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

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T Yro (1) Mohave   1 c 4

COMPLETE AND MAIL TO:

STATE MINE INSPECTOR
1616 WEST ADAMS, SUITE 411
PHOENIX, ARIZONA 85007-2627

STATE MINE INSPECTOR
MAR 13 1990

FOR OFFICE USE ONLY
START-UP NUMBER 04307044
STATE NUMBER 09/245
DEPUTY NUMBER Hamm
NEW ✓ MOVE ____

NOTICE TO ARIZONA STATE MINE INSPECTOR

In compliance with the Arizona Revised Statutes, we are submitting this written notice to the Arizona State Mine Inspector of our intent to start ✓, stop ____, move ____ an operation.

Please check the appropiate boxes: Contractor ☐, Owner ☐, Operator ☑, Open Pit Mine ☑, Underground Mine ☑, Mill ☑, Quarry ☐, Aggregate Plant ☐, Hot Plant ☐, Batch Plant ☐, Smelter ☐, Leach Plant ☑.

If this is a move, please show last location: ____

If you have not operated a previously in Arizona, please check: ____ If you want the Education and Training Division to assist with your mine safety training, please check: ✓

If this operation will use any hazardous material; ie. cyanide, please check: ✓

COMPANY NAME: Gold Standard Mines Corp

MINE OR PLANT NAME: Tyro Mine

DIVISION: ____

CHIEF OFFICER: Bob Hughes **TELEPHONE:** 754-1119

COMPANY ADDRESS: Box 9106

CITY: Bullhead Az **STATE:** ____ **ZIP CODE:** 86430

MINE OR PLANT LOCATION: (include county and nearest town, as well as directions for locating property by vehicle): Section 7, 21N, 20W - Hwy 68 East from Bullhead to mile marker 6 1/2; N. 4 miles.

TYPE OF OPERATION: Mine & Mill **PRINCIPAL PRODUCT:** Gold

STARTING DATE: 3/4/90 **CLOSING DATE:** ____

PERSON COMPLETING NOTICE: Howard Sadlier **TITLE:** Manager

DATE OF REPORT TO STATE MINE INSPECTOR: 3/8/90

FORM 101-106 REV. 03/89

GOLD PURCHASE CONTRACT

Robert E. Jobes, P.E.
Tyro Mines, Inc.
P. O. Box 2633
Laughlin, Nevada 29023

Dear Mr. Jobes:

I have paid $_____ on my mine development contract.

The undersigned purchases_____ troy ounces of 999 fine gold, international hallmark for $325 per ounce for a total of $_____ with the express understanding that you have agreed:

1. To hold the above funds in your escrow account until Dominion Savings has issued its bond to me that the above amount is quaranteed to be repaid in the event you do not deliver gold to me as follows: (Fill in four monthly amounts and date.)

_____	Oz.	_____	198___
_____	Oz.	_____	198___
_____	Oz.	_____	198___
_____	Oz.	_____	198___

Total _____ Oz.

2. That you will deliver an additional _____ ounces of gold in four equal amount commencing one (1) year after my last delivery above to repay me the amount of original mine development contract.

Please send all gold by registered U.S. Mail to the undersigned at:

_____
Name

_____
Address

_____
City State Zip

( )_____
Telephone

KEEP THIS COPY FOR YOUR FILES.

SEE REVERSE SIDE FOR DOMINION SAVINGS & TRUST COMPANY FINANCIAL STATEMENT.

DOMINION SAVINGS & TRUST

DOMINION SAVINGS & TRUST COMPANY

BALANCE SHEET
AS OF MARCH 31, 1988

ASSETS

CURRENT ASSETS	
CASH	$105,182.00
TERM DEPOSITS	333,163.00
MARKETABLE SECURITIES	1,075,000.00
LOANS - SHORT - TERM	17,500.00
ACCOUNTS RECEIVABLE	4,000.00
	$1,534,845.00
INVESTMENTS	
COMMERCIAL NOTES PORTFOLIO	$23,885,162.00
FIXED ASSETS	
FURNITURE & FIXTURES	$117,680.00
COMPUTER EQUIPMENT & SOFTWARE	39,062.00
	$156,742.00
TOTAL ASSETS	$25,576,749.00

LIABILITIES

CURRENT LIABILITIES	
ACCOUNTS PAYABLE	$7,539.00
DEBENTURES - SHORT TERM	20,000.00
	$27,539.00
LONG TERM LIABILITIES	
CORPORATE DEBENTURES	$4,750,000.00
SHAREHOLDER'S EQUITY & CONTRIBUTED SURPLUS	
COMMON STOCK	
($1.00 par value: 100,000,000 author 4,000,000 issued)$	$799,210.00
PREFERRED STOCK	
($5.00 par value: 100,000,000 author 4,000,000 issued)	$20,000,000.00
TOTAL LIABILITIES & SHAREHOLDER'S EQUITY	$25,576,749.00

TYRO MINES, INC.

Tyro (file)

P.O. BOX 2633
Laughlin, Nevada 89029

(602) 754-3132

RECEIVED
OCT 25 1988

Nyal J. Niemuth

You were good enough to reply to our Wall Street Journal ad regarding the purchase of gold, and through replies and our bank we arranged for the capital to put Tyro Mine and Mill into operation. Now that we have mined and milled gold, we desire to acquire the mining machinery to bring mine production to 500 tons per day, the capacity of the Tyro Mill.

In the past six months, approximately $600,000 has been expended to activate the Tyro Mine and Mill. A development haul tunnel of over 460 feet has been completed and this tunnel, when completed, will permit the mining of ore bodies IA and II, totaling 344,738 tons of .15 gold ore. (See enclosed Plat "Tyro Mine".) The haul tunnel shown on the reverse of the Tyro Mine Plat will come in under the "240' Level" of the Tyro Mine.

We offer to sell 3,000 troy ounces of gold at $325 per ounce and guarantee that it will have a minimum value of $425 at the time of delivery which will commence the ninth month after use of funds. We have entered into an agreement whereby the above cash purchase will be bonded and guaranteed by Dominion Savings and Trust Company, a financial institution with total assets in excess of $25,000,000. The bond costs us 8% of the purchase price of gold, and must be written in amounts of $25,000; however, Dominion will permit us to include up to five beneficiaries (gold purchasers) on any of its bonds.

Remember, we agree that if gold does not have a value of at least $425 per ounce at the time of its delivery to you, we will deliver additional gold to bring the ounces you receive to be at least $425 per ounce. If gold exceeds $425 per ounce at the time of delivery, you will gain the increased value.

Summary Information

Ore Blocks (shown on Tyro Mine Plat) and a surface ore body of 60,000 tons (not shown) with an average value of .15 gold per ton are the basis of our program, for together they represent 404,738 tons of .15 gold ore that is ready to mine and mill once additional equipment is purchased.

Investment is protected by a bond provided by Dominion Savings and Trust Company to be issued through their Dallas, TX, office, in conjunction with American International Metals Corp.

The undersigned, a professional engineer, knows the ore blocks shown in the enclosed Plat exist from firsthand knowledge, and is acquainted with Engineer Dan Crackle, who prepared the original plats and ore reserves shown, and R. O. Camozzi, P.E., who preceded Mr. Crackle at Tyro and who reported that a 1,020,000 ton commercial ore deposit exists at the Tyro Mine.

We enclose a contract for your consideration and acceptance. If you have any questions, please visit the mine, or have any representative you elect contact us. We maintain an office at the mine property: our telephone number is (602) 754-3132.

Sincerely,

TYRO MINES, INC.

By _____
Robert E. Jobes, P.E.
President

REJ/lh
Encs.

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

VERBAL INFORMATION SUMMARY

1. Mine file: TYRO
2. Mine name if different from above:
3. County: Mohave
4. Information from: Bill Vanderwall

   Company:

   Address: P.O. Box 9125

   Bullhead City, AZ 86430

   Phone: 754-4481

5. Summary of information received, comments, etc.:

Mr. Vanderwall reports the phone and power have been cut off at Gold Standard's Tyro mine and mill. A few miners remain on staff and continue underground development.

Date: 2/6/89

Nyal J. Niemuth, Mining Engineer

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

VERBAL INFORMATION SUMMARY

1. Mine file: TYRO
2. Mine name if different from above:
3. County: Mohave
4. Information from: Walt Dore, Mill Superintendent
   Company: Gold Standard Mines Inc.
   Address: P.O. Box 9006KS
   Bullhead City, AZ 86430
   Phone: 754-3132
5. Summary of information received, comments, etc.:

Tyro mine and mill is operating again with full production of 300 TPD expected to be reached during the fourth quarter of 1988. The mining method will involve blast hole drilling from the surface with the ore hauled from the underground to the surface via rubber tired trucks and/or LHD's.

Date: October 17, 1988

Nyal J. Niemuth, Mining Engineer

FIELD VISIT

Mine: Tyro

Engineer: Nyal Niemuth

County: Mohave

Date: 6/16/88

Harrison Mining has completed 200′ of a planned 300′ decline being sunk at about 15 degrees to intersect the Tyro vein at about the 300′ level and then develop a sublevel and ore chutes. It is estimated 60,000 tons grading 0.144 oz/ton Au will be developed. Maintenance work is being done on the mill. Map and photos showing the decline and its location will be added to the mine file.

TYRO MINE MOHAVE COUNTY

NJN WR 5/3/85: Walter Fordham, associate editor of Metals Economic Group, Ltd., reported that he had heard from Bob Hughes of Equitable Corp. that they are planning to drive a 400' decline at the Tyro Mine (f) Mohave County.

NJN WR 7/21/85: Information received from Mrs. Bob Hughes of Equitable Corp. (c) has Mr. Earl Harrison of Harrison Mining, Box 3091, Kingman, Arizona 86402 controlling the Tyro Mine (f) Mohave County.

NJN WR 3/13/87: Harrison Mining (c) has leased the Moss Mine (file) and the mill at the Tyro Mine (file) Mohave County. It is rumored that Homestake would like to have leased the Moss Mine. Recent work done there indicates a possible 200,000 tons of .17 oz/ton Au. Harrison is currently revamping the shaft and planning a drilling program to confirm that resource.

NJN WR 5/15/87: Francis McQuidy, Quest Mining Corp, 6991 E. Camelback, Scottsdale, Arizona 85251, 941-3092, a consultaint representing BF Minerals (card) has leased the Mossback (file) Mohave County to Harrison Mining. They have dewatered the mine and are now rehabilitating the underground workings. He estimated that they are a couple of months away from production. The ore will go to the Tyro Mill (file) Mohave County, which they have leased.

NJN WR 1/22/88: Bill VanDerWall (card), Ivy Minerals, reported that the Harrison Mining Company (card) is mining at the Moss Mine (file) Mohave County at 10 day intervals and then running the Tyro (file) mill, Mohave County for 3 or 4 days. They have been doing this for the last few months and have milled 3,000 tons. The Moss Mine shaft has been rehabilitated, is currently at the 300 foot level and most of the mining has been taking place at that level. The vein on this level is 40' wide and contains .25 oz/ton Au. There is a major fault to the west but the vein is open to the east. Current reserve estimates would be 40,000 tons of greater than .1 underground. This conceivably could become 80,000 tons or greater.

TYRO MINE MOHAVE COUNTY

RRB WR 9/2/83: Bill Vanderwall of the Tyro Mine, Union Pass District, Mohave County, reports that they have made an agreement with the Bureau of Reclamation to pump 75 acre-ft. per year from Lake Mohave for 5 years. Their plant will treat 500 TPD but is restricted to 300 TPD by the ball mill capacity. He said they have a 2½ year reserve as a surface mine with a 4:1 stripping ration and a cut-off grade of 0.07 oz/ton. He reports a recovery of 84% when ground to 80% minus 200 mesh. He also stated that they are seeking custom ore and that milling costs are about $22/ton.

NJN WR 3/9/84: Bill Vanderwall (c) project manager for Gold Standard Mines, Inc. at the Tyro Mine, Mohave County reported he has assembled a box of literature on the Tyro Mine which he will give to the department the next time we visit.

NJN WR 3/9/84: Bill Vanderwall (c) Project Manager for Gold Standard Mines Inc. at the Tyro Mine, Mohave County reported they have surface ore till the middle of next year to the 240' level. Tyro's 1983 average grade was .078 oz/ton gold. The mill averaged a 75% recovery at 80% -200 mesh. A drilling program has been planned to develop reserves to the 450' level but finances are lacking to execute the program.

NJN WR 3/30/84: Frank Bain with Nicor visited and reported Nicor has looked at the Tyro Mine, Mohave County. Their judgement is that development of the underground there will be in the lower part of the epithermal system. That of course would result in a lowering of the ore grade. They estimate reserves of 4-5,000,000 of .05 oz Au/ton.

NJN WR 4/6/84: Chuck Bentzen (c) reported that the Tyro Mine and mill, Mohave County has shut down. Apparently the open pit mining operation is becomming uneconomic due to stripping and dilution problems.

TYRO MINE MOHAVE COUNTY

RRB WR 10/15/82: Visited the Tyro Mine in Mohave County and talked to Bill Hansen and the mill man, Chuck. They said that the vein assays 0.15oz/ton Au but due to the dilution in the open pit the mill heads assay 0.04 oz/ton Au. Stricter ore control practices have been initiated to correct this problem. Currently running the mill one shift per day at a rate of 18 tons per hour. When the four inch water line from the Katherine is completed, they will have enough water to run 3 shifts per day. The mill consists of a jaw crusher, cone crusher, rolls, ball mill with cyclone classifier, four cyanide agitation tanks and four carbon in pulp tanks with air lifts and screens. The carbon is stripped with hot caustic and cyanide and the gold plated on steel wool, fed to the furnace and sold as dore'.

NJN WR 10/22/82: It was reported that the pipe line from the Katherine Mine across the Lake Mead National Recreational Area to the Tyro Mine is complete and supplying water to the mill at Tyro.

NJN WR 1/7/83: It was reported that Bill Vanderwall, Jr. formerly at Pacific Research Operations in now the geologist in charge of ore control at the Tyro Mine, Mohave County.

NJN WR 4/1/83: It was reported that the operation at the Tyro Mine, Mohave County has had problems keeping the grade up and so has not yet become a profitable operation.

NJN WR 4/15/83: It was reported that the Tyro Mine had been pouring Dore bars but that the ore grade had only been averaging .05 oz Au/ton. (It was estimated that better than .1 oz Au/ton is required to break even.) The mine have been shut down for a couple of weeks now awaiting repairs to the crushing circuit of the mill.

NJN WR 8/26/83: Bill Vanderwall reported that he is project manager at the Tyro Mine, Mohave County for Gold Standard Mines, Inc. P.O. Box 9006 KS Bullhead City, AZ 86430, phone 754-2608.

TYRO MINE MOHAVE COUNTY

NJN WR 3/26/82: Steve Daniels (753-5839) a Kingman reporter with the Arizona Republic called. He was seeking information to do a story on the Tyro mine (file) and cyanide mill in Mohave County. The work he had was that the mine was ready to supply the mill (reportedly Arizona's largest cyanide mill) with 500 ton/day for a 40 day run.

NJN WR 5/7/82: Eric Vartanian of Memphis, Tenn. called. He identified himself as an investor in the Equitable Corp's Tyro Mine, Mohave County. He said the IRS is questioning his tax sheltered investment there as the IRS has investigated wether the Tyro really has an ore body and concluded that what is there is not worth processing. When asked if the Tyro was producing now, Mr. Vartanian replied that Equitable Corp. has been having problems with the start up of the mill.

NJN WR 5/14/82: Lee Quinn, an investor in the Tyro Mine, Mohave County called inquiring about the mine. He reported the IRS is investigating his investment. (See NJN weekly report 5/7/82)

MG WR 5/14/82: A pilot for Federal Express, Mr. Lee Quinn, 7140 Wickshire, Germantown, TN 38138; phone (901) 754-1807, in to look at the file on the Tyro Mine, Mohave County. He and a number of people have invested money to develop the mine. A lot of new equipment has been installed at the property. The IRS is investigating the investment. I connected Mr. Quinn to the Phoenix office to speak to Nyal Niemuth.

MG WR 5/21/82: Mr. Ramon Shannon reports the new mill at the Tyro mine, Mohave County has been poorly located. The mill is on low, flat ground (surrounded by hills) with little drainage. He believes the ore will have to be conveyed and handled many times more than if the designers had taken advantage of the hills.

NJN WR 9/3/82: Robert Jones with the Equitable Corporation in Las Vegas, Nevada, called with some questions regarding what is required to hold a mill site claim. With those questions settled he went on to report that getting enough water is a problem at the Tyro Mine, Mohave County. Apparently they have run out of water and are drilling some new wells. The mill was reported to have produced some dore metal prior to shutting down.

TYRO MINE

Mohave County
Union Pass District

CJH WR 10/24/80: Tom A. Boyden, NUEXCO, was interested in the Roadside Mine, Katherine District, and the Tyro Mine, Union Pass District, Mohave County. Will visit the office in early November.

CJH WR 12/19/80: Visit to the Tyro Mine east of Katherine, Mohave County, Arizona (see CJH FER 7/28/80). James Fraley, Mine Supt. took us around the mine area. A large stope (1500 ft long X 60 ft wide X 100 ft deep) was mined to surface. For geology and operations data see the F.H. Blair and Associates report in the Tyro Mine file. Mr. Fraley said that they are four months away from production of Au ore (no Ag) ranging from 0.025-0.10 oz/ton. The cut-off grade is 0.05 oz/ton. Production will be 500t/shift utilizing open pit methods.

KAP WR 6/5/81: A report was received that Equity Gold is erecting a flotation mill with the Tryo Mine, Mohave County. Rumors are that the Tyro Deposit contains at least 300,000 ton of 0.1% tr. oz. Au/ton.

NJN WR 10/9/81: On Saturday and Sunday in the company of and at the expense of Don Riedel, 3823 S. Atchinson Way, Aurora, CO 80014, a consulting geologist, I visited the Katherine and Oatman Mining Districts in Mohave County.

Tyro Mine, Mohave County, being developed by Equitable Gold was visited. No one of authority was present but one of the hands let us through the gate and let us look around. Most visible activity was the construction of a cyanide carbon absorption mill. Equipment present or assembled included: 36" x 48" jaw crusher, cone crusher, 6' x 20' ball mill, filter press, air lift pachuca tanks, carbon towers, numerous conveyors, crane, water truck, chicago compressor, payloader, trucks, a LHD, air track drill and an electrical transformer substation. (See pictures which will be added to the file.) Reportedly their plans are to open cut a large quartz vein structure which strikes N30E, dips nearly verticle in a country rock that is andesite and granitic gneiss with scattered diabase intrusions. This vein has previously been open cut (stoped out?) 10-15' wide to a depth of about 75' for a length of a couple hundred feet. Also reported completed were 11-500' hammer drill holes.

RRB WR 10/23/81: Bill Vandersall reported that the Cerbat Mill was being rebuilt and that the mill at the Tyro should be in operation in 60 days.

NJN WR 11/20/81: It was reported that the mill is complete at the Tyro Mine, Mohave County.

TYRO MINE

MOHAVE COUNTY
Union Pass District

T21N R20W Secs. 6 & 7

ABM Bulletin #137 p. 106
ABM Bulletin #131 p. 120
USGS Bulletin #397 p. 207
IC 6901 p. 48
Arizona Mining Journal 3/1/1921 p. 23
Mohave County Miner 12/74 (Mohave County Correspondence File)
Kingman Mining Project - 3 Claim Maps

Mining Journal 6/41 "Gold Standard Mines Corporation, Richard DeSmet, General Manager, Box 151, Kingman, Arizona is treating 250 tons of ore daily from the Tyro Mine five miles away. The mill is located on the company's Katherine property. Ore also is being stockpiled at the rate of 50 to 100 tons per day. Ore values are in gold and silver. Charles de Mund, Box 151, Kingman is president of Gold Standard Mines."

PAY DIRT 7/26/76 - The Goldelta Partnership is composed of mining interests in Spokane and Denver has signed a lease agreement with the Azcon Corporation (card) to explore and develop an Arizona property; the Tyro property, Mohave County.

WR VBD 6/5/76 George Fass, CTEA mine project in Kingman, reported an interview with Dennis Poynter who owns the Tyro group of claims in the Union Pass Mining District in Mohave County. According to Poynter, a diamond drilling program has "blocked out" ore reserves amounting to 3.5 million tons of low-grade gold ore. A London, England firm has set up 1.2 million dollars for additional drilling to block out 10 million tons.

3/18/77 WR VBD A British company that was drilling the Tyro Gold Mine in the Black Range of Mohave County has dropped their option on the property. The Tyro Mine is owned by Dennis Poynter of Kingman.

WR RRB 3/7/80 Bob Hughes, 3198 Camelback Drive, Las Vegas, Nevada wanted information on the Tyro Mine in Secs. 6 & 7, T21N R20W, Mohave County. He is getting ready to start mining and heap leaching. He had already notified State Mine Inspector. Gave him a copy of Pertinent Data, to guide him.

Office Visit and Telephone Call from Mrs. R. F. Cross, 12406 Vista Grande Court, Sun City, Arizona 85351 933-6595. Mrs. Cross said their son from Rockford Illinois had been interested in investing in this mine. She brought in a prospectus and attached material concerning mine. Wanted us to check out whether or not mine actually existed and if they were doing something. (A.T.)

GOLD PURCHASE CONTRACT

Robert E. Jobes, P.E.
Tyro Mines, Inc.
P. O. Box 2633
Laughlin, Nevada 29023

Dear Mr. Jobes:

I have paid $_____ on my mine development contract.

The undersigned purchases_____ troy ounces of 999 fine gold, international hallmark for $325 per ounce for a total of $_____ with the express understanding that you have agreed:

1. To hold the above funds in your escrow account until Dominion Savings has issued its bond to me that the above amount is quaranteed to be repaid in the event you do not deliver gold to me as follows: (Fill in four monthly amounts and date.)

_____	Oz.	_____	198___
_____	Oz.	_____	198___
_____	Oz.	_____	198___
_____	Oz.	_____	198___
Total _____	Oz.		

2. That you will deliver an additional _____ ounces of gold in four equal amount commencing one (1) year after my last delivery above to repay me the amount of original mine development contract.

Please send all gold by registered U.S. Mail to the undersigned at:

_____
Name

_____
Address

_____
City State Zip

( )_____
Telephone

TYRO (P) K 47

TYRO MINES, INC.

MAKE CARD ALSO FOR MINE & MILLING ACCOUNTING SERVICES P.12

P.O. BOX 2633
Laughlin, Nevada 89029
(702) 382-7556

February 13, 1988

Mr. Nyal J. Niemuth
4227 N. 11th Street
Phoenix, AZ 85014

Dear Mr. Niemuth:

Thank you for responding to our ad in the Wall Street Journal. Our brochure is enclosed along with a reply card that is explained below.

We have prepared a video tape (VHS) showing our mine property and the Tyro Mill in operation, which we would be pleased to forward to you for your review for $15. If you elect to participate in our program, you may keep the tape at no charge. If you decide not to participate in our gold program, just return the tape and we will return your deposit.

Our brochure has all the necessary copies of documents required to participate in our gold purchase program. Pages 13, 15, 16, 17 are perforated and should be filled out as you agree, signed, and mailed with your check to Mine & Milling Accounting Services, Inc., P. O. Box 2633, Laughlin, NV 89029.

We would welcome your visit to our operation, and we are only a scant 12 miles from the resort hotels along the Colorado River at Laughlin. If you determine to visit us and at the same time engage in a winter, high desert vacation (the winter weather is delightful) and require assistance in making reservations, just call.

Our mine contracts are limited in number, and we will accept contracts on a first come first serve basis; however, if you advise us you would like to review our video tape before deciding, please indicate the amount you may invest when requesting the tape and we will reserve the necessary tonnage for you.

Sincerely,

TYRO MINES, INC.

By Mary C. Bobbett
MARY C. BOBBETT, Secretary/Treasurer

MCB/jb

Enclosures

TYRO MINES, INC.
P.O. BOX 2633
AUGHLIN, NV. 89029

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 474 LAS VEGAS, NEVADA

MINE & MILLING ACCOUNTING SERVICES, INC.
P.O. BOX 2633
LAUGHLIN, NV. 89029

Mary C. Bobbett

Dear Mary,

Please send me a copy of the Tyro Video Tape, my $15 is enclosed, and reserve for me_____tons of ore until I review the video tape.

Name (please print)_____

Address_____

City_____ State_____ Zip_____

(_____)
Telephone No.

Typo (1) Hold (1 month

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

EVAN MECHAM, GOVERNOR
GERALD H. TELETZKE, PH.D., DIRECTOR

JOINT NOTICE OF PROPOSED ACTION

by the

U. S. Environmental Protection Agency
Region 9 (W-5-1)
215 Fremont Street
San Francisco, CA 94105

Telephone: (415) 974-8105

On Application for National Pollutant Discharge Elimination System (NPDES) Permit to Discharge Pollutants to Waters of the United States

State of Arizona
Arizona Department of Environmental Quality
2005 North Central Avenue-Room 300
Phoenix, AZ 85004

Telephone: (602) 257-2270

On Application for Certification for Compliance with Applicable Effluent Limitations and Appropriate Requirements of the State of Arizona

The Environmental Protection Agency (EPA), Region 9, San Francisco, California, and the Arizona Department of Environmental Quality (ADEQ) are jointly issuing the following notice of proposed action under the Clean Water Act (CWA).

The Environmental Protection Agency, Region 9, San Francisco, California, has received a complete application for a National Pollutant Discharge Elimination System (NPDES) permit and has prepared tentative determinations regarding the permit.

On the basis of preliminary review of the requirements of the Clean Water Act, as amended, the implementing regulations, the Regional Administrator, Region 9 Environmental Protection Agency, proposes to issue an NPDES permit to discharge to the following applicant, subject to certain effluent limitations and special conditions.

Public Notice No. 29-87-AZ December 7, 1987

Harrison Mining
P. O. Box 1116
Bullhead City, Arizona 86442
NPDES Permit No. AZ0022187

The applicant operates the waste control facilities located at the Tyro Mill near Bullhead City in Mohave County. These waste control facilities are required to contain the runoff from 3.22 inches of rainfall in 24 hours and all process generated wastewater. The discharge from this facility, at latitude 35° 13' 25" N, longitude 114° 27' 50" W, is to an unnamed wash tributary to the Colorado River. This segment of the Colorado River has protected uses of Aquatic and Wildlife, Domestic Water Source, Full Body Contact, Agriculture Irrigation and Agriculture Livestock Watering. The proposed permit contains effluent limits for Copper, Zinc, Lead, Mercury, Cadmium, Cyanide and pH. The permit will expire five years after it becomes effective.

The State of Arizona is considering a request to certify the discharge described above, pursuant to Section 401 of the Clean Water Act. The certification will set forth any limitations and monitoring requirements necessary to assure compliance with water quality standards under Section 303, areawide waste treatment management plans under Section 208(e), effluent limitations under Sections 301 and 302, standards of performance under Section 306, or prohibitions, effluent standards or pretreatment standards under Section 307 of the CWA, and any other appropriate requirement of State law.

The State may certify a draft permit and specify conditions which are more stringent than those in the original draft permit, where the State finds such conditions necessary to meet the requirements of the CWA. For each more stringent condition, the certifying State agency shall cite the CWA or State law references upon which that condition is based. Review of appeals of limitations and conditions attributable to State certification shall be made through the applicable procedures of the State.

The Administrative Record, which includes the application, draft permit conditions and other relevant documents, is available for public review Monday through Friday from 9:00 a.m. to 4:00 p.m. at the EPA address below. A copy of the draft permit and other pertinent documents may be obtained by calling or writing to the addresses below.

Persons wishing to comment upon or object to the proposed determinations or request a public hearing pursuant to 40 CFR 124.12 should submit their comments or request in writing within thirty (30) days from the date of this notice, either in person or by mail to:

U. S. Environmental Protection Agency
Region 9 (W-5-1)
Attn: Andrew Lincoff
215 Fremont Street
San Francisco, CA 94105

Telephone: (415) 974-8284

State of Arizona
Arizona Department of Environmental Quality
Attn: Wayne H. Palsma - Room 300
2005 North Central Avenue
Phoenix, AZ 85004

Telephone: (602) 257-2270

All comments or objections submitted within thirty (30) days from the date of this notice will be considered in the formulation of the final determinations regarding the application. If the response to this notice indicates a significant degree of public desire for a public hearing, the Regional Administrator shall hold one in accordance with 40 CFR 124.12. A public notice of such hearing will be issued at least thirty (30) days prior to the

hearing. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

The permit will become effective thirty-three (33) days following the date of mailing by the EPA of the final permit. If no comments request a change in the draft permit, the permit will become effective three (3) days from the date of mailing.

A request for an evidentiary hearing may be submitted to the Permits Record Coordinator, (W-5-1), within thirty-three (33) days following the mailing of the final determination, in accordance with 40 CFR 124.74. If granted, applicable provisions of the permit will be stayed pending the hearing.

Please bring the foregoing notice to the attention of all persons you know would be interested in this matter.

1C

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Tyro Mine Date 6/4/82

District Engineer Nyal J. Niemuth

Subject: Field Visit

I visited the Tyro Mine and Mill where I met with Dan Crackel, Mining Engineer, who provided the following information.

The official startup date for the Mine and Mill was June 1. Lyle Richins, formerly an Engineer for Phelps Dodge at Morenci, is in charge. His office number is 754-2608. Currently 15 men are employed.

The company names involved and their apparent relationship is as follows: The Equitable Corp. has raised the money and funded Gold Standard. Gold Standard runs the Tyro operation thru the Keystone Co. who is/was the construction contractor and will be the operator.

A tour was made of the mine. Both underground and at the open pit. Mine production is coming from the first ore block which runs from the old open stope south following the ridge. This 130,000 ton ore block grading .14 oz./ton Au is being mined by open pit methods. Waste on the west side of the ore body is removed, a bench at a time, followed by the ore. Waste to the east will be left in place and become a pit wall. Mining width will be determined by sampling and fire assaying of to be mined material. Cutoff grade will be .13 oz./ton Au. 35-50' mining widths are anticipated. Assaying is being performed by Mineral Assaying Service, P.O. Box 6156, Kingman, Az. 86401.

A brief walk thru of the Mill, which has just started up, was made. Lime and cyanide are being added to the ore in the crushing circuit. Carbon is added to the pulp, after some retention time in the agitation tanks. Final product will be dore bars poured on site, although the furnace has not yet arrived.

Water for the mill is coming from a variety of sources. This included wells on the property, wells at the Sheep Trail Mine, and upon completion of a pipeline, water from some of the workings at Katherine.

NJN/ap

GEOLOGICAL OBSERVATIONS
AT THE TYRO MINE
UNION PASS MINING DISTRICT
MOHAVE COUNTY, ARIZONA

The relevant geologic information readily available upon cursory examination of the Tyro Mine vicinity suggests the vein closely resembles those occuring in the neighboring Oatman Mining District. Similarities include genesis, structural relationship, mineralogy of ore and gange and vein texture.

The genesis, or origin of the vein quite likely was the circulating hydrothermal solutions following volcanic activity during the Tertiary mineralizing period from two to sixty-five million years ago. These "Bonanza" type veins typically contain ore shoots which are confined to definite vertical and horizontal ranges within the vein. Beyond this range the vein is low grade or barren. It is generally accepted that this productive range, or ore shoot, resulted from conditions of chemistry, temperature and pressure favorable to the selective precipitation of gold from ascending, hot, aqueous solutions generated by volcanism. The hydrothermal solutions acquire a mineral lode at depth from reaction with the roots of volcanoes and precipitate minerals selectively at shallower locations.

Structurally, the vein or, more accurately, the zone of mineralization is a complex lode consisting of a main vein accompanied by many branching and irregular stringer veins of all sizes three feet and less in width and varying widely in strike and dip but overall trending northeast and nearly vertical. This zone appears to represent a fault which probably formed before mineralization and moved during and after vein formation as evidenced by broken and recemented vein material. Wall rock to the vein is chiefly granite gneiss although at the point of most profound vein expression the vein is associated with volcanic dykes showing sixty feet of displacement and exhibiting finely disseminated pyrite.

The Tyro vein is of relatively simple mineralogical character. It consists of mainly quartz and calcite with lesser amounts of fluorite. The ore mineral is finely divided free gold combined with silver. This electrum has tentatively been assigned a silver/gold ratio of 2.63. Texturally, the vein material varies from coarsley crystalline to amorphous. Some veins are mostly quartz, some mostly calcite, but all exhibit the two minerals to some degree. The layering of thin bands of amorphous quartz, called chalcedony banding, by successive infusions of mineral laden solutions, is common in larger veins. The banded chalcedony may show multicolor hues, at Oatman, this was characteristic of high grade ore.

Finally, based on the conclusions arrived at by the U.S. Geological Survey (U.S.G.S. Bull. 743) Oatman District, where deposits appear to closely resemble the Tyro deposit, it appears that ore will tend to be concentrated at the gneiss-volcanic-fault interface and be rather limited in vertical and horizontal extent. However, a low grade zone may extend for some distance from the interface. It is the intention of the author to conduct further geologic mapping, drilling and assaying to ascertain the limits of producible ore.

Respectfully submitted,

William Vanderwall

William Vanderwall
Registered Geologist,
State of Arizona No. GIT34

12/22/82

William Vanderwall
c/o Tyro Mine
P.O. Box 9006-KS
Bullhead City, AZ 86430
January 19, 1983

Robert W. Hughes, President
The Equitable Corporation
612 East Carson Avenue
Las Vegas, Nevada 89101

Dear Bob:

Geological mapping of the current mining levels based on blast hole sample assay results has substantiated the existance of a continuous ore zone averaging greater than 0.10 ounces gold per ton which traverses the mining levels in a meandering fashion. The zone is entirely contained within the larger quartz-calcite vein and varies in thickness from a maximum of fifteen feet to less than one foot. The average width is calculated to be eight feet along a horizontal distance of over 120 feet exposed by present activity. Furthermore, the depth appears continuous along the face of the existing 130 foot deep open cut which borders current activities to the north and was, no doubt, the object sought by previous operators. To the south, beyond the area of present operations, no statistics are available for interpretation but geological mapping has shown the quartz-calcite host vein to continue southward for a distance of more than 800 feet and preliminary surface sampling results indicate the target zone may continue unbroken with the vein. Exploratory drilling is necessary to delineate the target zone.

Blasthole mapping has shown the contact of the zone of ore within the larger vein is gradational. By reducing the cut off grade from 0.10 ozs. Au/ton to 0.07 ozs. it is possible to increase the ore zone to average 25 feet. While this width is amenable to surface mining the meandering nature of the ore zone is such that continued sampling and assaying of blast hole ejecta would be necessary.

Since my appointment to Laboratory Supervisor it has been necessary to expend a good deal of time in the organization of the lab. It is clear from the preliminary metallurgy previously performed that additional ore testing is advisable. It it is possible to grind our ore coarser, and maintain current recoveries, less time would be required per ton in the crushing/grinding circuit and hence more tons could be processed in a given time.

Also, if our waste from the mine is suitable for a conventional heap leach additional values could be recovered without expanding current operations to a great extent. Towards these ends I have been training Ed McRann, assayer to perform various laboratory tests, i.e. sampling, screening and weighing techniques as well as statistical handling of data. Eventually he will be responsible for acquiring and interpretating the data generated by column leach experiments. Coincidently, Fred Copeland, our Chief Assayer, has been training millhands in the methods of accurately determining solution chemistry. He is also renovating our atomic absorption machine which will eventually handle all solution assays and base metal assays from the Cerbat ore.

The Bureau of Land Management has approved our plan to increase the tailings disposal area and the preliminary construction has been completed. The impoundment area is completed, the pipeline route surveyed and inside surface area calculated. It appears necessary to at least partially line the pond to insure recapture of water. An economic feasibility study is underway to determine the least expensive method of insuring water recycling.

With respect to our discussion concerning the acquisition of additional properties in the Cerbat Range, preliminary negotiations with the representative of the owner of the Chico property indicates we would be able to obtain an option on the property for providing this year's assessment work. If an agreeable option can be obtained, I recommend exploratory drilling on two prominent veins on the property, the Mint and the Cashier, both convenient to our proposed haulage road. Also in the immediate area, I recommend looking into options on the Detroit Mine, Section 31, T 23 N, R 17 W; the Alpha Mine, Section 32, T 23 N, R 17 W; and the De La Fontaine, Section 5, T 22 N, R 17 W; all located on the western side of the Cerbats convenient to the proposed haulage road. On the eastern side, in the vicinity of the fountain head, I recommend acquiring inexpensive options on the Stockton Hill properties of Sharon Steel; the copper and gold mine, Section 33, T 23 N, R 17 W; and the state lease on Section 32, T 23 N, R 17 W. These recommendations are based on past production and history, geological setting and on unsubstantiated verbal communications with local people of reputation. All these properties should be considered prospects and will need drilling to identify and delineate ore. I can acquire additional information on these properties upon request.

Chuck Fraley has informed me that soon my time will be divided between the Tyro and the Kingman operation. I am looking forward to getting underground again and foresee no problem although my responsibilities at the Tyro will require the greater portion of my time. I will have to delegate some responsibilities to the Lab people which I now assume and some to the Chief Driller, but I am confident that they are capable people.

I will require a four wheel drive vehicle if I am to do much field work in the Cerbats as my van has only a limited range in those hills.

Finally, I wish to commend Ken Hall for sharing his broad and exact knowledge with me while organizing the ore testing and tailings disposal projects. He is a most valuable asset to us.

Sincerely,

William Vanderwall

February Report
Tyro Mine

Ore Grade Analysis:

Geological mapping of blasthole assay results has consistently shown an ore zone of mineable width which averages greater than 0.07 ounces gold per ton (See Blasthole Assay Map #5). With the exception of the period 2/19/83 through 2/26/83, when virtually no dilution occurred (See Production Statistics for that period), comparison of blasthole assays and mill head assays shows 20% - 30% dilution. Although some dilution is inevitable the 20% - 30% figure is considered too high and every effort should be practiced to keep dilution to a minimum.

Blasthole Assay Map #5 represents a composite of all Blasthole Assay Maps drawn to date and clearly delineates the vein. Although the vein undulates, it is of sufficient size to accomodate surface mining while minimizing dilution. The fact that ore grade at the mill is lower indicates dilution occurs during the mining and loading operations or during the transfer of ore from the ore stockpile to the grizzly, or both.

To improve ore grade more selective mining techniques must be practiced, perhaps removing waste prior to ore would eliminate the sloughing off of loose waste from the walls into the ore zone. Loader operators, both at the mine and the mill, must exercise disgression in transfering ore. Care must be taken not to dig country rock from the wall and floor of the loading area. Since dilution was minimal during the last week, a 10% dilution factor should be maximum.

Tailings Analysis:

Mill statistics indicate values lost to tails have exceeded 0.02 ounces gold per ton during the month of February. This situation appears to have been alleviated by increasing the amount of cyanide in the system. Cyanide was increased to 1.25 lbs./T slurry from 0.80 lbs/T with a resulting drop in tails values from 0.21 ozs. Au/T on 2/23 (186 lbs. CN) to 0.006 ozs. Au/T on 2/25 (1.35 lbs. CN). This information is based on limited data and additional laboratory testing is underway to verify that the problem has, indeed, been corrected.

Other factors which may have contributed to high tailings values are:

Leaking valves in the stripping circuit which caused "stripped" carbon, being transfered to #4 CIP tank, to actually enter the tank relatively loaded with precious metal thereby reducing the effectiveness of this final adsorbtion. This allows solution with some residual values to escape with the tails. These values are not totally lost since the solution is recirculated. At any rate this problem is being corrected by the replacement of the worn out valves.

Particle size analysis shows a decrease in finely ground material (% less than 200 mesh dropped to below 50%). Since recovery depends on contact with values and cyanide maintaining a fine grind to

liberate values is essential. Laboratory testing indicates an acceptable recovery (86%) can be accomplished by grinding to 55% - 200 mesh. However, this is preliminary data, further testing is underway to conclusively determine optimum particle size.

Finally, high tailings values could be resulting from inactive carbon in the CIP tanks. Laboratory tests are planned to determine the activity of the carbon. If activity is low a transfusion of activated carbon may be required.

Recovering Additional Values From Tails:

Since solution containing residual values is discharged with tails and ultimated recirculated, it is suggested that carbon adsorbtion columns be implaced in the tailings pond water reclaimation line. This would recover values from the water and free up cyanide to act on new material in the ball mill. In addition to recovering values this system would effectively increase cyanide strength at the ball mill and could lower cyanide cost.

Also, since tails settle in the pond to approximately 60% solids, 40% liquids (barren solution) there exists a possibility to rinse or dewater tails and recover this 40%. Laboratory data indicates barren solution contains .008 ozs. Au/T, if this were recovered an additional 0.96 ozs. Au could be won per 300T of tails. Most effective recovery would entail rinsing and dewatering by use of a rinsing centrifuge. However, situation economics may require simple rinsing which would leave tails with 40% fresh water. Simple rinsing could be accomplished by filling the northernmost tailings pond with fresh water and pumping tails onto the surface of the pond so as the particles settled they would be rinsed. By maintaining fresh water inflow equal to outflow to the mill a barren solution equalibrium would be established that is half as valuable as the present solution.

Exploration Results:

Geological mapping and surface sampling of the northeast extremity of the Tyro vein (See Exploration Proposal - NE Tyro Vein Map) indicates this area to be an excellent exploration target when equipment and manpower are available.

Surface samples across vein exposure on 15 foot intervals show average values to exceed 0.15 ounces gold per ton and average vein width to exceed 10 feet. Since surface sampling is somewhat unreliable, due to enrichment phenomenon, and exposed vein width and true vein width may differ considerably, due to alluvial cover, it is recommended that the vein be drilled to determine true value and width. Vein depth is assured by exposure to a depth of 130 feet in the open pit on the Southwest and outcrop exposure on the Northeast. Therefore, a potential of up to 80,000 tons of ore exists, possibly more, if the vein widens with depth as it appears to do on the Southwest exposure. Air track drilling to intersect the vein at depths of 15 feet and 45 feet would establish a reliable tonnage and grade estimate. Thirty-five to 70 holes would be required, a drill road built and two weeks time, maximum.

If the vein proved economic, underground mining could initially extract limited quantities of ore which could be used to upgrade

open pit ore mined at the present location. Eventually, shrinkage stoping could produce sufficient daily tonnage to become reliable mill feed.

Observations:

Three days each, for two weeks this month I have accompanied the afternoon crew at work and make the following observations:

The CIP operator position requires a person with some skill in analytical techniques and should have some background in mathematics and chemistry. The operator must be responsible and hard working as the job requires constant attention. Since this operator is responsible for maintaining the CIP system, cooking and electrowinning he should be well versed in the chemical and physical parameters involved.

The Ball Mill operator requires less skill in analytical techniques and, as I see it, is less demanding of a position both in time and intellect. Of course, he must know the ball mill operation and the principles of cyanide leaching. It seems that, unlike the CIP operator, this operator could be given additional tasks to perform without jeopardy to the ball mill. Such tasks might include checking and maintaining water tank and cyanide tank levels, additional ball mill feed belt sampling and density samples, maintaining ball mill feed, loading ball mill feed and conveyor belt maintainence.

Lead Men appear to me, to be an extra man on the crew. After six days of observation, I am still unaware of the need for Lead Men on afternoon and night shifts.

After a very brief exposure, and by no means am I speaking from a position of experience, I would suggest consideration of the following: Reduce the crews from three to two men, transferimgg the Lead Man to the position of Ball Mill operator or CIP operator, whichever he is best qualified for and transfer the two extra men to jobs for which they are more appropriately suited.

Respectfully submitted,

William Vanderwall
Registered Geologist
State of Arizona, No. GIT34

April 15, 1983

Robert W. Hughes, President
The Equitable Corporation
612 E. Carson Ave.
Las Vegas, Nevada 89101

Dear Bob:

Please recall my reports concerning geological observations at the Tyro Mine, i.e., ore genesis, structural relationship, mineralogy and vein texture, and subsequent development statistics dated December 22, 1982, and January 19, 1983, respectively. These reports established the need to conduct further geologic mapping, sampling and drilling to ascertain the limits of producible ore. Since that time development work has been ongoing and data generated in the actual mining process has delineated producible ore to the southwest. The northeast extension of economic mineralization is yet to be determined. However, I am confident that gold mineralization extends in that direction.

SOURCE OF DATA

Conclusions contained in this letter are based on actual mine statistics generated by assaying and mapping rock chips, or cuttings, produced while drilling blast holes necessary to excavate ore. These assays are then verified by mill assays of the ore shipped from the mine coincidental to the processing procedure. Since January, 1983, over feet of drillhole material has been assayed by nearly separate assays. Furthermore, weekly geologic maps are drawn from this assay data. Since blastholes are drilled on four foot intervals the geologic maps are very accurate.

Conclusions are also based on previous work done on the property, namely, mining conducted from 1938 to 1941, when 213,000 tons of ore was mined and shipped from a zone extending 300 feet northeasterly from the area of this report, and exploration data generated by The Equitable Corporation during the economic feasibility study conducted prior to reopening the Tyro Mine. Both of these sources are considered reliable.

STATISTICAL TREATMENT OF DATA

Proven ore reserves are typically determined by sampling at least three sides of an ore block. In this case the surface side has been thoroughly sampled by blasthole assays, the northeast side by previous mining and the bottom side by exploration sampling of underground workings. These measurements and assay values are then mathematically converted to

tonnage and grade. This exercise yeilds an ore block, which is presently being mined, containing 72,324 tons of ore averaging o.10 ounces gold per ton. (See attachment I for measurements and assay values.)

DEVELOPMENT ORE

From the data collected to date it seems probable that material previously considered to be low grade, marginal, development ore is, indeed, economic. The term, development ore, referring to that material lying between the surface and the 130 foot level below which lies ore belonging to the miner participants. As it is necessary to remove this ore to provide access to the underlying miner participant orebody it is fortuitous that a large portion of this material will be economic. I, therefore, recommend we follow the engineer's mine plan as explained in Attachment I. This plan requires the excavation of somewhat more material than was initially anticipated but much of this material will be ore. Also, upon reaching the 130 foot level we will have a full 60 feet of working width thereby enableing the use of larger equipment and the handling of larger quantities of ore, subsequently lowering the cost per ton of ore mining and handling. This, of course, will optimize profit to the miner participants.

Respectfully submitted,

William Vanderwall
Registered Geologist
State of Arizona

WV/bh

ATTACHMENT I

SURFACE MINE PLAN FOR DEVELOPMENT ORE

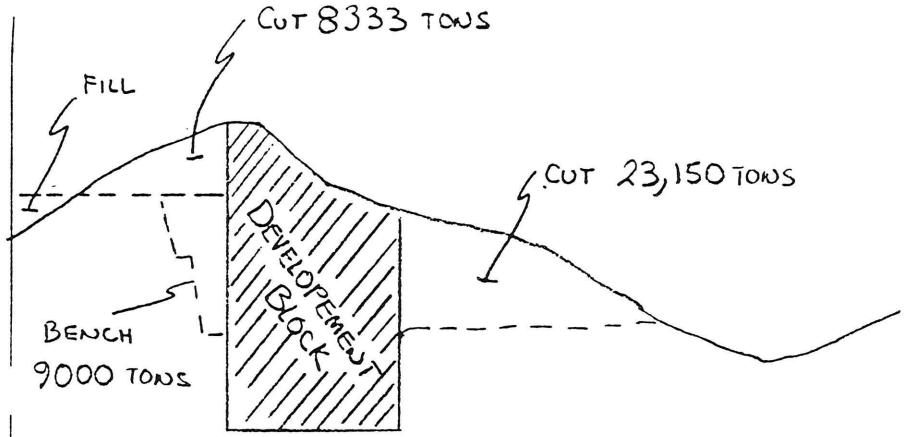
The block immediately south of the old Tyro Pit is mineralized to ore values for approximately 100' south. The width of this zone averages 73' and the average height is 107'. This gives a mineable tonnage of 72,324 tons, using 2.5 tons per cubic yard of ore. (See Fig. 1)

The first step will be (currently being done) to strip waste to the east, west and south to an elevation of 2700'. The overburden will be pushed west, south and southeast into the canyon. The mining technique we are and will continue to use consists of drilling 10 to 20 foot lifts in ore and waste and taking both concurrently. The ore and waste are drilled out, the drill cuttings assayed, then the ore plotted and blasted out. After removal of the ore, the waste is then shot and removed.

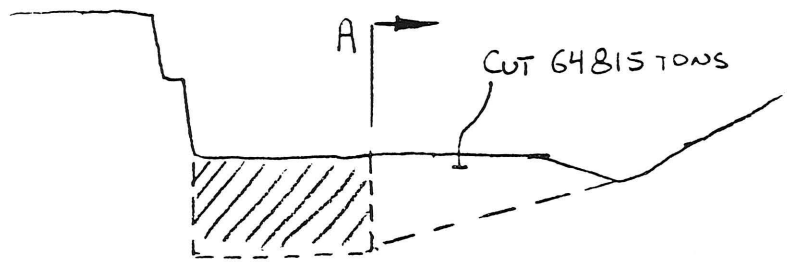
Step 1 (See Fig. 2) consists of the removal of 40,000 tons of ore in 10' lifts in conjunction with the stripping of 40,500 tons of waste, a ratio of nearly 1 : 1.

The second step will be to bench the waste east of the ore block and cut a ramp at about 10% grade from the east canyon floor to the 2658 level. Again, this will be done in 10' lifts where possible to better maintain ore grade and keep bench and pit walls as low as possible. This method will also allow for picking up any ore which may run to the east of the development block without it being irretrievably lost in the waste piles.

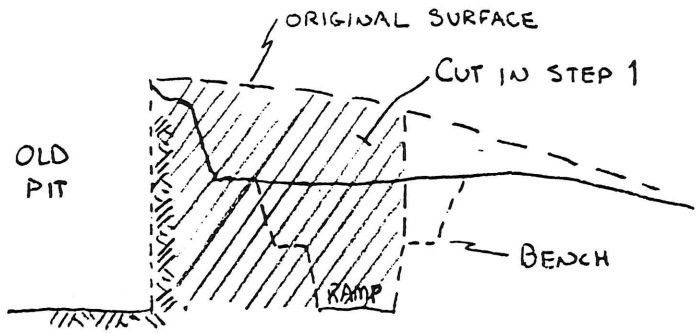
Step 2 will result in removal of 32,000 tons of ore and 64,815 tons of waste, an ore to waste ratio of 1 : 2.03. Total ore to waste ratio for both steps is 1 : 1.456, which is a very favorable ratio and a result of the location of the ore zone in the center of a relatively high ridge; indeed, the very existence of the ridge is a result of the high resistance of the ore contained within it.



STEP 1 - DEVELOPEMENT PLAN
VIEW LOOKING NORTH



STEP 2 - DEVELOPEMENT PLAN
VIEW LOOKING NORTH
A L



STEP 2 - DEVELOPEMENT PLAN
SECTION A-A

FIGURE 2

MINE PLAN ~ TYRO MINE

DEVELOPEMENT ORE

SUBJECT
SHEET NO. OF
JOB NO.
BY DATE
CHKD. BY DATE

SHEET NO. ____ OF ____

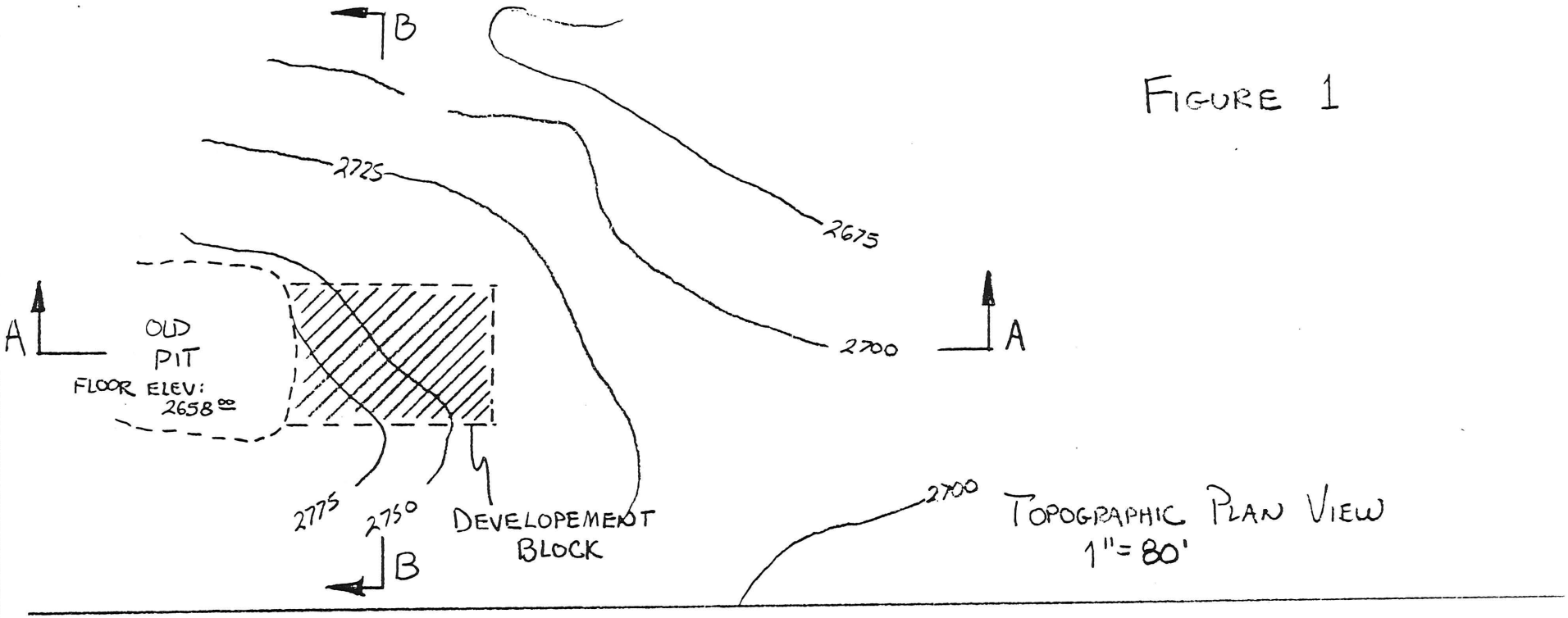
JOB NO. ____

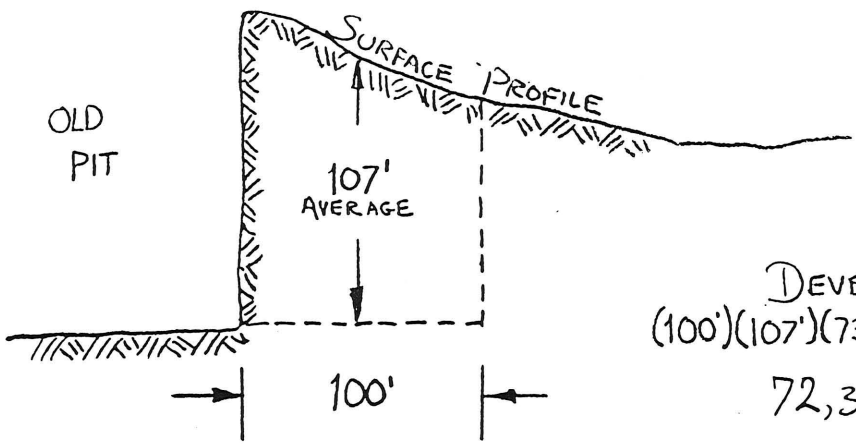
SUBJECT ____

BY ____ DATE ____

CHKD. BY ____ DATE ____

FIGURE 1



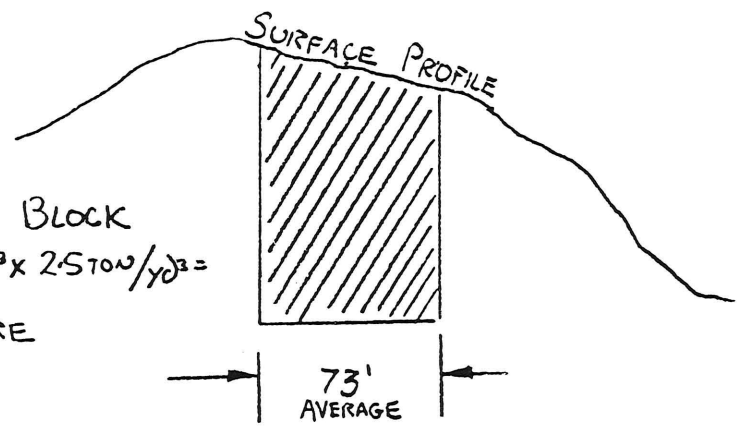


SECTION A-A
LONGITUDINAL VIEW 1" = 80'

DEVELOPEMENT BLOCK

$(100')(107')(73') \div 27\ yd^3/FT^3 \times 2.5\ TON/yd^3 =$

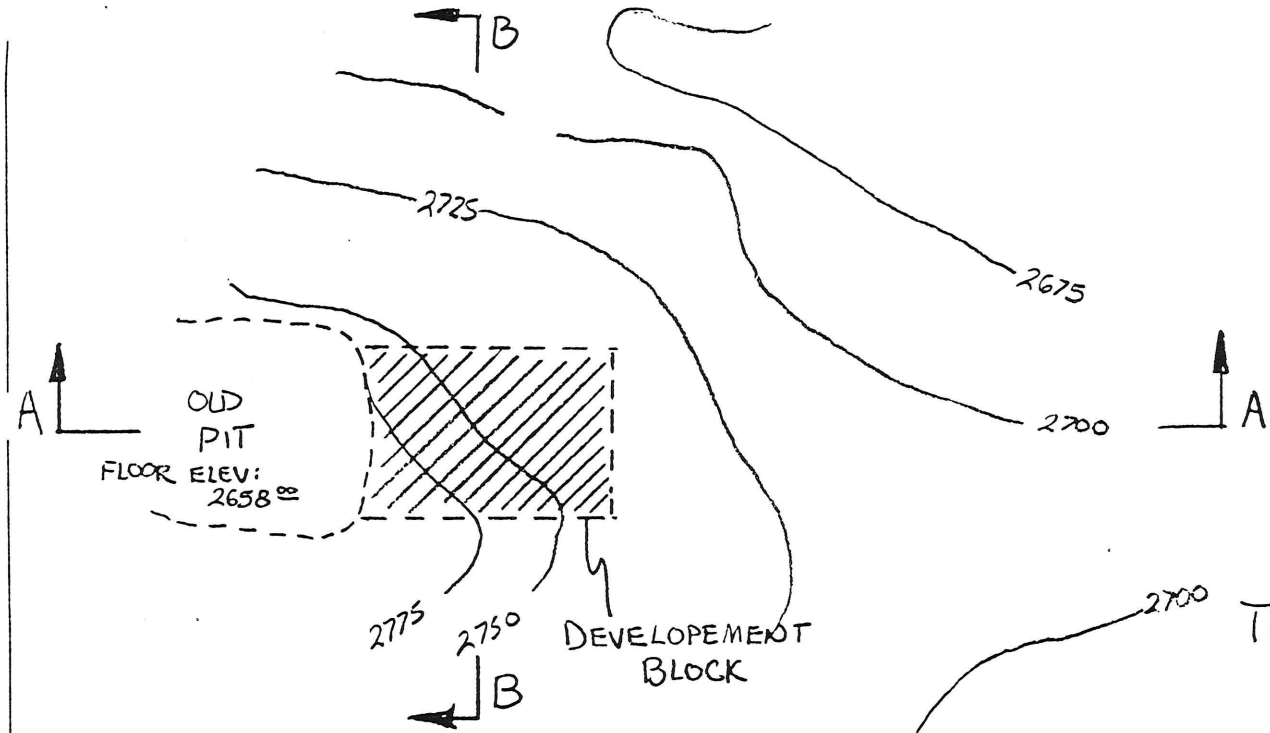
72,324 TONS ORE



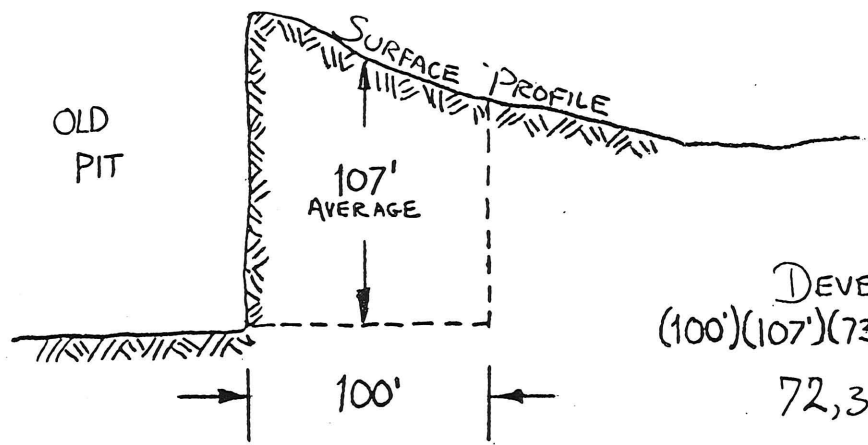
SECTION B-B
CROSS SECTION 1" = 80'

SHEET NO. ____ OF ____
JOB NO. ____
SUBJECT ____
BY ____ DATE ____
CHKD. BY ____ DATE ____

FIGURE 1

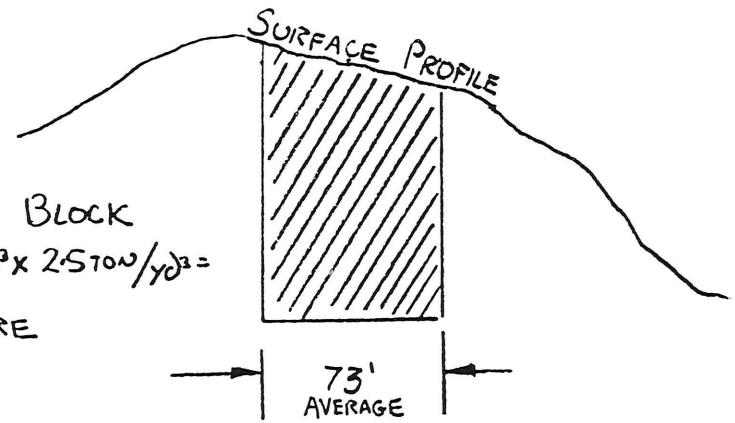


TOPOGRAPHIC PLAN VIEW
1" = 80'

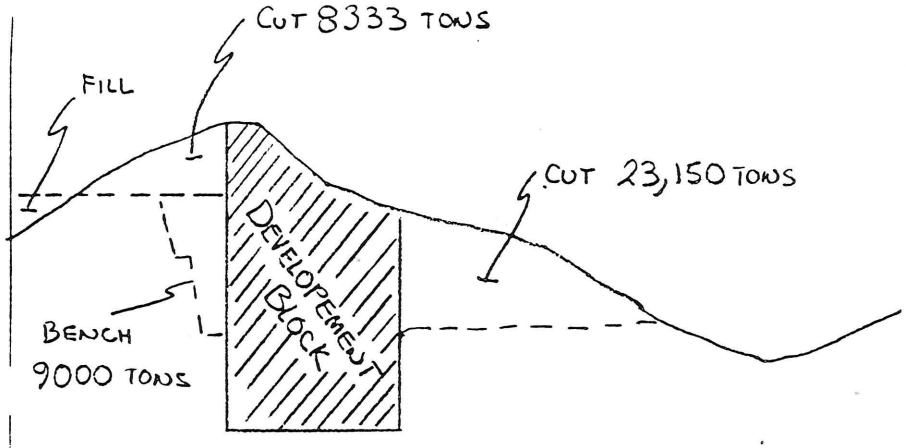


SECTION A-A
LONGITUDINAL VIEW 1" = 80'

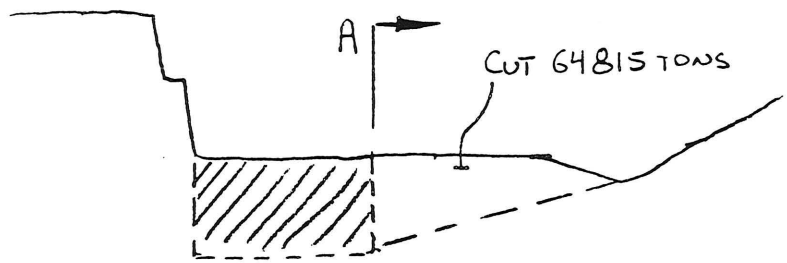
DEVELOPEMENT BLOCK
$(100')(107')(73') \div 27\ yd^3/ft^3 \times 2.5\ TON/yd^3 =$
72,324 TONS ORE



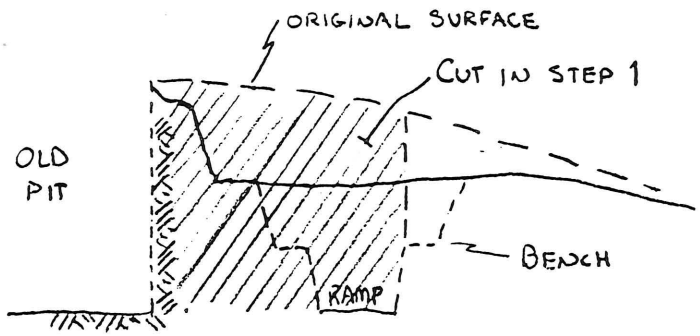
SECTION B-B
CROSS SECTION 1" = 80'



STEP 1 - DEVELOPEMENT PLAN
VIEW LOOKING NORTH



STEP 2 - DEVELOPEMENT PLAN
VIEW LOOKING NORTH
A L



STEP 2 - DEVELOPEMENT PLAN
SECTION A-A

FIGURE 2

MINE PLAN ~ TYRO MINE

DEVELOPEMENT ORE

SUBJECT
SHEET NO. OF
JOB NO.
DATE
BY CHKD. BY DATE

May 1, 1983

OFFICE MEMO

FROM: Bill Vanderwall

During the past two weeks we have been benching the sides of the pit as required by law. The assay results from these drillholes indicates this waste material will average about 0.04 ounces gold per ton. Taken by itself this material is non-economic, however, if we mix the 0.04 material with the 0.08 mined ore in equal proportions we could ship 0.06 oz. gold per ton material to the mill. This exercise would, in effect, double our ore reserve estimates, lower our per ton cost overall and increase our bullion production by about 60%, if we double mill capacity to 600 TPD.

With this in mind I have taken the liberty to perform a few simple laboratory tests on this ore blending. On a Laboratory basis, I have obtained favorable results. First the lower grade material is less abrasive therefore crushing a 50 - 50 mix is not as hard on the crushing - grinding circuit as crushing straight 0.08 oz. material. In other words, doubling the amount of mill feed would not double the cost per ton of milling the ore.

Second, recovery, on a Laboratory basis, remains about the same at 80% so we would not lose any additional values.

Third, make up chemicals would not be doubled since the concentration of precious metal values per ton would decrease, the cyanide concentration could be decreased by an equal percentage.

Also, labor, power and mill supplies would increase only nominally since our present crew and equipment, with some additions, could handle the increased work load.

There are,however, several factors which must be determined before the advisability of doubling mill capacity can be established. Obviously, considerable capital expenditures are required to double production.

The crusher circuit must be reengineered and closed to produce 600 TPD of -¼" ball mill feed. The grinding circuit must be doubled by installing another ball mill. Cyanide and lime feeders must be re-designed to be capable of automatic, controlled chemical delivery. The agitation circuit must be made more effective, possibly by addition of agitation tanks or existing tanks equipped with special agitators enabling maximum recovery in half the present agitation time. The carbon

stripping circuit must be increased and a carbon reactivation system installed.

Lastly, and most critically, is a reliable water source must be acquired, water storage facilities constructed at the mine and the water system, within the mine, reengineered.

Therefore, it is recommended that 0.06 oz. gold per ton blend be tested at a rate of 300 TPD in the present system to determine crusher wear, ball mill discharge particle size, agitation and carbon tank residency time and recirculation water availablilty. Concurrently the laboratory will determine physicochemical parameters of the solutions.

At this time it is not known whether or not this ore blending is economical.

May 15, 1983

Robert W. Hughes, President
The Equitable Corporation
612 E. Carson Avenue
Las Vegas, Nevada 89101

Dear Bob:

Pursuant to our numerous conversations concerning the sudden drop in the static water level in our well, the Katherine Mine, and the coincidental loss of recharge volume, I submit the following facts.

The water level in the shaft is down 10 feet from previous measurements and inflow to the mine has been reduced by two-thirds. This means, unfortunately, that the maximum amount of water available to the Tyro is 60 tons per day or enough water to process about 120 - 150 tons of ore depending on the quantity of water we are able to recover from tailings.

The only plausible explanation for this sudden occurence is that the mine has collapsed below pump level and sealed off the upper portion of the mine from inflowing water. This would drastically reduce inflow to the upper shaft and alter the static level accordingly. Since a slough off seems to be the case and we experienced the difficulty just after the earthquake in California, I suspect the resulting shock wave has caused the water soaked mine walls to fail.

It is possible the water pressure will eventually clear a passageway through the cave in, in fact I suspect it will, but it is impossible to predict when this will happen. It has been 10 days since the collapse and we have detected no increase in inflow with our instruments.

Therefore, I have obtained permission from the Bureau of Reclamation to withdraw enough water from Lake Mohave to resume normal operations and have made arrangements with them to obtain a 5 year water allotment, renewable, in 5 year increments, for up to 20 years.

As you know our present pipeline terminates about one mile from the Lake, so to obtain the water we will have to extend our line, put a pump in the lake and string electrical cables. Permits are underway to allow our doing this. At this time I can only guess the cost will be about $50,000. That's not so expensive when you consider we lose $4,000 per day every day we are running at one-third capacity.

Permits from the National Park Service and the Corp of Engineers will take two to four weeks but will be forthcoming. I have people pricing pipe and cable as well as two Engineering firms coming out to bid the actual setting of the pump, electrical hook-ups and other technical work. The Tyro, of course, will provide the trenching and laying of pipe.

If all goes well, we will be back in full production with an adequate and inexhaustible water supply within six weeks.

During this time, The Tyro will run at one-third capacity, or more. By cutting the work force as much as possible and running our highest grade ore it is likely we can produce enough bullion to pay operating costs and possibly a little of the pipeline costs as well.

Sincerely,

William Vanderwall
GOLD STANDARD MINES CORP.
Project Manager

WV:bh

GOLD STANDARD MINES CORP.
P. O. BOX 9006-KS
BULLHEAD CITY, AZ 86430
(602) 754-2608

June 9, 1983

Robert W. Hughes, President
The Equitable Corporation
612 E. Carson Avenue
Las Vegas, Nevada 89101

Dear Mr. Hughes:

After much deliberation, I am of the opinion that, with the following modifications and improvements, the Tyro Mill is acceptable to Gold Standard as an operable plant.

1. Water must be provided to the mill in sufficient quantity to enable the processing of 500 tons of ore per day. Water must be piped onto the premises and deliverable at no less than 85 gallons per minute. This quantity of water, 75 acre feet per year, must be available for 5 years or more.

2. Primary (Jaw) Crusher must produce 500 TPD, -2 inch product, continuously, without excessive down time. Secondary (Cone) Crusher must produce 500 TPD, -1 inch product, continously, without excessive down time. Tertiary crusher must be installed to produce 500 TPD, 100% - 3/8 inch product, exclusively stockpiled as fine ore.

3. Present Ball Mill must be refitted with new liners and must be capable of producing 500 TPD, 80% -200 mesh ground material from fine ore stockpile, without excessive down time.

4. All critical pumps must be provided with replacement parts with an average expected life of 6 months or less.

5. All critical compressors providing agitation and CIP air must be in good working order.

6. Plastic plumbing now present in the carbon stripping circuit must be replaced by stainless steel.

7. Carbon inventory must amount to no less than twice the minimal system charge.

8. Cyanide and lime feeders must operate efficiently to maintain desired chemical levels.

GOLD STANDARD MINES CORP.
P. O. BOX 9006-KS
BULLHEAD CITY, AZ 86430
(602) 754-2608

February 1, 1993

OFFICE MEMO
FROM: Bill Vanderwall

PRODUCTION STATISTICS
TYRO MILL
January 1, 19 3 through Jan. 31, 19 3

Date	Heads Au.ozs/T	Tails Au.ozs/T	Tons Processed	Au In Heads	Au Out Tails	Net Au
1/2-1/8	.044	.024	1671	73.52	49.19	33.42
1/9-1/15	.059	.010	1231.9	72.7[illegible]	22.1[illegible]	50.51
1/16-1/22	MILL DOWN FOR REPAIRS					
1/23-1/29	.071	.012	720.4	51.15	1.14	42.51
1/30-1/31	.046	.041	556.3	25.59	22.21	2.13
TOTALS	.053 Avg.	.022 Avg.	4179.[illegible]	232.94	03.72	129.22

AVERAGE HEADS = Total Au Heads / Total Tons = 222.94 / 4179.5 = .053

AVERAGE TAILS = Total Au Tails / Total Tons = 93.12 = .022

% RECOVERY = Net Au Divided by Avg. Heads X 100 =
Total Tons

129.12 / 4179.6 Divided by .053 X 100 = 52.33%

GOLD STANDARD MINES CORP.
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(602) 754-2608

March 1, 1983

OFFICE MEMO
FROM: Bill Vanderwall

PRODUCTION STATISTICS
TYRO MILL
February 1, 1983 through February 23, 1983

Date	Heads Au.ozs/T	Tails Au.ozs/T	Tons Processed	Au In Heads	Au Out Tails	Net Au
2/1 - 2/5	.069	.019	845.9	58.3	16.07	42.30
2/6 - 2/13	MILL DOWN					
2/13 - 2/18	.060	.034	1230.2	73.21	41.83	31.93
2/18 - 2/28	.075	.022	2263.7	169.78	49.80	119.98
TOTALS	.069 Avg.	.024 Avg.	4339.8	301.96	107.25	194.71

AVERAGE HEADS = $\frac{\text{Total Au Heads}}{\text{Total Tons}} = \frac{301.96}{4339.8} = .069$

AVERAGE TAILS = $\text{Total Au Tails} = \frac{107.25}{4339.8} = .024$

% RECOVERY = Net Au Divided by Avg. Heads X 100
Total tons

$\frac{194.71}{4339.8}$ Divided by .069 X 100 = 65.02%

NOTE: Increased Cyanide to 1.25 lbs/ton on 2/25/83 resulting in tails values decrease by nearly 50%. Since temperature increase is proportional to consumption of cyanide, I suspect as summer approaches cyanide demand will increase.

GOLD STANDARD MINES CORP.
P. O. BOX 9006-KS
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(602) 754-2608

April 1, 1983

OFFICE MEMO
FROM: Bill Vanderwall

PRODUCTION STATISTICS
TYRO MILL
March 1, 1983 through Mar. 31, 1983

Date	Heads Au.ozs/T	Tails Au.ozs/T	Tons Processed	Au In Heads	Au Out Tails	Net Au
2/28-3/6	MILL DOWN					
3/7-3/13	.091	.019	1613	147.03	32.97	114.99
3/14-3/15	.073	.91	613.3	44.97	3.77	34.72
3/16-3/22	MILL DOWN					
3/23	.092	.222	199.7	12.37	9.18	13.10
3/24-3/31	MILL DOWN					
TOTALS	.030 Avg.	.919 Avg.	3025.0	309.88	40.88	132.39

AVERAGE HEADS = $\frac{\text{Total Au Heads}}{\text{Total Tons}} = \frac{309.69}{2625.9} = .000$

AVERAGE TAILS = $\frac{\text{Total Au Tails}}{\text{Total Tons}} = \frac{46.93}{2625.9} = .010$

% RECOVERY = $\frac{\text{Net Au}}{\text{Total Tons}}$ Divided by Avg. Heads X 100

$\frac{162.86}{2625.9}$ Divided by .000 X 100 = 62%

NOTE: Blasthole assays indicate ore mined contains values 21% greater than ore processed at the mill. This indicates dilution is occuring during the mining and loading process.
To improve ore grade more selective mining, loading and ore transfer techniques must be practiced.

GOLD STANDARD MINES CORP.
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May 1, 1933

OFFICE MEMO
FROM: Bill Vanderwall

PRODUCTION STATISTICS
TYRO MILL
April 1, 1933 through April 30, 1933

Date	Heads Au ozs./T	Tails Au. ozs./T	Tons Processed	Au In Heads	Au Out Tails	Net Au
4/1-19	MILL DOWN AGITATION TANKS PUMPED TO CIP - 700 TONS					
	.080	.028	700	56.00	19.60	36.40
4/20-26	.091	.035	304.5	27.71	10.66	17.05
4/27-30	MILL DOWN					
TOTALS			1004.5	83.71	30.26	53.45

AVERAGE HEADS = $\frac{\text{Total Au Heads}}{\text{Total Tons}} = \frac{27.71}{304.5} = .091$

AVERAGE TAILS = $\frac{\text{Total Au Tails}}{\text{Total Tons}} = \frac{30.26}{304.5} = .035$

% RECOVERY = Net Au Divided by Avg. Heads X 100
Total Tons

$\frac{17.05}{304.5}$ Divided by .091 X 100 = 56%

NOTE: High tails values are attributed to;
1. Pumping down agitation tanks with high percentage of oversize material.
2. Poor performance of cyclone after shut down due to dilution of slurry.

July 15, 1983

OFFICE MEMO

FROM: Bill Vanderwall

PRODUCTION STATISTICS
TYRO MILL
June 1 through June 30, 1983

Date	Heads Au oz/T	Tails Au oz/T	Tons Processed	Au In Heads	Au Out Tails	Net Au
6/1-6/4	.075	.012	532.1	39.91	6.385	33.52
6/5-6/11	.070	.020	897.5	62.83	17.95	44.88
6/12-6/18	.064	.031	868.1	55.56	26.91	28.65
6/19-6/25	.059	.036	865.1	51.04	31.14	19.90
6/26-6/30	.050	.016	573.7	28.69	9.18	19.51
TOTALS	.064 Avg	.025 Avg	3736.5	238.03	91.57	146.5

Average Heads $\frac{\text{Total Au Heads}}{\text{Total Tons}} = \frac{238.03}{3736.5} = .064$ oz/T

Average Tails $\frac{\text{Total Au Tails}}{\text{Total Tons}} = \frac{91.57}{3736.5} = .025$ oz/T

% Recovery $\frac{\text{Net Au} \div \text{Avg. Heads}}{\text{Total Tons}} \times 100 =$

$\frac{146.5 \div .064}{3736.5} \times 100 = 61.26\%$

Note: Decreasing head values during the month is attributed to necessary excavation of marginal ore to maintain the loading area at a suitable elevation lower than the mine level.

High tails values for midmonth are a result of small amounts of copper and zinc found to be contained in the ore. Independent laboratory testing has established approximately 0.005% copper in altered wallrock adjacent to the vein and as much as .004% copper in the vein. Additional cyanide has resolved the problem. Geologically, the copper alteration appears transitory in nature and will not persist with continued mining.

Accumulation of copper, zinc and iron in the stripping and electrowinning circuit had altered the composition of the cathodes to such a degree that normal Tyro flux would not oxidize the base metal component of the cathodes. A complete transfusion of stripping solution was required.

OFFICE MEMO

FROM: BILL VANDERWALL

PRODUCTION STATISTICS
TYRO MILL
July 1 through July 31, 1983

Date	Heads Au oz/T	Tails Au oz/T	Tons Processed	Au In Heads	Au Out Tails	Net Au
7/1-7/2	.074	.014	169.3	12.53	2.37	10.16
7/3-7/7	.068	.013	498.1	33.87	6.48	27.39
7/8-7/14	MILL DOWN - LINER REPAIR					
7/15-7/16	.056	.012	302.6	16.95	3.63	13.32
7/17-7/23	.080	.017	892.6	69.81	15.17	54.64
7/24-7/31	.059	.012	1102.0	65.02	13.22	51.80
TOTAL	.067	.014	2964.6	198.18	40.87	157.31

Avg. Heads $\frac{\text{Total Au Heads}}{\text{Tons Total}} = \frac{198.18}{2964.6} = .067$ oz/T

Avg. Tails $\frac{\text{Total Au Tails}}{\text{Total Tons}} = \frac{40.87}{2964.6} = .014$ oz/T

% Recovery $\frac{\text{Net Au}}{\text{Total Tons}} \div \text{Avg. Heads} \times 100 = \frac{157.31}{2964.6} \div .067 \times 100 = 79.20\%$

NOTE: Due to decreasing water supply in the Katherine Mine and increased weekend water demand by residents of the Resort Lands it has been necessary to curtail or reduce production time on weekends.
Ball Mill down 7/22,23 because of no ore.

Total hours of Ball Mill running time totaled 301.75.

Total Dore production for month was 568.43 ozs.

Ounces of Dore per hour of running time is 1.88.

GOLD STANDARD MINES CORP.

P. O. BOX 9006-KS
BULLHEAD CITY, AZ 86430
(602) 754-2608

OFFICE MEMO

From: M. Vanderwall

PRODUCTION STATISTICS
TYRO MILL

August 1 - August 31, 1983

Date:	Head Au	Tails Au	Tons	Au in	Au out	Net Au
8/1 - 7	.073	.011	801.4	58.50	8.82	49.68 ozs.
8/8 - 14	.065	.009	1007.8	65.51	9.07	56.44
8/15- 17	.058	.011	324.0	18.79	3.56	15.39
8/18- 21	Down - out of ore					
8/22- 26	.077	.012	485.5	37.38	5.83	21.59
8/26- 31	Down - scheduled maint. &bmodifications					
Total			2618.7	180.18	27.28	152.9
Average	.069	.010				

Average Heads: $\frac{\text{Total Au In}}{\text{Total Tons}} = \frac{180.18}{2618.7} = .069\text{ozs./ton}$

Average Tails: $\frac{\text{Total Au Out}}{\text{Total Tons}} = \frac{27.28}{2618.7} = .010\text{ozs./ton}$

Percent Recovery: 84.62

Note: Ever decreasing water supply from the Katerine Mine and increased water demand from local residents has necessitated reduced production on weekends.

Total hours of ball mill running time: 273.5
Total Dore produced Aug 8 - Sept 5: 769.37ozs.
Ounces of dore per hour of running time: 2.81ozs.

It is anticipated that the mill will remain down during the month of September for necessary repairs, improvements and modifications.

Recharge to the Katherine Mine has not been sufficient to warrant expectations that accumulated water reserves would be sufficient, by the end of September, to enable 24 hour per day operations. It will be possible to resume 12 hour per day production on Katherine Mine water as soon as the crushing and grinding circuits are completed. It will be necessary to extend the water line to Lake Mohave to resume operations at +300TPD.

GOLD STANDARD MINES CORP.
P. O. BOX 9006-KS
BULLHEAD CITY, AZ 86430
(602) 754-2608

November 9, 1983

To: Robert Hughes, William Hiatt

From: William Vanderwall

Subject: Production Statistics October 1 - 31, 1983

Date	Heads	Tails	Tons	Au In	Au Out	Net Au
10/1-10	MILL DOWN scheduled maintenance					
10/11-15	0.084	0.014	689.5	57.92	9.65	48.27
10/16-23	0.076	0.012	1486.2	112.95	17.83	95.12
10/24-26	0.090	0.015	395.7	35.61	5.94	29.67
10/26-31	MILL DOWN Jaw Bearings Out					173.06
10/31	+700 tons of ore in Agitation Circuit.					
	Avg. Heads	0.08 oz/T Au				
	Avg. Tails	0.013 oz/T Au				
	% Recovery	83.75%				

Note Mill up on 10/11/83, Crusher Circuit producing approximately 32 Tons/Hr. 100% -½" product, ball mill feed averaging 10 tons per hour with 1.2 tons per hour +¼" rejects giving net ball mill discharge of 8.8TPH, 80% minus 200 mesh. Testing underway to increase ball mill feed without increasing rejects or possibly handling rejects in larger volume.

Mill down intermittently 10/11-15 to tighten liners and check for wear on new rubber liners. Wear appears normal and uniform.

Mill down 10/26-31 due to failure of the main bearings in the jaw crusher. Babbit bearing poured on 10/30. Jaw up 10/31 to break in new bearing, down immediately to replace motor.

Wear on cone liners in closed circuit is very heavy, will have to replace liners soon.

Katherine Mine water recharged to 320' during shutdown, drawn down to 353' on October 31. Mine water should be adequate until pipeline to Lake is operable or until late November.

Exploration southwest of the present pit, consisting of 10' air tract drillholes across the vein outcrop indicated no commercial ore present in that area. Drillholes from the northeast outcrop showed 40' averaging 0.086 ozs Au/ton. More drilling is underway to further delineate the northeast orebody.

Immediately, no problems are anticipated producing sufficient ore from the present mine location.

December 20, 1983

TO: Robert Hughes; William Hiatt

FROM: William Vanderwall, Tyro Project Manager

SUBJECT: Production Statistics, November, 1983

Due to several problems encountered by the Assay Office, namely lack of supplies and furnace malfunctions, calculation of production for the month of November cannot be accomplished by the usual method of weekly head and tail averages, since assays are extremely incomplete. Therefore, the following monthly averaging method was employed.

Basically this method tabulates known values and the tons related to those values and produces a known average. This average is then applied to total monthly tons as registered on the Techweigh digital counter. This exercise yields the following data:

Heads Average: 0.072 ozs. Au/ton
Tails Average: 0.014 ozs. Au/ton
Recovery: 80.56%

Total Tons (4006.11T) X 0.072 = 286.44 ozs. Au in
4006.11T X 0.014 = 57.85 ozs. Au out
228.59 ozs. Au net

While the above figure comes reasonably close to Smelter receipts for the month, which total 192.79 ozs. Au, the 35.80 ozs. discrepancy is accounted for by the following considerations.

1. Total tons, as cumulated, does not consider ball mill rejects, estimated to be 6 - 8% of total material passing over the scale. 286.44 ozs. X .07 = 20.05 ozs. Au.
2. Undersize carbon which escapes the CIP circuit but is recovered in the Sweco as -24 mesh +65 mesh fraction. This fraction, estimated to be 0.04 lbs/T of ore processed may amount to 1 - 2 ozs. Au per month.

3. Electrolitic cell mud, estimated from past production to contain 8 ozs. Au per month.
4. Carbon settling in the CIP tanks and inactive, estimated to be 2 - 4 ozs. Au per month. (Based on September, 1983, recovery when tanks were emptied and carbon recovered.)
5. Solution losses, Agitation Circuit, CIP Circuit and Stripping Circuit. Losses considered nominal.
6. Gold returned by Engelhard in slag and magnetite and copper contained in slag. Loss considered to equal savings earned by not refining steel wool on property.
7. Losses from tramp oversize eliminated prior to tails discharge, at woodscreen and sweco. Losses considered nominal.

Of course none of these losses are absolute, except part of Nos. 5 and 7, since material is saved or recycled.

Particle size analysis for the month indicate a satisfactory grind (80% -200 mesh) was accomplished except as ball charge was lowered toward the end of the month - this was necessitated by the dwindling stock of balls. This situation, as yet, remains and the grind, and hence, recovery is suffering. Recoveries of +84% in beginning November have been reduced to 75% by month's end.

The transition from Katherine Mine water to lake water caused a temporary chemical imbalance due to the fact that lake water is slightly more acid than mine water. Adjustments of pH caused cyanide losses and tails values were abnormally high (0.025 - 0.035 ozs. Au) for a three day period. It has been determined that nearly three times as much lime is required to adjust the pH of lake water as was needed to adjust mine water. Cyanide consumption, however, is 1/3 less with lake water as with mine water, which results in a net saving per ton of water processed of about 30 cents. Neither the increase in lime or the decrease in cyanide was predicted from laboratory tests done on lake water.

GEOLOGICAL REPORT

The Tyro Patented Mining Claim
Union Pass Mining District
Mohave County, Arizona

LOCATION:

The Tyro patented mining claim (Mineral Servey #2862) lies on the western slope of the Black Mountains, in the SE¼ of Section 6 and the SW¼ of Section 5, Township 21 North, Range 20 West, Gila and Salt River Meridian, Mohave County, Arizona. The property consist of approximately 20 acres of private land accessible via 8 miles of semi-improved dirt road east of Katherine's Landing, Arizona. The land is fairly rugged with an elevation from 2400 to 2600 feet.

SCOPE OF REPORT:

Time was the limiting factor in this very interesting investigation. One day was spent in the field examining surface outcrops, structural relationships, vein mineralogy and collecting samples. A sketch map, showing these factors and sample locations and results, is attached to this report.

A considerable portion of the facts and opinions contained in this report has been gleaned by this author from published reports, conversations with knowledgeable men of reputation familiar with the district and from this author's understanding of the geology and ore-forming processes exhibited in the area.

HISTORY:

The earliest recorded work on the Tyro Claim occured prior to the turn of the century when high-grade pockets of ore mined by simple methods. The claim was patented in 1911 and at some time subsequent a shaft was sunk, some crosscutting done and a portion of the vein stoped to the surface. No records were kept and the exact amount of ore mined is unknown, however, due to the scarcity of waste rock on the dump, it appears that nearly all the mined material was shipped, probably to the mill at the Katherine Mine, eight miles distant. During the 1930's and early 1940's more than a million tons of ore from the district was milled at the Katherine.

Over a quarter million tons of the Katherine's production came from the Tyro Vein, from a mine adjoining the Tyro Claim. The ore averaged 0.135 ounces of gold per ton and 0.40 ounces of silver. This mine is shown on the accompanying map, labeled "open pit". The bulk of production took place during the years 1939 to 1941, it closed due to the war effort. Between 1982 and 1984 an additional 80,000 tons were mined from this location by open pit methods and 135,000 tons, averaging 0.14 ounces of gold per ton were blocked out but not mined. A mill was constructed and stands intact, the operator intends to reopen and the possibility of treating custom ore is being considered.

The Sheeptrail-Boulevard Mine, located just south of the Tyro Vein in Section 7, produced approximately 15,000 tons of gold ore prior to 1904. Currently, the mine is being reopened and a pilot plant has been installed.

Clearly, the Tyro Claim is located in an area that has produced a considerable amount of gold and silver.

GEOLOGY:

The relevant geologic information readily available upon cursory examination of the Tyro Claim vacinity suggest the vein closely resembles that occuring on the neighboring open pit mine. Similarities include genesis, structural relationship, mineralogy of ore and gange and vein texture. The Tyro Vein is not as wide nor as strong where it outcrops on the Tyro Claim, as it is in the area of the open pit, averaging 25 feet across along a length of 500 feet on the Tyro Claim compared to 65 feet across along 1200 feet at the open pit. Still, economic grade ore should exist on the Tyro Claim for the following reasons:

The genesis, or origin, of the vein quite likely was the circulating hydrothermal solutions following volcanic activityduring the Tertiary mineralizing period from two to sixty-five million years ago. These "Bonanza" type deposits are typically ore shoots which are confined to definite vertical and horizontal ranges within the vein. Beyond this range the vein is low grade, a ore shoot amounting to a few thousand tons may be surrounded by several hundred thousand tons of lower grade material like the white of an egg surrounding the yolk. It is generally accepted that this productive range resulted from conditions of chemistry, temperature and pressure favorable to the selective precipitation of precious metals from ascending, hot, aqueous solutions generated by volcanism. Ideal conditions resulted in high-grade ore while less than ideal conditions resulted in lower grade material. The hydrothermal solutions acquire a mineral lode atdepth from reaction with the roots of volcanoes and precipitate minerals selectively at shallower locations.

Structurally, the vein or, more accurately, the zone of mineralization is a complex lode consisting of a main vein accompanied by many branching and irregular stringers of all sizes three feet and less in width and varying wildly in strike and dip but overall trending northeast and nearly vertical. This zone appears to represent a fault which appears to have formed before mineralization and has moved during and after vein formation as evidenced by broken and recemented vein material. Wall rock to the vein is chiefly granite gneiss although dikes of acid to intermediate volcanic rocks have intruded the granite prior to vein formation in places.

Mineralogically the Tyro Vein is of simple character. It consist mainly of quartz and calcite with lesser amounts of flourite. The ore mineral is finely divided free gold combined with silver, or electrum. Texturally, the vein material varies from coarsely crystaline to amorphous. Some veins are mostly quartz, some mostly calcite, but all exhibit the two minerals to some degree. The layering of thin bands of amorphous quartz, called chalcedonic banding, by successive infusions of minerals laden solutions is common. The banded chalcedony may show multicolored hues, this is characteristic of higher grade ore. The recognition of different kinds of quartz is of commercial importance, barren white quartz at the surface may indicate ore at depth.

ORE RESERVES:

Based on the cursory geological evaluation insufficient data exist to conclusively calculate ore reserves. However, reliable sources explain that Azcon Corporation, then a subsidiary of Consolidated Goldfields, drilled an exploritory hole on the Tyro Claim in 1976. It is reported that Azcon intersected 15 feet of ore 300 feet below the surface. This report, combined with sampling results obtained by this author and the obvious geological association of the Tyro Vein with past production all indicate the Tyro Claim is a sound target for additional exploration.

Consider, the three samples taken at intervals along 500 feet of vein 25 feet wide averaged 0.12 ounces of gold per ton. The Exploritory hole drilled by Azcon indicates that ore continues to a depth of at least 300 feet and maintains a width of 15 feet. This suggests a potential of more than 200,000 tons of ore.

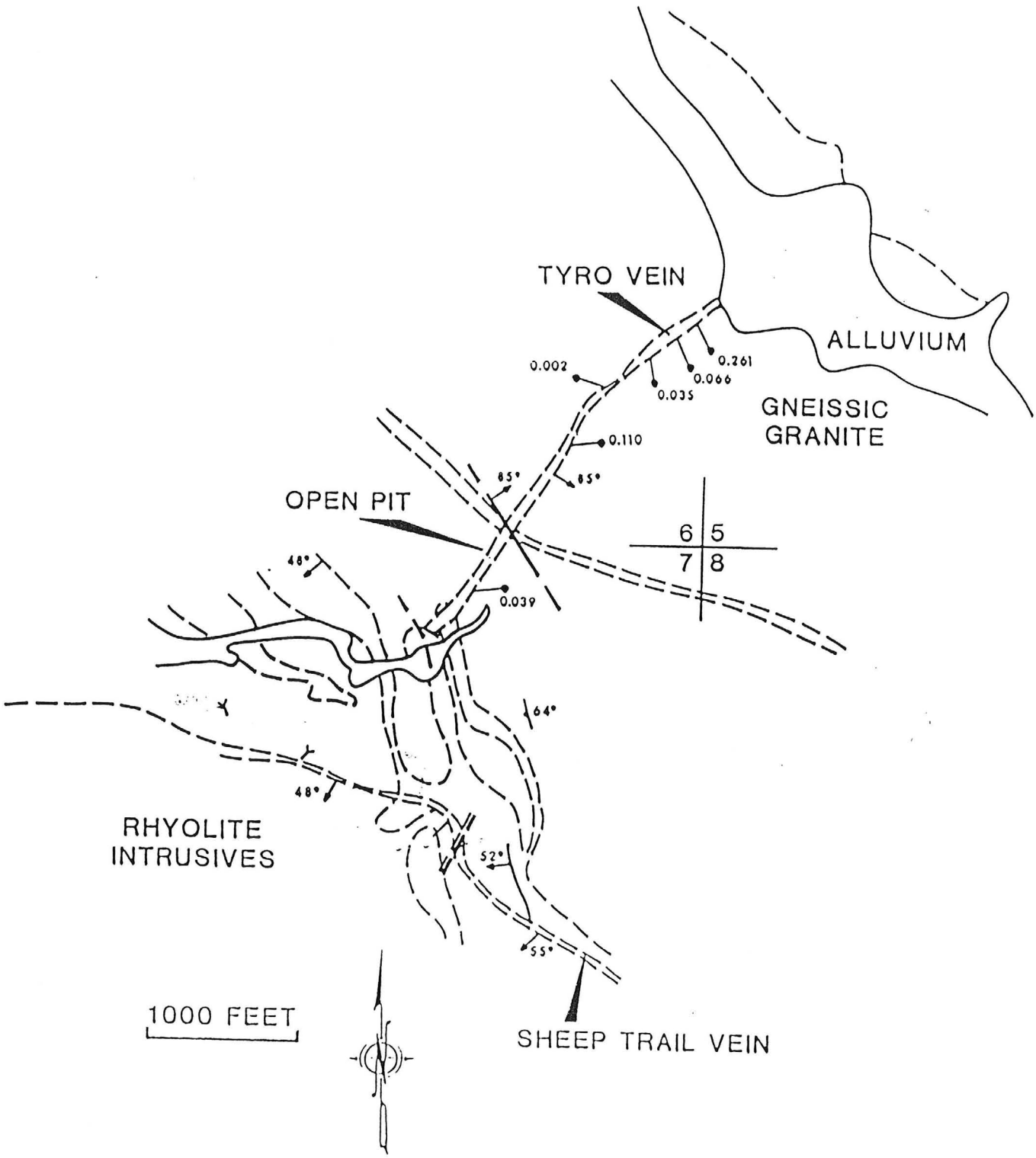
RECOMMENDATIONS:

To establish the producible limits of the ore it is recommended that a detailed geologic map be prepared that integrates all known surface and underground data. Surface outcrops and underground workings should be sampled at closely spaced intervals. Once completed these exercises will yield information upon which to base drillhole locations. Once drilled the producible limits of the orebody can be determined and proven ore reserves calculated.

Respectfully Submitted,

Wm. Vanderwall
Registered Geologist
State of Arizona No. GIT34

TYRO MINE


TYRO VEIN
ALLUVIUM
GNEISSIC GRANITE
0.002
0.035
0.066
0.261
0.110
85°
85°
OPEN PIT
6 5
7 8
48°
0.039
64°
48°
RHYOLITE INTRUSIVES
52°
55°
1000 FEET
SHEEP TRAIL VEIN

MINE VISIT REPORT

Mine- Tyro Date- April 20, 1984

County- Mohave

Engineers - Nyal J. Niemuth and Richard R. Beard

While in the Union Pass Mining District, a brief visit was made to the Tyro Mine. Neither Bill Vanderwall, Project Manager, nor Dan Crackel, Mining Engineer, were on site. The workers present reported the operation was shut down, confirming reports we had heard. The open pit reserves have been depleted causing the shut down. Future plans are to drive a decline to develop the underground reserves. It is estimated that it will be approximately one year before operations resume.

cc: Tucson Office

ARIZONA DEPARTMENT OF HEALTH SERVICES

Division of Environmental Health Services

BRUCE BABBITT, Governor
JAMES E. SARN, M.D., M.P.H., Director

JOINT NOTICE OF PROPOSED ACTION

by the

U.S. Environmental Protection Agency
Region IX [M-5]
215 Fremont Street
San Francisco, CA 94105

On Application for National Pollutant Discharge Elimination System (NPDES) Permit to Discharge Pollutants to Waters of the United States

State of Arizona
Department of Health Services
1740 West Adams Street - Room 200
Phoenix, AZ 85007

On Application for Certification for Compliance with Applicable Effluent Limitations and Appropriate Requirements of the State of Arizona

The Environmental Protection Agency (EPA), Region IX, San Francisco, California, and the Arizona Department of Health Services (ADHS) are jointly issuing the following notice of proposed action under the Clean Water Act (CWA).

The Environmental Protection Agency, Region IX, San Francisco, California, has received a complete application for a National Pollutant Discharge Elimination System (NPDES) permit and has prepared tentative determinations regarding the permit.

On the basis of preliminary review of the requirements of the Clean Water Act, as amended, and implementing regulations, the Regional Administrator, Region IX, Environmental Protection Agency, proposes to issue an NPDES permit to discharge to the following applicant, subject to certain effluent limitations and special conditions.

Public Notice No. 16-82-AZ

August 2, 1982

Equitable Corporation
612 East Carson
Las Vegas, Nevada 89101

NPDES Permit No. AZ0022187

The applicant proposes to develop and operate the Tyro Mine located near Bullhead City, County of Mohave, State of Arizona. The proposed discharge will consist of excess rainfall and stormwater from the waste control facilities. The discharge, at latitude 35° 13' 25" N, longitude 114° 27' 50" W, will be to a dry wash tributary to the Colorado River. The protected uses of the Colorado River (Lake Powell to Topock) are Full Body Contact, Aquatic Life and Wildlife, Drinking Water Supply, Agriculture Irrigation and Agriculture Livestock Watering. This permit, as proposed, will expire September 30, 1987.

The State of Arizona is considering a request to certify the discharge described above, pursuant to Section 401 of the Clean Water Act. The certification will set forth any limitations and monitoring requirements necessary to assure compliance with water quality standards under Section 303, areawide waste treatment management plans under Section 208(e), effluent limitations under Sections 301 and 302, standards of performance under Section 306, or prohibitions, effluent standards or pretreatment standards under Section 307 of the CWA, and any other appropriate requirement of State law.

The State may certify a draft permit and specify conditions which are more stringent than those in the original draft permit, where the State finds such conditions necessary to meet the requirements of the CWA. For each more stringent condition, the certifying State agency shall cite the CWA or State law references upon which that condition is based. Review of appeals of limitations and conditions attributable to State certification shall be made through the applicable procedures of the State.

The Administrative Record, which includes the application, draft permit conditions and other relevant documents, is available for public review Monday through Friday from 9:00 a.m. to 4:00 p.m. at the EPA address below. A copy of the draft permit and other pertinent documents may be obtained by calling or writing to the addresses below.

Persons wishing to comment upon or object to the proposed determinations or request a public hearing pursuant to 40 CFR 124.12 should submit their comments or request in writing within forty-five (45) days from the date of this notice, either in person or by mail to:

U.S. Environmental Protection Agency
Region IX [M-5]
Attn: GPA Permits Clerk
215 Fremont Street
San Francisco, CA 94105

Telephone: 415/974-7410

State of Arizona
Department of Health Services
Attn: Permits Unit
1740 West Adams Street - Room 200
Phoenix, AZ 85007

Telephone: 602/255-1277

All comments or objections submitted within forty-five (45) days from the date of this notice will be considered in the formulation of the final determinations regarding the application. If the response to this notice indicates a significant degree of public desire for a public hearing, the Regional Administrator shall hold one in accordance with 40 CFR 124.12. A public notice of such hearing will be issued at least thirty (30) days prior to the hearing. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

The permit will become effective thirty-three (33) days following the date of mailing by the EPA of the final permit. If no comments requested a change in the draft permit, the permit will become effective three (3) days from the date of mailing.

A request for an evidentiary hearing may be submited to the Grants and Permits Administration Clerk, [M-5], within thirty-three (33) days following the mailing of the final determination, in accordance with 40 CFR 124.74. If granted, applicable provisions of the permit will be stayed pending the hearing.

Please bring the foregoing notice to the attention of all persons you know would be interested in this matter.

Tyro Mine File

John Jost

MELVIN H. JONES
Mining Geologist

25 August, 1980.

RECONNAISSANCE GEOLOGY EXAMINATION, TYRO MINE, BLACK MOUNTAIN, about 7 miles NE of Bullhead City, Mohave County, Arizona.

As requested by Mr. James M.Campbell,Jr.,120 W. Kent Ave, Wauconda, Ill.,60084, the writer (and Mr. Campbell),made a Reconnaissance Geological examination of the Tyro Min, on Aug19,1980. This mine is in Sections 6 and 7, T-21-N,R-20-W, SR&G B&M, and consists of 3 patented mining claims. At the time of our visit to this mine(10.00 AM), no mine officials were present(although this was a workday).A small group of workers were rebuilding the inside of a mobile home (that had been damaged by fire). We were informed that this will be a laboratory. This is at the intended mill site, where much milling equipage was scattered around on the ground(some new). None had been erected or installed. A large leaching pad,and solution ponds,had been constructed. Also, a large ore pile that had been transported from the distant mine site, was there (for future milling according to the workers). We were also told that a drilling rig was on it way to the mine from Winnemucca, Nevada. As Mr. Campbell had previously visited the mine, we borrowed a "hard hat", and proceeded up the mountain to the old mine site, by car. Noted was some new road re-building, and some "open pit" recent mining,on a large outcrop near the Main shaft. The "ore" from this operation apparently had been hauled down to the mill site.

The writer was informed that The Equitable Corporation, 421 E. Carson St.,Las Vegas, Nevada, is in charge of the Tyro Mine. No attempt will be made to go into the subject of the names of the Owners or Supervisory (or management personell), as none were present. Fortunately, a copy of a report on the Tyro Mine dated 19 Nov.,1979, by F.H.Blair & Associates, Spokane, Washington, had been obtained. This outlined a study of the Mine,and present undertakings and goals. Apparently,'The Equitable Corporation'has been selling interests in the mine, and a considerable amount of capital has been raised. (see Incl.#2)

GEOLOGY.

The 'country rock' in the area is a course grained gneissic granite, according to the older reports, and was Pre-Cambrian in age. However, More recent studies show that large portions of the rock in the area are Andesites, and there are a number of Rhyolite dykes (as well as Andesite dykes) in the numerous fault zones. Anyone who has studied Petrology, knows that this does not cover the abundant course grain crystaline rocks seen in the region, which belong to the granite family. The RHyolites and Andesites are, of course, finer grained rocks. Gold and Silver mineralization in the Tyro mine occurred during the Larimide. The Andesites, Rhyolites, and Gold Road formations are Tertiary. The gold values are in imbricating stringers, and veins of quartz, calcite, and some fluorite. 'F.H. Blair and Associates' study reports the veins range from ¼ inch to about 4 feet, with the average of about 4 inches. An average of only 4 inch veins raises many questions as to the feasibility of mining costs ??

According to other old reports, the Tyro Mine was sunk to a depth of 500 feet during 1915-16, but values decreased with depth. There was some drifting at the 200 foot level. A lode was reported at the mine of 20 to 35 feet in width, and was 1800 feet long. It strikes to the NE, and dips 85 deg. SE.

DISCUSSION.

In the old mine workings, we visited the mentioned shaft. There is a tunnel several hundred feet in length, that joins the shaft from a good roadway. Apparently, no recent development has been done in the underground workings. A high water level was noted in the shaft; it had not been pumped out. Not far from the shaft collar, the earlier mentioned 'open pit' work had been started. Blasting and mining had been done on the supposedly "ore outcrop". An air compressor and other mining equipage was present. Apparently, the "ore" from this operation had been transported to the mill site pile.

Upon our return to the mill site(which is on the road down the mountain), a grab sample was taken from the ore pile. Equal sized rocks were picked up at equal distances around the pile. The assay results were extremely low, only 0.02 oz. per ton of Au. (see Incl #3).

Mr. Clifford J. Hicks, Field Engineer, Arizona Dept. of Mineral Resources (Phoenix), visited the Tyro mine on 28 July, 1980. He reported little activity at the mine, although mill completion was scheduled for September, 1980, and to be in operation by October, 1980.

CONCLUSIONS.

As none of the mine officials were present, there was no one at the mine to intelligently answer questions. As a result, this study is based on what was seen, old studies (and in particular the F.H. Blair report), and the ore sample taken.

The 'Blair' report is believed to be highly acceptable for most pertenant information. But some important data for starting up a mine is not there. They state the gold ore averages 0.128 Oz. per ton and silver 0.314 oz. per ton. Also, the "measured " ore in Blocks 1 and 2 has only 31,600 tons. "Indicated" ore in Blocks 4,6,and 8 total 403,333 tons, "Inferred" ore in Blocks 3,5, and 7 are estimated at 166,333 tons. It is well to point out now, that only the 31,600 tons can be relied on. The others are essentially 'guesses'. Furthermore, to start an underground mine with only 0.128 Oz. Au(and with limited reserves) is very questionable. All Major operating mines (Homestake and Carson City, Nev.) have 0.20 oz. or better.

Where are studies showing the costs of mining, transporting, and milling this 0.128 Oz. ore ? If there are none, a competant Mining Engineer, and Metalurgist, should be immediately engaged to make such studies, before mining is started, or milling machinery is acquired. A 'mill sized' sample should be taken to a suitable processing plant for tests. Further, if the foregoing studies are favorable, then a drilling program with a competant geologist,should be made to determine ore in reserve.

RECOMMENDATION.

The undersigned has grave doubts, at the present time, as to whether or not, the Tyro mine can be operated at a profit. Future drilling, and a comprehensive study of mining and milling costs, may clarify this situation.

Perhaps there may be some satisfactory answers to some of the above criticism. But unfortunately, no Management people were at the mine during the visit.

1601 Sandhill Rd., Sp.36
Las Vegas, Nev. 89104.
or; Box 1196,Wickenburg,Az.
85358

MELVIN H JONES
Mining Geologist.

Arizona Testing Laboratories

817 West Madison · Phoenix, Arizona 85007 · Telephone 254-6181

For Mr. Melvin H. Jones
Post Office Box 1196
Wickenbury, Arizona 85358

Date August 22, 1980

ASSAY CERTIFICATE

LAB NO.	IDENTIFICATION	OZ. PER TON		PERCENTAGES			
		GOLD	SILVER	COPPER			
7377	DK1	Trace					
	DV2	Trace					
	DV3	0.01					
	SG1	Trace					
	SG2	Trace					
	SG3	0.03					
	SG4	0.11					
	SG5	0.15					
	Tyrol	0.02					

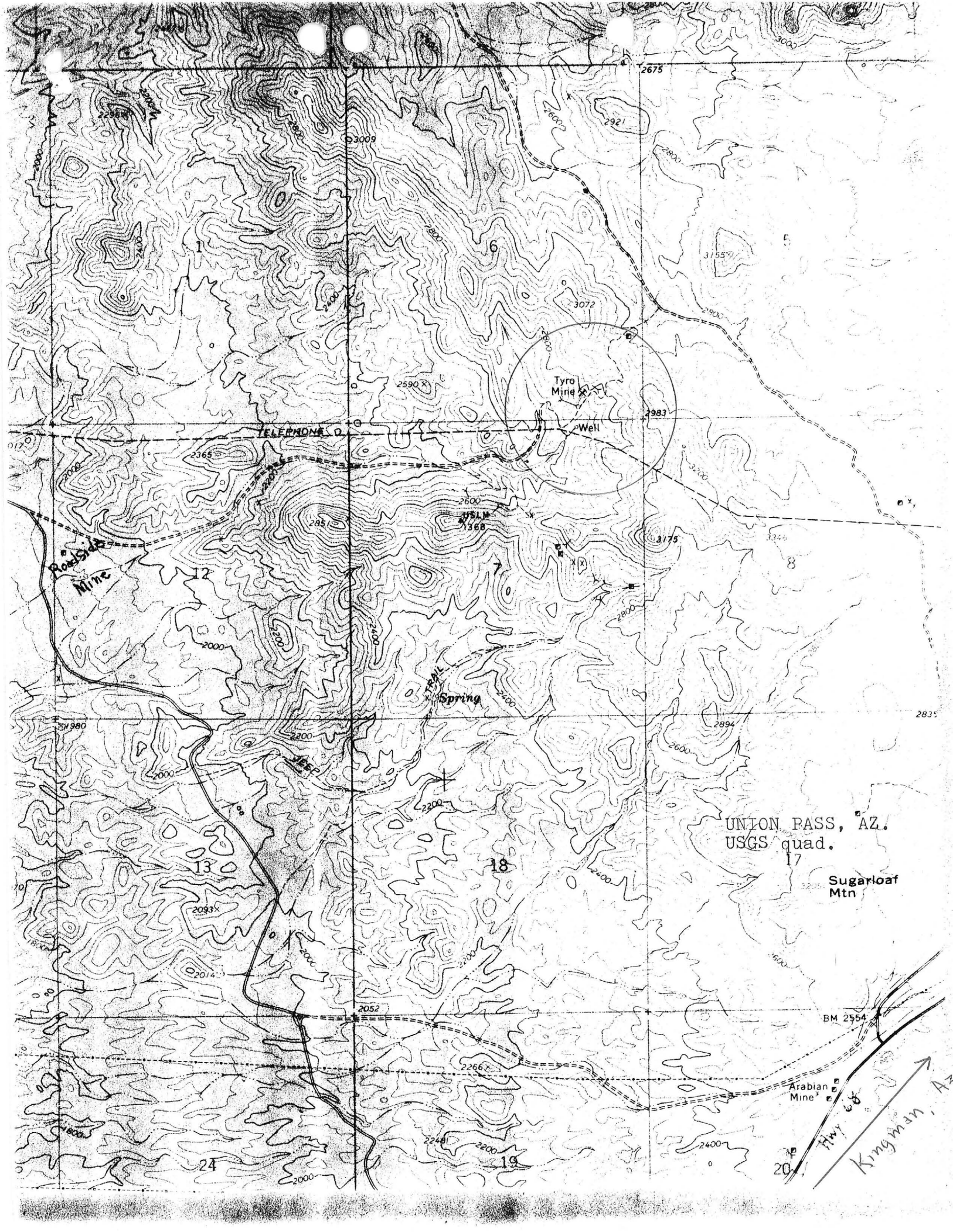
Respectfully submitted,

ARIZONA TESTING LABORATORIES

Claude E McLean Jr

Claude E. McLean, Jr.

Registered Assayer
CERTIFICATE
6258
CLAUDE E. McLEAN, JR.
Date Signed 8/22/80
ARIZONA, U.S.A.


Tyro Mine
Well
TELEPHONE
USLM
Roadside Mine
Spring
TRAIL
JEEP
UNION PASS, AZ.
USGS quad.
17
Sugarloaf Mtn
BM 2554
Arabian Mine
Hwy 66
Kingman, AZ
1
6
5
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12
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18
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24

CONCLUSIONS AND RECOMMENDATIONS

It is my opinion that there are over 600,000 tons of ore that will contain 0.128 ounces gold and 0.314 ounces silver per ton. I am recommending a budget of $914,500 be allocated to develop and mine the ore from the Tyro. See Table III. An additional allocation of $1,000,000 should be considered for the purchase and installation of a 300 - 500 ton per day mill.

Classification of the calculated tonnages is based upon definitions used by the U.S. Geological Survey and U.S. Bureau of Mines. These classifications are "Measured", "Indicated" and "Inferred". See attached definitions. Using these three classifications of ore allows some subjective adjustment of grade and dimensions based upon my knowledge of the Tyro Mine and gold occurrences in the Black Mountains, Mohave County, Arizona.

Tonnage and assay value calculations used in this report are shown on the enclosed Tables 1 and 2, and Plates 1 and 2. These calculations are for eight tonnage blocks. Seven of the blocks can be developed and mined by driving a 300 - 400 foot decline into the present underground workings (See Plate 1). Block No. 8 will require seperate access.

Measured ore in Blocks 1 and 2 totals 31,600 tons containing 0.12 ounces gold and 0.39 ounces silver per ton.

Indicated ore in Blocks 4, 6, and 8 totals 403,333 tons containing 0.14 ounces gold and 0.36 ounces silver per ton.

Inferred ore in Blocks 3, 5, and 7 totals 166,333 tons containing 0.10 ounces gold and 0.20 ounces silver per ton.

Sincerely yours,

Frank H. Blair, C.P.G.S.

Enclosure

FRANK H. BLAIR
ASSOCIATION OF PROFESSIONAL GEOLOGICAL SCIENTISTS
CPGS #3517

NOTE: ✓ The plats referred to above, prepared by F. H. Blair & Associates, are not attached due to their size; however, copies are available, at minimal cost, upon request.

The complete mill records for the Tyro Mine 1939 through 1942 are available, since they comprise of voluminous records, a representative sample is attached. Likewise, copies are available upon request and payment of copying costs.

THE EQUITABLE CORPORATION

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Tyro

Date July 28, 1980

District Union Pass

Engineer Clifford J. Hicks

Subject: Field Visit

The Tyro property was visited in the company of George McDevitt, Consultant, 712 E. Beale Street, Kingman, Arizona 86401, ph. 753-5754. It is located in Sec. 6 and 7, T21N, R20W and is easily accessible by a graded county road and is 5 miles east of Katherine, Arizona. A locked access gate prevented driving into the property so we walked into the leach pad preparation area, but not to the mine. The preparation area was deserted, however, it is possible that they are working ten days on and four days off. This is a common practice in Mohave County.

The Tyro Property consists of three patented gold-silver claims and is being developed as a tax shelter by The Equitable Corporation of Las Vegas, Nevada. Mail address: 421 East Carson St. Box 23, Las Vegas, Nevada 89101. Office address: 3198 Camel Back Drive, Las Vegas, Nevada 89109, ph. (702) 731-3951.

Copies of "The Equitable Plan for 1980" and a portion of a report by F. H. Blair and Associates, Mineral Exploration Consultants, N. 1103 Mamer Road, Spokane, Washington 99216, ph. (509) 924-8283 are attached for inclusion in the mine file. The Blair report contains a description, history, geology, and conclusions and recommendations.

Work accomplished to date seems to be the excavations and leveling necessary for a large (100' x 150') leach pad, a pregnant solution pond, a barren solution pond, an overflow basin and a mill site. Although the excavations have been made, no liners are in evidence. Equipment on the ground consists of two 40 ft. office trailers, one truck mounted crane (this may be a dragline for loading and unloading the leach pad), a D-9 (or equivalent) dozer, two patrol graders, one camper size trailer, what looks like part of an autogenous mill (not in place), a back hoe and a motor generator set, plus many other unidentified bits and pieces. Since mill completion is scheduled for September and ore milling and gold casting for October, 1980 work will have to be speeded up. Survey stakes, probably marking the route of a power and/or telephone cable, were noted.

cc: Tucson

Tyro mine
Mohave Co.

METALLURGICAL REPORT.

Oatman, Ariz.
July 25th, 1934.

Report of the metallurgical investigation of two samples of gold ore from the Tyro Mine, Mohave County, Ariz.

The samples under investigation consisted of fresh rejects from channel cuts in the first 47' of drift from the main cross-cut, and a composite of the drift and internal cross-cut, and are designated respectively as Tyro #5, and Tyro Composite.

The ore tested was a mixture of dense, white quartz and brecciated, silicified granite, carrying minute quantities of free gold and pyrite, none visible to the eye.

The samples, after being crushed to minus 10 mesh, assayed 0.230 oz. Au and 0.265 oz. Au respectively. Tyro #5 assayed 0.87 oz. Ag.

Scope of Investigation.

The purpose of the investigation was to determine the possibility of producing a satisfactory tailing by flotation, with the idea in mind that the small amount of concentrate would be treated , on the property, in order to recover the valuable minerals in the form of bullion.

In order to obtain comparative data, a series of cyanide tests were also run, by grinding and continuously agitating the ore in cyanide solution of ordinary strength.

The main factors to be determined were the probable recovies to be expected, and degree of fine grinding necessary to obtain the same, with the two processes.

Metallurgical Conclusions.

Ores similar in character to those tested, probably cannot be treated satisfactorilly by the flotation process. Evidence produced by screen analyses, and assays of the sizes from flotation tailing, indicate that a considerable percentage of the gold is extremely fine, and remains locked in the gangue on all meshes.

There is no evidence of free gold or pyrite in the tailing, and the concentrate shows some moderately coarse gold associated with some extremely fine particles.

Roughing tests only were run, and the highest recovery reported was 81.55% of the gold content. The character of the concentrate produced would lend itself readily to grading up, or cleaning, this being a function of operating manipulation. Ratios of concentration ranged up to 25 into 1, with no noticeable effect upon the tailing.

The screen analyses do not indicate that there is any slime interference preventing a satisfactory recovery. Most of the tests were conducted at a liquid-solid ratio of four to one. Higher solids showed no benefit on small scale work, but should be more suited to plant operation, if for no other reason than reagent conservation.

Grinding.

It is indicated that the best recovery by flotation is to be made when grinding to 90% or more thru 200 mesh. Coarser grinding is immediately reflected in higher tailing.

The ore is amenable to treatment by the cyanide process, when ground sufficiently fine. Even after 96 hours of agitation, all sand portions of the tailing carry important values. It would therefore be advisable to grind all ore to from 85% to 90% thru 200 mesh. A recovery of 95% can be expected.

Alkalinity.

From a flotation standpoint, it is indicated that if the hydrogen-ion concentration is maintained at a pH of 8.9 by soda ash, or somewhat lower by sodium silicate, these results can be duplicated in practice.

Filtration and Reclamation of Water,

It was noted that slime dispersion by soda ash can be overcome by the addition of a small amount of H_2SO_4 to the products, resulting in fast filtering and settling products, should it be necessary to reclaim water. Sodium silicate, in the concentration tried, did not result in slime dispersion. It would be well to carry this reagent to the concentration of slime dispersion, but screen analyses do not show much promise of improvement in recovery.

The best results were obtained with soda ash or sodium silicate added to the ball mill. The following are typical examples of test sheets which recorded maximum recoveries:

Signed Paris C. Brough

FLOTATION TEST.

Date 7/7/34 No. 10

Feed Tyro #5 Assay Ozs Au. 0.230
Method of preparation. Minus 10 mesh feed to ball mill. Roughing only.

Time of grind 25 Min. Wgt. of ore 500 gms. Water added 500 cc

Reagents.

Name	No. drops.	No. cc	Place	Lbs. per ton.
Soda ash			Ball mill	0.80
#301			" "	0.10
Amyl xanthate			Cell	0.10
Aerofloat #15			"	0.60
Amyl xanthate			" @ 3 min.	0.10

Record of Manipulation.

Pre-agitation period. 5 Min. Water added 1500 cc

Frothing Period.

Froth No. 1 6 Min. Kind. Fair flocculation.

Flotation tail pH 8.4

Metallurgical Results.

Products	Wgt. gms.	Wgt. %	Assay Ozs Au	Distribution %
Calculated head		100.00	0.227	
Flotation Conct.	24	4.86	3.50	74.8
Flotation tails	470	95.14	0.06	25.2
Totals	494	100.00		100.00

Ratio of concentration. 20 to 1

Remarks; The slime was disparsed, but tailing indicates that a higher pH is needed.

Signed P. C. R3.

FLOTATION TEST.

Date 7/13/34 No. 13

Feed Tyro #5 Assay Ozs Au 0.23 Ozs Ag 0.87
Method of preparation. Minus 10 mesh feed to ball mill.

Time of grind, min. 25 Wgt. of ore. 500 gms. Water added 500cc

Reagents.

Name	No. drops	No. cc	Place	Lbs. per ton.
Soda ash			Ball mill	2.00
#301		0.25	" "	0.10
Amyl xanthate		0.25	Cell	0.10
Aerofloat #15	10		"	0.60
Amyl xanthate		0.25	" @ 3 min.	0.10

Record of Manipulation.

Pre-agitation period. 3 Min. Water added. 1500 cc.

Frothing Period.

Froth No.1 7 Min. Kind. Well flocculated.

Screen analysis. Flotation tailing.

Plus	65	mesh.	tr %
"	100	"	0.2
"	150	"	1.6
"	200	"	3.8
Minus	200	"	94.4

Flotation tail pH 8.9

Metallurgical Results.

Products	Wgt. gms.	Wgt. %	Assay Ozs Au.	Distribution %
Flotation Concn.	41	8.22	2.00	81.55
Flotation Tail	458	91.78	0.04	18.45
Totals	499	100.00		100.00
Calculated Head		100.00	0.201	

Ratio of concentration 12.1 to 1

Remarks; In all tests, all visible metallic minerals are floated very quickly. Reagent additions are probably considerably higher than would be the case in actual practice.
Recovery, based upon a head of 0.23 oz Au. is 82.57%.

Signed. P. C. R3.

FLOTATION TEST.

Date 7/24/34 No. 25

Feed. Tyro Composite Assay Ozs. Au. 0.265
Method of preparation Minus 10 mesh feed to mill. Sodium silicate added in place of soda ash. Roughing only. All other factors constant.
Time of grind. 20 Min. Wgt. of ore. 500 gms. Water added 500 cc

Reagents.

Name	Place	Lbs. per ton.
Sodium Silicate	Ball mill	3.00
#301	" "	0.10
Amyl xanthate	Cell	0.10
Aerofloat #15	"	0.40
Amyl xanthate	" @ 3 min.	0.10

Record of Manipulation.

Pre-agitation period. 3 Min. Water added 1500 cc

Frothing Period.

Froth No. 1 7 Min. Kind. Bubbles not well flocculated and larger than with soda ash.

Screen analysis Tailing.

Plus	65	mesh	Tr %
"	100	"	0.4
"	150	"	2.8
"	200	"	5.8
Minus	200	"	91.0

Flotation tail pH 7.9

Metallurgical Results.

Products	Wgt. gms.	Wgt. %	Assay Ozs Au	Distribution %
Calculated head.		100.00	0.279	
Flotation Conct.	20	4.0	5.66	81.0
Flotation Tail	482	96.0	0.055	19.0
Totals	502	100.00		100.00

Ratio of concentration 25 to 1

Remarks; Slime not dispersed at this concentration of sodium silicate.

Signed P. C. R3.

TYPICAL SCREEN ANALYSIS OF FLOTATION TAILING.

Test No. 16. 43% solids to flotation. All other factors constant.

							Distribution		
Plus	65	mesh	Tr	% Assay	Ozs	Au	Ozs	Au.	$
"	100	"	1.3	"	"	" 0.22	"	" 0.0028	0.0980
"	150	"	4.1	"	"	" 0.18	"	" 0.0074	0.2590
"	200	"	7.3	"	"	" 0.16	"	" 0.0116	0.3960
Minus	200	sand	17.1	"	"	" 0.11	"	" 0.0188	0.6580
"	200	slime	70.2	"	"	" 0.04	"	" 0.0280	0.9800
Totals			100.00					0.0686	$2.3910

Signed P. C. B.

CYANIDE TEST.

Date 7/17/34. No. 5

Feed. Tyro 5. Assay Ozs. Au. 0.230
Time of grind, Min. 19 Wgt. of ore 1500 gms. Solution added 6150 cc

Initial charge, lbs. KCN per ton solution. 2.50
Lime added, lbs. per ton. 5.0 Place Ball mill.

Leaching Period.

Ratio of solution to ore. 3.07 to 1

24 hrs. Titration KCN 2.4
CaO 1.1
96 " " KCN 2.3
CaO 1.0 Assay Ozs Au. 0.01

Screen analysis of tailing.

							Distribution		
Plus	65 mesh	Tr %	Assay	Ozs	Au.		Ozs	Au.	$
"	100 "	0.8	"	"	"	0.055	"	" 0.00044	0.015
"	150 "	3.2	"	"	"	0.040	"	" 0.00128	0.044
"	200 "	6.2	"	"	"	0.035	"	" 0.00217	0.075
Minus	200 sand	16.3	"	"	"	0.015	"	" 0.00244	0.084
"	200 slime	73.5	"	"	"	0.005	"	" 0.00367	0.124
	Totals	100.0						0.01	$0.342

Fresh solution on charge.
Slime agitation.

Recovery % Au. 95.66
Settling qualities of slime. Very good.

Remarks; The ore was ground in cyanide solution, and no difficulty should be found in duplicating this test, provided the ore is ground sufficiently fine, with a characteristic ball mill grind.

Assays of the screen sizes indicate that fine grinding is necessary, for these products have been in contact with solution for four days.

Samples were removed from the agitating charges daily, and indicate that the bulk of the extraction is made early, altho metal continues to be dissolved up to 72 hours at least.

Signed Paris C. Brough

MINE VISIT REPORT

Mine- Tyro Date- April 20, 1984

County- Mohave

Engineers - Nyal J. Niemuth and Richard R. Beard

While in the Union Pass Mining District, a brief visit was made to the Tyro Mine. Neither Bill Vanderwall, Project Manager, nor Dan Crackel, Mining Engineer, were on site. The workers present reported the operation was shut down, confirming reports we had heard. The open pit reserves have been depleted causing the shut down. Future plans are to drive a decline to develop the underground reserves. It is estimated that it will be approximately one year before operations resume.

cc: Tucson Office