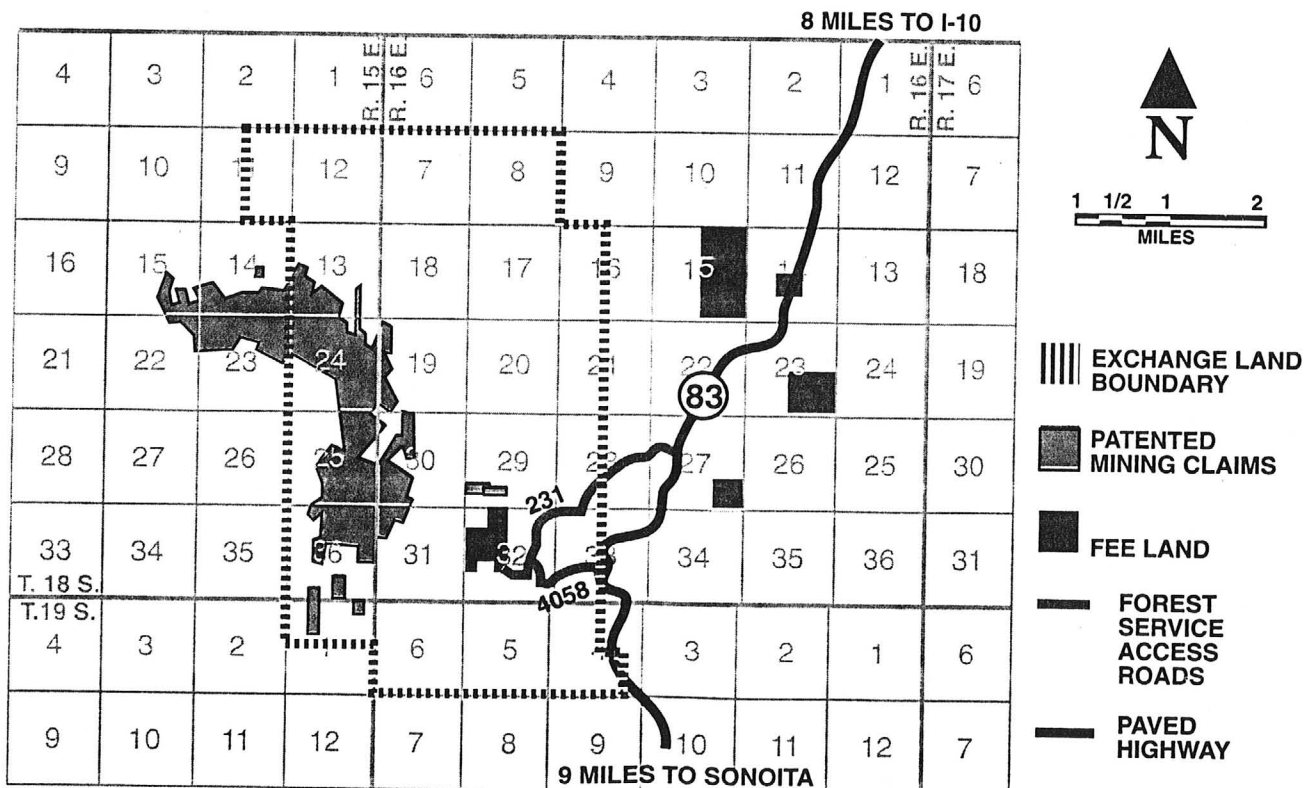
- ▶ The development of a mine on the Rosemont property is a separate process and would require extensive permitting for air and water quality, groundwater protection, and endangered species assurances. These permits would involve working with the U.S. Environmental Protection Agency, the Arizona Department of Environmental Quality, the Arizona Department of Water Resources, and U.S. Fish and Wildlife Department, among others. Mining cannot commence until these permitting processes, which will take at least 5 years, are complete. All of these permitting processes provide opportunities for public comment.
- ▶ Today's mines are strictly regulated by environmental laws and are not allowed to discharge toxic waste or toxic materials to air, surface water, groundwater, or land surface.
- ▶ Asarco has no significant water rights on the east side of the Santa Rita Mountains. Water resources that would be acquired with the land exchange are minimal and inadequate to sustain a mine.
- ▶ There are more than 100 historic mining-related sites in the Rosemont Ranch area, including old dumps, adits, mill sites, and declines, which represent mining activities from before the turn of the century to the present day.

PATENT AND MINERAL RESOURCE FACTS

- ▶ In addition to the lands sought through the exchange, Asarco holds patented mining claims on a copper deposit in the Rosemont Ranch area including 132 lode claims totaling 2,015 acres. Patents for 347 of these acres were issued in 1995 concluding a process that spanned more than ten years. Some of the mining claims on the exchange property were filed during the 19th century.
- ▶ The mineral resource underlying the 2,015 acres contains about 3 billion pounds of copper.
- ▶ About 1.5 billion pounds of the 3 billion would be recovered in the event a mine is developed.

MINE FACTS

- ▶ The decision to develop a mine on the property would be considered after the exchange is complete. A final decision will depend on many factors including world demand for copper, project capital cost, and cost of operation.
- ▶ More than \$15 million has been spent for discovery and exploration of this area thus far.
- ▶ The cost of developing a mine would be \$300 million to \$500 million. An additional \$1 billion in operating costs would be expended while mining the 1.5 billion pounds of recoverable copper. Operating costs for recovering copper from similar mines today is 65 to 75 cents per pound.
- ▶ If a mine were developed, it would employ about 650 local people and generate taxes and business for local suppliers.



If you are interested in demonstrating your support of Asarco's Rosemont Ranch Land Exchange, we would encourage you to write to any or all of the following individuals:

Senator Jon Kyl
P.O. Box 10246
Phoenix, AZ 85064-0246

Senator John McCain
450 W. Paseo Redondo #200
Tucson, AZ 85701-8275

Representative Ed Pastor
2432 E. Broadway Blvd.
Tucson, AZ 85719

Representative Jim Kolbe
1661 N. Swan Road #112
Tucson, AZ 85712

Senator Keith Bee
Capitol Complex
1700 N. Washington
Phoenix, AZ 85007-2890

Representative Bill McGibbon
Capitol Complex
1700 N. Washington
Phoenix, AZ 85007-2890

Representative Lou-Ann Preble
Capitol Complex
1700 N. Washington
Phoenix, AZ 85007-2890

Jack Ward Thomas
Chief of the Forest Service
P.O. Box 96090
Washington, DC 20090-6090

Chip Cartwright
Regional Forester
517 Gold Avenue
Albuquerque, NM 87102

John Kirkpatrick
Deputy Regional Forester
517 Gold Avenue
Albuquerque, NM 87102

Wayne Thornton, U.S. Forest Service
Director of Land Use and Minerals
517 Gold Avenue
Albuquerque, NM 87102

Mike Borens, U.S. Forest Service
Lands Officer
300 W. Congress Street
Tucson, AZ 85701

John McGee, U.S. Forest Service
Coronado Forest Supervisor
300 W. Congress Street
Tucson, AZ 85701

Steve Christiansen, U.S. Forest Svc.
Rosemont Project Manager
300 W. Congress Street
Tucson, AZ 85701

Richard de J. Osborne, CEO
ASARCO Incorporated
180 Maiden Lane
New York, NY 10038-4991

Frank McAllister, Executive V.P.
ASARCO Incorporated
1150 N. 7th Avenue
Tucson, AZ 85705

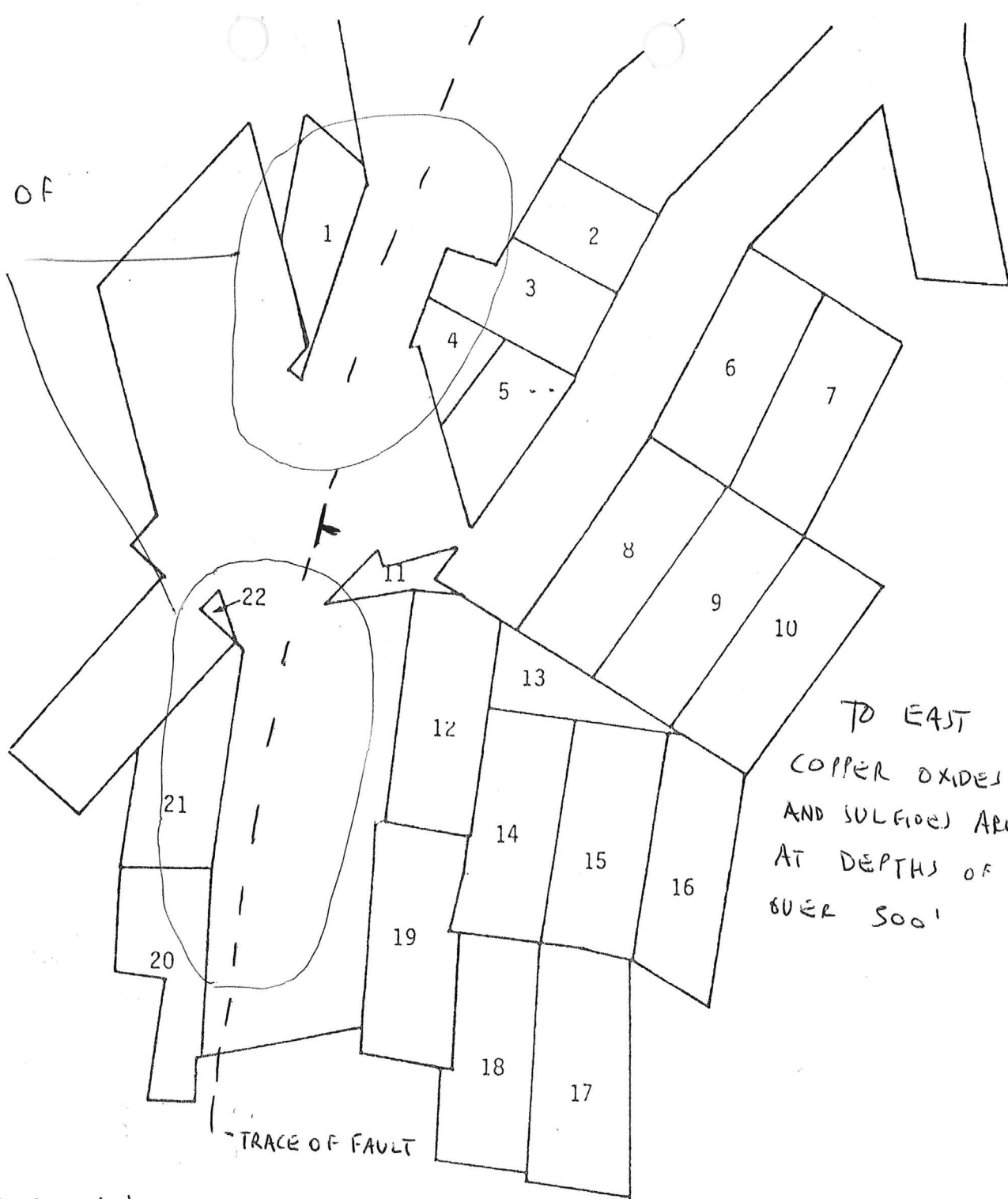
Letters should include:

Full name and mailing address

Phone number

Each letter should be individually addressed to the person listed above

AREAS OF
COPPER
OXIDES



TO EAST
COPPER OXIDES
AND SULFIDES ARE
AT DEPTHS OF
OVER 500'

TRACE OF FAULT

CLAIMS ANAMAX

ATTEMPTED TO
PATENT IN
EARLY 1980'S

Patent Appl'n, Mining Claims

- | | |
|-------------------------|----------------------|
| 1. Falls No.2 | 12. Santa Rita #12 |
| 2. Tailor | 13. Santa Rita #13 |
| 3. Merchant | 14. Santa Rita #14 |
| 4. Wedge No.2 | 15. Santa Rita #15 |
| 5. Wedge | 16. Santa Rita #16 |
| 6. Santa Rita #4 | 17. Santa Rita #28 |
| 7. Santa Rita #5 | 18. Santa Rita #27 |
| 8. Santa Rita #8-A | 19. Santa Rita #26 |
| 9. Santa Rita #9 | 20. Last Chance No.2 |
| 10. Santa Rita #10 | 21. Last Chance No.1 |
| 11. Santa Rita Fraction | 22. Cushing Fraction |

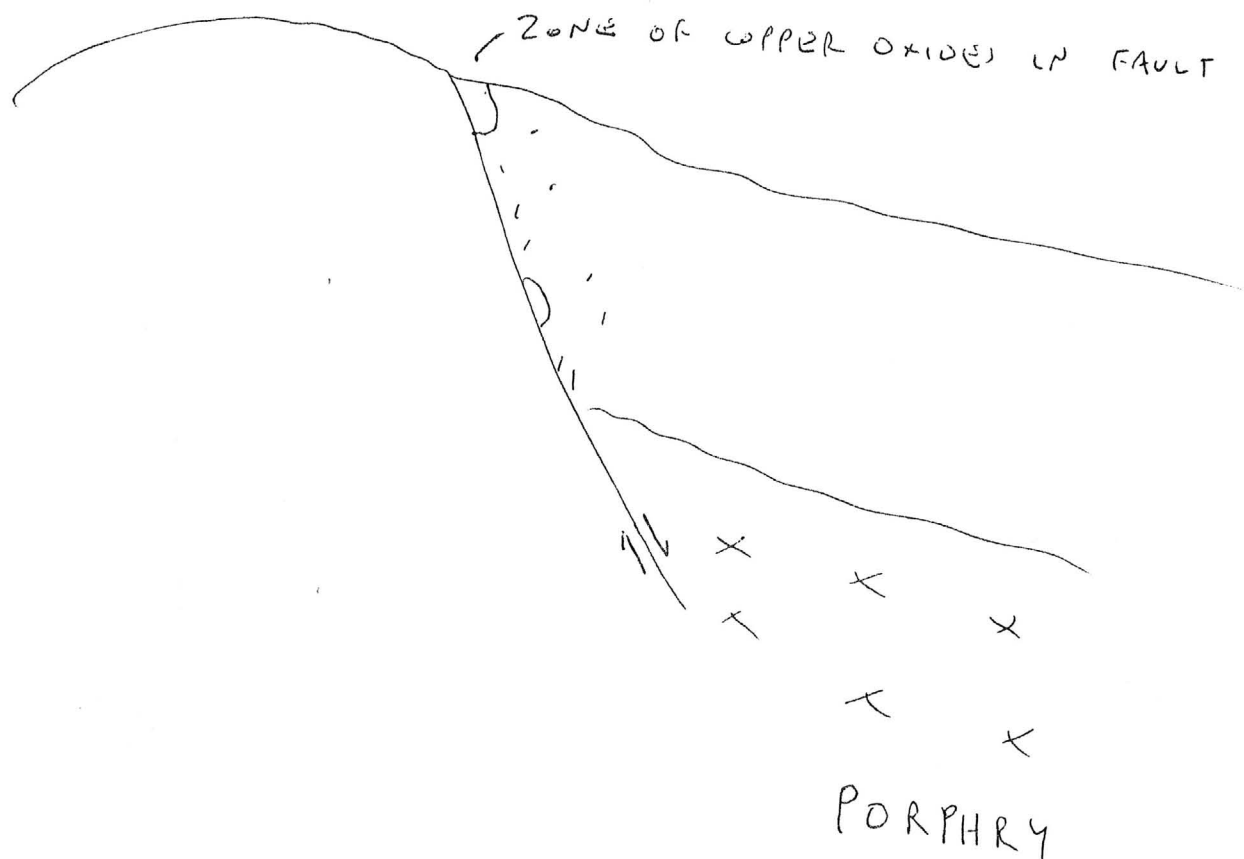


Patented Lands

GENERALIZED CROSS SECTION THRU HELVITIA
SECTION 25 + 36 , TIBS RISE

W

E



SOCIETY FOR MINING, METALLURGY, AND EXPLORATION, INC.

P.O. BOX 625002 • LITTLETON, COLORADO • 80162-5002

PREPRINT
NUMBER

92-61



GEOLOGY OF THE HELVETIA COPPER DEPOSIT — ARIZONA

S. A. Anzalone

ASARCO Incorporated
Tucson, Arizona

R. L. Brown

ASARCO Incorporated
New York, New York

For presentation at the SME Annual Meeting
Phoenix, Arizona — February 24-27, 1992

Permission is hereby given to publish with appropriate acknowledgments, excerpts or summaries not to exceed one-fourth of the entire text of the paper. Permission to print in more extended form subsequent to publication by the Society must be obtained from the Executive Director of the Society for Mining, Metallurgy, and Exploration, Inc.

If and when this paper is published by the Society for Mining, Metallurgy, and Exploration, Inc., it may embody certain changes made by agreement between the Technical Publications Committee and the author, so that the form in which it appears is not necessarily that in which it may be published later.

These preprints are available for sale. Mail orders to PREPRINTS, Society for Mining, Metallurgy, and Exploration, Inc., P.O. Box 625002, Littleton, Colorado 80162-5002.

PREPRINT AVAILABILITY LIST IS PUBLISHED PERIODICALLY IN
MINING ENGINEERING

1

Geology of the Helvetia Copper Deposit
Arizona

The Helvetia copper deposit is a large undeveloped Laramide porphyry copper system located in the Santa Rita Mountains, Pima County, Arizona. This porphyry copper system consists of four areas of copper mineralization: Rosemont, Peach-Elgin, Broadtop Butte, and Copper World. Asarco refers to the four areas collectively as the "Helvetia Deposit". Mineralization and alteration are primarily contact pyrometamorphic, and zoning of hydrothermal alteration and sulfide mineral assemblages are similar to those observed at the Twin Buttes and Mission copper mines located approximately 32 km west of Helvetia. Asarco acquired the Helvetia Deposit in 1988 and has continued the exploration and development effort since then.

A considerable amount of excellent geological work has been completed in the area but little information has been published on developments since the mid-1950's. The geology of the deposit as developed by numerous geologists over the past 75 years and the large, bulk tonnage low grade copper deposits outlined in recent years will be briefly reviewed in this paper.

Location

The Helvetia copper deposit is located approximately 50 km southeast of Tucson, Arizona, in the northern Santa Rita Mountains (Figure 1). It lies within the Basin and Range Physiographic Province at elevations ranging from 1402 m to 1890 m.

Exploration and Mining History

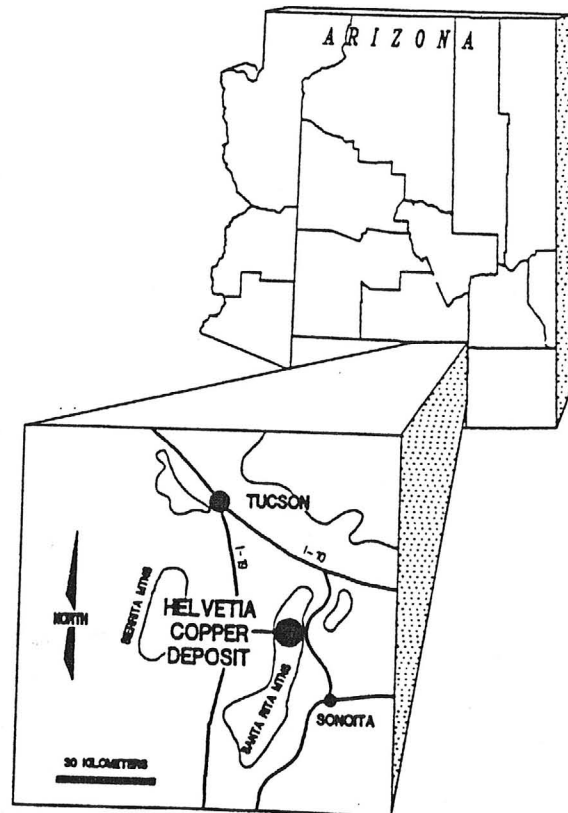
Copper mineralization may have been discovered in the Helvetia district prior to the Civil War, but no records are available for these early discoveries. The district has had a relatively small production of copper ore principally from underground mines. In the late 1880's copper ore from the district was treated at the Columbia Smelter, located on the west side of the Santa Rita Mountains, and the Rosemont Smelter, located on the east flank of the same range near the Rosemont Camp (Creasey, 1955). In 1903 the Helvetia Copper Company began operation and continued until 1911. Copper was produced almost continuously from 1915 to 1951. In the 1940's, some disseminated copper mineralization skarns were mined from small open pits located in the Elgin area. Total production from the Helvetia District through 1950 totalled 227 300 tons of ore containing 17 290 000 pounds of copper, 1 097 980 pounds of zinc, and 180 760 ounces of silver (Schrader, 1915; Creasey, 1955).

After 1950, activities consisted mainly of exploration and development drilling. The Lewisohn Copper Company conducted a drilling program in the Peach-Elgin area in 1955 and in 1956 outlined a possible open pit copper deposit in the Peach Hill area (Figure 3). Drilling in 1956 by American Exploration and Mining Co. in the Ingersoll breccia area, located southeast of Broadtop Butte, failed to outline

an economic deposit. In the late 1950's the Helvetia Deposit was acquired by the Banner Mining Company, and a modest exploration drilling program was conducted in the area. During this Banner program, drill hole G-33 penetrated the first significant porphyry copper mineralization in the Rosemont area. This hole contained a 300 m intercept of greater than 0.90% Cu mineralization. Anaconda Mining Company acquired the property in 1963 and carried out an extensive mapping and drilling program. The vast majority of the modern information on the Helvetia Deposit was developed by Anaconda and Anamax personnel. Their efforts resulted in the delineation of the Rosemont area porphyry copper deposit, a major North American copper resource. The property was incorporated into the Anamax Mining Co. when Amax joined Anaconda in a partnership in 1973. Anamax sold the property to a real estate company in 1986 which in turn sold it to Asarco in 1988.

Geology

The four Helvetia copper deposits occur within a series of moderate to steeply dipping Paleozoic and Mesozoic sedimentary rocks that have been intruded by Laramide igneous rocks. Mineralization and alteration are primarily contact pyrometamorphic (Creasey, 1955), and hydrothermal alteration and zoning of sulfide

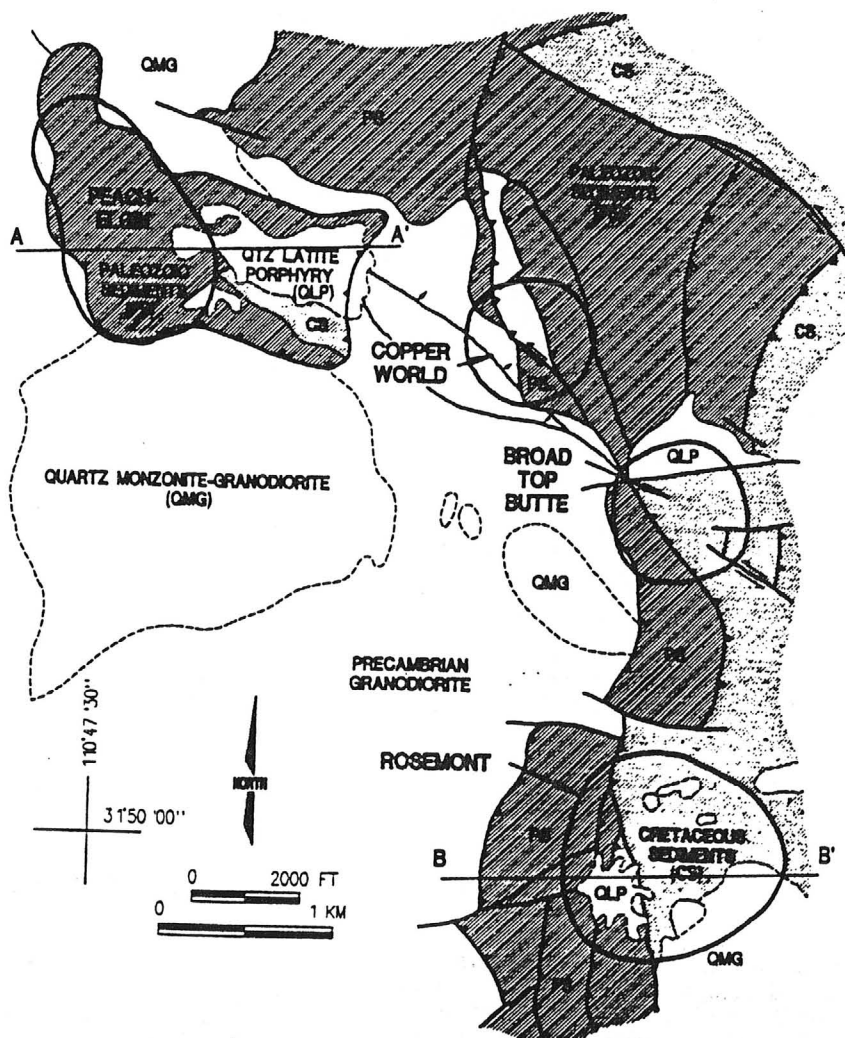


LOCATION MAP - HELVETIA COPPER DEPOSIT
FIGURE 1

mineral assemblages are similar to those found at Asarco's Mission mine and Cyprus Mining Company's Twin Buttes mine. The Paleozoic stratigraphic sequence, ranging from the Cambrian Bolsa quartzite to the Permian Rain Valley Formation, correlates well with the stratigraphic sections developed in the Twin Buttes and Mission mine areas. The Paleozoic rocks are chiefly limestone, dolomitic limestone, and quartzite; the Mesozoic rocks, primarily Cretaceous in age, consist of shales, sandstone, arkose, and impure limestone (Creasey, 1955). The thickness of the Paleozoic stratigraphic section in the deposit area totals approximately 1828 m (Figure 5) (McNew, 1981).

Two types of Paleocene intrusives cut the Paleozoic-Mesozoic strata in the region. One, a granodiorite stock, is found primarily in the western portion of the project area (Figure 2). The other, a moderate to strongly altered quartz latite porphyry, is closely associated with copper mineralization. The quartz latite porphyry is locally mineralized and strong

copper mineralization in adjacent skarns is considered to be genetically related to this porphyry. The principal alteration features in the quartz-latite porphyry are sericite and clay alteration of the feldspars, partial destruction of the mafics, and varying degrees of silicification. Limestones in contact with the quartz latite porphyry have locally been metasomatically altered to lime-silicate skarns. McNew (1981) has classified one of the principal components of the skarn as garnet tactite, composed primarily of andradite garnet with varying amounts of quartz, diopside, tremolite, serpentine, wollastonite, and vesuvianite. Endoskarn alteration is occasionally observed in the quartz latite porphyry. Garnet is the predominant endoskarn mineral, vesuvianite is locally abundant, and epidote occurs in small amounts at intrusive contacts (McNew, 1981). Occasional Tertiary lamprophyric dikes penetrate the area and the general region is underlain by Precambrian granodiorite (Figure 2).



GENERAL GEOLOGY OF HELVETIA COPPER DEPOSIT
 FIGURE 2
 (AFTER HDREWES & VJPERRY)

lization

Sulfide mineralization is considered post-contact pyrometamorphic alteration and occurs in all of the altered sediments. While all of the altered sediments are mineralized to some extent, higher grade copper mineralization tends to favor certain skarn horizons indicating that the original rock type and stratigraphy exerted considerable control over ore deposition. Drilling to date in the Rosemont area indicates that the Horquilla and Colina formations were far more receptive to copper mineralization than the other sedimentary formations in the Helvetia Deposit area (Figure 4). Primary sulfide minerals include chalcopyrite, bornite, and pyrite with chalcopyrite and pyrite predominating. Sulfides occur principally as veinlets, coarse disseminations, blebs, and clots within irregular lenticular zones lying in and generally parallel to the lime-silicate areas. Magnetite in varying amounts is found throughout the skarn zone. In the oxidized zone a considerable tonnage of copper occurs as azurite, malachite, cuprite, and chalcantite. Minor amounts of silver, molybdenite, sphalerite, galena, and scheelite occur throughout the deposit.

The total sulfide content of the deposit is relatively low, seldom exceeding 3% in the altered Paleozoic rocks. The sulfide content of the Mesozoic sequence is somewhat higher due primarily to an increase in pyrite content.

Structure

The structure of the Helvetia copper deposit area is highly complex. The rocks are cut by numerous faults including thrust faults, high-angle normal and reverse faults, and tear faults. Considerable folding of the sediments is observed throughout the area.

A complex assemblage of thrust faults, high-angle normal faults, and tear faults follows the crest line of the Santa Rita Mountains in the Helvetia deposit area. This complex structural zone is known locally as the "Backbone Fault". The Backbone Fault zone forms the western edge of the east dipping block of Paleozoic sediments that include the Rosemont copper deposit. Post-ore faulting, principally high-angle normal and thrust faulting, has had substantial effects on all four mineral areas (McCurry, 1990).

The Peach-Elgin is the most structurally complex of the four copper deposits. It is described in the literature as part of the Helvetia Klippe (Schrader, 1915; Creasey, 1955; Drewes, 1972). The entire Peach-Elgin deposit is underlain by a thrust fault that places Paleozoic and Mesozoic sediments and Laramide quartz-lattice porphyry over Precambrian granodiorite (Figure 3). The Helvetia Klippe is considered by some to be the offset upper segment of the Copper World mineral area (Figure 2).

Schrader, 1915; Creasey, 1955; and Drewes, 1972, have described the geology and structural environment of the Helvetia region and the reader is directed to these publications for additional geological information.

Reserves

Approximately 450 drill holes have been drilled throughout the Helvetia Deposit. The Rosemont area has been tested by approximately 130 vertical and angle diamond drill holes. Based on this drilling a computer-generated reserve estimate was completed for the Rosemont copper deposit by Anamax in 1977. This estimate outlined a geological reserve of 362 million tons of sulfide mineralization assaying 0.61% Cu, 0.019% Mo, and 0.25 oz/ton Ag based on a 0.30% copper cutoff. In addition, 66 million tons of copper oxide mineralization assaying 0.53% Cu was estimated. Asarco is continuing to explore and define the Rosemont copper deposit, and there is little doubt that the ultimate copper resource will exceed these preliminary estimates. The waste to ore ratio will depend on the cutoff grade and pit design selected. Using the preliminary Anamax data, the waste to ore ratio is approximately 3:1.

The Peach-Elgin area has been penetrated by 81 churn and diamond drill holes. Based on a 0.40% Cu cutoff, a hand-drawn geological reserve of 23 million tons averaging 0.76% total copper has been delineated. Approximately 60% of this mineralization occurs as sulfides. If a 0.30% Cu cutoff is used, the tonnage doubles and the grade is approximately 0.58% Cu. The waste to ore ratio at Peach-Elgin is less than 3:1.

The current drill hole spacing in the Broadtop Butte and Copper World areas is too wide to accurately define a geological reserve. Opportunities to outline additional mineralization in these target areas appear good.

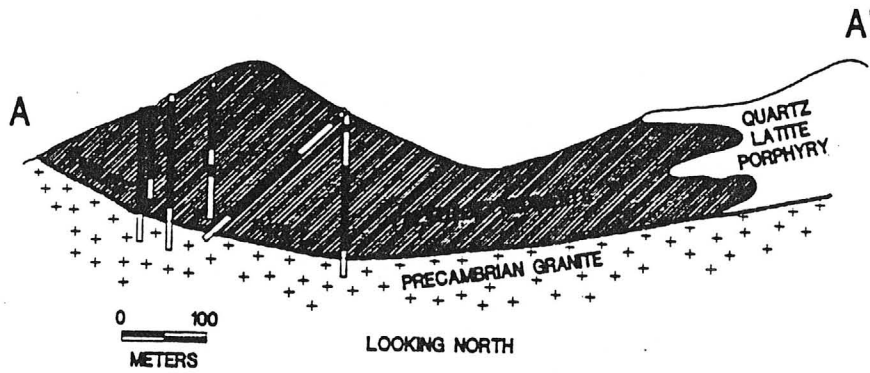
Additional drilling will be required before a minable ore reserve and pit plan can be developed for the entire deposit. Based on current evidence, it appears that the Helvetia deposit contains a geological reserve of copper mineralization in excess of 500 million tons.

Metallurgy

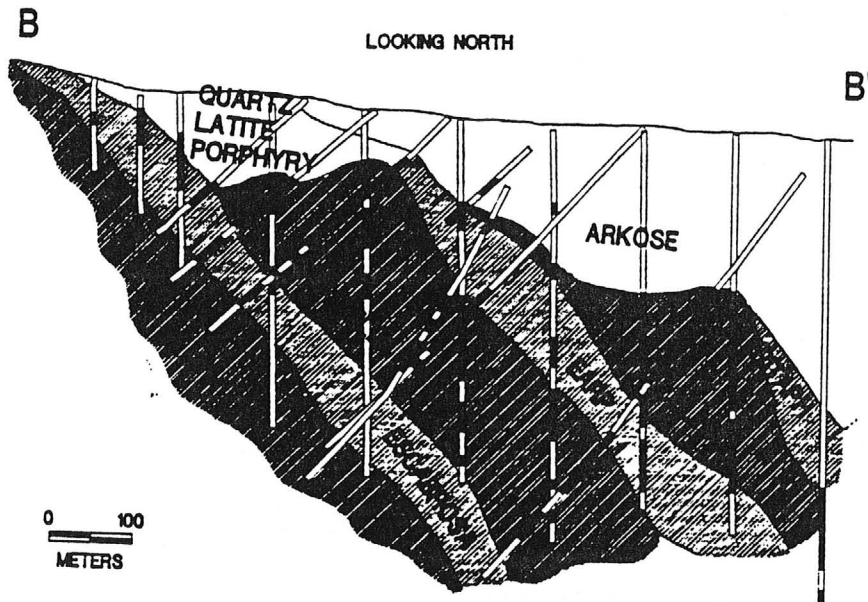
A limited amount of metallurgical testing has been completed on samples from the Rosemont area. This testing indicates that the sulfide mineralization is amenable to concentration by standard flotation methods. These tests produced a copper concentrate assaying 33.5% Cu with payable precious metal credits (Barter, 1987). The sulfide mineralization from the other copper deposits should react to treatment in a similar fashion. A considerable tonnage of oxide copper mineralization is present throughout the deposit. No test work has been completed, but much of the oxide material should be amenable to treatment by SX-EW methods.

Conclusion

The Helvetia copper deposit ranks as a major skarn type porphyry copper occurrence. It is amenable to open pit mining methods, and metallurgical recoveries should be similar to those achieved at Asarco's Mission Unit. A significant percentage of the copper oxide mineralization present will be amenable to heap



CROSS SECTION THROUGH HELVETIA KLIPPE
SHOWING PEACH-ELGIN AREA +0.3% COPPER INTERCEPTS
FIGURE 3



CROSS SECTION THROUGH ROSEMONT AREA
SHOWING 0.3% COPPER INTERCEPTS
FIGURE 4

AGE	FORMATION	THICK	SECTION	DESCRIPTION
CRETACEOUS	WILLOW CANYON FORMATION	670m		ARKOSIC SANDSTONE AND SILTSTONE, ANDESITE, VOLCANIC AND CHERT COBBLE CONGLOMERATE
	GLANCE CONGLOMERATE	0-480m		LIMESTONE AND GRANODIORITE COBBLE CONGLOMERATE
PERMIAN	RAINVALLEY	0-90m		LIMESTONE, DOLOMITE, SANDSTONE
	CONCHA LIMESTONE	120-175m		LIMESTONE, THICK-BEDDED, CHERTY
	SCHERRER FORMATION	220m		QUARTZ, FINE-GRAINED, DOLOMITE, MINOR SILTSTONE AT BASE
	EPITAPH FORMATION	305m		LIMESTONE, MARL, SILTSTONE, DOLOMITE, LOCAL GYPSUM AND QUARTZITE
	COLINA LS	105m		LIMESTONE, MEDIUM-THICK-BEDDED
	EARP FORMATION	245m		SILTSTONE, SHALE, SOME SANDSTONE AND LIMESTONE
PENN	HORQUILLA LIMESTONE	245m		LIMESTONE, THIN-MASSIVE-BEDDED, SILTSTONE, MINOR SHALE AND CONGLOMERATE AT BASE
MISS	ESCABROSA LIMESTONE	170m		LIMESTONE, THICK-MASSIVE-BEDDED, LOCAL CHERT
DEV	MARTIN FORMATION	120m		DOLOMITE, LIMESTONE, SILTSTONE, SOME SANDSTONE
CAMBRIAN	ABRIGO FORMATION	225-275m		SILTSTONE, SHALE, LIMESTONE, AND QUARTZITE, THINLY INTERBEDDED
	BOLSA QZ	140m		QUARTZITE, COARSE-GRAINED
PC	CONT GR			GRANODIORITE PORPHYRY

STRATIGRAPHIC COLUMN OF THE HELVETIA COPPER DEPOSIT

(AFTER G.E. McNEW, 1981)

FIGURE 5

leaching and SX-EW recovery. Asarco acquired the Helvetia property in 1988 as part of an on-going program to increase its domestic copper reserves. It is continuing development of the property as a resource for the future.

Acknowledgements

The authors wish to express their thanks to ASARCO Incorporated for making possible the presentation of this paper. We also acknowledge the work of F.C. Schrader, S.C. Creasey, G.L. Quick, and H. Drewes of the USGS; V.D. Perry, P.H. Pickard, R.C. Baker, W.J. Garmoe, W.G. McCurry, and C.F. Barter of Anaconda and Anamax; G. Jackson of Banner Mining Co.; and G.E. McNew, whose outstanding geological work formed the basis for this presentation.

References

Barter, C.F., 1987, Personal communication, former geologist with Anamax Mining Company, Tucson, Arizona.

Creasey, S.C., Quick G.L., 1955, Copper deposits of part of the Helvetia mining district, Pima Co., Arizona: U.S. Geol. Survey Bull. 1072-F, P. 301-323.

Drewes, H., 1972, Structural geology of the Santa Rita Mountains, southeast of Tucson, Arizona: U.S. Geol. Survey Prof. Paper 478, 35 pp.

McCurry, W.G., 1991, Personal communication, former geologist with Anamax Mining Company, Tucson, Arizona.

McNew, G.E., 1981, Tactite alteration and its late stage replacement in the southern half of the Rosemont Mining District, Arizona: Unpublished Master's thesis, University of Arizona, Tucson, 80 pp.

Schrader, F.C., 1915, Mineral deposits of the Santa Rita and Patagonia Mountains, Arizona, with contributions by J.M. Hill, U.S. Geol. Survey Bull. 582, 372 pp.

03/03/94

ARIZONA COPPER RESERVES

COMPILED BY

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

PROPERTY:

HELVETIA

ALSO KNOWN AS - Helvetia East (866)

OPERATOR\OWNER:

Asarco Inc.
180 Maiden Lane
New York, NY 10038
212-510-2000

LOCATION INFORMATION:

TOWNSHIP 18 S RANGE 15 E SECTION 36
COUNTY - Pima AZMILS - 499
DESCRIPTION - Twenty miles SE of Tucson in Santa Rita Mtns.

ORE TYPE AND RESERVE INFORMATION:

Sulfide - 362 MILLION TONS AT 0.61% Cu
Acid Soluble - 66 MILLION TONS AT 0.53% Cu

RESERVE INFO. - Sulfide reserve includes 0.25 oz/ton Ag.

RESERVE INFO. - Also includes 0.016% Mo and 0.0005 oz/ton Au. (Dresher, T.A., 1979)

SOURCES:

SME Preprint 92-61, Geology of the Helvetia Copper Deposit - Arizona, Anzalone, S.A. and Brown, R.L.

COMMENTS:

Additional mineralization occurs in Broadtop Butte and Copperworld areas. Total mineralization likely exceeds 500 MM tons.

03/02/94

ARIZONA COPPER RESERVES

COMPILED BY

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

PROPERTY:

HELVETIA

ALSO KNOWN AS - Helvetia East (866)

OPERATOR\OWNER:

Asarco Inc.
180 Maiden Lane
New York, NY 10038
212-510-2000

LOCATION INFORMATION:

TOWNSHIP 18 S RANGE 15 E SECTION 36
COUNTY - Pima AZMILS - 499
DESCRIPTION - Twenty miles SE of Tucson in Santa Rita Mtns.

ORE TYPE AND RESERVE INFORMATION:

Sulfide - 337 MILLION TONS AT 0.54% Cu
Acid Soluble - 22 MILLION TONS AT 0.55% Cu

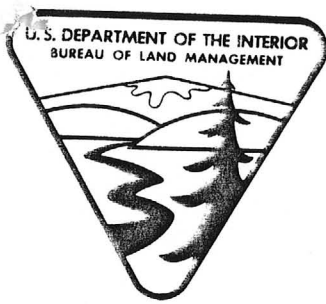
RESERVE INFO. - Sulfide - 0.088 oz/ton Ag, 0.0005 oz/ton Au

SOURCES:

Drescher, T.A. "Deposit Summary Report Helvetia East Deposit" April 1979 pg 11 ADMMR Helvetia file

COMMENTS:

Purchased by Asarco in 1988 for \$1 million cash and 1200 acres of Non-mineral land. (Peach Elgin included) "Metals Week", Aug 29, 1988 pg 1 gave sulfide - 280 million tons at 0.62% Cu; 0.016% Mo, Acid Soluble - 23 million tons at 0.78% Cu



ARIZONA PUBLIC LANDS UPDATE



This is another in a continuing series of information newsletters designed to keep the public and user groups informed on BLM policies and programs.
DEBORAH STEVENS, Editor

May-June 1988

P. 1-HELVETIA MPE (P)

BLM completes Empire-Cienega land exchange; public gains rich resources

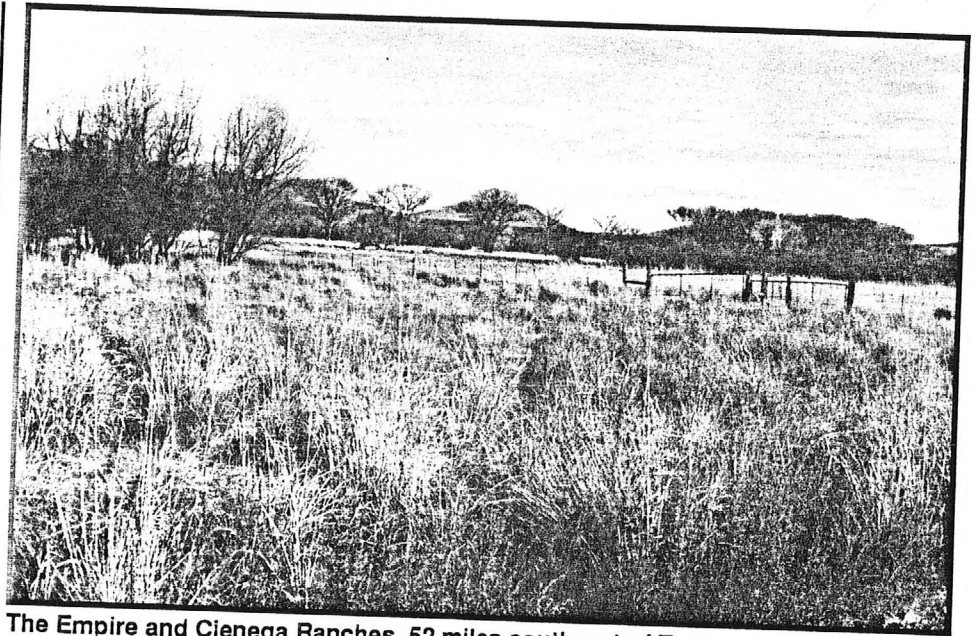
More than 54,000 acres of prime Arizona grasslands, riparian areas, scenic forests and canyonlands came into public ownership on June 8, 1988 with BLM's completion of the Empire and Cienega land exchange.

Through this exchange, the federal government gained title to 41,604 acres of the Empire and Cienega and portions of the Rose Tree ranches in southeastern Pima and Santa Cruz counties, as well as the 13,000-acre Gubler-Frei Ranch that abuts the Grand Canyon National Park in the Arizona Strip.

According to BLM Arizona State Director D. Dean Bibles, "BLM is mandated to manage the land for multiple uses. And this is a prime example of multiple use. The public has gained invaluable riparian areas, a diversity of wildlife habitat and recreational and educational opportunities that will grow into the next century."

BLM accepted title for the four parcels from Seven West Properties of Scottsdale, which in turn acquired title to 49,482 acres of public land. The public land includes 80 acres at Wilmot and Valencia roads in southeast Tucson and three parcels near Phoenix. The Phoenix tracts include 6,854 acres east of Arizona Highway 89 and south of Highway 74, 6,721 acres west of Phoenix and southwest of Morristown,

"The public has gained invaluable riparian areas, a diversity of wildlife habitat and recreational and educational opportunities that will grow into the next century."



The Empire and Cienega Ranches, 52 miles southeast of Tucson, comprise some of the finest true grasslands in the state.

and 35,827 acres west of Phoenix and north of Interstate 10 in the Tonopah area.

The Empire, Cienega, Rose Tree and Gubler-Frei properties were appraised at \$35,745,000 by an independent appraiser using federal standards, and his work was approved by BLM reviewing appraisers. The tracts acquired by Seven West Properties were appraised for \$35,754,332. BLM received \$9,332 in equalizing money.

Bibles said the Empire and Cienega ranches, 52 miles southeast of Tucson, comprise a mixture of outstanding resources that include some of the finest true grasslands in the state. He also extolled the 7 1/2-mile Cienega Creek and the rich riparian zone it nourishes. Fisheries biologists say the creek is vital to the survival of the endangered Gila topminnow and is also a haven for the Gila chub, a candidate for the endangered list. A third Arizona native fish,

the longfin dace, also is found in the creek.

The ranches provide habitat for a variety of game and non-game animals and birds including a herd of pronghorn antelope that was re-introduced by the Arizona Game and Fish Department. The pronghorns once were native to the area but disappeared several years ago for various reasons.

Other mammals include both mule and whitetail deer, javelina, mountain lion and an occasional black bear that wanders onto the ranches from the higher slopes nearby.

Among the bird population are three species of quail, various raptors and such scarce species as the yellow-billed cuckoo. The Tucson Chapter of the Audubon Society is assisting BLM on an inventory and compilation of a bird list for the area.

The ranches produce huge cottonwood trees that line Cienega Creek, as well as

(Continued on Page 2)

(Empire-Cienega continued)

willow and velvet ash. Elsewhere, oak, juniper and mesquite thrive.

In the Arizona Strip, the Gubler-Frei Ranch features stands of ponderosa pine, deep canyons and spectacular scenery.

Bibles, pointing out that the property abuts both the Grand Canyon National Park and Lake Mead National Recreation Area at an elevation of some 6,000 feet, said "This promises to be an excellent back-country recreation area as well as a key wildlife area." The ranch house will be used as an administrative site for field work and to house a fire crew.

Bibles said grazing on the ranch will not be assigned to any one rancher. Instead, it will be used as a supplemental or emergency allotment as the need arises. This procedure will also eliminate the problem of cattle wandering onto the two National Park Service properties.

The Empire and Cienega ranches are open to immediate public use, but with some restrictions to safeguard environmentally-sensitive areas and to protect livestock that graze there.

The public is encouraged to use two main access routes to the ranches, one off Highway 83 and the other off Highway 82. Both entrances will be marked by signs that read "Empire-Cienega Resource Conservation Area".

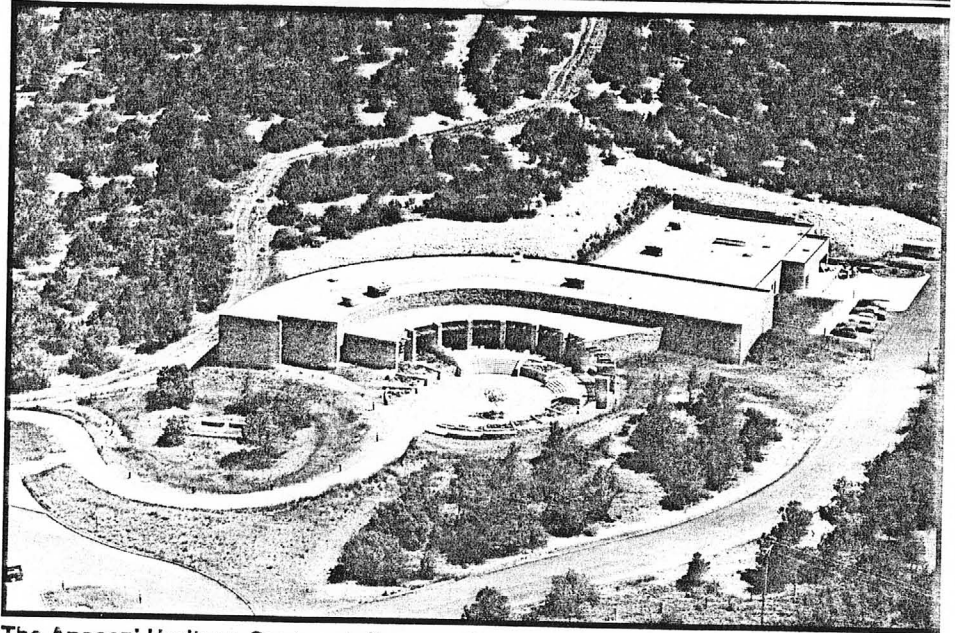
Vehicle use will be limited to designated roads to protect the watershed from erosion, and woodcutting will be prohibited.

A BLM fire crew will be stationed at the ranches, and a BLM ranger will patrol the area.

Further uses and regulations for managing the property will be subject to BLM's planning system. Bibles said a committee of citizens from the area, including Tucson, has been named to advise BLM in this process.

"We feel extremely fortunate in being able to make this exchange," Bibles said. "The Empire and Cienega ranches were being looked at for subdividing and development, but there also was much public sentiment for not developing them."

He called the area some of Arizona's best lands for multiple use management and said that it is gratifying that we were able to exchange land near expanding metropolitan areas that have low public resource values for land high in scenic, recreational and other multiple use values.



The Anasazi Heritage Center staff currently manages almost 2 million artifacts, samples and documents. The majority of the archaeological collections resulted from the Dolores Archaeological Program (DAP), the largest single archaeological contract awarded in the U.S. to date.

BLM announces Anasazi Heritage Center grand opening

If you are fascinated with prehistoric artifacts and eager to visit one of the richest archaeological regions in the U.S., you'll be happy to know that the BLM Anasazi Heritage Center (AHC) located near Dolores, Colorado will soon open its doors to the public. Official dedication ceremonies have been set for August 27, 1988.

After 10 years of planning, building, collecting and cataloging prehistoric artifacts, the AHC will open daily from 9 a.m. to 5 p.m. (10 to 5 on Sundays) beginning June 25. The pueblo-style museum was constructed by the Bureau of Reclamation as mitigation for construction of the McPhee Dam and Reservoir Project. The 40,500 square-foot facility will serve as a visitor, interpretive and research center, as well as a repository for millions of archaeological artifacts.

According to BLM Director Robert Burford, "The Anasazi Heritage Center is a one-of-a-kind facility with a great deal to offer the public." Visitors will enjoy a "total" museum experience. Permanent exhibits focus on the prehistoric Anasazi Indians, modern archaeology and changing resource uses. But there is much more. A full-scale replica of an Anasazi pithouse dwelling illustrates how these prehistoric people lived in the Four Corners area be-

tween A.D. 1 and A.D. 1300. In the Discovery Area visitors can grind corn, attempt to weave on a replicated loom, use microscopes and handle actual Anasazi artifacts. Visitors can also take the self-guided interpretive walk to the Escalante and Dominguez ruins adjacent to the center.

Director Burford noted that the opening of the center is a very special celebration for the citizens of the Four Corners states of Colorado, Arizona, New Mexico and Utah.

The new center reflects BLM's multiple use management philosophy. This management philosophy balances public and resource needs and provides for preservation and protection, as well as for use and development. Visitors will have the opportunity to explore this philosophy through exhibits and interactive computers.

The center is set into the hillside near the remains of the 12th century Dominguez and Escalante Anasazi ruins. These sites were named after the two Spanish Franciscan friars who led a 1776 expedition into the area and were the first to record discovering prehistoric Indian ruins in Colorado. The ruins were excavated and stabilized 200 years later. The Escalante ruins turned out to be a trading outpost for the Chaco Anasazi Indian tribe.

UNITED STATES
DEPARTMENT OF
AGRICULTURE
FOREST SERVICE
LAND EXCHANGE NOTICE

Notice is hereby given that the Forest Service is considering an exchange of land with Anamax Mining Company, P.O. Box 127, Sahuarita, Arizona 85629, under the authority of the Act of March 20, 1922 (42 Stat. 465), as amended by the Act of February 28, 1925 (43 Stat. 1090), and the Federal Land Policy and Management Act of 1976 (P.L. 94-579, 90 Stat. 2743).

The lands under the jurisdiction of the Forest Service that are being considered for exchange are described as E $\frac{1}{2}$ sec. 11; All sec. 12; Lots 1 through 6, NE $\frac{1}{4}$, E $\frac{1}{2}$ NW $\frac{1}{4}$, NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 13; Lots 1 through 7, 9, and 10, S $\frac{1}{2}$ SW $\frac{1}{4}$, and parts of Lots 8 and 11, sec. 24; Lots 2, 4 through 10, NE $\frac{1}{4}$ NW $\frac{1}{4}$, W $\frac{1}{2}$ W $\frac{1}{2}$, and parts of Lots 1 and 3, NE $\frac{1}{4}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 25; NE $\frac{1}{4}$, S $\frac{1}{2}$ sec. 26; SE $\frac{1}{4}$ sec. 27; E $\frac{1}{2}$ sec. 34; All sec. 35; Lots 1 through 8, W $\frac{1}{2}$ NW $\frac{1}{4}$, NW $\frac{1}{4}$ SW $\frac{1}{4}$, N $\frac{1}{2}$ SE $\frac{1}{4}$ sec. 36; T. 18 S., R. 15 E.; All secs. 7 and 8; W $\frac{1}{2}$ sec. 16; All secs. 17 and 18; Lots 1, 2, 5, E $\frac{1}{2}$, E $\frac{1}{2}$ NW $\frac{1}{4}$, NE $\frac{1}{4}$ SW $\frac{1}{4}$, and parts of Lots 3 and 4 sec. 19; All sec. 20; W $\frac{1}{2}$ sec. 21; W $\frac{1}{2}$ sec. 28; Lots 1, 2, N $\frac{1}{2}$, N $\frac{1}{2}$ SW $\frac{1}{4}$, SE $\frac{1}{4}$ sec. 29; Lots 1 through 9, E $\frac{1}{2}$, SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 30; Lots 1 through 4, N $\frac{1}{2}$, N $\frac{1}{2}$ S $\frac{1}{2}$ sec. 31; Lots 1 through 4, NE $\frac{1}{4}$, NW $\frac{1}{4}$ NW $\frac{1}{4}$, N $\frac{1}{2}$ SE $\frac{1}{4}$ sec. 32; Lots 3, 4, NW $\frac{1}{4}$, N $\frac{1}{2}$ SW $\frac{1}{4}$ sec. 33, T. 18 S., R. 16 E.; Lots 1 through 7, SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 1, T. 19 S., R. 15 E.; Lots 3, 4, S $\frac{1}{2}$ NW $\frac{1}{4}$, SW $\frac{1}{4}$ sec. 2; Lots 1 through 4, S $\frac{1}{2}$ N $\frac{1}{2}$, S $\frac{1}{2}$ sec. 5; Lots 1 through 7, SE $\frac{1}{4}$, S $\frac{1}{2}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$, E $\frac{1}{2}$ SW $\frac{1}{4}$ sec. 6, T. 19 S., R. 16 E., G&SRM, all together comprising 13,338.77 acres, more or less, in the Coronado National Forest, Pima County, Arizona. The Anamax lands are described as the APACHE: W $\frac{1}{2}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NE $\frac{1}{4}$, LESS AND EXCEPTING THEREFROM a 5-acre portion, sec. 27, T. 6 N., R. 27 E.; SE $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 21 and Lot 12, sec. 28, T. 7 N., R. 20 E.; NE $\frac{1}{4}$, E $\frac{1}{2}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$, N $\frac{1}{2}$ SE $\frac{1}{4}$ sec. 26 and SW $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$, W $\frac{1}{2}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ SE $\frac{1}{4}$, E $\frac{1}{2}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$, W $\frac{1}{2}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$, E $\frac{1}{2}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$, E $\frac{1}{2}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 31, T. 8 N., R. 30 E., G&SRM, comprising a total of 555.78 acres, more or less, in the Apache National Forest, Apache County, Arizona. COCONINO: E $\frac{1}{2}$ E $\frac{1}{2}$ W $\frac{1}{2}$ SE $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$, S $\frac{1}{2}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$, S $\frac{1}{2}$ N $\frac{1}{2}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$, N $\frac{1}{2}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$, SW $\frac{1}{4}$ N $\frac{1}{2}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$, W $\frac{1}{2}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 29; N E $\frac{1}{4}$ N W $\frac{1}{4}$ N E $\frac{1}{4}$, E $\frac{1}{2}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$ NE $\frac{1}{4}$, LESS AND EXCEPTING THEREFROM the southernmost 430 feet of the E $\frac{1}{2}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$ NE $\frac{1}{4}$, W $\frac{1}{2}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$, LESS AND EXCEPTING THEREFROM the southernmost 430 feet; W $\frac{1}{2}$ E $\frac{1}{2}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$, LESS AND EXCEPTING THEREFROM the southernmost 430 feet; E $\frac{1}{2}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$, LESS AND EXCEPTING THEREFROM the southernmost 430 feet and the northerly 400 feet of the southerly 400 feet of the southerly 400 feet of the easterly 220 feet of said NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 32 and W $\frac{1}{2}$ W $\frac{1}{2}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$, LESS AND EXCEPTING THEREFROM the southernmost 430 feet and the northerly 400 feet of the southerly 430 feet of the westerly 330 feet of said NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 33, T. 23 N., R. 8 E.; E $\frac{1}{2}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$, N $\frac{1}{2}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 29, T. 24 N., R. 8 E., G&SRM, comprising a total of 195.00 acres, more or less, in the Coconino National Forest, Coconino County, Arizona. CORONADO: SE $\frac{1}{4}$ NE $\frac{1}{4}$, NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 1; W $\frac{1}{2}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$, E $\frac{1}{2}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 2 and N $\frac{1}{2}$ S $\frac{1}{2}$ sec. 11, T. 15 S., R. 18 E.; SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 22, T. 19 S., R. 14 E.; MS 1791, Old Pennsylvania Placer Mining Claim, Greaterville Mining District, sec. 25, T. 19 S., R. 15 E.; E $\frac{1}{2}$ sec. 19; All sec. 20; N $\frac{1}{2}$, SW $\frac{1}{4}$, NW $\frac{1}{4}$ SE $\frac{1}{4}$, S $\frac{1}{2}$ SE $\frac{1}{4}$ sec. 29; Lots 2, 3, 4, E $\frac{1}{2}$, E $\frac{1}{2}$ E $\frac{1}{2}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$, E $\frac{1}{2}$ SW $\frac{1}{4}$ sec. 30; NE $\frac{1}{4}$, NE $\frac{1}{4}$ NW $\frac{1}{4}$, NE $\frac{1}{4}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 31; W $\frac{1}{2}$ NE $\frac{1}{4}$, NW $\frac{1}{4}$, N $\frac{1}{2}$ SW $\frac{1}{4}$, N $\frac{1}{2}$ SE $\frac{1}{4}$ sec. 32 and S $\frac{1}{2}$ S $\frac{1}{2}$ NE $\frac{1}{4}$, N $\frac{1}{2}$ SW $\frac{1}{4}$, N $\frac{1}{2}$ N $\frac{1}{2}$ SE $\frac{1}{4}$ sec. 33, T. 19 S., R. 16 E., G&SRM, comprising a total of 3,457.50 acres, more or less, in Pima County, Arizona; Lots 1, 2, 3, S $\frac{1}{2}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 6, T. 15 S., R. 19 E.; a portion of the E $\frac{1}{2}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$ described by metes and bounds together with an undivided two-twentieths interest in and to the associated well site described by metes and bounds (1.10 acres) sec. 25, T. 17 S., R. 23 E.; N $\frac{1}{2}$ NW $\frac{1}{4}$, NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 27; NE $\frac{1}{4}$ NE $\frac{1}{4}$, N $\frac{1}{2}$ NW $\frac{1}{4}$, SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 28 and SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 29, T. 19 S., R. 29 E., G&SRM, comprising a total of 560.18 acres, more or less, in Cochise County, Arizona; Five portions of MS 3592, Iron Cap Lode, Tyndall Mining District (17,227 acres), sec. 2, and two portions of MS 4251, Susie Lode, Tyndall Mining District (3,218 acres), secs. 2 and 11, T. 20 S., R. 14 E., G&SRM, comprising a total of 20,445 acres, more or less, in Santa Cruz County, Arizona; All together the Coronado National Forest offered private lands comprising 4,038,125 acres, more or less. SITGREAVES: W $\frac{1}{2}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$, SE $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 9, T. 9 N., R. 23 E., G&SRM comprising 40.00 acres, more or less, in the Sitgreaves National Forest, Navajo County, Arizona.

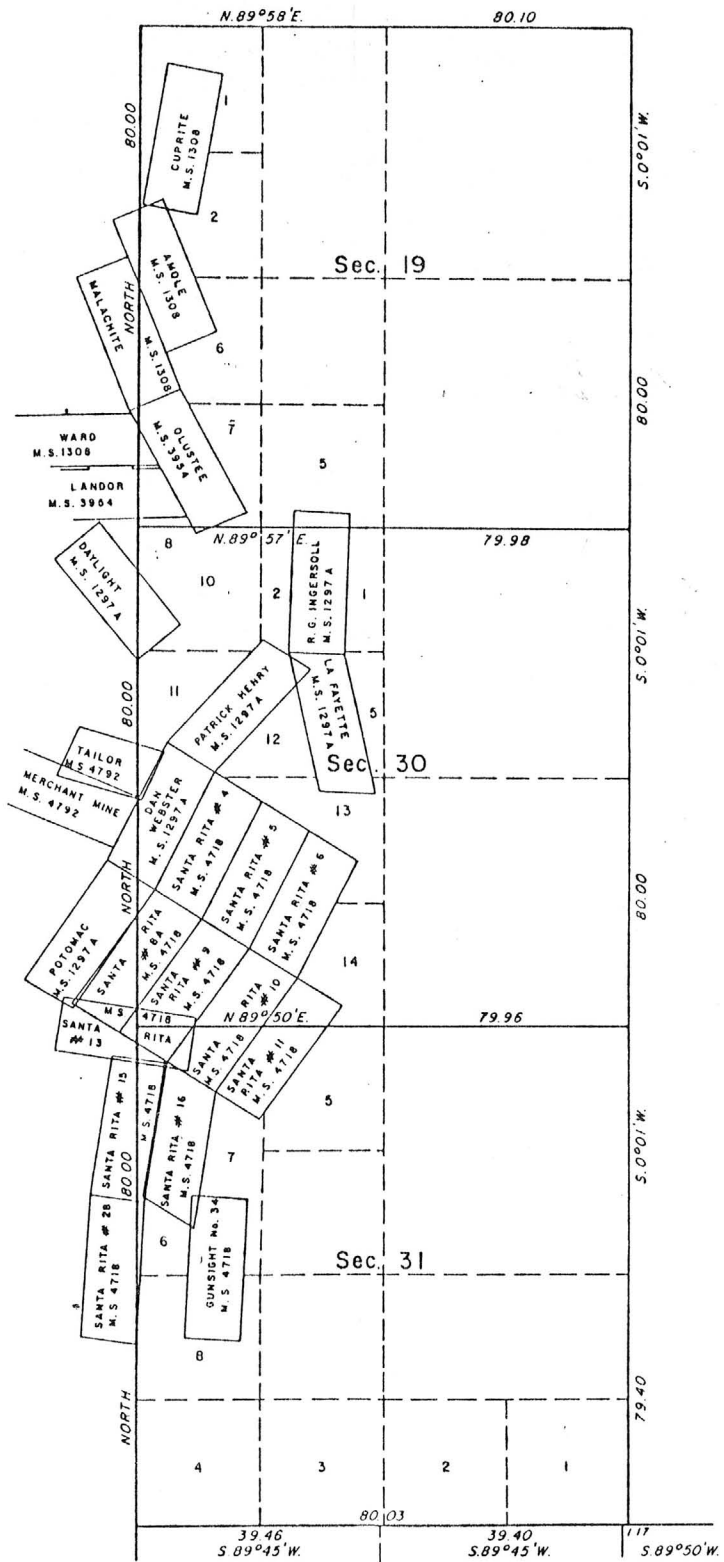
Helvetia
K
MAY 30 1983

TONTO:
NE $\frac{1}{4}$ SW $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 14;
NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 23; W $\frac{1}{2}$ SW $\frac{1}{4}$ sec. 24
and N $\frac{1}{2}$ NW $\frac{1}{4}$, E $\frac{1}{2}$ SW $\frac{1}{4}$ LESS AND
EXCEPTING THEREFROM the
south 330 feet sec. 25, T. 6 N., R. 10
E.; E $\frac{1}{2}$ W $\frac{1}{2}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$,
E $\frac{1}{2}$ W $\frac{1}{2}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 29, T. 6
N., R. 13 E.; Portions of a subdivi-
sion known as Cherry Creek Es-
tates Amended: Tracts "A" and
"B" and Lots 1 through 12, 14
through 22, 24 through 26, 29, 30, and
32 through 55, Cherry Creek Estates
Amended, according to Map No.
326, records of Gila County, Arizo-
na, sec. 4, T. 9 N., R. 14 E., G&SRM,
comprising a total of 466.50 acres,
more or less, in Gila County, Arizo-
na; portions of MS 3569 described
as the patented Red Rover Mining
claims Nos. 6, 7, and 15, Magazine
Mining District (61.90 acres), within
unsurveyed protracted secs. 27 and
28, unsurveyed T. 8 N., R. 5 E.;
portions of MS 2359 described as the
patented Humming Bird, Key, Blue
Coat, Mammoth Deposit, Black
Lode, Arlington, Silver Reef, Rosa-
lie, and Cecil Lode Mining Claims,
Copper Creek Mining District
(189,732 acres), secs. 21 and 28, T.
9 $\frac{1}{2}$ N., R. 4 E., comprising a total of
251,632 acres, more or less, in Mari-
copa and Yavapai Counties, Arizo-
na; All together the Tonto National
Forest offered private lands com-
prising 718,132 acres, more or less.
The TOTAL offered private lands
comprise 5,547,037 acres, more or
less.
Any or all of the above described
lands may be exchanged provided
the values are equal. In the event
the values are not equal, either
party may equalize the values by
the payment of cash. The amount
of cash to be paid may not exceed
twenty-five percent of the value of
the National Forest lands.
Persons claiming such properties
or having valid objections to this
proposed exchange must file their
claims or objections with the Re-
gional Forester, USDA Forest Ser-
vice, 517 Gold Avenue, SW, Albu-
querque, New Mexico 87102, within
15 days after date of the last publi-
cation of this notice.
/s/ Ray J. Woodbury
Acting Director of
Lands and Minerals
Publish: May 30, June 6, 13, 20, 1983
The Arizona Daily Star

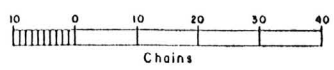
6-19-83

WNSHIP, 18 SOUTH, RANGE 16 EAST, OF THE GILA AND SALT

SUPPLEMENTAL PLAT OF SECTIONS 19, 30 AND 31



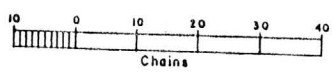
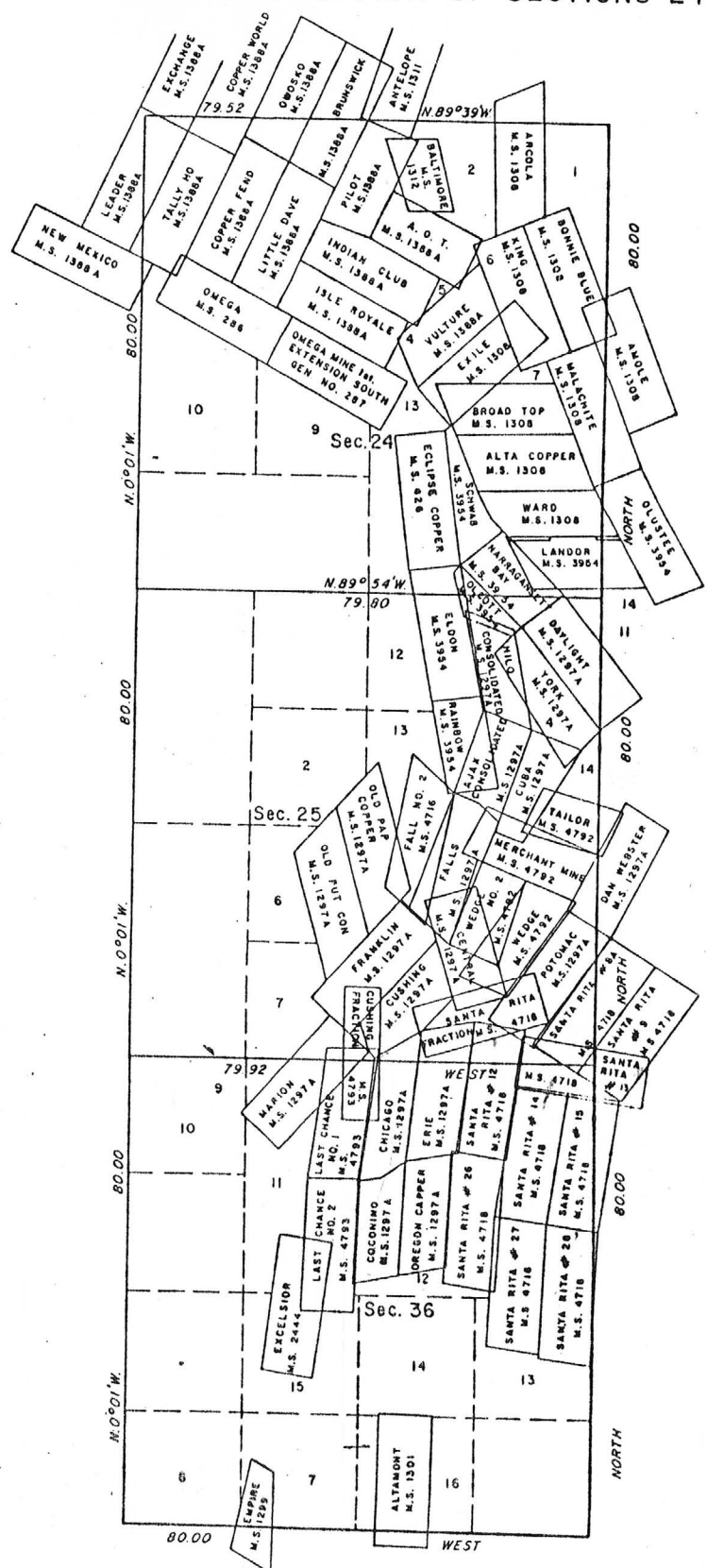
**NOT OFFICIAL
ADVANCE COPY**

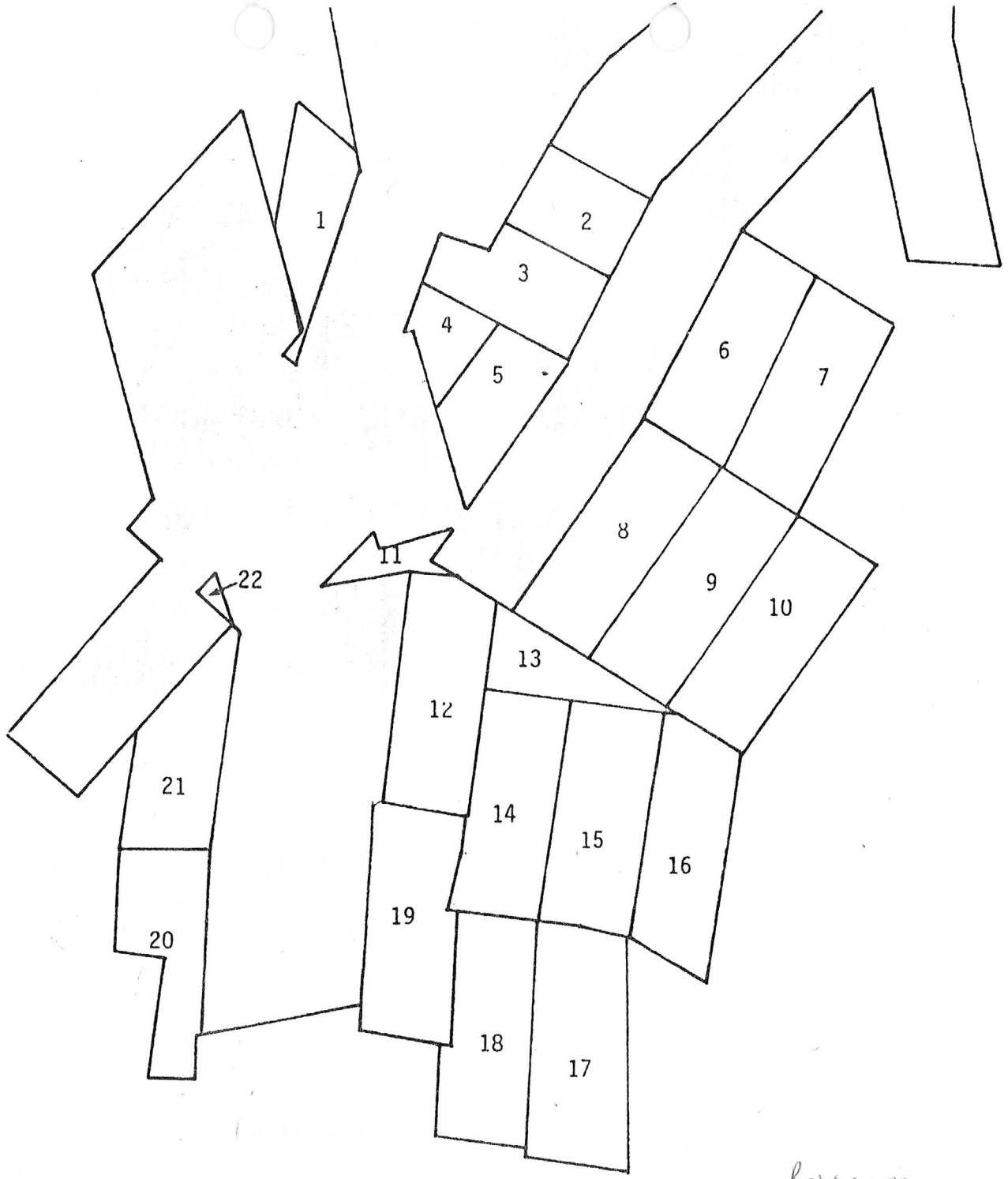


SUPPLEMENTAL PLAT OF SECTIONS 24, 25 AND



NOT OFFICIAL
ADVANCE COPY





Rosemont

Patent Appl'n, Mining Claims

- | | |
|-------------------------|----------------------|
| 1. Falls No.2 | 12. Santa Rita #12 |
| 2. Tailor | 13. Santa Rita #13 |
| 3. Merchant | 14. Santa Rita #14 |
| 4. Wedge No.2 | 15. Santa Rita #15 |
| 5. Wedge | 16. Santa Rita #16 |
| 6. Santa Rita #4 | 17. Santa Rita #28 |
| 7. Santa Rita #5 | 18. Santa Rita #27 |
| 8. Santa Rita #8-A | 19. Santa Rita #26 |
| 9. Santa Rita #9 | 20. Last Chance No.2 |
| 10. Santa Rita #10 | 21. Last Chance No.1 |
| 11. Santa Rita Fraction | 22. Cushing Fraction |



Patented Lands

Helvetia mine may be long time coming

By Ed Lopez
The Arizona Daily Star

A copper mine in the Coronado National Forest near the old mining camp of Helvetia could be years away, and a state official predicts that its overburden and tailings won't be visible from Green Valley or Tucson.

Mike Greeley, a field engineer for the Arizona Department of Mineral Resources, says the center of the ore body is about a half-mile to a mile south-southeast of Helvetia Peak. Since the site is east of the north ridge line of the Santa Rita Mountains, it would block a view of mining operations from the west and northwest.

Dennis Mortensen, manager of operations for the Anamax Mining Co., says he can't provide any specifics on where tailings would be dumped because no definite decisions have been made.

"It's rather inappropriate to even talk about technical details," Mortensen said. "It's somewhat way out in the future."

Other observers agree that mining may not begin for years.

A proposed land swap between Anamax and the U.S. Forest Service that would clear the way for mining was first publicized in 1975.

J.M. "Mike" Borens Jr., lands forester for the Coronado National Forest, said the proposal that now calls for the exchange of 21 square miles adjacent to land already owned by Anamax for 8.6 square miles of company land has been in the works since 1971.

Aside from regulatory delays, the price of copper plays a key role in whether any new copper mines will open, observers say.

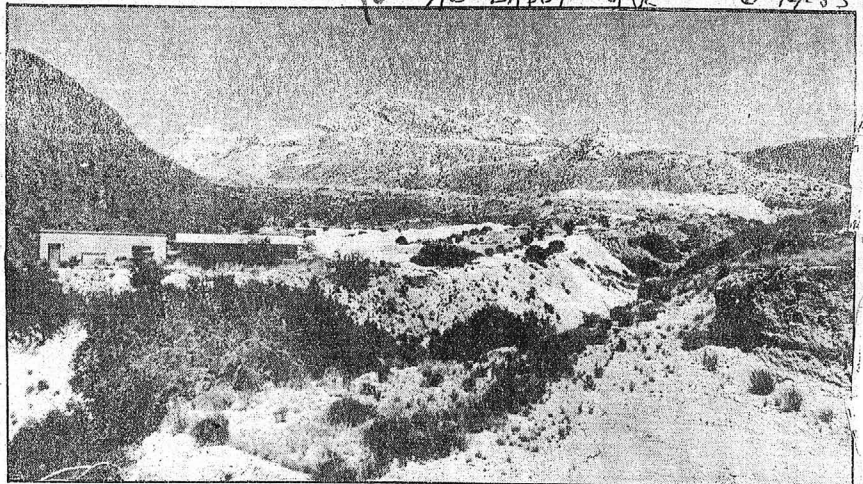
Foreign competitors with better ore deposits, cheaper labor and few if any laws requiring pollution controls put domestic producers at a price disadvantage.

"I've heard that to open any new copper mine, the price of copper would have to hit about \$1.25 a pound," Greeley said.

"Copper is an internationally traded commodity and you have some awfully good foreign mines competing against us," he added. "That competition keeps the prices down. . . . You have to have a good deposit and the market has to be very good because otherwise you can't compete."

Spencer R. Titley, professor of geosciences at the University of Arizona, said the threshold figure he has heard is \$1 a pound.

But he questioned how valid that figure might



A closer view of the old limestone quarry and deserted buildings

be, saying other variables such as labor and pollution-control costs are also important.

"Every ore body has to be looked at as an entity unto itself," he said.

Copper is currently selling for 79 to 81 cents per pound.

According to 1973 figures provided by Anamax in a proxy statement, the known reserves of the Helvetia deposit were placed at 320 million tons with an average content of 0.0064 percent sulfide copper ore.

John H. Jett, director of the Arizona Department of Mineral Resources, said this would yield about 12.8 pounds of copper per ton, with some loss during processing.

The Helvetia deposit also had 20 million tons of oxide copper ore. The average content of 0.0055 percent would yield 11 pounds of copper per ton.

Mortensen said he was not at liberty to say if the figures had changed or what the correct figures might be.

Jett noted that some copper mines in South America have deposits with as high as 2 percent copper ore per ton. The average sulfide ore content from Arizona mines between 1971 and 1981 was 0.0064 percent.

In 1970, the Morenci mine had a reserve of 500 million tons of sulfide ore, at which time 435 mil-

lion tons had already been mined. In 1977, the Pima mine had reserves of 146 millions tons with up to 199 million tons already mined.

Greeley said reserves figures do not necessarily reflect the amount of copper present. Deposits are classified as "mineralized rock" "ore," with the latter representing the amount that can be mined at a profit.

Doug Shakel, a geologist and southwest regional vice president of the Sierra Club, said he doesn't envision any new open pit mine on the Anamax land for years. But he says that the company may want to consolidate the land for the benefit of possible future owners.

The joint owners of Anamax, Amax Inc. and Anaconda Minerals Co., both want to sell their part of the partnership.

"In discussions Anamax had with environmentalists back in the early 1970s," Shakel said, was stated that "land on the east side of mountain range would be used for overburden tailings."

Borens said he also understands that mining operations would be on the east side of a ridge

Greeley, a former geologist for Anamax, said he has not seen any geologic maps, but he understands the deposit dips at an angle that would require less stripping than at the company's T. Buttes mine.

Len
1/1/83

Anamax plans Santa Rita

HELVETIA MINE

open pit mine

By Howard Fischer
© 1983 The Arizona Daily Star

PHOENIX — Anamax Mining Co. wants nearly 21 square miles of national forest land 18 miles southeast of Tucson International Airport for a new open pit mine, mill and tailings dump.

Dennis Mortensen, manager of operations for Anamax, said he is not at liberty to say how large an ore body the company estimates is under its adjoining land, nor how many acres the pit itself would cover.

He said it would be speculation to say when a mine could be operating or how many people it would employ.

In exchange for the property, the company says it is willing to swap 8.6 square miles around the state, including some property that the U.S. Forest Service covets in Madera Canyon in the Santa Rita Mountains.

has long wanted, including property along streams and near wilderness areas.

Among the list of what Anamax is offering is land in Madera Canyon, some in the Rucker Canyon area of Cochise County and in Happy Valley on the east side of the Rincon Mountains.

By contrast, Poague said, the land Anamax wants is "not especially unique," covered mainly with low scrub and with some oak in the dry washes.

Poague said there could be a large, visible tailings dump, but added that Anamax officials have agreed to work with the Forest Service and put the tailings where they would be the least obtrusive.

He said federal mining laws would allow Anamax to acquire needed Forest Service property adjacent to its mine without compensation. That method, however, would take longer, the Forest Service would lose

It could take up to two years to complete the swap, including completion of an environmental assessment, appraisals of all the parcels, an opportunity for public comment and a final decision in Washington.

Company officials are seeking 13,339 acres bordering land they already own west of Arizona 83 and about 12 miles south of Interstate 10 near the old mining camp of Helvetia. Portions are nearly 6,200 feet above sea level. See map, Page 1D.

Although the ore body sits under about 1,600 acres of company-owned property, the additional land is needed to construct a mill and to have somewhere to dump the overburden and tailings.

The company has had plans for an open pit mine in the Santa Rita Mountains for nearly a decade.

What has delayed the exchange so far has been a number of environmental studies,

said Mike Borens, lands officer for the Coronado National Forest. He also said Anamax has changed its mind several times on exactly what land it wanted and what it was willing to give up.

Borens said there still could be some changes on what the Forest Service will receive depending on the value at which the land is appraised.

He pointed out that the lands being received and given away must be within 25 percent of the value of each other. Borens said although the difference can be made up in cash, the Forest Service simply doesn't have any money to make purchases.

Lee Poague, in charge of recreation for the Coronado National Forest, said it appears that what the Forest Service would relinquish would be more than made up by what it would get. He said Anamax has bought a lot of land that the Forest Service

the Santa Rita property and it would not get anything in return.

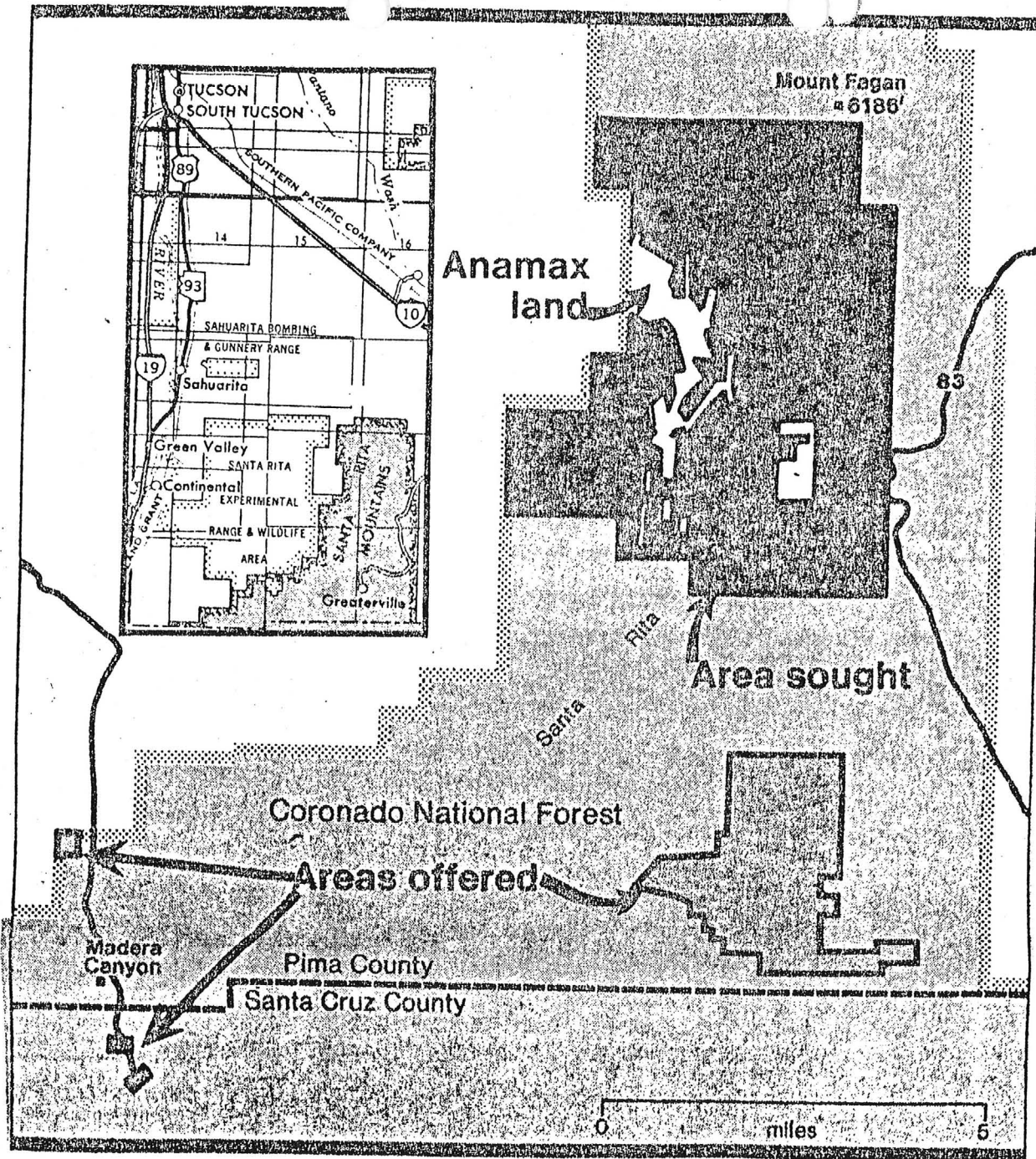
Even if the exchange goes through, Mortensen said, there are other considerations that could hold up the opening of a mine.

One key problem has been the depressed copper market. Mortensen said it would be logical to assume that Anamax will not open a new mine until product prices increase.

The Anamax official explained that the company is owned by Amax Inc. and Anaconda Minerals Co., and that both are trying to sell their half of the partnership.

Atlantic Richfield, parent company of Anaconda, was ordered several years ago by the Federal Trade Commission to divest itself of the Anamax interest to reduce its share of the copper market.

John Frankovich, chief counsel for Anamax, said officials of Amax, apparently not interested in having a new partner, also have put their interest on the block.



Copper swap — To create an open-pit copper mine, mill and tailings dump at a date yet to be disclosed, Anamax Mining Co. wants to trade 8.6 square miles of Arizona land, including the sites shown here, for nearly 21 square miles of the

Judy Margolis, The Arizona Daily Star
 Coronado National Forest around the old Helvetia mining camp. The company owns the mining site, but says it needs the adjacent land for the mill and the tailings dump. The site is 18 miles southeast of Tucson International Airport. *Story, Page 1A.*

Deserted Shacks All That's Left Of Mining Bonanza Of Helvetia

ARIZONA DAILY STAR NOV. 12, 1967

Actors Cause Brief Bit Of Excitement

By BRUCE ITULE
(Third of a Series)

Last year, the ghost town of Helvetia in the Santa Rita Mountains was full of excitement as Paul Newman and Richard Boone walked its dusty streets.

The actors, along with a full brigade of Hollywood personnel, were in the town and its vicinity 43 miles south of Tucson for the filming of "Hombre."

But today, Helvetia once again sits alone in the mountains, for the mines near the town which once spilled over with copper are no longer mined.

In order to get to Helvetia, follow the Nogales Hwy., U.S. 89, to Sahuarita, 16 miles south of Tucson, and turn left across the railroad tracks. Next, follow the dirt road about 20 miles to a junction and a sign pointing to Helvetia. Then, turn right and follow this road which leads into the town.

The first claims near Helvetia were made in the late 1870s when L.M. Grover located the Old Dick, Heavy Weight and Tallyho claims, but they were not developed until 1881.

The first mine worked in the area was the Frijole mine located by John A. Rockfellow in 1880 while he was camped on the west slope of the Santa Rita Mountains. He called the mine the Frijole, the Spanish word for beans, because beans were considered necessary in camp.

After the Frijole started operation, it was not long before other claims were made, and the town of Helvetia began to take shape.



One-Third Of What's Left Of Town

Two Of The Half Dozen Buildings That Still Stand

Now, all that remains of the Frijole and the other mines are the old shafts and the many roads which lead to them, making a beautiful design as they crisscross up the mountains near Helvetia.

In the early 1890s, all of the important claims in the region were acquired by the Helvetia Copper Company of New Jersey.

Helvetia's post office was opened in 1899, and soon af-

ter, two stage lines connected the town with Tucson.

In 1903, Helvetia Copper Co. of Arizona built and operated a smelter in the town until 1907.

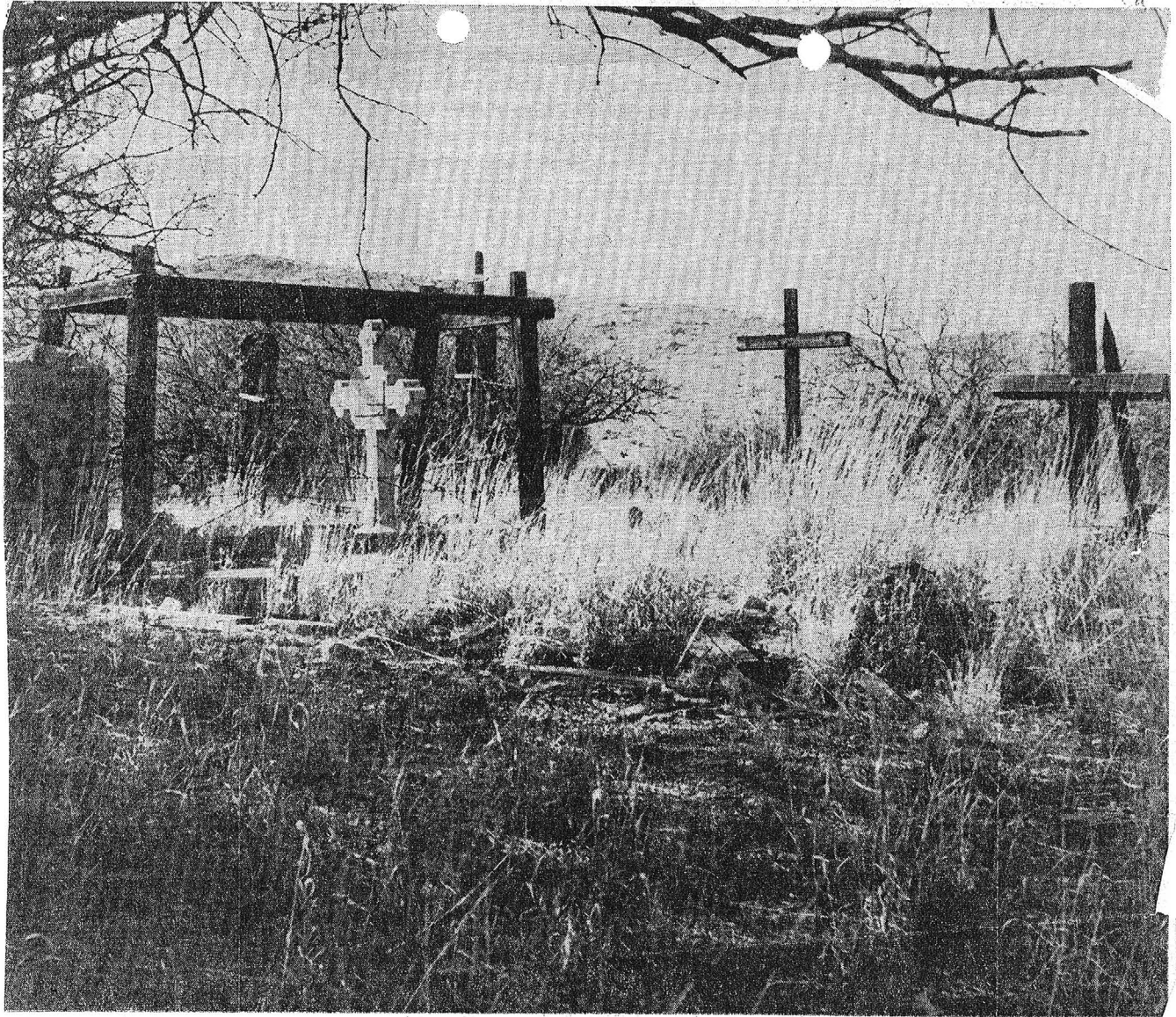
But, like many mining towns throughout the Southwest the mines had one day to quit coming forth with the green ore which had made many men rich.

In 1921, the post office closed, and it did not take

long before Helvetia was emptied and left to die.

As the town is now looked upon, it is hard to believe that its mines pumped \$4,000,000 in ore, including 17 million pounds of copper.

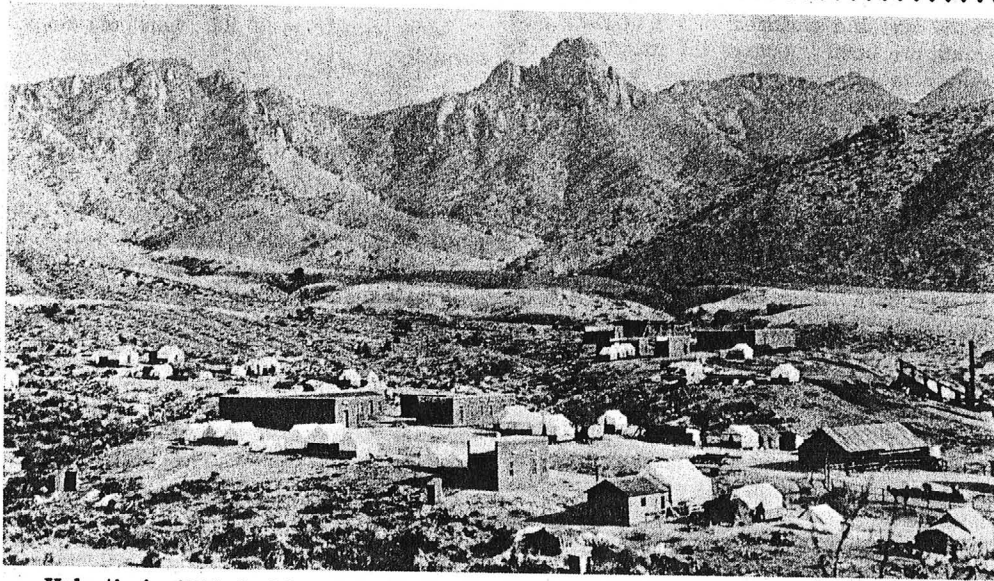
Today, Helvetia is a ghost town, and all that remains of this Arizona mining town to remind visitors that people once ate, slept and lived here are the half dozen deserted buildings and a few old and torn-down "keep out" signs.



Names Still On Headstones At Town Graveyard

Some Remained Behind After Miners Left Helvetia When Green Ore Ran Out

Scenes In Old Arizona



Helvetia in 1901, looking easterly over the camp toward the Santa Rita Mountains.

Helvetia Has Long History Of Mining ^{8/24/70}

The area in the Santa Rita Mountains southeast of Tucson, where The Anaconda Company is conducting long-range planning for development of two copper ore bodies, was once a booming mining camp, even boasting a post office for slightly more than two decades. †

Copper mining in the area began in the late 1880's and picked up steam when the Helvetia Copper Company of New Jersey acquired a number of claims in 1891. In 1903 the Helvetia Copper Company of Arizona took over the mining operations on one major property. A 150-ton smelter, which didn't work, was built and shut down after nearly two years of constant struggle and unprofitable operation.

A number of properties, many of them now included in the Anaconda holdings, were worked sporadically. There was considerable production during World War I, but this came to a jarring halt when the bottom fell out of the copper market after the war. There was additional production of limited scale and considerable exploration and development work from the late 1940's to the late 1950's, but none of them ever really got off the ground.

According to a report issued by the Arizona Bureau of Mines in February 1936, production in the Helvetia (Rosemont) District from 1882 through 1920 totaled 15,150,000 pounds of copper, 510,000 pounds of zinc, about \$1,000 in gold and some \$124,000 in silver—for a grand dollar total of about \$3,320,000.

It was not until the late 1940's that an effort to make something out of the properties scattered over the area began in

earnest. It was along about this time that Allan Bowman of the Banner Mining Company started out to wrap up some southern Arizona properties, operating on the theory there was a good chance there were some large, low-grade copper deposits surrounding some of the old operations from which the high-grade core had been worked out.

In his work, the company put together a sizeable area around Twin Buttes—where Anaconda has recently brought the big Twin Buttes mine into production on Banner-owned ground.

Bowman also was attracted to the Helvetia area, across the Santa Cruz River. In 1948 he began his methodical, patient acquisition of property in the area. The company also located a number of additional claims. The process went on for more than 15 years, until Banner pretty well had the area wrapped up.

Banner's exploratory drilling at least partially delineated the known ore body at Helvetia—and discovered a major new ore body over the mountains on the east slope. Geological studies and drilling pinned down this ore body, several hundred feet down. It is expected that this ore body will be the first to be developed, for Anaconda has acknowledged it compares favorably with the scale of its Twin Buttes mine. Anaconda acquired access to the Helvetia property when it leased all of Banner's holdings in Pima County.

Now, step by step, development is progressing towards the day when a big new mine and then another will eventually come into being in this historic mining area—one more chapter in Arizona's fascinating mining history.

Planned Helvetia mine postponed until 1980s

GREEN VALLEY — A mining company representative reports that the planned Helvetia mine will not be developed until the 1980s and even then will not be visible from here.

Appearing before the Green Valley Coordinating Committee, Charles Stott, general counsel for Anamax Mine Co., said the only current action is a proposed land swap for which an environmental study is being made by the University of Arizona.

He said all specific

plans for development of the mine will be delayed until "the depressed copper market" shows signs of stabilization.

The land trade would involve 22 parcels Anamax owns in the Coronado National Forest and other national forests in the state, according to James Rivers of the U.S. Forest Service.

He said the forest service would acquire about 5,544 acres of "prime land" in exchange for 14,000 acres near the Helvetia mine, that Anamax would use for processing facilities and mine waste removal.

Rivers said Anamax owns 1,500 acres at the Helvetia site and requires the additional acreage to conduct a "full-scale mining operation."

Stott said more than 100 million tons of copper are contained in the Helvetia land and, although it is less than the total at Anamax's Twin Buttes mine northwest of here, it is closer to the surface and more easily removed.

From 400 to 450 workers will be employed at the mine when its operation begins, he estimated.

**THE ARIZONA
REPUBLIC**

Real Estate

December 30, 1942

MEMORANDUM

SUBJECT: Helvetia Mine

TO: George A. Ballam

FROM: J. S. Coupal

I have just talked with Mr. Neil Clark, who is attorney for the Octave Company, and have arranged for him to go to Tucson and look over the Helvetia possibly on Tuesday of next week, that is January 5. Mr. Clark will probably leave Phoenix Monday evening and stay in Tucson. He will phone you on arrival.

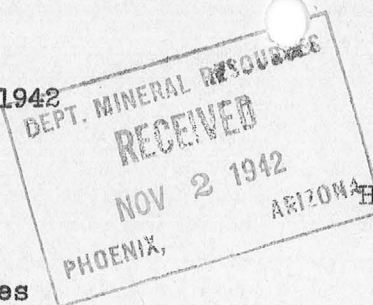
I believe it will pay for you to go to the mine with Neil Clark. He will probably have Lamont West with him. Mr. West is the superintendent and operator of the Octave Mine.

I believe a deal can be worked out.

I am sending a copy of this to Mr. R. A. Bernie.

cc - Mr. R. A. Bernie
Sahaurita, Arizona

Oct. 31, 1942



MEMORANDUM

To: Director, Dept. Mineral Resources
From: George A. Ballam

Helvetia Mng. & Mill.
(Leader shaft)

The Leader shaft is located on the millsite of the Helvetia Mining and Milling Co. It is 150 feet deep with water standing at the 1st level, 60 ft. It is not known when the shaft was sunk, although fragments of old records indicate that the property was worked from this shaft as early as 1900. At that time there was a smelter on the property, and sulfide ores were smelted, much of the ore coming from the two levels in this shaft, according to a couple of old Mexicans who are at present working in the vicinity, and who worked in the Leader shaft. Considerable amounts of ore were shipped from time to time, and during the World War I period, several cars of molybdenite were shipped in addition to the copper. Much of this came from the 60 ft. level which is open at present, and which is being worked now by Burney, both for mill ore and shipping grade.

The workings on the 140 level, under water, consisted of a drift to the northeast, two hundred feet or so, with several hundred feet of other workings and considerable stoping, according to report. The condition of the timber under water is unknown, as also the state of the workings, but the latter are not believed to be caved since the ground is generally good.

The operators are desirous of unwatering this shaft and opening it up. Not only will considerable ore be exposed, according to all the evidence, both copper and molybdenite, but by extending the longer drift 300 feet, it will be under the ore which the operators are at present underhand stoping in the Leader tunnel. They are working in a winze at 125 ft. ^(level) below the tunnel level on an incline of about 35°, and this entire bedded plane could be stoped from the proposed drift at 140 ft. ^(vertical) depth below the tunnel level, which is the collar level. Most of this stope has been shipped, some 1200 tons, but the work is slow under the present manner of operation. In addition, much of the mill ore, about the same tonnage, has been taken out in the same manner.

Burney and Gregory are making application for a preliminary development loan of \$5000 to have readier access to this ore body, and under the circumstances, it is very obvious that the proposed work is warranted, and will greatly facilitate production, not only of copper but also molybdenite, which they propose to separate. They have shipped nearly 300,000# copper in the form of high-grade ore and concentrates during the past few months, and would like to step up ore shipments to a car a day in addition to increasing mill output. Since the road program has been approved and will be commenced at any time, this program is readily possible.

George A. Ballam

October 21, 1942

Mr. R. A. Burney
Helvetia Mining & Milling Co.
Tucson, Arizona

Dear Mr. Burney:

We note in recent correspondence, relative to your operation, that there is some possibility of your shutting down. If this is the case, have you considered possibility of turning the property over to others who might be willing to operate it?

We have inquiries from several established mining companies relative to their acquisition of new properties, particularly operators previously mining and milling gold ores, who would like to find a base metal property on which to move their equipment and personnel.

If you have any ideas along this line we would be pleased to hear from you and will present your proposal to one or two interested organizations whose operating reputation is beyond question.

Very truly yours,

Earl F. Hastings
Assistant Director
Projects Engineer

EFH:BA

Tucson, Arizona

October 20, 1942

Major General A. M. Tuthill
State Director of Selective Service
3018 Professional Building
Phoenix, Arizona

Dear General Tuthill:

I am enclosing copies of two memorandum reports from George A. Ballam who is field engineer for the Department of Mineral Resources in the southern district.

The action of the Local Board on Selective Service has resulted in the shutting down of the mill operations of the Helvetia Mining & Milling Company and means the cutting off of a monthly production of 100,000 pounds of copper. We sent notices to all mining companies of a bulletin from your office which instructed the Local Boards to reconsider the classification of all key men in the mining industry. From the action indicated in the two memorandum reports it would seem as though proper consideration is not being given to the mining industry. At least not in this particular case.

We are doing our utmost to step up production and this action and the action of the local Florence board does not appear to be in line with the general war efforts.

Mr. Burney, the manager of the Helvetia Mining & Milling Company has on advise from our Department been considering the application for an RFC General Mine Loan to more than double the production of copper from his property. In view of the action and conditions at this property it looks as though we are about to lose the present 100,000 pounds of copper production per month and also an additional potential tonnage of the same amount.

I would appreciate knowing just what action or what assistance we can be in trying to get this situation in line. With best wishes and kindest regards.

Very truly yours,

J. S. Coupal, Director

October 21, 1942

MEMORANDUM

✓
/ HELVETIA MINING & MILLING CO.
R. A. BURNEY, MANAGER.

TO:: George Ballam

FROM: J. S. Coupal

I received your two memorandums, one on the Mine Freezing Order and the other on deferment for miners regarding Mr. Burney of the Helvetia Mining Company.

On the deferment question for Mr. Burney I immediately contacted Colonel Laird and submitted copies of your report. Today I discussed the question with Colonel Duffy who had personally investigated Mr. Burney's case. He consulted with the manager of the local board at Florence and was informed that Mr. Burney had been advised that he was in Class 3-A, and that reconsideration of his case would not come before the local board for another 90 days and at that time he would undoubtedly be reclassified as 2-B, which means that he would be definitely deferred from draft.

Colonel Duffy criticized us severely for having reported as we had on the transfer from 3-A to 1-A. I am afraid Mr. Burney misunderstood the instructions from Mr. Fulbright, the local board member of the Selective Service at Florence. The local board are paying strict attention to the orders from headquarters on deferment of miners. It is going to be quite necessary that we check carefully all statements made in such instances as Mr. Burney's and see to it that we get authentic reports on such cases. If we are to do any work toward helping in such instances it may be necessary to 'phone the local board and see that the statements made are correct; otherwise, when we make a kick and we can not substantiate the statements made we are putting ourselves in a position where our complaints will not be heeded.

Regarding the Mine Freezing Order--we know that the freezing directive has backfired in a number of instances. It is a problem to keep labor on the job right now and it is up to the individual manager to do their utmost to keep up production. If the men are soldiering or are not putting in regular hours, it is up to men like Mr. Burney to go to the U. S. Employment Service and try to get men who will stay on the job. I will say that the draft boards are not ignoring the mine deferment requests.

I hope that Mr. Burney can see his way clear to get labor to continue operations and I do feel that he can be assured that his deferment will hold as long as he is producing copper.

October 19, 1942

MEMORANDUM

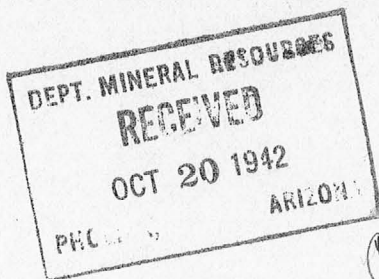
Deferments for Miners *H.*

To: Director, Dept. Mineral Resources
From: George A. Ballam

Robert Arthur Burney, No. 2571, Order 2981, Florence, Pinal County, Board, was recently transferred from III A to IA. Last week he was directed to report for induction. He appeared before the board, requested deferment asking to file form DSS 42 A. Fulbright, board member, said he could file it, but it wouldn't do much good as he couldn't get more than a 90-day deferment anyway. He was advised to take his physical examination at once.

Burney, Mgr. Helvetia Min. & Milling Co., has been a miner all his life, and recently has been producing up to 100,000 lbs. copper monthly. I talked with him Sunday for a couple of hours. He is about ready to pull the switch and shut down. He feels that if he has to go within a few months, he might as well save a lot of mine and mill headaches which are in the offing by going now. He has shut his mill down, partly on account of labor difficulties cited elsewhere, and also on account of having been gone for some time on the above mission. I read him the new "guides and suggestions" for "utmost consideration" for deferments etc., but he says the board isn't paying much attention to that sort of stuff. I asked him to write Col. A. A. Laird as directed.

Kindly advise how far the boards can go in ignoring mine deferments requests.



George A. Ballam

Oct. 19, 1942

MEMORANDUM

Mine Freezing Order H

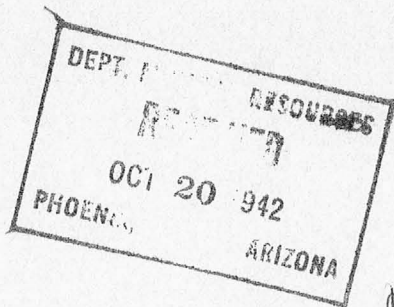
To: Director, Dept. Mineral Resources
From: George A. Ballam

I have been requested to transmit the following information:

R. A. Burney, Mgr. Helvetia Mng. and Milling Co., informed me that since the passage of the 'freezing' directive, there has been a decided slow-down among his employees. They have been advised by agitators that he cannot fire them for any reason whatever. They get drunk and don't report for work, even sending out messengers for their pay checks. He informed them that if fired for cause they will be subject to reclassification in selective service to 1A. He fired several, but finally had to shut the mill down.

He believes some publicity in the press might have a beneficial effect, IF there really is a remedy as has been reported.

George A. Ballam



DEPARTMENT OF MINERAL RESOURCES

REPORT TO OPA ON ACTIVE MINING PROJECT

Date 6/11/45

Name of Mine Nelectra

Owner or Operator Ramsey Bros

Address 298 E. Wackerly, Tucson

Mine Location Nelectra

Filing Information

File System.....

File No.....

This chart to be used for gallons of gasoline required per month.

PRESENT OPERATIONS: (check X)

Production ; Development.....; Financing.....; Sale of mine.....;

Experimental (sampling).....; Owner's occasional trip.....;

Other (specify).....

PRODUCTION: Past and Future.

Tons

Approx. tons last 3 months

Approx. present rate per 3 months

Anticipated rate next 3 months

If in distant future check (X) here

EQUIPMENT OPERATED:

Type	Quantity or Horse Power	Miles or Hours Per Month	Gallons Required Per Month
Personal Cars
Light or Service Trucks
Ore Hauling Trucks	3900
Compressors
Other Mine or Mill Eqpt.

Additional gas for hauling

PRODUCT PRODUCED OR CONTEMPLATED: Name metals or minerals.

Copper

REMARKS:

.....
.....
.....
.....

ARIZONA DEPARTMENT OF MINERAL RESOURCES

By George A. Allen

DEPARTMENT OF MINERAL RESOURCES

REPORT TO OPA ON ACTIVE MINING PROJECT

Date: 1/27/45

Name of Mine: ✓ Helvetia

Owner or Operator: Mrs I B Blankenship

Address: 298 Granada St, Tucson

Mine Location: Helvetia Mining Dist - 35 mi S Tucson

Filing Information

File System: _____

File No.: _____

This chart to be used for gallons of gasoline required per month.

PRESENT OPERATIONS: (check X)

Production ; Development _____; Financing _____; Sale of mine _____;

Experimental (sampling) _____; Owner's occasional trip _____;

Other (specify) _____

PRODUCTION: Past and Future.

Tons

Approx. tons last 3 months _____

Approx. present rate per 3 months _____

Anticipated rate next 3 months 400 tons per mo.

If in distant future check (X) here _____

EQUIPMENT OPERATED:

Type	Quantity or Horse Power	Miles or Hours Per Month	Gallons Required Per Month
Personal Cars	<u>41 Stude.</u>	<u>7000</u>	_____
Light or Service Trucks	_____	_____	_____
Ore Hauling Trucks	_____	_____	_____
Compressors	_____	_____	_____
Other Mine or Mill Eqpt.	_____	_____	_____

PRODUCT PRODUCED OR CONTEMPLATED: Name metals or minerals.

✓ Copper

REMARKS:

This mine which has been a good producer is resuming operations under owners management

ARIZONA DEPARTMENT OF MINERAL RESOURCES

By _____

[Signature]

DEPARTMENT OF MINERAL RESOURCES

REPORT TO OPA ON ACTIVE MINING PROJECT

Date 1/27/45

Name of Mine Helvetia

Owner or Operator Mrs R B Blankenship

Address 798 Granada St

Mine Location Helvetia Mng Dist

Filing Information

File System.....

File No.....

This chart to be used for gallons of gasoline required per month.

PRESENT OPERATIONS: (check X)

Production ; Development.....; Financing.....; Sale of mine.....;

Experimental (sampling).....; Owner's occasional trip.....;

Other (specify).....

PRODUCTION: Past and Future.

Tons

Approx. tons last 3 months

Approx. present rate per 3 months

Anticipated rate next 3 months

If in distant future check (X) here

EQUIPMENT OPERATED:

Type	Quantity or Horse Power	Miles or Hours Per Month	Gallons Required Per Month
Personal Cars
Light or Service Trucks
Ore Hauling Trucks
Compressors
<u>Hoist</u> Other Mine or Mill Eqpt.	<u>800</u>

PRODUCT PRODUCED OR CONTEMPLATED: Name metals or minerals.

Copper

REMARKS:

Operation being resumed under owner's management.

ARIZONA DEPARTMENT OF MINERAL RESOURCES

By George A. Callan

DEPARTMENT OF MINERAL RESOURCES

REPORT TO OPA ON ACTIVE MINING PROJECT

Date..... 1/27/44
 Name of Mine..... Helvetia
 Owner or Operator..... B H Martin
 Address..... 646 E 5th St Tucson
 Mine Location..... Helvetia Mng Dist

Filing Information

File System.....
 File No.....
 This chart to be used for gallons of gasoline required per month.

35 mi South of Tucson

PRESENT OPERATIONS: (check X)

Production.....; Development.....; Financing.....; Sale of mine.....;
 Experimental (sampling).....; Owner's occasional trip.....;
 Other (specify).....

PRODUCTION: Past and Future.

Tons

Approx. tons last 3 months
 Approx. present rate per 3 months
 Anticipated rate next 3 months 400 per mo
 If in distant future check (X) here

EQUIPMENT OPERATED:

Type	Quantity or Horse Power	Miles or Hours Per Month	Gallons Required Per Month
Personal Cars	<u>40 Ford</u>	<u>7000</u>
Light or Service Trucks
Ore Hauling Trucks
Compressors
Other Mine or Mill Eqpt.

PRODUCT PRODUCED OR CONTEMPLATED: Name metals or minerals.

✓ Copper

REMARKS:

Supt of operations resumed at this property

ARIZONA DEPARTMENT OF MINERAL RESOURCES

By..... George A Ballan

DEPARTMENT OF MINERAL RESOURCES

REPORT TO OPA ON ACTIVE MINING PROJECT

Date: 2/17/45

Name of Mine: Helvetia

Owner or Operator: Fernando F. Fierro

Address: 1702 D 9th Ave Tucson

Mine Location: 15 mi east Sahaurita

Filing Information

File System:

File No:

This chart to be used for gallons of gasoline required per month.

PRESENT OPERATIONS: (check X)

Production ; Development.....; Financing.....; Sale of mine.....;

Experimental (sampling).....; Owner's occasional trip.....;

Other (specify).....

PRODUCTION: Past and Future. **Tons**

Approx. tons last 3 months

Approx. present rate per 3 months

Anticipated rate next 3 months

If in distant future check (X) here

EQUIPMENT OPERATED:

Type	Quantity or Horse Power	Miles or Hours Per Month	Gallons Required Per Month
Personal Cars	<u>4</u>	<u>1800</u>
Light or Service Trucks
Ore Hauling Trucks
Compressors
Other Mine or Mill Eqpt.

PRODUCT PRODUCED OR CONTEMPLATED: Name metals or minerals.

Copper

REMARKS:

This man is working at Helvetia mine and is hauling other employees to work

ARIZONA DEPARTMENT OF MINERAL RESOURCES

By: George H. Bell

DEPARTMENT OF MINERAL RESOURCES

REPORT TO OPA ON ACTIVE MINING PROJECT

Date..... ✓ 1/30/45
 Name of Mine..... Beloceta
 Owner or Operator..... Mrs. B. Blankenship
 Address..... 298 N. Grande Mesa
 Mine Location..... Beloceta

Filing Information

File System.....
 File No.....
 This chart to be used for gallons of gasoline required per month.

PRESENT OPERATIONS: (check X)

Production.....; Development.....; Financing.....; Sale of mine.....;
 Experimental (sampling).....; Owner's occasional trip.....;
 Other (specify).....

PRODUCTION: Past and Future.

Tons

Approx. tons last 3 months
 Approx. present rate per 3 months
 Anticipated rate next 3 months 3000
 If in distant future check (X) here

EQUIPMENT OPERATED:

Type	Quantity or Horse Power	Miles or Hours Per Month	Gallons Required Per Month
Personal Cars
Light or Service Trucks
Ore Hauling Trucks
<u>2</u> Compressors
<u>Hoist</u> Other Mine or Mill Eqpt.	<u>2400 gts</u>

PRODUCT PRODUCED OR CONTEMPLATED: Name metals or minerals.

✓ Copper

REMARKS:

.....

ARIZONA DEPARTMENT OF MINERAL RESOURCES

By..... [Signature]

DEPARTMENT OF MINERAL RESOURCES

REPORT TO OPA ON ACTIVE MINING PROJECT

Date: 4/30/45
Name of Mine: Helvick
Owner or Operator: Robert Romer
Address: 505 W. W. St. Tucson
Mine Location: Helvick, Ariz.

Filing Information

File System
File No.
This chart to be used for gallons of gasoline required per month.

PRESENT OPERATIONS: (check X)

Production [X]; Development; Financing; Sale of mine;
Experimental (sampling); Owner's occasional trip;
Other (specify)

PRODUCTION: Past and Future.

Tons

Approx. tons last 3 months
Approx. present rate per 3 months
Anticipated rate next 3 months
If in distant future check (X) here

EQUIPMENT OPERATED:

Table with 4 columns: Type, Quantity or Horse Power, Miles or Hours Per Month, Gallons Required Per Month. Includes entries for Personal Cars (1934 Ford, 1820 miles) and other equipment.

PRODUCT PRODUCED OR CONTEMPLATED: Name metals or minerals.

Copper

REMARKS

This mine is a heavy producer, Romer employs hauler trucks... No geologists available in district

ARIZONA DEPARTMENT OF MINERAL RESOURCES

By: [Signature]

May 6, 1943

Mr. Charles Taylor
County Assessor
Tucson, Arizona

Dear Mr. Taylor:

Thank you for your telegram which was received in Los Angeles. Please accept my humble apologies for not having replying to it immediately.

I did contact the people I had in mind and who were interested in the Helvetia. They did say that they would not be interested in the low grade milling zinc-lead-silver property you mentioned.

I would like very much to be kept posted on the progress of the Helvetia property and if and when a firm option on reasonable terms can be obtained, I will gladly take it up with these people again.

With best wishes and kindest regards, I am

Very truly yours,

J. S. Coupal, Director

JSC:kk



OFFICE OF

April 7, 1943

PERSONAL

Mr. J. S. Coupal
413 Home Builders Building
Phoenix, Arizona

Dear Mr. Coupal:

I have been trying to deal with Mrs. Blankenship on the Helvetia property for the past two days. I first wanted a sixty day option, then I finally asked her for a thirty day option. She is willing to entertain the offer as outlined by you, but will give no one an option on the property. I tried to explain to her very fully that your people would not consider a deal unless they had sufficient time to make a thorough examination, but she said there were so many people who are interested and wanted to go out there and make an examination. You know, as well as I, that 95% of the people have neither the money nor the connections to tackle a mine of that size and being a woman it is impossible to argue with her or to get her to listen to anything that is within reason.

Maybe later on she might be willing to give us a thirty day option. If I hear any more, I will be glad to drop you a note, and I further believe that I might run across another mine which will have better chances of making a success.

With regards and best wishes, I am

Yours very truly,

C. M. Taylor

CMT:wg

C. M. TAYLOR
County Assessor

April 19, 1943

Mr. C. M. Taylor
County Assessor
Pima County
Tucson, Arizona

Dear Mr. Taylor:

While in Los Angeles last week I talked with the party who asked me to make inquiries on the Helvetia property.

I expect to be in Tucson Tuesday afternoon and Wednesday and plan to call and discuss this question with you. I hope that we can get a definite commitment from Mrs. Blankenship even though we do not get a thirty-day option. I believe that after a discussion with you and possibly Mrs. Blankenship, we may be able to advise my parties in Los Angeles by wire and have them on the property within a few days.

With best wishes and kindest personal regards, I am

Very truly yours,

J. S. Coupal, Director

JSC:kk

March 25, 1943

Mr. Charles Taylor
County Assessor
Tucson, Arizona

Dear Mr. Taylor:

While in Tucson yesterday I talked with George Ballam regarding your interest in the Helvetia property owned by Mrs. Blankenship and Messrs. Gregory and Burnie. My understanding is that you have been able to make a reasonable deal with the parties owning this property for taking it over. I do not know whether or not you intend to operate the property personally. I have mentioned the Helvetia and one other property in Arizona to parties whom I consider very responsible and who are anxious to enter into a deal to take over what looks like a promising copper scheelite producing mine.

I have been asked to get all information regarding the property to them and an outline of a deal to take over. If you care to consider this matter, I would be very much pleased to go into further details with you and put you in direct contact with the people I have in mind. It would seem to me as though a contract could be made with them for an overriding clause covering the interest or compensation you expect from turning your contract over to them.

In order to make an equitable deal I do feel as though under the present conditions some people always like to know just what they are paying and to whom the payments go. You may or may not agree with this policy, but it is one that I believe has merit and one that avoids future difficulty in any operations of this nature.

I expect to be in Tucson April 3 to April 5 to prepare for and attend the Scrugham hearing on Monday, April 5. Within a week or ten days after the hearing I expect to make a short visit to the Coast and would like very much to know beforehand whether or not you care to make a tentative deal on the Helvetia so that I may advise my people and go into further detail with you.

Mr. Charles Taylor

March 25, 1943

I do hope that you can make arrangements to attend the Tucson hearing and be able to present some of the problems which the small mine operators in the State are confronted with and which, if corrected, will lead to a much increased production from the mines.

With best wishes and kindest regards, I am

Very truly yours,

J. S. Cougal, Director

JSC:kk

January 20, 1943

Mr. R. A. Berney
Sahaurita, Arizona

Dear Mr. Berney:

I am making plans to be in Tucson early Saturday afternoon and stay over Sunday and would, if possible, like to meet with you, Mrs. Blankenship, and Mr. Gregory to work out some equitable arrangement for a deal on the Helvetia Mine for you folks and for the Arizona-Eastern Gold Mines Company, the owner of the Octave Mine.

I had hoped that Miss Haskell, the Secretary-Treasurer of the Company, will also be in Tucson at that time.

Can you advise me by phone or otherwise whether or not such a meeting could be arranged, and if so, sometime either late Saturday afternoon or Sunday forenoon would be agreeable and also say just where we could meet.

I would appreciate hearing from you.

I am sending a copy of this letter to Mr. Gregory so that he may try to contact you and get something definite about the possibilities of such a meeting.

With best wishes and kindest regards, I am

Very truly yours,

J. S. Coupal, Director

JSC:kk

cc - Mr. John Gregory
Tucson, Arizona

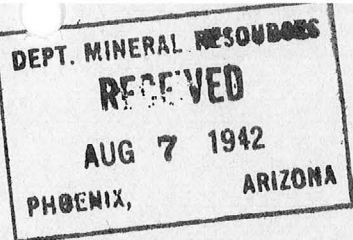
NAME OF MINE: HELVETIA
OWNER: Mrs. R.B. Blankenship,
298 Granada St., Tucson

COUNTY: Pima
DISTRICT: Helvetia
METALS: Cu

OPERATOR AND ADDRESS		MINE STATUS	
Date:	L.M. Vreeland, Gen. Mgr., Box	Date:	
5/1/44	2771, Tucson	5/1/44	Shipping
1/45	✓ B.H. Martin, Box 514, Tucson	9/44	Closed
		1/45	Shipping
		5/46	Idle

over

9/22/43 16 men employed.
10/1/43 4 cars per week shipped. Access
road Sahuarita-Helvetia completed. Want
siding & ramp at Sahuarita--SWPC application
mailed.
1/3/44 Shipping 50 tons per day--Hayden
2/15/45 Reopened by owner & expect to ship
to El Paso smelter. Fully equipped
with hoist, compressor, etc.



Aug. 5, 1942

Memo. to J. S. Coupal

Sam:

Am working on the Mineral Hill-Twin Buttes-San Xavier - Olive Camp survey. Have been messed up by high water in Santa Cruz, wet weather, threatening cloudbursts, some of which materialized, and in general, rain. Hope to have the survey finished this week. Had some car trouble caused by water and sand but all fixed up now.

Off the record, I believe this Helvetia operation is a natural for stepping up production. Burney is a good experienced miner and millman. His partner is an ex automobile man. Burney was raised in the Helvetia district and knows the ore. He also had considerable mill experience with Chino. However, he is practically alone, and aside from the help Brent Rickard has given him, he hasn't had much. They have been so busy that they have lost touch completely, hence I believe the department can work on some virgin ground. Suggest you take a look-see if you can get away. The boys are amenable to all suggestions, and they have ore.

JWS.