

CONTACT INFORMATION

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PRINTED: 06-13-2012

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: BLUEBIRD MINE

ALTERNATE NAMES:

RANSOM COPPER CO. PROPERTY BOSTON MIAMI COPPER CO. PROP. CARROW PROPERTY WESTERN COPPER CO.

GILA COUNTY MILS NUMBER: 148C

LOCATION: TOWNSHIP 1 N RANGE 14 E SECTION 35 QUARTER C LATITUDE: N 33DEG 23MIN 15SEC LONGITUDE: W 110DEG 54MIN 00SEC TOPO MAP NAME: INSPIRATION - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:

COPPER OXIDE

BIBLIOGRAPHY:

ADMMR BLUEBIRD MINE FILE EMJ JAN 1975 P 78 SEE:ADMMR BOSTON MIAMI COPPER CO FILE AZBM CLIPPING FILE BLUEBIRD FILE Miller, Arthur,1967,Heap leaching CU Ranchers Bluebird Mine, Miami, Arizona: AIME-SME Preprint 67-B-339, 16p.

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EMJ JAN 1975 P 78

SEE: ADMMR RANSON COPPER CO FILE

SEE:ADMMR BOSTON MIAMI COPPER CO FILE

AZBM CLIPPING FILE BLUEBIRD FILE

BLUE BIRD GROUP

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Mining Congress Journal, July, 1966, p. 71
" June, 1968, p. 15
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Mining Journal, June, 16, 1972, p. 505, 506

"Feb. 9, 1973, p.
"Oct. 19, 1973, p. 334
"July 19, 1974, p. 63 (income)
"October 18, 1974, p. 346 (cu prod. & prices)
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Metals Week, March 5, 1973

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Mining Engineering, April, 1973, p. 47

"June, 1973, p. 68

"February, 1974, p. 110

"September, 1974, p. 67 (personnel)
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Contractor & Engineer, November, 1973, p. 16

BLUE BIRD GROUP

USGS P.P. 115, p. 91

IC 8341, p. 10, 24-26

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E/MJ, Feb., 1952
      Aug., 1964
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      Sept., 1965, p. 168
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      July, 1966, p. 84, 85
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      Dec., 1966, p. 133
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      Sept., 1967, p. 182
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      Jan,, 1968, p. 124
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      March, 1969, p. 196
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      April, 1971, p. 11,
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      March, 1973, p. 194
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      June, 1973, p. 188
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      Aug., 1974, p. 98 (personmel)
      January, 1975, p. 78 (mine & plant exp.)
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Mining World, July, 1962, p. 41
" Dec., 1962, p. 36
" Dec., 1963, p. 36
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Metal Mining & Processing, Feb., 1964, p. 48, 49
"""" Jan., 1964, p. 17
"""" July, 1964, p. 44
"""" May, 1964, p. 61
"""" Oct., 1964, p. 39
""" Feb., 1965, p. 39
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Skillings Mining Review, April 16, 1966, p. 12
                           June 11, 1966, p. 29
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                           July 2, 1966, p. 17
                           Sept. 17, 1966, p. 8
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                           Nov. 12, 1966, p. 36
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                           March 4, 1967, p. 19
                           April 1, 1967, p. 30
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                           June 3, 1967, p. 16, 17
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                           May 10, 1969, p. 8
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             11
                           Feb. 10, 1973, p.
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SMR, April 21, 1973, p. 8-2 2

January 12, 1974, p. 38

"March 23, 1974, p. 12

"June 22, 1974, p. 17

"Aug. 17, p. 14, 1974 (personnel)

"Nov. 23, 1974, p. 10 (gen. info.)
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RANCHERS EXPLORATION & DEVELOPMENT CORP.

Mr. George Bott brought in an article relating to activity in the Klondyke area. It stated that the Kop-Ran Development Corporation (subsidiary of Ranchers) is doing development work on Head Center mine in the district for Mr. Riebold. REL WR 10/10/73

BLUE BIRD GROUP

MIAMI DISTRICT, GILA COUNTY

Oct. 27, 1961 - Al Stovall visited regarding his recent drilling and possible leach operation of the Blue Bird property (Carrow'estate) adjoining Inspiration.

TRAVIS P. LANE - Weekly Report - 10-28-61

Bert Reed, Chief Geologist of Inspiration Copper Company, stated that Inspiration had made an offer to the Carrows for the claims. This was largely made so as to provide waste disposal room for anticipatedwaste stripping of Red Mountain next to the present pit where new reserves of considerable volume have been disclosed by recent drilling. Bert felt that deeper drilling down the pitch of the ore zone, which pitches at a flat angle, would be desirous.

Al Stovall recently drilled several 125 foot holes which disclosed a blanket of oxidized copper ore in the Schultz Granite. This blanket contains chrysocolla and some malachite with low calcium content, which is leachable. He has retained Norman Keyes as metallurgical consultant. Ben H. Cody and O.E. Young, both of whom had done much leach experimentation for Phelps Dodge were also recommended. Al stated that both had been very helpful but were not consulting at present. The ore body pitches at a flat angle. The upper hole patterns penetrated through the ore but the lower hole patterns did not. Al was advised to sink two deeper holes down dip and if these proved out, to drill further down. The dimensions and downward extension of the orebody are not yet clearly defined.

LEWIS A. SMITH - Memo - 11-22-61

Globe-Miami Area (file) See: Major Active Mining Operations in the Blobe=Miami Area of ARizona

RANCHERS EXPLORATION & DEVELOPMENT

8/74, p. 98 (personnel)

8/74, p. 98 (personnel)

7/74, p. 138 (expl. venture with German Co.)

E/MJ 9/73, p. 177

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Mining Journal, October 19, 1973, p. 334
                 July 19, 1974, p. 63 (income)
                October 18, 1974, p. 346 (cu prod. & prices)
Skillings Mining Review, March 23, 1974, p. 13
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                          June 1, 1974, p. 5
                          Aug. 17, 1974, p. 14 (personnel)
             11
     11
                         Sept. 14, 1974, p. 24 (earnings)
     "
                         November 2, 1974, p. 5 (exploring jointly with Texas Util. Fuel
                                                  Co. for uranium)
                         October 26, 1974, p. 17 (personnel)
                    11
                         Nov. 23, 1974, p. 10 (gen. info.)
     11
Mining Congress Journal, June, 1974, p. 11 (uranium expl. venture with German Co.)
                         July, 1974, p. 19 (personnel)
                         November, 1974, p. 5 (joint venture with Tufco to explore
                                                for uranium)
Metals Week, Aug. 26, 1974, p. 2 (cu sales)
Mining Engineering, September, 1974, p. 66 (personnel)
                    December, 1974, p. 24 (joint venture with Tufco for uranium in Ariz.)
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Mining Magazine, December, 1974, p. 479 (joint venture with Tufco for uranium in Ariz.)

12/74, p. 133 (expl. for uranium) p. 134 (expl. venture with Frontier Resources and

Marline Oil)

KAP WR 6/20/80: At the mine visit to Rancher's Bluebird Mine, Mike Attaway, engineer, reported the mine nearing full procution. The costs of production over the last four years have nearly doubled and the cost of fuel accounts for fifty percent (50%) of the total production cost. Their fuel bill is now running about \$250,000 monthly.

NJN WR 8/30/85: While driving thru the Globe-Miami area I noticed that the tanks and buildings at the former Ranchers Bluebird Mine (f) are all being removed.

RANCHERS EXPLORATION & DEVELOPMENT CO. (Bluebird Mine)

GILA CO.

MG/WR 8/3/79 - Visited George VanEtten, General Manager, and Mike Attaway, Plant Manager, of the Bluebird Mine. Operations have reached about 80% of capapcity since resumption of mining.

CJH WR 10/10/80: David C. Fitch (an acquaintance of long standing), Manager of Exploration, Ranchers Exploration and Development Corp., 1776 Montana Road, N.W. of Albuquerque, New Mexico 87107. Ranchers is looking for Au, Ag prospects for drilling. Old mines with 0.20 oz/st across a 5' face and/or an Ag equivalent of 10 oz/st and a 100,000-200,000/st reserve would be desirable.

CJH WR 12/26/80: Visitor: Robert Evans, 2013 W. San Miguel Ave, Phoenix, Arizona 85015, phone 242-6275. Wanted to confirm what constitutes assessment work. He reported that Ranchers Exploration and Development is doing extensive claim staking in the following areas in the Hieroglyphic Mountains, Maricopa County: Secs. 5, 6, 7, 8, 9, T6N, R1W; Secs. 1, 12, T6N, R2W; Secs. 30, 31, T7N, R1W.

RRB WR 1/9/81: Robert Evans, 2013 W. San Miguel Avenue, Phoenix, Arizona 85015, phone 242-6275, has claims in Hieroglyphic Mountains. He came in to check specific points in Laws & Regs. He reports that Harvey S. Eastman and Rocky Mountain Surveyors are covering the area with claims named WIN 1,2,...and Burro 1,2,... Maricopa County (at least 1000 total) for Ranchers Exploration and Development. He wanteded to know what he should do about the fact that they were overlapping his claims. I suggested that he contact Ranchers before doing anything else. He also said that ranchers in the area told him that Ranchers was drilling water wells and had brought in equipment to sink a shaft.

NJN WR 1/7/83: It was rumored that Ranchers" entire Miami Operations are for sale.

MG WR 2/18/83: There are only two people left at the Bluebird Mine, Gila County. According to the office manager, Mr. Bob Barte, all copper production ceased in October 1982. An initial test was made on the property to determine the feasibility of an in-situ leach facility to recover copper from the deposit. An injection hole was drilled and several recovery wells were put in. The ground was hydrofraced and tested. Apparently the results were disappointing or inconclusive, since the project has been shelved for the time being.

NJN WR 11/25/83 John Motica with Ranchers Exploration and Development Corp., 1776 Montano Rd., NW, Albuaquerque, NM 87107, Phone 505-344-3542. Visisted and was supplied with a list of mines of potential interest to Ranchers. He explained he is semi-retired and contacts, submittals, etc. should be made with exploration manager Dave Fitch, same address.

The Blue Bird Mine increased their ore reserves to 75 million from 13 milli tons. The drilling continued throughout the quarter. FTJ QR 9/71

Went to Globe-Miami and visited Blue Bird mine office. Change in number of 100 instead of 85. Did not get any information regarding Old Reliable mine.

Ranchers Exploration and Development Company continued to mine and leach at Bird mine west of Miami. FTJ QR $3rd^{\frac{1}{4}}$ '72

During the period the Blue Bird continued its exploration and production was No information given out regarding the Old Reliable venture. FTJ $4 \ \frac{1}{4} \ ^{1}$ 72

Active Mine List - October 1973 - (1971 figures fiscal year 13,987,840 lbs. 04,500,000 T Ore, 3,885,790 T Waste. Empl. 85).

To Blue Bird to see Steve Potter who was not in. FTJ WR 12/14/72

To Globe, Miami, Blue Bird office. Mr. Potter out. FTJ WR 12/15/72

To Blue Bird mine to visit Steve Potter, no changes except dealing with Japane Difficult to gain much information. FTJ WR 2/15/73

Went to Blue Bird to visit S_{t} eve Potter who was out of office. FTJ WR 6/15/73

The Blue Bird was operating at capacity at the end of the last quarter FTJ Ann Report 6/28/73

BLUE BIRD GILA COUNTY

Visited the Blue Bird operation and interviewed Joe Jackson and Mr. Strand. They are pumping 500 gallons per minute. FTJ WR 3-31-67

Visited the Blue Bird operation - they are pumping about 500 gpm at present. They had one workman badly burned by acid with a threatened loss of sight. FTJ WR 5-26-67

Visited Blue Bird operation. Bechtel Corp. has the contract for construction of the electrowinning plant. Cement copper being stockpiled. FTJ WR 9-29-67

Active Mine List Oct. 1967 - 37 men

Visited Blue Bird-leaching operation at regular rate. Electrowinning plant expected to be completed about April 1, 1968. FTJ WR 12-1-67

The production of copper at the Blue Bird mine totaled 1,900,000 lbs. during the quarter. In the northern end of the property, a drilling program that is still in progress has indicated the presence of a sizeable copper deposit. The construction of the electrolytic plant is 20% completed and on schedule for the start of operation late in March. Taken from Skillings Mining Review Dec. 9, 1967 p. 14

Visited Blue Bird office. Construction by Bechtel Company continues. No information on completion date. FTJ WR 1-26-68

Visited Blue Bird who have started the new plant, but probably will not be at capacity for awhile due to small changes that they anticipate. Kenneth L. Power, former metallurgist at Silver Bell, is now metallurgist at Blue Bird. FTJ WR 3-29-68

Active Mine List April 1968 - 50 men

Interview with Mr. Strand at the Blue Bird operation - about normal except for some operational bugs. FTJ WR 5-31-68

Ranchers Exploration and Development Corporation's Blue Bird open pit copper leach mine near Miami, Arizona, began construction of its new electrowinning plant to recover copper from heap leach solutions. The new plant will not only increase profits substantially, but also reduce iron contamination in the leaching heaps. Taken from World Mining Catalog Number June 1968.

Active Mine List Oct. 1968 - 65 men

Visited Blue Bird mine - according to workmen, no particular changes. FTJ WR 11-29-68

Visited Blue Bird, Ken Power, Mgr., somewhere on property. Apparently operations normal. FTJ WR 1-31-69

Ranchers Exploration & Development Company (Bluebird Mine (File))

MG/WR 10/25/79 - Mike Attaway of Ranchers told me that operations at the Old Reliable Mine resumed at the end of September. The leach method is different now; instead of sprinkling acid on top of the blasted ore, the acid is injected through drill holes drilled 300-400 feet down from the surface. Cement copper containing about 80% Cu is produced. The company is looking for a buyer of the cement copper; Magma Copper Co. does not want the product. Ranchers is having trouble keeping the copper concentration up in the pregnant solution. Incidentally, I was told that Newmont Leases the top 300-400 feet of the Old Reliable to Ranchers; the lower mineralization comprises part of the Copper Creek deposit publicized by Newmont.

BLUE BIRD GROUP GILA COUNTY

Ranchers Exploration & Development Corp.,*4204 Coal Avenue, SE, Albuquerque, New Mexico, has purchased the Blue Bird open-pit copper mine located about 1½ miles west of Miami, Arizona. The property has been worked on a limited basis for the past year by Stovall Mining Co. Maxie L. Anderson, Ranchers Exploration President, said the purchase price was approximately \$1 million, 60% of which will be paid from production income. Some \$500,000 will be spent to expand and modernize the operation, increasing production to 15,000 to 20,000 lbs. of saleable copper per day. Production, which should begin in June, will be switched from "heap leaching to vat leaching". E&MJ April 1964 p. 20 * EGW Note 1-2-64

Visited Blue Bird mine, now taken over by Ranchers Development Co., 3 men working. Cleaning up and repairing equipment. No solution going through the plant. EGW WR 4-9-64

At present all leaching stopped. Three men are cleaning the place and working over the equipment. Neil Hazen, foreman, said he didn't know what the plans were, but expected some men in from Albuquerque most any day. EGW Memo 4-14-64

Mr. Williams said that Ranchers had not started any work at the time of his last visit. His last visit was May 29, 1964.

Visited Ranchers Development Corp.'s Blue Bird mine. All activity is on mining and building up the heap. No solution had been started at the time of the visit. EGW WR 10-15-64

Visited Ranchers Exploration and Development Corp.'s Blue Bird Mine - M. W. James, supt. They now have 160-165 gpm going through the precipitating plant and are still mining to increase the size of their leach area. 160 tons of concentrates have been shipped to Mountain Copper Co., Ltd., Martinez, California. EGW WR 11-27-64

Visited Ranchers Exploration and Development Corp. Blue Bird Mine. They are still stripping and building up their heap. There is now 230-235 gpm going thru the plant. EGW WR 1-29-65

Visited the Blue Bird mine and plant of Ranchers Development Corp., at the time of the visit 220 gpm of solution was going through the precipitating plant making about 10 tpd cement copper. They now have 5 large leaching dumps but the shortage of water is limiting production. Cement copper is shipped to Associated Metals, San Francisco, for export to Japan. EGW WR 3-26-65

BLUE BIRD GROUP GILA COUNTY

Visited with Mr. M.W. James, supt of the Blue Bird property operated by Ranchers Development Corp. The Blue Bird was operating but were suffering from insufficient water to carry out full capacity leaching operation. FTJ WR 5-28-65

Ranchers operation Blue Bird - between 75,000 and 100,000 tons of ore is treated per month. The cement copper produced is sold at the mine to brokers. At least 50% goes to foreign countries, Sweden, Norway, Netherland, and Japan are the heaviest buyers. The cement grades between 80% and 85%. FTJ WR 10-1-65

Visited Ranchers-Bluebird - M. W. James resigned as supt. and Art Miller, Ass't to the Pres. is acting as supt. until a replacement can be found. FTJ WR 1-28-66

Visited Rancher's Blue Bird Mine. They are using about 300 gpm in their leaching operation. Still looking for a manager. FTJ WR 3-25-66

W. W. Sorsen, Globe, Arizona, effective May 1, 1966, has been appointed general supt. of mining operations of Ranchers Exploration Development Corp.'s Blue Bird Mine - Miami, Arizona. Mr. Sorsen was formerly general foreman at the Hayden, Arizona smelter of the Kennecott Copper Corp. Skillings 5-14-66 p. 14

Visited Blue Bird - Mr. Miller absent - production normal. FTJ WR 5-27-66

Visited the Blue Bird operation - using about $400~{\rm gpm}$ of water in their leaching. FTJ WR 9-30-66

Visited the Blue Bird mine - operations normal. FTJ WR 11-25-66

Visited Blue Bird office. Richard F. Strand replaced W. W. Sorsen as supt. Strand was mine and maintenance foreman. FTJ WR 1-27-67

In copper Ranchers has entered its third year at the Blue Bird open pit mine at Miami, Arizona. Production at the mine for the last half of 1966 was 4,087,738 lbs. of copper compared to the same period a year ago when 3,275,769 lbs. of copper were produced, recording a substantial increase of metal over the period of the last two years. Skillings 3-4-67 p. 19

BLUE BIRD GROUP GILA COUNTY

Miami Copper - Superior Oil are building a road north of Pinal Ranch for a distance of $3\frac{1}{2}$ miles to their claims which are on the west side of Powers Gulch. They also have a group of claims south of Pinal Ranch on the west side of Rawhide Canyon. Both companies are going to drill and exchange information learned from drilling. Technical Drilling Service of Midland, Texas, have the contract for the drilling.

Sprague - Henwood are drilling in the dacite about 4 miles south of Pinal Ranch and on the east side of Rawhide Canyon, for Inspiration Copper Co.

John Jones Drilling Co. is drilling southeast of Schultz Ranch about 4 miles for Kerr-McGee. Three shallow holes have been drilled.

Ranchers Development Co. of Albuquerque, have taken over the Blue Bird. At present all leaching has stopped. Three men are cleaning the place and working over the equipment. Neil Hazen, foreman, said he didn't know what the plans were, but expected some men in from Albuquerque most any day. EGW Memo 4-14-64

BLUE BIRD GILA COUNTY

Operations at the leach plant and pit are slow. Three men were working at the time of the visit. Various reports around Globe and Miami indicate that Stoval is out of the picture and that the McClures had assumed control. Red Williams reported that it was rumored that an offer had been made by Inspiration for the property. He also said that Harmon Keyes would be pulled back, to straighten out the leaching procedure. At last word about \$90,000 in precipitates have been delivered to Inspiration Smelter, and there are, perhaps, 60 tons stocked at the leach plant. The last cement copper looked cleaner than previously and the last shipment ran 80% copper. A large dirst tank approximately 125 x 125 feet was constructed for decanting leach waste water has been built to the southeast and below the leach dump. The precipitation vats are largely empty of tin, but preparations to recharge them were underway. Lewis A. Smith - Memo May 1963

Tony Bennett tells me that Callahan (Callahan Mining Corp., I presume) has leased and optioned the Carrow Bluebird property, and other adjacent property, and has moved in a couple drills. I saw one when I came down from Greer. FPK 9-11-63

Active Mine List Oct. 1963 - 10 men

The officers were away for Thanksgiving when the mine was visited 11-27-63, but the operator there reported that leaching of the new heap leach dump was now under way, and the old dump was being dried out. The copper content of the pregnant solution was reported to be good. Cement copper is still being produced. Considerable water for decanting was present in the largest settling tank below the precipitation plant. LAS - Memo - 11-27-63

Visit and conference with R. J. Henderson, Foreman 1-31-64

The leaching of the new dump has not been too successful, thus far, as the ore is hard and more silicified than that in the old dump. The solution is running very low in copper content. The cement copper runs approximately 66 percent copper. The water for leaching is not clear, containing some iron sulphate, which precipitates on the dump surface. When the sulphate oxidizes to Fe_2O_3 it forms a hard impervious coat. This necessitates frequent "stirring up" of the top of the dump. It was suggested that a flocculent be employed in the decantation ponds to facilitate the precipitation of the iron-sulphate, and that just the better water be returned to the circuit.

Henderson stated that the Callahan had moved off of Stovall Copper's ground and did not exercise their option. However, they still have an option on the Schultz ground. They are not drilling there now. Ranchers Dev. Corp. of Grants, N. M., now has an option on the Stovall Company's ground. Red Williams said that they were evaluating the operation now and that they might take it over. Henderson was not certain as to what would eventually result. LAS - Memo - 1-31-64

Arizona Department of Mines and Minearl Resources Library Entry 11/29/93

Authors: Miller, Arthur

Pub. Date: 1967

Title: Heap leaching copper ore at Ranchers Bluebird Mine, Miami,

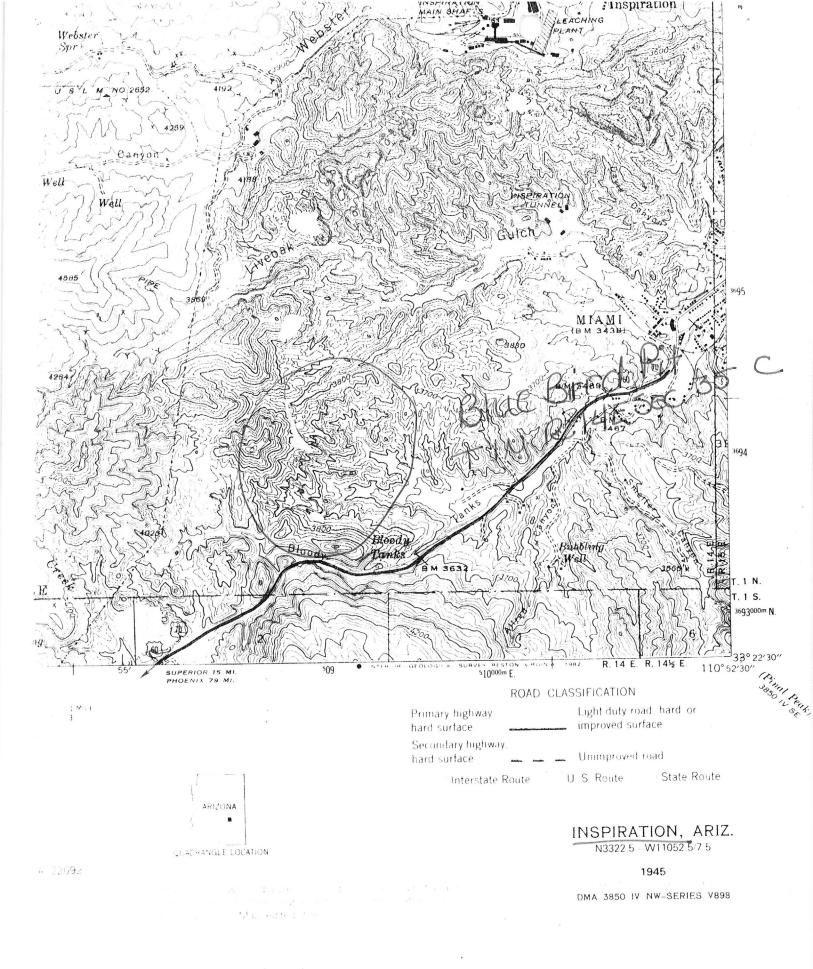
Arizona: AIME-SME Preprint 67-B-339, 16p.

Area/County: Gila

Latitude: 33471670 Longtitude: 110895550 (Dec. Equiv.)

Key words: leaching, copper, Bluebird Mine, SX-EW

ADMMR Library location / Library subject: BLUEBIRD MINE FILE



Returned Writer

Ransome Copper Company

Miami

Arizona

1193

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

July 11, 1958

To the Owner or Operator of the Arizona Mining Property named below:

Ransome Copper Mine	(Gila County)	copper	
(Property)		(ore)	

We have an old listing of the above property which we would like to have brought up to date.

Please fill out the enclosed Mine Owner's Report form with as complete detail as possible and attach copies of reports, maps, assay returns, shipment returns or other data which you have not sent us before and which might interest a prospective buyer in looking at the property.

Frank P. Knight

FRANK P. KNIGHT, Director.

Enc: Mine Owner's Report

RANSOM COPPER

Cu

Gola

4 - 1

T 1 N, R 14 E

Ransom Copper Co.

42

Date Printed: 06/28/96

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

INFORMATION SUMMARY

Information from:

Jay Speahardt

Company:

Cyprus Miami

Address:

City, State ZIP:

Miami, Arizona

Phone:

520-473-7161

MINE:

Bluebird

ADMMR Mine File:

Bluebird Mine file

County:

Gila

SUMMARY

Frank Harris, Public Relations, BHP Minerals, San Manuel called asking the current status and initial production capacity of the Bluebird mine's SX/EW plant in Miami. The modern operation began as a copper leach-precipitation operation in 1966. Recovery methods changed to solvent extraction - electro winning in 1968-69, making it one of the first, if not the first to use the recovery method. The property continued to operate into 1982 as a heap leach - SX/EW facility until it was shut down on October 25, 1982. The property was acquired by Inspiration Consolidated Copper in 1984 and is now held by their successor, Cyprus Miami.

Jay Speahardt at Cyprus Miami reported on the status of the old Bluebird SX/EW plant. The plant and building are gone. The building that can be seen from the hiway is a shop building built by Cyprus in the last ten years.

Year	Copper production in pounds and
	notes
1966	by leach - precipitation 7,200,000
1967	7,690,000
1968	conversion to leach - SX/EW
	1,449,000
1969	9,924,000
1970	11,520,000
1971	12,458,000
1972	14,680,000
1973	15,005,000
1974	15,340,000

1975	15,122,000
1976	17,876,000
1977	17,068,000
1978	closed part of the year 3,926,329
1979	10,955,000
1980	13,017,000
1981	13,328,000
1982	shut down Oct. 25, 1982 no
	production was reported
1983	
1984	property acquired by Inspiration
я	Consolidated Copper

Ken A. Phillips, Chief Engineer Date: June 28, 1996

- RELLY

Office of State Mine Ansperme

705 W. Wing, Capitol Building Phoenix, Arizona 85007 STATE 1. LIPECTOR

AUG 15 1985

NOTICE TO ARIZONA STATE MINE INSPECTOR

35
In compliance with Arizona Revised Statute 27-303, we are submitted
this written notice to the Arizona State Mine Inspector (705 West
Wing, Capitol Building, Phoenix, Arrzona 85007) of our intent to
start/stop (please circle one) a mining operation.
COMPANY NAME Nichols Development Corporation
CHIEF OFFICER Worth Nichols
COMEANY ADDRESS P.O. Box 167 Globe, Drigosa
CMEANY TELEPHONE NUMBER 425 - 8114
III E CA PLANT NAME Inspiration Consolidated Congress Co.
MINI OH PLANT LOCATION (including county and meanest tout, as well as directions for locating by website.
Bluebird Mine Site
Miani, Brigara
Gilw County
TYPE OF OPERATION PRINCIPAL PRODUCT
STARTING DATE 8/12/85 CLOSING DATE 8/30/85
DURATION OF OPERATION 3 weeks
PERSON SENDING THIS NOTICE Que & Peu
TITLE OF PERSON SENDING THIS NOTICE Secretary
DATE NOTICE SENT TO STATE MINE INSPECTOR 8/2/85
PLEASE NOTE: Any operation found operating, without having sent this notice to the Arizona State Mine Inspector, will be charged with a petty offense.

RECEIVED

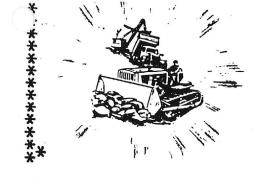
SEP 1 6 1985

DEPT. OF MINES & MINERAL RÈSOURCES

HOLS DEVELOPME TECORPORA

HEAVY EQUIPMENT RENTAL Box 167

Globe, Az. 85502 Phone 425-7006 • 425-8116



August 12, 1985

Mr. Vernon R. Gomez, Subdistrict Manager Mine Health and Safety Administration 2721 North Central Avenue, Suite 900 Phoenix, Arizona 85004

Dear Mr. Gomez:

This letter serves as notification that Nichols Development Corporation, working under bid contract for Inspiration Consolidated Copper Company, will commence work on August 12, 1985.

The site of the work is located at the Bluebird Mine west of

Miami, Arizona .

The maximum number of men expected to be working on this project

is 5.

Any further information may be obtained through our office located at 1750 N. Broad Street in Globe, Arizona or by calling 425-7006.

Sincerely,

VJ Plew, Secretary

cc: State Mine Inspector Mr. Jim Rassmussen

SEP 1 6 1985

DEPT. OF MINES & MINERAL RESOURCES

STATE MINE INSPECTOR



JUL 1 1 1984 RANCHERS EXPLORATION AND DEVELOPMENT CORPORATION

Box 6217 / 1776 Montano Road, N.W. / Albuquerque, New Mexico 87197 Telephone (505) 344-3542 / TWX 910 989 1688 RANC EXPLO ABQ TLX 66 0422 RAN EXP ALB

July 9, 1984

Mr. James McCutchan Arizona State Mine Inspection 705 W. Wing Capital Bldg. Phoenix, AZ 85007

RE: Bluebird Mine, Miami, AZ - 02-00158

Gentlemen:

This will confirm conversation with Ms. Cleo Schulte of your office on July 3, 1984, advising that effective July 6, 1984, Inspiration Consolidated Copper Co. will assume control of the above referenced mine. Mr. Jake Timmers of Inspiration is our contact.

Should you have any questions regarding the above, please feel free to contact me.

Sincerely,

David L. Nussear

Corporate Purchasing and Transportation Manager

DLN/cje

cc:

PAM

JMR

Jake Timmers, Inspiration



Hecla Mining Company

NEWS

March 9, 1984

MAR 1 2 1984

RANCHERS-HECLA AGREE TO MERGER

DEPT. MINERAL RESOURCES
PHOENIX, ARIZONA

ALBUQUERQUE, NEW MEXICO and WALLACE, IDAHO -- Ranchers Exploration and Development Corporation and Hecla Mining Company today announced that the two companies have entered into a definitive merger agreement for the merger of the two companies. In the merger, each outstanding share of common stock of Ranchers will be exchanged for 1.55 shares of Hecla common stock.

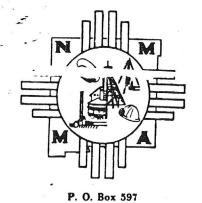
On the basis of approximately 5.76 million shares of Ranchers common stock outstanding (assuming exercise of outstanding options), approximately 8.9 million shares of Hecla common stock would be issued in the merger.

Hecla also announced that certain shareholders of Ranchers, including First Mississippi Corporation and members of the Anderson family, owning approximately 35% of the outstanding Ranchers common stock, have granted Hecla irrevocable proxies to vote all of the shares owned by them in favor of the merger. In addition, Ranchers has agreed to grant to Hecla an option to purchase up to 200,000 shares of its common stock at an exercise price of \$34.88 per share.

In Wallace, William A. Griffith, President and Chief Executive Officer at Hecla, stated, "This joining together of two fine precious metal mining organizations will create a company that is not only the largest domestic mine producer of silver, but which also has diversified interests in lead and industrial minerals to protect it during dips in precious metal prices. It will truly be the premier silver mining company in the United States." About 6.8 million ounces of silver was mined for Hecla's account in 1983 and, Ranchers produced about 2.3 million ounces.

Leland O. Erdahl, President and Chief Executive Officer of Ranchers, stated that the combination was an extremely favorable development for Ranchers and its stockholders. Mr. Erdahl stated that Ranchers will cooperate with Hecla in consummating the transaction at the earliest possible date. A

(over)



NEW MEXICO MINER

A newsletter published by the New Mexico Mining Association in the interest of the minerals industry.

The New Mexico Mining Association

SANTA FE, N. M.

Vol. 35, No. 2 ---- February 1973

EL TENIENTE EXPROPRIATION RULED VIOLATION - The Chilean expropriation of Kennecott Copper Corporation's equity interest in the El Teniente copper mine is a violation of both International Law and the Public Order of Germany, Judge Luther of the Hamburg District Court said in late January. In a strongly worded forty-seven page opinion received by the company, the judge stated that the violation was "so bad that it is unbearable for our understanding of law and legal policy". On January 22, the court lifted Kennecott's attachment of 3,500 tons of copper from El Teniente unloaded from a Russian vessel for Norddeutsche Affinerie in Hamburg. The judge indicated that the court probably would not have lifted the attachment if Norddeutsche Affinerie had been the purchaser of the copper rather than a processor for purchasers who might not be German. Kennecott's general counsel, Pierce N. McCreary, said, "The attachment was only a first step in bringing a law suit. Its lifting has little effect on the main proceeding, which began January 9. The significance of this opinion of the court is that courts of both France and Germany have now independently ruled that the expropriation of El Teniente without compensation was illegal." On November 29, 1972 the Paris Court of Extended Jurisdiction ruled that the expropriation of El Teniente was a violation of the Public Order of France. At issue in Paris is a payment of approximately \$2 million for another shipment of El Teniente copper. At issue in Hamburg is the copper itself, valued at \$3.5 million.

RANCHERS FORMS VENTURE WITH MITSUBISHI - Ranchers Exploration and Development Corporation has announced that it has reached a preliminary agreement in principle with Mitsubishi International Corporation on terms of a possible joint venture to operate the company's Bluebird Copper Mine near Miami, Arizona. The proposed agreement initially provides that Mitsubishi will contribute about \$250,000 to cover costs of research and test work for expanding present production facilities. The two companies have developed an economic model for operation of the mine at about four times the present production of 7,500 tons of cathode copper annually. The research and test work -- to be conducted over a period of about six months and commencing in the near future -- will determine whether the model can be achieved in actual operations. Whether the venture proceeds upon the terms presently agreed upon will depend on the results of the work. It is possible that negotiations could be reopened after completion of this initial phase. The proposed agreement provides that following the completion of the first phase, Mitsubishi will contribute about \$20 million to the joint venture and will own a thirty per cent interest. Ranchers, which will contribute the mine and existing production facilities, will receive \$3.75 million in cash from the venture and own seventy per cent of it. The remaining venture capital contributed by Mitsubishi --about \$16.25 million-- will be used to pay part of the costs of expansion.

INCO IVERTAL

RANCHERS EXPLORATION AND DEVELOPMENT CORPORATION: - stated in its annual report that although somewhat slower to come on stream than expected, the leaching operation of Ranchers Exploration at the Old Reliable mine near Mammoth, Arizona, gradually built up to planned levels and is operating as planned. The pioneering project got off the

News Letter - Nevada Mining Association 11-15-73

ground, literally, in early March 1972 when the 4-million-ton deposit was shattered with 4-million pounds of explosive. Leaching began on the terraced surface of the deposit on August 23, 1972, with some 300 gallons per minute of solution being applied with lawn sprinklers. Solution began to seep from the base of the deposit - some 475 feet below the top - exactly a month later. Initial flow measured only 10 gallons per minute, but rose slowly in the next several months, reaching 210 gallons per minute by the end of November. This was, however substantially less than had been expected, considering that by this time more than 30-million gallons of solution had been applied to the 245,000 square feet of leaching surface. Concern that some of the solution might be escaping was allayed, however, by the fact that the flow continued to rise steadily. By the end of December, it had reached 275 gallons per minute, and a month later had risen to 425 gallons - about two-thirds the amount of solution then being applied.

The flow increased sharply in February. By the end of the month, 900 gallons per minute were emerging from the deposit, about the same amount being applied to the surface. Since that time, the flow on and off the deposit has been in approximate equilibrium at about 1000 gallons per minute. The loaded solution, containing about .20% copper, flows from a small holding dam at the base of the deposit and into the precipitation plant. Production of cement copper from the leach liquors began in January, when some 117,000 pounds were produced, climbed to 364,000 pounds in February, and has averaged about 500,000 pounds per month since then. (Pay Dirt, October 29, 1973)

RANCHERS

EXPLORATION AND DEVELOPMENT CORPORATION



PROGRESS REPORT

1776 Montano Road, Northwest / Post Office Box 6217 Albuquerque, New Mexico 87107 / Phone (505) 344-3542

COMPANY AGREES TO FORM VENTURE WITH MITSUBISHI FOR POSSIBLE OPERATION OF BLUEBIRD COPPER MINE

Your Company is pleased to announce that it has reached a preliminary agreement in principle with Mitsubishi International Corporation on terms of a possible joint venture to operate the Company's Bluebird Copper Mine near Miami, Arizona. The proposed agreement initially provides that Mitsubishi will contribute about \$250,000 to cover costs of research and test work for expanding present production facilities.

The two companies have developed an economic model for operation of the Mine at about four times the present production of 7,500 tons of cathode copper annually. The research and test work — to be conducted over a period of about six months and commencing in the near future — will determine whether the model can be achieved in actual operations. Whether the venture proceeds upon the terms presently agreed upon will depend on results of the work. It is possible that negotiations could be reopened after completion of this initial phase.

The proposed agreement provides that following the completion of the first phase, Mitsubishi will contribute about \$20-million to the joint venture and will own a 30 percent interest. The Company, which will contribute the Mine and existing production facilities, will receive \$3.75-million in cash from the venture and own 70 percent of it. The remaining venture capital contributed by Mitsubishi -- about \$16.25-million -- will be used to pay part of the costs of expansion.

EXPANSION ESTIMATED TO COST \$36-MILLION

The total cost of expansion is estimated on a preliminary basis to be about \$36-million. This would mean that after the \$16.25-million contribution by Mitsubishi another \$20-million in capital would be required. Seventy percent of this amount would be provided by the Company and 30 percent by Mitsubishi. Mitsubishi has agreed to guarantee the Company's share of this financing. After expansion is completed, or not later than 26 months after construction commences, whichever occurs first, Mitsubishi will begin receiving its 30 percent of copper production.

The proposed expansion includes enlargement of the present solvent extraction-electrowinning plant and a change in the leaching system. Copper ore is presently placed in heaps and the copper removed by percolating a solution of sulfuric acid and water through these piles of ore. Under the proposed system, the ore would be processed by vat, agitation, acid-bake or some similar method of treatment which would increase the recovery of copper from the ore.

Ralph Levenson, president of Intramet Corporation, New York, sales agent for cathodes produced at the Mine, assisted with the negotiations with Mitsubishi.

February 5, 1973

Maxie L. Anderson

President

DIRECTORS: Maxie L. Anderson, President

Edward E. Monteith, Jr. — Executive Vice-President, Republic National Bank
Robert V. Sibert — President, Pearson-Sibert Oil Co. of Texas
Frank Coolbaugh — Mining Consultant
Roy Richards — President, Southwire Company
J. B. Mudd—M.B.E., M.C., Consulting Mining Engineer
Edward McL. Titmann — Mining Consultant

RECEIVED

Bank, Dallas, Texas
FEB 1 3 1973

DEPT. MINERAL RESOURCES
PHOEDIX, ABIZONA

OFFICERS: Maxie L. Anderson, President Leland O. Erdahl, Vice-President, Finance John E. Motica, Vice-President, Geology Milton H. Ward, Vice-President, Operations Herbert M. Campbell II, Secretary M. K. Kaiser, Assistant Secretary and Treasurer



11 Agri

1776 Montano Road, Northwest / Albuquerque, New Mexico 87107 / Post Office Box 6217 / Phone (505) 344-3542

COLORADO MILL TAILINGS EFFORT ADVANCES; WILL BE COMPANY'S FOURTH URANIUM PROJECT

The Company continues to make encouraging progress on its fourth new uranium project, the treatment of uranium mill tailings at Durango and Naturita, Colorado. The latest development in the project, being handled by the Company's wholly-owned subsidiary, Durita Development Corporation, is the receipt of a radioactive materials license from the Colorado Department of Health. The license and related state permits now in hand allow the Company to proceed with removal of the tailings from their present sites to locations where they can be leached to remove a portion of the remaining uranium. The Naturita tailings total approximately 630,000 tons, those at Durango about 1½-million tons. The tailings, left from milling operations at the two sites from 1943-63, contain about two million pounds of uranium, and tests indicate that at least 65% of this amount can be recovered, along with a substantial amount of vanadium.

Work on the Naturita portion of the project will begin first, with \$765,000 of earthwork commencing at the new treatment site in early July, followed by construction of the material processing facility shortly thereafter. The earthwork will consist primarily of construction of three clay-lined leaching tanks, measuring 400 x 1000 x 20 feet, 25 acres of clay-lined evaporation ponds, four plasticlined solution collection ponds, and a plastic-lined water storage reservoir. The processing facility will consist basically of bins, conveyors, dryer, crusher, and an agglomerator for preliminary treatment of the material, which will then be placed in the leaching tanks for treatment with sulfuric acid. The solution emerging from the tanks will be piped to solvent extraction plants for removal of the uranium oxide (U308) and vanadium. It is presently expected that the plant will produce about 1,100 pounds of U308 and 4,000 pounds of V205 daily. Production should begin in late November and continue for approximately 16 months. Production at Durango is projected to commence in mid-1979 and to continue for about 32 months.

Progress is continuing at the Company's other three new uranium projects — the Johnny M, Hope, and Small Fry mines. The Johnny M, located in the Ambrosia Lake area of northwest New Mexico, produced approximately 50,000 pounds of U308 in April and in May and will be a net income producer in the final quarter of the fiscal year. The Hope Mine, also in northwest New Mexico, is moving toward full production, but the development-grade ore remains low. Approximately 90,000 tons of ore have been stockpiled at the Small Fry Mine near Moab, Utah, and mining is proceeding while milling arrangements for the ore are investigated. The Company expects to reach a decision on milling of the ore within the next several months.

June 21, 1977

Maxie L. Anderson, President

DIRECTORS / Maxie L. Anderson — President, Ranchers Exploration & Development Corporation / Frank Coolbaugh — Mining Consultant / Phil S. Cross — Vice President, Kerr Addison Mines Limited / Edward E. Monteith, Jr. — Executive Vice President, Republic National Bank, Dallas, Texas / John E. Motica — Senior Vice President, Geology, Ranchers Exploration & Development Corporation / Roy Richards — President, Southwire Company / Edward McL. Tittmann — Mining Consultant OFFICERS / Maxie L. Anderson — President / Herbert M. Campbell II — Vice President and Secretary / Leland O. Erdahl — Vice President, Finance / David K. Hogan — Vice President, Engineering / M. K. Kaiser — Treasurer / Paul A. Matthews — Vice President, Operations / John E. Motica — Senior Vice President, Geology

Officers KOP-RAN DEVELOPMENT CORPORATION

Eckhardt Koppen President

Milton H. Ward Vice President

Herbert M. Campbell II Secretary

M. K. Kaiser Treasurer

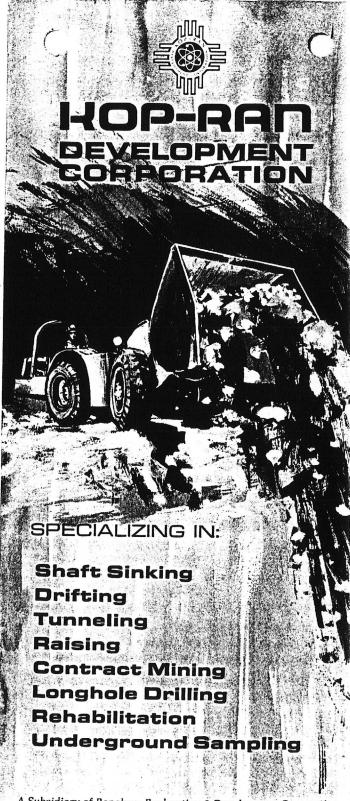
Eckhardt M. Koppen, Kop-Ran president, has had more than 15 years experience as a miner and mining contractor in underground mines throughout the United States and Canada. This experience has included sinking, drifting, raising, tunneling, and stoping (backfill, shrinkage, and open). Employers



in the U.S.: Union Carbide, Magma Copper, New Idria, and Ranchers Exploration, principally in California, Arizona, Montana, and North Carolina. Canadian employers: Harrison Western, International Nickel, Geco Copper, and Red Lake Gold Mines. Mr. Koppen formed his own contracting firm in 1967 and worked independently until formation of Kop-Ran in 1971.

Milton Ward is a mining engineer and Vice President, Operations, Ranchers Exploration and Development Corporation, Albuquerque, New Mexico; Mr. Campbell is an attorney and Secretary of Ranchers; Mr. Kaiser, an accountant, is Assistant Secretary and Treasurer of Ranchers.

Kop-Ran Development Corporation Box 6217 Albuquerque, New Mexico 87107



A Subsidiary of Ranchers Exploration & Development Corporation

KUP-RAN

Kop-Ran Development Corporation is an experienced, fully-equipped contractor specializing in shaft sinking, drifting, tunneling, raising, longhole drilling, rehabilitation, underground sampling, and contract mining — both exploration and production.

Kop-Ran is organized to do your contracting job efficiently, economically, and in a professional manner. We are organized to respond rapidly to your needs and requirements and will save you money by doing the job right — the first time.

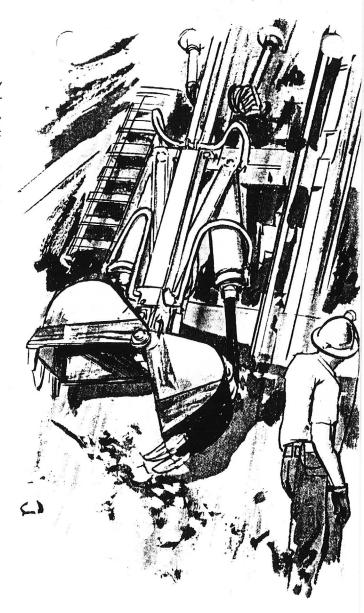
WHY KOP-RAN?

EFFICIENT — Kop-Ran is a tightly knit organization, with a maximum of on-the-job supervision and control and a minimum of office overhead. Of Kop-Ran's full-time employees, 95 percent are miners or foremen — all working directly on your project. The group is organized to work around-the-clock, if necessary. In many instances, we may be able to do your job quicker and more economically than you can do it yourself.

EXPERIENCED — Kop-Ran employs only expert miners and foremen. These men, experienced in U.S. and Canadian mines, are carefully selected to provide maximum performance daily. All are paid top wages and incentive bonuses based on performance.

Recent projects have included a variety of work assignments at the Tungsten Queen Mine, Townsville, North Carolina, and the Old Reliable Copper Mine, Mammoth, Arizona. Work at the Tungsten Queen included shaft rehabilitation, drifting, raising, stope development, and exploration drilling. Activity at the Old Reliable has involved tunneling and cross-cutting, preparations for coyote blasting, loading for blast, and stemming.

EQUIPPED — Kop-Ran is fully-equipped to do your job quickly and efficiently. Machinery includes all types of drilling, mucking, raising, and sinking equipment, including modern underground diesel-powered equipment.



WHOM TO CONTACT

If you have a mine contract job for bid — large or small — call or write Eckhardt Koppen or Milt Ward, and we'll be happy to discuss it with you. We can save you money; compare our bid with those of our competitors or with the cost of doing the job yourself. Phone: (505) 344-3542; address: Box 6217, Albuquerque, New Mexico 87107. Operations limited to U.S. and Canada.

THIRD QUARTER REPORT

EXPLORATION AND DEVELOPMENT CORPORATION

MARCH 31, 1977

RECEIVED MAY 25 1977

RANCHERS EXPLORATION AND DEVELOPMENT CORPORATION

Montano Road, N.W. Albuquerque, New Mexico 87107

STATE OF ARIZONA MINERAL BUILDING FAIRGROUNDS DEPARTMENT OF MINERAL RESOURCES

PHOENIX, AZ 85007

DDRESS CORRECTION REQUESTED

pounds. The Mine achieved its production goal of about 45,000 pounds for April, and it appears there is a reasonable likelihood that this output can be maintained in May and June. The work force at the Mine has stabilized, and Management is generally satisfied with the mine's performance, although production costs remain quite high. Litigation with General Atomic Company over the 1972 sales agreement on the mine's production was partially settled early in the fiscal year with Gulf States Utilities agreeing to purchase three million pounds of the disputed production. Gulf States had agreed in 1973 to purchase approximately this amount of Johnny M production from General Atomic. Litigation is continuing with General Atomic with respect to production in excess of three million pounds. The Johnny M property is jointly owned by the Company and HNG Oil Company and is held under lease from the Santa Fe Railroad.

A significant development in the third quarter was sale of output from the newly-completed Hope uranium mine, jointly owned by the Company and Chaco Energy Company. Production from the property, located near Grants in northwest New Mexico, was sold to United Nuclear Corporation for a price which is expected to average about \$25 per pound of U₃O₈ in ore. The first deliveries of ore were made in late March, and the Mine will begin contributing to earnings in the final quarter of the year. Mining is planned at a rate of 5,000 tons of ore per month. The Mine is estimated to contain in-place proven and indicated ore reserves of about 826,000 pounds of uranium oxide. Average grade of the ore delivered is expected to be about .15 percent uranium oxide, or about three pounds per ton of ore.

Production continued at a rate of about 5,000 tons per month at the Small Fry uranium mine near Moab, Utah, during the third quarter. As of May 1, approximately 85,000 tons of ore containing about

two pounds of uranium oxide per ton were in stockpile at the Mine. Milling arrangements for the ore are being investigated.

The Company purchased two million tons of uranium mill tailings in southern Colorado during the first quarter of the fiscal year and is proceeding with engineering of a processing plant to treat the material. The Company expects to recover approximately half of the two million pounds of uranium oxide in the tailings, and has entered into an agreement whereby up to 1.2 million pounds of the uranium will be sold to

Virginia Electric and Power Company.

The Company's uranium exploration program remained active throughout the three quarters, with drilling concentrated in southeast Utah, northwest New Mexico, southern Colorado, and northern Wyoming. As of April 1, approximately 245,000 feet of hole had been drilled, and additions to ore reserves were made at some locations. Funding for the exploration venture with Texas Utilities Fuel Company was increased to \$1.5 million for the current year which began in October, 1976 and will increase to \$2.5 million the following year. The venture with Urangesellschaft expired in December, but consideration is being given to further exploration of portions of the acreage controlled by the venture.

The outlook is favorable for the final quarter of the fiscal year. Earnings could exceed those of the third quarter, provided progress continues at the Johnny M and Hope mines. Efforts to sell or process production from the Small Fry Mine will continue, and the tailings project will be pushed forward as rapidly as possible. All in all, the Company expects a strong finish for the year, setting the stage for fur-

ther progress in FY 1978.

May 16, 1977

Maxie L. Anderson, President

FINANCIAL HIGHLIGHTS	Three Months Ending March 31		Nine Months Ending March 31	
	1977	1976	1977	1976
Gross Income \$	4,695,422	\$ 3,225,826	\$14,440,610	\$10,892,286
Net Income before Income Taxes	701,309	(70,392)	1,558,980	718,354
Income Taxes	275,000	(45,000)	475,000	180,000
Net Income	426,309	(25,392)	1,083,980	538,354
Earnings per Share	.30	(.02)	.75	.38

SUMMARY OF CONSOLIDATED BALANCE SHEET/MARCH 31, 1977 RANCHERS EXPLORATION AND DEVELOPMENT CORPORATION AND SUBSIDIARIES

ASSETS	
Current Assets: Cash and Certificates of Deposit Trade Accounts Receivable Inventories Prepaid Expenses and Deposits TOTAL CURRENT ASSETS	1,501,288 2,256,779
Property, Plant and Equipment, Less Allowances for Depreciation, Depletion and Amortization of \$9,229,191 Other Assets and Deferred Charges TOTAL ASSETS	. 15,255,670 8.980,128
LIABILITIES AND STOCKHOLDERS' EQUITY	
Current Liabilities: Trade Accounts Payable Federal Income Taxes Other Liabilities Current Portion of Long-Term Debt TOTAL CURRENT LIABILITIES	495,000 1,185,007
Long-Term Debt—Less Current Portion Deferred Income Taxes TOTAL LIABILITIES	3,010,588 3,950,000
Stockholders' Equity: Common Stock—par value \$.50 per share: Authorized—4,000,000 shares Issued—1,542,228 including shares in Treasury Paid-In Surplus Retained Earnings Less cost of 121,608 shares in Treasury	771,114 5,516,170 15,002,857 21,290,141
TOTAL STOCKHOLDERS' EQUITY	1,205,629 20,084,512
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	\$30 315 936

This statement has been prepared without audit.

HIGHLIGHTS

- 1. Net earnings increased to \$.30 per share in the third quarter, bringing earnings for the first nine months of the fiscal year to \$.75 per share, compared to \$.38 for the same period a year ago.
- 2. Copper production at the Bluebird Mine continued at a record level, totaling about 13.6-million pounds for the nine months.
- 3. Third quarter uranium royalties reached a new high of \$1,004,168, increasing the total for the three quarters to \$2,169,517.
- 4. Production improved at the Johnny M uranium mine, and development is continuing in an effort to reach an acceptable level of operations in the final quarter of the year.
- 5. Production began at the Hope uranium mine in the third quarter, and the property is now producing at near its projected output.
- 6. The Small Fry uranium mine remained in production throughout the nine months, and some 85,000 tons of ore are in stockpile awaiting the completion of milling arrangements.
- 7. Progress was made on the uranium mill tailings project in southern Colorado, with an agreement being reached with Virginia Electric and Power Company to purchase uranium recovered from the tailings.
- 8. Exploration for uranium continued at a steady pace during the nine months, with modest additions being made to ore reserves at some properties.

DIRECTORS / Maxie L. Anderson—President, Ranchers Exploration & Development Corporation / Frank Coolbaugh—Mining Consultant / Phil S. Cross—Vice President, Kerr Addison Mines Limited / Edward E. Monteith, Jr.—Executive Vice President, Republic National Bank, Dallas, Texas / John E. Motica—Senior Vice President, Geology, Ranchers Exploration & Development Corporation / Roy Richards—President, Southwire Company / Edward McL. Tittmann—Mining Consultant Officers / Maxie L. Anderson—President / Herbert M. Campbell II—Vice President and Secretary / Leland O. Erdahl—Vice President, Finance / David K. Hogan—Vice President, Engineering / M. K. Kaiser—Treasurer / Paul A. Matthews—Vice President, Operations / John E. Motica—Senior Vice President, Geology

RANCHERS EXPLORATION

AND DEVELOPMENT CORPORATION

1776 Montano Road, N.W. Albuquerque, New Mexico 87107

TO OUR SHAREHOLDERS:

The third quarter was a critical period in which your Company was able to record a substantial gain in earnings while continuing efforts to bring its new uranium projects on line. Progress to date on these projects places the Company in good position to close the year on a strong note.

Third quarter earnings totaled \$.30 per share, lifting earnings for the nine months to \$.75 per share (\$.25 first quarter, \$.20 second quarter), an increase of about 97 percent above the \$.38 earned in the first three quarters last year. Net income was \$1,083,-980 on revenues of \$14,440,610, an increase of 33 percent over the \$10,892,286 received in the same

nine months a year ago.

Uranium royalties were the greatest contributor to the improved earnings, totaling \$2,169,517 for the nine months, including \$1,004,168 in the third quarter alone. The third quarter figure stemmed largely from a spot sale of uranium in March by Kerr McGee Corporation, from which most of the Company's royalties are received. Royalties are expected to return to a more normal level in the fourth quarter, but even at that royalties for the year will substantially exceed the previous record total of \$1,797,000 received last year.

Other contributors to revenues included Bluebird copper sales of \$9,652,076, Johnny M uranium sales of \$1,519,768, sales of \$874,138 by Ran-Con, the Company's mining contractor subsidiary, and miscellaneous income of \$225,111. Bluebird Mine copper sales represented an increase of about 17 percent over the \$8,214,476 recorded in the same period a year ago.

The Bluebird continued to operate quite efficiently during the nine months, but profits were again reduced by low copper prices. Production totaled 13,637,395 pounds, compared to 11,757,152 a year ago, an increase of 16 percent. The Company also reopened its Big Mike copper leaching operation near Winnemucca, Nevada in October 1976, and the property is currently producing approximately 3,000 pounds of cement copper daily.

Output increased slowly at the Johnny M Mine and total deliveries to May 1 stood at about 200,000

RANCHERS

EXPLORATION AND DEVELOPMENT CORPORATION



PROGRESS REPORT

1776 Montano Road, Northwest / Post Office Box 6217 Albuquerque, New Mexico 87107 / Phone (505) 344-3542

EXPLORATION VENTURE UNDERWAY; COPPER OPERATIONS PROGRESSING

The Company's recently-formed uranium exploration venture with Occidental Minerals Corporation and Frontier Mining Corporation is well underway, with drilling proceeding on selected portions of the 120,000 acres which the joint venture controls in northwest New Mexico. The Company is managing the venture and owns a 45 percent interest; Occidental and Frontier each have a $27\frac{1}{2}$ percent interest. In addition to the newly-formed venture, the Company is investigating other means of expanding its total exploration program, not only for uranium but for copper and several other minerals.

Nearly all details have been completed concerning execution of the Agreement which the Company and Houston Natural Gas have to sell uranium production from the Section 7 property in the Ambrosia Lake area to Gulf Oil Corporation. The Company has now exercised its option to purchase the ore reserves on an adjoining property, and a toll-milling agreement with one of the processing mills in the area is substantially complete. It is anticipated that the entire package will be finalized in about a week and the Company has already begun preliminary engineering towards bringing the mine onstream. The Agreement with Gulf calls for delivery of five to ten million pounds of U308 at an estimated gross value of \$50-million to \$90-million. Deliveries will be at the rate of about a million pounds a year beginning in 1976, although Gulf has the right to defer delivery for up to one year. The Company considers the terms of the sale to be quite favorable, particularly in view of the expanded earnings base which it should ultimately provide.

Copper production at the Bluebird Mine remains at a high level, with record production of 51,500 pounds occurring during one 24-hour period in late May. Output is now averaging about 43,000 pounds per day; objective for the upcoming fiscal year is 45,000 pounds per day without expansion of the present plant. Expansion of the plant and a change in leaching methods are, however, still under intensive study. The Company has also taken further steps to improve the quality of cathodes being produced in the plant and has made considerable progress in improving their density. Plans are being made to replace the lead anodes used in the production circuit, thus eliminating a source of product contamination.

Terracing of the surface of the Old Reliable copper deposit, shattered on March 9 with four million pounds of explosives, has been completed and in-place leaching of the ore is expected to begin in August. Construction of a precipitation plant is on schedule and a six-mile-long pipeline to provide water for leaching solutions is being laid. Leach liquor should begin flowing into the new plant late in the first quarter of the 1973 fiscal year.

June 14, 1972

Maxie L. Anderson President

DIRECTORS: Maxie L. Anderson, President — President, Maxiell Corporation Edward E. Monteith, Jr. — Executive Vice-President, Republic National Bank, Dallas, Texas Robert V. Sibert — President, Pearson-Sibert Oil Co. of Texas Frank Coolbaugh — Mining Consultant Roy Richards — President, Southwire Company J. B. Mudd—M.B.E., M.C., Consulting Mining Engineer Edwin M. Tittmann — Mining Consultant

OFFICERS: Maxie L. Anderson, President Leland O. Erdahl, Vice-President, Finance John E. Motica, Vice-President, Geology Milton H. Ward, Vice-President, Operations Herbert M. Campbell II, Secretary M. K. Kaiser, Assistant Secretary and Treasurer

RANCHERS

EXPLORATION AND DEVELOPMENT CORPORATION



PROGRESS REPORT

1776 Montano Road, Northwest / Post Office Box 6217 Albuquerque, New Mexico 87107 / Phone (505) 344-3542

EXPANSION OF COPPER OPERATIONS NOW UNDERWAY AT THREE LOCATIONS

The Company is continuing to expand operations at its Bluebird, Old Reliable, and Big Mike copper properties. At the latter location, construction of a precipitation plant to produce cement copper is now nearing completion. The plant will be used to treat about 300,000 tons of oxide-sulphide ore in stockpile at the Mine.

Work has begun on a tunnel and crosscuts in preparation for instituting a leaching operation at the Old Reliable Mine near San Manuel, Arizona. Plans call for the deposit to be fractured with conventional explosives, and the copper to be removed by percolating a mixture of sulfuric acid and water through the shattered ore. Although this is a novel approach to treating the ore and removing the mineral values, the Company has made a thorough study of the new technology required and believes that it can be used successfully to make the property a low-cost producer of cement copper. The Mine contains approximately 4-million tons of ore with a copper content of .74 percent. It is estimated that about 30-million pounds of copper can be recovered by in-place leaching over a period of approximately five years. Fracturing of the deposit is now tentatively scheduled for late spring, and production is projected to begin in the first half of fiscal year 1973. Negotiations are continuing with a major company which would become a partner in the venture.

Modification of the solvent extraction plant at the Bluebird Mine has been completed and, in combination with an increased mining rate, will permit a 10 to 15 percent annual increase in production. The Mine produced about 11.8-million pounds of copper cathodes in the previous fiscal year, is projected to produce 13-million pounds in the current year, and should produce in excess of 13.5-million pounds in fiscal year 1973. Approximately 75 percent of the output for the present fiscal year has been committed to buyers at an average price of \$.54 per pound, insuring a very satisfactory profit for the Mine this year. Encouraged by drilling which has increased reserves above the 75-million tons previously reported for the property, the Company is continuing to investigate new methods of leaching which will eventually lead to a further substantial increase in Mine output.

MUDD, TITTMANN NAMED TO BOARD

The Company is most pleased to announce the appointment of two distinguished representatives of the mining industry to its Board of Directors. They are J. B. Mudd, managing director (chief executive officer) of Anglo American International Ltd., and Edwin M. Tittmann, chairman of the board and chief executive officer of American Smelting and Refining Company from 1963 until his retirement earlier this year. The experience and technical expertise of these new board members will be of considerable assistance to the Company as it continues to expand and diversify its mining operations.

October 19, 1971

Maxie L. Anderson

President

DIRECTORS: Maxie L. Anderson, President — President, Maxiell Corporation
Edward E. Monteith, Jr. — Executive Vice-President, Republic National Bank, Dallas, Texas
Robert V. Sibert — President, Pearson-Sibert Oil Co. of Texas
Frank Coolbaugh — Mining Consultant
Roy Richards — President, Southwire Company
J. B. Mudd — Managing Director, Anglo American International Ltd.
Edwin M. Tittmann — Mining Consultant

OFFICERS: Maxie L. Anderson, President Leland O. Erdahl, Vice-President, Finance Arthur Miller, Vice-President, Construction John E. Motica, Vice-President, Geology Milton H. Ward, Vice-President, Operations Herbert M. Campbell II, Secretary

RECEIVED

SEP 2 9 1978 1776 Montano Road, Northwest / Albuquerque, New Mexico 87107 / Post Office Box 6217 / Phone (505) 344-3542

DEPT. MINERAL RESOURCES
PHOENIX, ARIZONA

COMPANY CONCLUDES AGREEMENT FOR WORK ON IDAHO GOLD PROPERTY

The Company has taken a major step toward development of its Idaho gold-antimony property by concluding a letter agreement with Canadian Superior Mining (U. S.) Ltd. Under the agreement, CSM will conduct further drilling and metallurgical work on the property, which the Company has had under lease from Bradley Mining Co. for several years in the Stibnite area of central Idaho. The work will begin immediately.

The initial objective of the program will be to determine the extent of an oxidized gold deposit on the property. CSM already controls other gold deposits in the immediate area, and production from the property could be obtained in a relatively short time if there are no problems metallurgically. Production would be by surface-type mining, heap leaching and precipitation of gold concentrate. Profits from the gold operation would be shared 70% by CSM and 30% by Ranchers after both parties have recovered their investment in the project.

In addition to the oxide gold deposits, the property is also known to contain several low-grade sulfide gold deposits totalling about 9-million tons. CSM will also have an option to acquire a 51% interest in this part of the property by spending \$500,000 over a five-year period.

As in the case of new operations in most western states, it will be necessary to obtain various environmental approvals before mining operations can commence. In addition, Ranchers and CSM are attempting to modify certain provisions of the Company's present lease, and the outcome of these efforts will affect the commencement of mining operations and work on the sulfide deposits.

The Company's Alaskan gold placers, jointly held with Marline Oil Company and Frontier Resources, are also receiving renewed attention in light of the continuing strength in the price of gold.

The Company is also conducting negotiations to extend a uranium joint venture with Urangesellschaft on about 260,000 acres, primarily in southeast Utah. A letter of intent has been signed between the Company, UG and a group of major utilities, and it is anticipated that negotiations can be successfully concluded during the quarter ending December 31, 1978.

September 15, 1978

Maxie L. Anderson, President

HIGHLIGHTS

- 1. The Company earned \$.81 per share in the three months ending September 30, the best first quarter performance in the Company's history.
- 2. The Johnny M Mine continued to be the main contributor to income with uranium oxide sales totaling \$4,370,951.
- 3. The Durita uranium mill tailings project operated smoothly during the quarter, producing uranium which was sold for \$3,658,159.
- 4. The Hope Uranium Mine experienced its best quarter of production with output being sold for \$546,527.
- 5. Uranium royalties from properties in northwest New Mexico totaled \$377,675, a small increase over the first quarter last year.
- 6. Uranium exploration remained at a high level and further work was done to organize another exploration venture with a major group of utilities.
- 7. Production of copper continued at the Bluebird Mine, although low copper prices forced the mine to operate well below capacity.
- 8. The Company began evaluating its Escalante silver property with a view toward future production.

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RANCHERS EXPLORATION AND DEVELOPMENT CORPORATION

KOP!

1776 Montano Road, N.W. Albuquerque, New Mexico 87197

TO OUR SHAREHOLDERS:

The first quarter of the new fiscal year was the best such period in Company history, with earnings totaling \$.81 per share, compared to \$.27 a year ago. This performance was second only to the \$1.16 per share earned in the final quarter of the previous fiscal year when sale of stockpiled uranium concentrate at the Durita project lifted earnings to a record level. The quarter also saw continued improvement in the Company's balance sheet as current assets increased by more than \$3-million over the prior quarter, while current liabilities remained virtually unchanged, giving a favorable ratio of about 3 to 1.

Gross income for the quarter rose to \$11,022,440, an increase of 108 percent over the \$5,281,985 received in the same quarter last year. Net income totaled \$1,182,539, an increase of about 205 percent over the \$388,119 earned in the first quarter a year ago.

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CONSOLIDATED CONDENSED BAL CE SHEET/SEPTEMBER 30, 1978 & 1977 RANCHERS EXPLORATION AND DEVELOPMENT CORPORATION AND SUBSIDIARIES

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Current Assets:	1978	1977
Cash and Certificates of Deposit		\$ 2,343,449
Accounts Receivable	3,243,665	1,808,888
Inventories: Finished Products	1,854,824	488,169
Accounts Receivable Inventories: Finished Products Ore in Leach Heaps & Stockpiles Supplies Prepaid Expenses and Other Current Assets	105,962	2,322,934
Supplies	174,154	189,428
Prepaid Expenses and Other Current Assets	671,462	940,023
TOTAL CURRENT ASSETS	12,213,374	8,092,891
Property, Plant and Equipment, Less Allowances for Depreciation and Amortization (1978-\$15.535.385: 1977-\$9 628 129)		18,486,952
Other Assets and Deferred Charges: Investment in Joint Ventures Claim for Refund of Income Toxes		re 2012年前11日 第
Claim for Refund of Income Taxes	3,783,942	5,903,191
Other Assets		1,068,190
Marketable Securities	2,674,016	82,739
	57 C.	556,436
TOTAL ASSETS	8,082,584	7,610,556
A CONTRACTOR OF THE CONTRACTOR	\$38,917,097	\$34,190,399
IARII ITIES AND STOCKHOLDERS' EDULTV		
Current Liabilities: Trade Accounts Payable Federal Income Taxes Amount Refundable to Customer Other Current Liabilities Current Portion of Long-term Debt TOTAL CURRENT LIABILITIES	\$ 1,288,753 952,312 -0- 1,002,021 995,393 4,238,479	\$ 1,513,638 75,000 2,296,781 297,321 942,378 5,125,118
Current Liabilities: Trade Accounts Payable Federal Income Taxes Amount Refundable to Customer Other Current Liabilities Current Portion of Long-term Debt TOTAL CURRENT LIABILITIES	\$ 1,288,753 952,312 -0- 1,002,021 995,393 4,238,479 3,323,675	75,000 2,296,781 297,321 942,378 5,125,118 3,368,211
Current Liabilities: Trade Accounts Payable Federal Income Taxes Amount Refundable to Customer Other Current Liabilities Current Portion of Long-term Debt TOTAL CURRENT LIABILITIES cong-term Debt, Less Current Portion Deferred Income Taxes tockholders' Equity: Common Stock - Par Value \$.50 a Share: Shares Authorized - 4,000,000	\$ 1,288,753 952,312 -0- 1,002,021 995,393 	75,000 2,296,781 297,321 942,378 5,125,118
Current Liabilities: Trade Accounts Payable Federal Income Taxes Amount Refundable to Customer Other Current Liabilities Current Portion of Long-term Debt TOTAL CURRENT LIABILITIES Ong-term Debt, Less Current Portion Deferred Income Taxes Stockholders' Equity: Common Stock - Par Value \$.50 a Share: Shares Authorized - 4,000,000 Shares Issued - 1,542,228 including Shares in Tracesses.	\$ 1,288,753 952,312 -0- 1,002,021 995,393 	75,000 2,296,781 297,321 942,378 5,125,118 3,368,211
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Current Liabilities: Trade Accounts Payable Federal Income Taxes Amount Refundable to Customer Other Current Liabilities Current Portion of Long-term Debt TOTAL CURRENT LIABILITIES Long-term Debt, Less Current Portion Deferred Income Taxes Lockholders' Equity: Common Stock - Par Value \$.50 a Share: Shares Authorized - 4,000,000 Shares Issued - 1,542,228 including Shares in Treasury Capital in Excess of Par Value Retained Earnings Less Cost of Common Stock in Treasury	\$ 1,288,753 952,312 -0- 1,002,021 995,393 -4,238,479 -3,323,675 5,650,000 771,114 5,530,053 -20,509,121 -26,810,288	75,000 2,296,781 297,321 942,378 5,125,118 3,368,211 4,750,000 771,114 5,524,989 15,797,715 22,093,818

This statement has been prepared without audit.

in copper sales from the Big M. Mine, \$47,044 in mine contracting sales, and \$55,946 miscellaneous.

Operations :

All phases of the Company's operations functioned smoothly during the quarter with four mines and the Durita project in production. Durita, where some 630,000 tons of old uranium mill tailings are being leached, is performing about as projected, with ultimate uranium recovery expected to be about 60 percent. Vanadium recovery may be slightly higher than projected. No vanadium was sold during the quarter, although a long-term sales agreement was concluded whereby all production will be sold at prices related to the world market price at time of delivery. It is presently expected that the first phase of the project at Naturita, Colorado, will be terminated late in the third quarter and the solvent extraction plant moved to Durango, Colorado, for treatment of an additional 1.4-million tons of tailings. New legislation governing the removal and burial of uranium mill tailings has just been enacted by the Congress, and the Company is studying this legislation to determine what alternatives it may offer for treatment of the tailings at Durango.

The Johnny M Mine, located near Grants, N.M., operated satisfactorily during the quarter, producing about 38,000 tons of ore containing approximately 215,000 pounds of uranium oxide. A similar level of production is contemplated in the second quarter. Approximately 70 percent of production is coming from the large deposit on Section 18 south of the main shaft, while the remainder is coming from Section 7 to the north. Stope and track development is continuing in the far northwestern portion of Section 7, and production from this area will commence in the second half of the

fiscal year.

The Hope Mine, jointly owned with Chaco Energy, a subsidiary of Texas Utilities, performed very well during the quarter, producing 24,622 pounds of uranium oxide in ore for the Company's account. Second quarter production is also expected to be above average. Reserves in the mine are limited, however, and a drilling program

to proper a company and an experience of the company of the control of the contro	Parisonal dist
FINANCIAL HIGHLIGHTS	
Three Months Ending September 30	
1978	1977
	A STATE OF THE PARTY OF
	5,281,985
Income before Income Taxes	463,119
Income Taxes 525,000	75,000
Net Income	388,119
Income per Share	
Primary	.27
	27
Average Shares Outstanding	1,440,133
	THE WAY IN THE

is now un vay to determine if additional ore can be found.

The Company's copper operations continued to be affected by low prices, with the Bluebird Mine operating at about half capacity, producing approximately 850,000 pounds of cathodes per month. Production for the quarter was 2,498,000 pounds. Prices improved somewhat during the quarter, but need to rise further for the mine to be reasonably profitable. Although present prices are in the \$.65 to \$.70 per pound range, the Company expects higher prices and will likely increase mining steadily until full production is again achieved. Facilitating this action is a new three year labor contract which has just been negotiated with personnel who operate the mine's solvent extraction-electrowinning plant. The Big Mike Mine, near Winnemucca, Nevada, produced 272,638 pounds of cement copper during the quarter; this mine will be closed in the second quarter, terminating operations which have been conducted at the property intermittently since January 1970.

Exploration

Uranium exploration held at a steady level during the quarter, with four to six drill rigs operating throughout the period. Most of the activity was conducted in northwest New Mexico and southwest Colorado on behalf of the joint venture with Chaco Energy, although some work was done on properties in southwest Utah held jointly with Urangesellschaft. Further work was done during the quarter to organize, with a major group of electric utilities, a program to conduct additional exploration on these properties.

Outlook

The Company expects a good second quarter, with earnings equaling or perhaps slightly exceeding those of the first quarter. The Company is in good financial condition and as a result is in a position to expand its mineral operations further and plans, if current market prices prevail, to purchase up to an additional 50,000 shares of the Company's common stock. An active evaluation of the Escalante silver property in southwest Utah is now underway, and development of this prospect, which contains an estimated 20-million ounces of silver, looks promising. Milling arrangements are also being sought for stockpiled uranium ore at the Small Fry Mine, where mining was terminated in August. Plans for reactivating the Tungsten Queen Mine are also being evaluated. The long term outlook for tungsten has improved to the extent that the Company is considering reopening the mine for its own account or in conjunction with a partner.

November 22, 1978

Maxie L. Anderson, President

HIGHLIGHTS

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RANCHERS EXPLORATION AND DEVELOPMENT CORPORATION



1776 Montano Road, N.W. Albuquerque, New Mexico 87197

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APR 9 1979

1776 Montano Road, Northwest / Albuquerque, New Mexico 87107 / Post Office Box 6217 / Phone (505) 344-3542

COMPANY DECLARES DIVIDEND, SETTLES URANIUM LITIGATION

The Company has declared a cash dividend of \$.10 per share of common stock payable to shareholders of record at the close of business on Friday, March 30. Payment date for the dividend, which is the first step in establishment of a policy for payment of regular quarterly dividends, is April 17.

The dividend reflects the Company's increased operating income and its growing financial strength. The dividend policy will be reviewed periodically, but it appears that a modest, stable dividend will continue to be in the best interests of the Company and its shareholders. However, the Company will continue to plow the largest share of its earnings back into exploration and development of new properties. This approach has led to excellent growth in income and profits in recent years.

The dividend also reflects removal of a substantial uncertainty which has hung over the Company for the past several years—the pending litigation over sale of uranium from the Johnny M Mine near Grants, New Mexico, jointly owned with a subsidiary of Houston Natural Gas Corporation. The State District Court suit over this matter was dismissed on March 8 following a settlement with General Atomic Company which terminated a 1972 sales agreement.

Management regards the settlement as quite favorable, particularly in contrast to the 1972 sales agreement which provided for deliveries of uranium at prices of less than \$10 per pound. Although the settlement agreement is complicated and involves both production costs and the market price of uranium, it basically means that the Company will be selling uncommitted Johnny M uranium for prices that should be in the \$33-35 per pound range after taking into account a per-pound payment to General Atomic.

Not subject to the new agreement are the initial three million pounds of Johnny M production. This uranium is covered in a 1976 partial settlement of the litigation whereby the Company and HNG dealt directly with a General Atomic customer who had purchased the production. About half of this material had been delivered by the end of calendar year 1978. The sales price for this uranium is currently in the range of \$31 per pound and production costs are about \$23 per pound. It is expected that the remaining 1.5 million pounds subject to this agreement will have been produced by late 1980, whereupon the terms of the new agreement will come into effect.

March 20, 1979

Maxie L. Anderson, President

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SEMI-ANNUAL REPORT

VCHERS CPLORATION AND

EXPLORATION AND DEVELOPMENT CORPORATION

DECEMBER 31, 1978

FEB 2 8 1979

PHOENIX, ANIZONA
PHOENIX, ANIZONA

RANCHERS EXPLORATION AND DEVELOPMENT CORPORATION

1776 Montano Road, N.W. Albuquerque, New Mexico 87107

STATE OF ARIZONA MINERAL BUILDING FAIRGROUNDS DEPARTMENT OF MINERAL RESOURCES PHOENIX, AZ 85007

ADDRESS CORRECTION REQUESTED

CONSOLIDATED CONDESED BALANCE SHEET/DECEMBER 31, 1974 1977 RANCHERS EXPLORATION AND DEVELOPMENT CORPORATION AND SUBSIDIARIES

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Current Assets:	1978	1977
Cash and Certificates of Deposit Accounts Receivable Inventories: Finished Products Ore in Leach Heaps & Stockpiles	\$ 7,587,065 3,037,475 1,225,751 -0-	\$ 2,698,985 820,102 693,932 2,585,383
Supplies Prepaid Expenses and Other Current Assets TOTAL CURRENT ASSETS	131,020 751,156 12,732,467	295,347 873,139 7,966,888
Property, Plant and Equipment, Less Allowances for Depreciation and Amortization	12,732,107	7,500,000
(1978-\$17,215,693; 1977-\$10,022,465) Other Assets and Deferred Charges:	, ,	22,889,102
Investment in Joint Ventures Claim for Refund of Income Taxes Other Assets Marketable Securities	3,946,720 1,068,190 2,673,657 556,436	5,210,232 1,068,190 81,329 556,436
TOTAL ASSETS	$\frac{8,245,003}{\$38,254,196}$	$\frac{6,916,187}{\$37,772,177}$
LIABILITIES AND STOCKHOLDERS' EQUITY Current Liabilities: Note payable	\$ -0-	\$ 500,000
Current Liabilities: Note payable Trade Accounts Payable Federal Income Taxes Other Current Liabilities Current Portion of Long-term Debt	\$ -0- 1,049,020 1,137,312 1,430,625 146,393	\$ 500,000 2,256,380 400,000 452,063
TOTAL CURRENT LIABILITIES	3,763,350	4,654,228
Long-term Debt, Less Current Portion Deferred Income Taxes	1,953,394 5,650,000	3,006,361 4,750,000
Stockholders' Equity: Common Stock - Par Value \$.50 a Share: Shares Authorized - 4,000,000		
Shares Issued - 1,542,228 including Shares in Treasury Capital in Excess of Par Value Retained Earnings	771,114 5,530,053 21,709,144	771,114 5,524,989
Less cost of Common Stock in Treasury	28,010,311	16,603,790
(1978-111,474 Shares; 1977-114,808 Shares)	1,122,859	1,146,748
(1978-111,474 Shares; 1977-114,808 Shares) TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	1,122,859 26,887,452 \$38,254,196	22,899,893

This statement has been prepared without audit.

Operations

The Company's pioneering mineral recovery project at Naturita, Colorado, where old mill tailings are being reprocessed to produce uranium and vanadium, operated smoothly throughout the first half, but the second phase of the project at Durango, Colorado, was dealt a severe — and perhaps fatal blow — by failure of the Colorado Department of Health (CDH) to issue a nuclear materials handling license. The Company's uranium sales contract with Virginia Electric and Power Company specified that such a license be in hand by December 31, 1978 in order to cover the Durango production. Failure of the CDH to act in a timely manner — even though the CDH-licensed Naturitia operation has demonstrated that it is a safe method for disposing of a long-standing environmental hazard while at the same time recovering a valuable, energy-producing mineral — has placed the second phase of the project in jeopardy. The Company has not decided what actions, if any, can or will be taken to salvage the project. The CDH's responsibilities and will to act have been compromised by new federal legislation governing the removal and burial of uranium tailings in several western states. This well-intentioned legislation, enacted to correct a potential health hazard created largely in production of uranium for the country's nuclear defense program, has given the Nuclear Regulatory Commission increased authority over disposal of the tailings. The NRC has been unable to come to grips with the disposal problem in a timely manner, even though the Durango tailings, located on the outskirts of town, are acknowledged to constitute a potential health hazard. It is just such regulatory inertia and strangulation, which, even in the face of a consensus for action, are contributing so much to the country's inflation and declining productivity. The Company's immediate course of action is unclear, although it is apparent that if the Durango project is not permitted to proceed, the government will ultimately have to purchase the tailings from the Company at a considerable cost to the taxpayer. The Naturita phase of the project is rapidly winding down and will be largely concluded in the third quarter.

The Johnny M. Mine, the Company's chief contributor to income in recent quarters, turned in only a so-so performance in the half. First quarter output was satisfactory, the Company's are totaling 107,522 pounds of uranium in ore, but at to 76,913 pounds in the second quarter. The six-month total of 184,435 pounds represented a decline of 19 percent from the 228,446 pounds produced in the first half last year. Second half earnings will be strongly influenced by the Mine's performance in the third and fourth quarters.

The long-term prospects for the Johnny M have been enhanced by the signing of a memorandum of understanding with General Atomic Company which will permit settlement of the long-standing suit over sale of future production from the Mine. This action has no immediate effect on operations at the Johnny M, where the first three million pounds of uranium have been committed to Gulf States Utilities. However, sales on production in excess of that amount will be freed of the original sales contract with General Atomic.

Production at the Bluebird Mine declined to 4,854,164 pounds of copper during the half, but should climb steadily in the next six months as full production is resumed as the result of rising prices. Full capacity will be about 1.3-million pounds of cathodes per month. The Company is also considering resumption of copper production at its Old Reliable Mine.

Outlook

Management expects that earnings will decline in the third quarter as Durita production terminates, although the amount of uranium royalties and Johnny M production will significantly influence results for the period. The Company will continue its uranium exploration program under the Chaco Energy joint venture and may enlarge this activity with completion of a second venture with a group of utilities. Plans are well underway to begin a trial mining project at the Escalante Silver Mine in southwest Utah, which contains an estimated 20-million ounces of silver. The substantial rise in silver prices is lending considerable impetus to this project. The Company will also begin a trial mining effort this summer on its Alaskan gold placers to confirm ore grade and determine operating costs and efficiency of gold recovery.

February 6, 1979

Maxie L. Anderson, President

FINANCIAL HIGHLIGHTS	Three Months Ended December 31			hs Ended aber 31
	1978	1977	1978	1977
Gross Income	\$10,714,006	\$ 7,332,638	\$21,736,446	\$12,614,623
Income before Income Taxes	1,800,024	1,131,075	3,507,563	1,594,194
Income Taxes	600,000	325,000	1,125,000	400,000
Net Income Income Per Share	1,200,024	806,075	2,382,563	1,194,194
Primary	.84	.56	1.65	.83
Fully diluted	.80	.54	1.59	.83

FIRST HALF HIGHLIGHTS

- 1. The Company earned \$1.65 per share in the first half of the fiscal year ending December 31, including \$.84 per share in the second quarter.
- 2. The Durita uranium and vanadium mill tailings treatment project was the greatest contributor to income, producing sales of \$8,145,848.
- 3. The Johnny M Mine operated below capacity during the half, contributing \$7,178,299 to sales; a preliminary agreement settling litigation over sale of mine production was reached in January.
- 4. Production of copper at the Bluebird Mine continued to decline, but a decision was made in January to resume full production because of a sharp rise in copper prices.
- 5. The Hope Uranium Mine operated satisfactorily during the six months, producing income of \$1,338,878.
- 6. Uranium royalties from properties in northwest New Mexico totaled \$953,387, an increase of about 50 percent over the same period a year ago.
- 7. Uranium exploration continued under terms of the joint venture with Chaco Energy and progress was made on formation of another venture with a group of electric utilities.
- 8. Evaluations were begun on the Company's silver and gold properties and a decision was made to establish pilot mining operations at two of the properties.

DIRECTORS / Maxie L. Anderson—President. Ranchers Exploration & Development Corporation / Frank Coolbaugh—Mining Consultant / Phil S. Cross—Vice President. Kerr Addison Mines Ltd. / Robert M. Haldeman—Mining & Management Consultant / Edward E. Monteith, Jr.—Executive Vice President. Republic National Bank, Dallas, Texas / John E. Motica—Senior Vice President. Geology, Ranchers Exploration & Development Corporation / Edward McL. Tittmann—Mining Consultant OFFICERS / Maxie L. Anderson—President / Herbert M. Campbell II—Vice President and Secretary / Leland O. Erdahl—Vice President, Finance / David K. Hogan—Vice President, Engineering / M. K. Kaiser—Treasurer / Paul A. Matthews—Vice President, Operations / John E. Motica—Senior Vice President, Geology.

RANCHERS EXPLORATION AND DEVELOPMENT CORPORATION

Mag

1776 Montano Road, N.W. Albuquerque, New Mexico 87197

TO OUR SHAREHOLDERS:

The Company continued to gain strength during the first six months of the fiscal year, with earnings reaching a record \$1.65 per share, compared to \$.83 per share for the first half a year ago. First quarter earnings were \$.81 per share, second quarter \$.84 vs. \$.27 and \$.56 in the same periods last year. Net income increased by 99.5 percent, totaling \$2,382,563 for the half, compared with \$1,194,194 a year ago.

Accompanying this increase was a sharp rise in gross income, which totaled \$21,736,446, up 72 percent over the \$12,614,623 recorded last year. Sales were about evenly split in the first and second quarters, totaling \$11,022,440 and \$10,714,006, respectively.

The big increase in income from a year ago resulted from sales of \$8,145,848 at the Durita mill tailings project, which was not in operation during the first half last year. Income from the Johnny M Mine also rose, totaling \$7,178,299, vs. \$5,748,158 last year, an increase of about 25 percent. Hope Mine uranium sales increased by 114 percent, totaling \$1,338,878, compared to \$624,884 a year ago. Uranium royalties were up 48.5 percent from \$642,025 to \$953,387 in the period just ended. Bluebird Mine sales fell 18 percent to \$3,460,597, compared to \$4,238,040 last year; Big Mike copper sales were also off 18 percent from \$468,646 to \$382,205. Sales of Ran-Con, the Company's mine contractor subsidiary, also declined, totaling \$94,350, compared to \$721,588 a year ago.

The Company ended the six months in the strongest financial position in its 25 year history, with the ratio of current assets to current liabilities rising to 3.4 to 1. As of June 30, 1978, the ratio stood at 2.2 to 1. The current assets include \$7,587,065 in cash and certificates of deposit, nearly triple the \$2,698,985 of a year ago. The Company continues to carry in its "other assets" category a claim of \$1,068,190 for refund of income taxes pending an appeal by the IRS of a suit previously won by the Company. Much of the claim is not subject to the appeal, but the Company will not assign any of the amount to current assets until the appeal is resolved.

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OCT 1 1979

DEPT. MINERAL RESOURCES
PHOENIX, ARIZONA

1776 Montano Road, Northwest / Albuquerque, New Mexico 87107 / Post Office Box 6217 / Phone (505) 344-3542

COMPANY BEGINS TRIAL MINING AT ESCALANTE SILVER PROPERTY

The Company has commenced a test mining project at the Escalante Silver Mine in southwest Utah, where more than 18 million ounces of silver have been drilled out. The property is leased from Escalante Silver Mines, Inc. of Salt Lake City, Utah. The project had been pending for several weeks while royalty negotiations were in progress; these negotiations have been completed and the test, which is expected to take approximately eight months to finish, is underway.

Company personnel are driving a 1,600-foot decline to intersect the ore vein at depth and do approximately 1,000 feet of development work in the vein. The test will permit evaluation of rock and water conditions and produce bulk samples for further metallurgical testing of the ore. The deposit contains more than 1.8 million tons of ore with a silver content of about 10 ounces per ton and limited amounts of lead and zinc. The property also has potential for additional ore. The large amount of water which will have to be pumped from the workings as mining proceeds appears at this juncture to be the largest problem in mining the deposit. A relatively new mining method, developed in Canada and known as vertical crater retreating, will be tested during the trial mining phase. The technique involves drifting along the top and bottom portions of the vein, drilling large diameter blast holes through the vein from top to bottom and then detonating explosives placed in the bottom of the holes. Blasting gradually retreats upward as ore falls into the bottom drift and is removed. The technique is safe and economical.

Silver prices have moved up sharply in recent weeks to a level of more than \$12 per ounce. If prices remain at this level, the mine would be highly profitable, and would be a major contributor to income. Plans call for the mine to produce about 1.5 million ounces of silver annually, thus leading to an operation lasting a dozen years or more.

The Company is just concluding its test mining of Alaskan gold placers, which were extensively drilled in 1974 and 1975 under terms of a joint venture with Frontier Resources and Marline Oil. The test, begun in June, involved processing about 50,000 yards of gold-bearing gravels to recover in excess of 1,000 ounces of gold. Results of the operation are being evaluated to determine mining costs and reliability of ore grade estimates. Positive results from this analysis, as well as continuation of gold prices at their present level of nearly \$350 per ounce, would result in a full scale operation at the properties next summer.

September 13, 1979

Maxie L. Anderson, President

DIRECTORS / Maxie L. Anderson—President, Ranchers Exploration & Development Corporation / Frank Coolbaugh—Mining Consultant / Phil S. Cross—Vice President, Kerr Addison Mines Limited / Robert M. Haldeman—Mining & Management Consultant / Edward E. Monteith, Ir.—President, Thomson-Monteith / John E. Motica—Senior Vice President, Geology, Ranchers Exploration & Development Corporation / Edward McL. Tittmann—Mining Consultant OFFICERS / Maxie L. Anderson—President / Herbert M. Campbell, II—Vice President and Secretary / Leland O. Erdahl—Vice President, Finance / David K. Hogan—Vice President, Engineering / M. K. Kaiser—Treasurer / Paul A. Matthews—Vice President, Operations / John E. Motica—Senior Vice President, Geology.



AB R

1776 Montano Road, Northwest / Albuquerque, New Mexico 87107 / Post Office Box 6217 / Phone (505) 344-3542

COMPANY EARNS RECORD \$3.01 PER SHARE EXPECTS FURTHER IMPROVEMENT IN 1980

The Company earned \$3.01 per share for the fiscal year ending June 30, 1979, a new record for the Company and an increase of 11 percent over the \$2.72 earned a year ago. Earnings by quarters were \$.81, \$.84, \$.68, and \$.68, compared to \$.27, \$.56, \$.73, and \$1.16 in 1978, when the fourth quarter total was swelled by sale of stockpiled uranium concentrates at the Durita project. Net income for the year just completed totaled \$4,328,842, up 10 percent over the \$3,916,986 received in the preceding year; gross income was \$39,497,054, an increase of 15 percent over the \$34,444,496 recorded in 1978.

Results for the year were good and would have been better had not the Company written off approximately \$830,000 (pre-tax) in engineering costs for the tailings treatment project at Durango, Colorado, which was shelved when a nulcear materials handling permit could not be obtained from the Colorado Department of Health. Uranium sales were the big contributor to income for the year, totaling \$24,789,267; copper sales were \$9,125,191; uranium royalties \$1,704,088; and interest and other income \$799,384. The increase in interest and other income -- up nearly eight-fold from the prior year -- is indicative of the dramatic improvement in the Company's financial condition which occurred in the year. Cash and equivalents on hand at year end totaled \$12,572,913, or about \$9 per share, a four fold improvement during the 12 months. Current assets are \$17,025,015, compared to \$8,995,412 a year ago, while current liabilities declined to \$3,539,409 from \$4,130,349. The current assetliabilities ratio rose, to 4.8-1 from 2.2-1. Long-term liabilities declined to \$1,817,876 from \$3,472,740.

OUTLOOK FOR 1980

The Company expects continuing improvement in its financial strength and earnings in the new fiscal year. Such improvement will be highly dependent upon uranium production and copper production and prices; however, interest income will increase further, and uranium royalties should be up sharply, perhaps to record highs.

This improvement will permit the Company to forge ahead with new mineral and energy projects, which are already receiving a great deal of attention. The recovery of gold is underway from the Alaskan placer deposits in a project to determine mining costs and reserves, and a test mining effort is being readied for this fall at the Escalante Silver Mine in southwest Utah. An increasing amount of management's time is being devoted to evaluation of geothermal steam projects, ranging from development of existing reservoirs to exploration for new fields. Success in implementing these efforts, as well as the production of precious metals, will have a substantial impact on the future of the Company.

August 7, 1979

Maxie L. Anderson, President

DIRECTORS / Maxie L. Anderson—President, Ranchers Exploration & Development Corporation / Frank Coolbaugh—Mining Consultant / Phil S. Cross—Vice President, Kerr Addison Mines Limited / Robert M. Haldeman—Mining & Management Consultant / Edward E. Monteith, Ir.—President, Thomson-Monteith / John E. Motica—Senior Vice President, Geology, Ranchers Exploration & Development Corporation / Edward McL. Tittmann—Mining Consultant OFFICERS / Maxie L. Anderson—President / Herbert M. Campbell, II—Vice President and Secretary / Leland O. Erdahl—Vice President, Finance / David K. Hogan—Vice President, Engineering / M. K. Kaiser—Treasurer / Paul A. Matthews—Vice President, Operations / John E. Motica—Senior Vice President, Geology.

THIRD QUARTER REPORT

EXPLORATION AND DEVELOPMENT CORPORATION

MARCH 31, 197

RANCHERS EXPLORATION AND DEVELOPMENT CORPORATION

1776 Montano Road, N.W. Albuquerque, New Mexico 87107

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STATE OF ARIZONA MINERAL BUILDING FAIRGROUNDS DEPARTMENT OF MINERAL RESOURCES PHOENIX, AZ 85007 RECEIVED

JUN 11 1979

DEPT. MINERAL RESOURCES
PHOENIX, ARIZOMA

ADDRESS CORRECTION REQUESTED

CONSOLIDATED CONDENSED (ANCE SHEET/MARCH 31, 1979 & 1978 CRANCHERS EXPLORATION AND DEVELOPMENT CORPORATION AND SUBSIDIARIES

ASSETS

Current Assets:	Ma	erch 31
Cash	<u>1979</u>	1978
Certificates of Deposit & Short-term Investments	15 MAN WATER SITE OF THE STATE	\$ 1,852,055
		552,954
Accounts Receivable	11,248,629 2,713,640	2,405,009
	2000年2月1日 1月1日 1月1日 1日 1	1,737,469
rinished Products		2001
		3,281,411
Supplies Prepaid Expenses & Other Current Assets	162,643	2,732,730 246,859
TOTAL CURRENT AGREES	876,685	910,591
TOTAL CURRENT ASSETS	15,460,024	11,314,069
101 Depreciation & Amortization		
(1979-\$17,861,756; 1978-\$12,071,460) Other Assets and Deferred Chemical Che	16,615,578	21,686,496
Investment in Joint Ventures		/mg/a/www.cashiri.
Other Assets and Deferred Charges: Investment in Joint Ventures Claim for Refund of Income Taxes Other Assets		5,203,683
Other Assets	1,068,190	1,068,190
Other Assets Marketable Securities	2,672,247 556,436	79,919
TOTAL ASSETS	7,743,597	556,436
TOTAL ASSETS	7,743,397	6,908,228
	<u>\$39,819,199</u>	\$39,908,793
Current Liabilities: Note Payable Trade Accounts Payable Federal Income Taxes Other Current Liabilities Current Portion of Long-term Debt	\$ -0- 1,067,984 1,664,984	\$ 1,400,000 1,545,837 912,312 688,242
	enterior de la company de la c	4,708,509
TOTAL CURRENT LIABILITIES	1 201 400	9,254,900
Long-term Debt, Less Current Portion		3,068,372
Described income taxes	5,650,000	4,750,000
Stockholders' Equity:		
Common Stock - Par Value \$.50 a Share: Shares Authorized - 4,000,000 Shares Issued - 1,542,228 Including	17 (1997) 12 (1997) 17 (1997) 12 (1997) 13 (1997)	
Shares in Treasury		
Capital in Excess of Par Value	771,114	771,114
Retained Earnings	5,530,053 22,688,533	5,528,653
	28,989,700	17,644,166
Less Cost of Common Stock in Treasury	20,989,700	23,943,933
(1979-112,674; 1978-110,608 shares)	1,140,203	1,108,412
	27,849,497	22,835,521
TOTAL LIABILITIES AND		
STOCKHOLDERS' EQUITY	\$39,819,199	\$39,908,793
This statement has been prepared without audit.		Sales or a Sales

Operations |

The Johnny M Mine, the Company's major underground mining operation, produced below expectations, with the Company's share of output for the three quarters amounting to only 263,045 pounds of U₃O₈ in ore. This was 27 percent below the 362,176 pounds produced in the same period last year. A significant factor in the lower production has been delays in bringing the mine's northwest ore body into operation as rapidly as had been projected. Primary development of the area has been completed, however, and production should begin to increase somewhat in the months ahead. Production is presently coming from the Section 18 ore body and several smaller ore bodies on Section 7, north of the mine's main shaft.

Production at the Hope Mine increased appreciably as the result of higher ore grade. Mine tonnage was up only about three percent over the first nine months last year, but pounds of uranium oxide in ore increased about 38 percent, from 50,504 pounds to 69,614 pounds. Production should continue at a reasonably high level in the

final quarter of the year.

The Durita uranium mill tailings operation at Naturita, Colorado began to taper off in the third quarter and will be closed in the fourth quarter as recovery of uranium and vanadium is completed. The project produced 169,731 pounds of uranium in the nine months, including 25,625 in the third quarter, and 863,728 pounds of vanadium, including 120,447 in the third quarter. The Colorado Department of Health failed to issue a nuclear materials handling license for the second phase of the project at Durango, Colorado, and this part of the project has been deferred indefinitely. The tailings at Durango are the property of the Company and will probably be disposed of under terms of new federal legislation governing removal, possible reprocessing, and burial of such tailings.

Higher prices have revived the Company's copper operations, and the Bluebird Mine is again moving toward full production. Production for the nine months totaled 7,257,214 pounds of cathodes, a decrease of 38 percent from the 11,739,561 pounds produced in the first three quarters a year ago when the mine was winding down from full production. Production should total about one million pounds in June and reach maximum output of

nearly 1.3 mill late in the first quarter of Fiscal Year 1980. The Company is also in the process of bringing its Old Reliable Mine back on stream. This mine and plant, which will produce cement copper, will be back in operation in mid-July, with first production expected in late August.

The Company continued to explore opportunities to expand its mineral operations. Uranium exploration, being conducted under terms of a joint venture with Chaco Energy, held relatively steady during the three quarters, and further progress was made in forming a new venture with a group of utilities. It is expected that arrangements for this venture will be completed in the next several months.

The sharp rise in silver prices, now exceeding \$9 per ounce in forward commodity markets, is lending impetus to the Company's effort to establish a pilot mining operation at its Escalante Silver Mine in southwest Utah, where an estimated 20-million ounces of silver are in place. The Company plans to drive a 1,600-foot decline to the ore body and do approximately 1,000 feet of development to determine feasibility of mining the deposit. The pilot phase of the project will begin this fall and continue for eight months. The Company will also initiate a pilot operation this summer at its gold placers in eastern Alaska, where a 75-day operation is expected to recover about 2,000 ounces of gold.

Outlook

The Company expects earnings for the final quarter to hold at about the third quarter level, with the goal being to earn a record \$3 per share, or better, for the year. This will, however, require improved performance at the Johnny M and Bluebird, as well as higher uranium royalties. The Company is drilling out what may develop into commercial uranium reserves on a section cornering the Johnny M Mine, and this project, along with other exploration for uranium, gold and silver, will be watched with interest. The financial condition of the Company should improve even further by the end of the fiscal year, and the Company will again pay the \$.10 per share dividend declared for the first time in the third quarter.

May 10, 1979

Maxie L. Anderson, President

FINANCIAL HIGHLIGHTS Three Mon Marc	22 CONTRACTOR STORY (1987)	Nine Mont Marc	
Gross Income	1978 \$ 7,705,764	1979 \$31,107,411	
Income before Income Taxes 1,579,389 Income Taxes 600,000 Net Income 979,389	1,600,376 560,000 1,040,376	5,086,952 1,725,000 3,361,952	3,194,570 960,000
Income per Share Primary	.73 .70	2.33 2.24	2,234,570 1.56 1.51

HIGHLIGHTS

- 1. The Company earned \$2.33 per share in the first three quarters of the fiscal year, including \$.68 per share in the third quarter.
- 2. The Company's financial condition continued to improve as cash exceeded \$11-million and the current asset-liability ratio reached 3.5 to 1.
- 3. The Company declared its first dividend since 1963, paying \$.10 per share of common stock to stockholders of record on March 30.
- 4. The Company's share of sales of uranium from the Johnny M Mine totaled \$9,804,528, and, in March, litigation was settled over sale of mine production.
- 5. Sales from the Durita uranium mill tailings project at Naturita, Colorado totaled \$10,693,-162; the second phase of the project at Durango, Colorado was deferred indefinitely.
- 6. A decision was made to place the Bluebird copper mine in full production again; output for the nine months totaled 7,257,214 pounds of cathodes.
- 7. Production from the Hope uranium mine rose, with output totaling 69,614 pounds of U_3O_8 , compared to 50,504 in the first nine months a year ago.
- 8. Uranium royalties from properties in northwest New Mexico were \$1,291,212 vs. \$1,371,-171 a year ago.
- 9. Uranium exploration continued and a decision was made to establish pilot mining operations at two of the Company's silver and gold properties.

DIRECTORS / Maxie L. Anderson—President, Ranchers Exploration & Development Corporation / Frank Coolbaugh—Mining Consultant / Phil S. Cross—Vice President, Kerr Addison Mines Ltd. / Robert M. Haldeman—Mining & Management Consultant / Edward E. Monteith, Jr.—President, Thomson-Monteith / John E. Motica—Senior Vice President, Geology, Ranchers Exploration & Development Corporation / Edward McL. Tittmann—Mining Consultant OFFICERS / Maxie L. Anderson—President / Herbert M. Campbell II—Vice President and Secretary / Leland O. Erdahl—Vice President, Finance / David K. Hogan—Vice President. Engineering / M. K. Kaiser—Treasurer / Paul A. Matthews—Vice President, Operations / John E. Motica—Senior Vice President, Geology.

RANCHERS EXPLORATION AND DEVELOPMENT CORPORATION

1776 Montano Road, N.W. Albuquerque, New Mexico 87107

TO OUR SHAREHOLDERS:

The nine months ending March 31 was one of the most successful in the Company's history, with earnings reaching a record \$2.33 per share. Earnings by quarters were \$.81, \$.84, and \$.68, respectively. Earnings for the first three quarters a year ago were \$1.56.

The Company's already-strong financial condition continued to show steady improvement in the third quarter; cash increased to \$11,248,629 at the end of the period, up from \$7,587,065 on December 31. The ratio of current assets to current liabilities stands at 3.5 to 1, and further improvement is expected in the final quarter of the year. The Company is still carrying in its "other assets" category a claim of \$1,068,190 for refund of income taxes pending an appeal by the IRS of a suit won earlier by the Company. Much of the claim is not being appealed by the IRS, but the Company will not reclassify any of the amount until the appeal is resolved.

Net income for the nine months was \$3,361,952, which was attained on a record gross income of \$31,107,-411 (\$11,022,440 first quarter; \$10,714,006 second quarter; and \$9,370,965 third quarter). For the same nine months a year ago, net income was \$2,234,570, gross income \$20,320,387.

The principal factor in the large increase in gross income from a year ago was sale of \$10,693,162 of uranium and vanadium from the Durita tailings project at Naturita, Colorado. Production had barely commenced a year earlier, with sales of only \$573,705 as of March 31, 1978. The Johnny M Mine was the second largest contributor to income, with uranium sales of \$9,804, 528, an increase of nearly five percent over the \$9,360,511 received last year. Sales of copper cathodes at the Bluebird Mine were slightly below those of a year ago, totaling \$5,989,287, compared to \$6,173,546. Sales of uranium from the Hope Mine were up nearly 69 percent — \$1,830,627, vs. \$1,084,374 last year. Uranium royalties were \$1,291,212, a decline of about six percent from the \$1,371,171 received a year earlier. Sales from the Big Mike copper property, which has since been mined out, totaled \$943,705, an increase of 38 percent over the \$684,124 received a year ago. Interest income began to be a factor in the Company's earnings for the first time, totaling \$364,829, compared to \$66,003 a year ago.

SEMI-ANNUAL REPORT

DEVELOPMENT CORPORATION EXPLORATION AND

DECEMBER 31, 1979

DEPT. MINERAL RESOURCES PHOENIX, ARIZONA RECEIVED MAR 4

RANCHERS EXPLORATION AND DEVELOPMENT CORPORATION

1776 Montano Road, N.W. Albuquerque, New Mexico 87107

STATE OF ARIZONA MINERAL BUILDING FAIRGROUNDS DEPARTMENT OF MINERAL RESOURCES PHOENIX, AZ 85007

CONSOLIDATED CONDEN BALANCE SHEET/DECEMBER 31, 1979 & 88 RANCHERS EXPLORATION AND DEVELOPMENT CORPORATION AND SUBSIDIARIES

ASSETS		
Current Assets:	1979	1978
Cash Certificates of Deposit and	, ,	\$ 1,609,111
Short-term Investments		5,977,954
Accounts Descriveble	11,803,888	7,587,065
Accounts Receivable Deposits With Brokers for Copper		3,037,475
Futures Contracts Inventories:	-,,	-0-
Finished Products	585,884	1,225,751
Supplies	100 104	131,020
Prepaid Expenses and Other Current Assets	1.060.167	751,156
TOTAL CURRENT ASSETS	17,719,476	12,732,467
Property, Plant and Equipment, Less Allowances for Depreciation and Amortization		,,
(1979-\$18,558,715; 1978-\$17,215,693) Other Assets and Deferred Charges:	16,080,028	17,276,726
Investment in Joint Ventures	3,688,249	3,946,720
Claim for Refund of Income Taxes	1,068,190	1,068,190
Other Assets Marketable Securities	2,655,763	2,673,657
Transcriber Securities	383,528	556,436
TOTAL AGGETTO	7,795,730	8,245,003
TOTAL ASSETS	\$41,595,234	\$38,254,196
Current Liabilities: Trade Accounts Payable Federal and State Income Taxes Other Current Liabilities Current Portion of Long-term Debt TOTAL CURRENT LIABILITIES Long-term Debt, Less Current Portion Deferred Income Taxes Stockholders' Equity: Common Stock - Par Value \$.50 a share: Shares Authorized - 4,000,000	\$ 1,700,943 370,712 1,049,859 59,393 3,180,907 1,729,001 6,450,000	\$ 1,049,020 1,137,312 1,430,625 146,393 3,763,350 1,953,394 5,650,000
Shares Issued - 1,542,228 Including Shares in Treasury	771,114	771,114
Capital in Excess of Par Value	5,528,694	5,530,053
Retained Earnings	25,152,401	21,709,144
Less Cost of Common Stock in Treasury	31,452,209	28,010,311
(1979-110,724 Shares; 1978-110,274 Shares)	1,216,883	1,122,859
	30,235,326	26,887,452
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	\$41,595,234	\$38,254,196
his statement has been prepared without audit.	Ψ-T1,070,40Φ	σσο,234,190

Work began at the Escalante Silver 1;, in southwest Utah, in September and remains on schedule. A 1,600-foot decline, now approximately half complete, has intersected the vein, where development work is underway. The vertical crater retreating mining technique planned for use in the

mine has been tested and appears satisfactory.

A 500 ton per day mill is being designed for the property, but in the meantime toll milling arrangements are being sought for ore production. By late May there should be 10,000 to 12,000 tons of ore on the surface containing six to seven ounces of silver per ton. The mine is projected to produce about 100,000 tons of ore of this approximate grade in the year beginning July 1. The mine contains about 1.8 million tons of ore with an average grade of approximately 10 ounces per ton. Production will average about 1.5 million ounces per year during the anticipated life of the mine.

The Company announced in January that it has acquired what appears to be another major silver property, the Revenue-Virginius Mine, near Ouray, Colorado. The mine was operated around the turn of the century and in the mid-1960s. Data acquired by the Company indicate that the property could contain about a million tons of ore with a silver content of approximately 10 ounces per ton, although considerable sampling of the vein and rehabilitation of mine workings will be necessary before ore tonnage and grade can be verified.

The Company has also leased several other gold and silver prospects which are to be included in a proposed exploration project. A registration statement covering the proposed public offering of \$5 million preformation and limited partnership interests in this program has been filed

with the Securities and Exchange Commission.

Production at the Johnny M Mine continued to be lower than projected, with the Company's share of production for the six months totaling only 133,250 pounds of uranium oxide in ore, compared to 184,435 pounds in the comparable period a year ago. Average grade of the ore was .16 percent U₃O₈, vs. .26 percent last year. The decline in production resulted primarily from delay in bringing the mine's northwest ore body into production. Development of this area is now largely complete, and it will be a major contributor

to production, which expected to increase in the third and fourth quarters of the year. Recent drilling has led to discovery of additional ore near present mine workings. The Hope Mine produced 26,396 pounds of uranium oxide in ore for the Company's account during the half; it is expected to be mined out in the third quarter after being in operation since 1977.

Production of copper increased substantially during the six months, with output rising at the Bluebird Mine by about a million pounds (5,866,741 pounds vs. 4,854,164 pounds for the same period last year) and operations being resumed at the Old Reliable leaching project for the first time since 1975. Production there totaled about a million pounds for the half, but will be well below that amount in the third and fourth quarters as the operation nears completion. Bluebird production needs to rise to about 1.2 million pounds per month to maximize profitability.

Outlook

The Company expects that third quarter earnings will remain at about the same level as those of the second quarter, although increased production at the Bluebird and Johnny M mines could improve this prospect somewhat. Further improvement is expected in earnings in the final quarter of the year. The Company has declared a 2 for 1 split on the outstanding shares of its common stock to be effected in the form of a stock dividend. Record date for shareholders entitled to receive the 100% stock dividend will be February 22; the additional shares will be issued on March 14. A cash dividend was also declared for the quarter ending March 31, equal to 12.5c per share based on the pre-split shares, or 6.25c per share adjusted for the stock split. This represents a 25 percent increase over the quarterly dividends previously paid. Record date will be the close of business on March 31; the dividend will be paid on April 15.

February 11, 1980

Maxie L. Anderson, President

FINANCIAL HIGHLIGHTS	Three Months Ended December 31		Six Months Ended December 31	
	1979	1978	1979	1978
Gross Income Income Before Income Taxes Income Taxes Net Income Income Per Share	\$ 7,264,223	\$10,714,006	\$15,345,550	\$21,736,446
	1,347,534	1,800,024	2,966,840	3,507,563
	420,000	600,000	900,000	1,125,000
	927,534	1,200,024	2,066,840	2,382,563
Primary Fully Diluted Dividends Per Share Average Shares Outstanding	.64	.84	1.44	1.65
	.62	.80	1.39	1.59
	.10		.20	—
	1,444,219	1,436,626	1,436,386	1,446,001

FIRST HALF HIGHLIGHTS

- 1. The Company earned \$1.44 per share in the first half, compared to \$1.65 in the same period last year.
- 2. Uranium royalties were the primary source of earnings, totaling \$2,629,573.
- 3. Production continued to increase at the Bluebird Mine, which benefited from higher copper prices.
- 4. Output of uranium oxide remained below expectations at the Johnny M Mine, where the northwest ore body has not yet been brought into full production.
- 5. The Old Reliable copper property resumed production in September.
- 6. Initial development of the Escalante Silver Mine began in September and is continuing on schedule.
- 7. A new silver property, the Revenue-Virginius Mine, was acquired, and the Company announced in January that it has begun planning to re-open the property.
- 8. Trial mining of the Company's Alaskan gold placers was completed in September, and plans were subsequently announced to expand operations there this summer.
- 9. Uranium exploration continued and a number of gold and silver properties were acquired for inclusion in a precious metals exploration program to be funded through a limited partnership in which the Company will be the general partner.

DIRECTORS / Maxie L. Anderson—President, Ranchers Exploration & Development Corporation / Frank Coolbaugh—Mining Consultant / Phil S. Cross—Vice President, Kerr Addison Mines Ltd. / Robert M. Haldeman—Mining & Management Consultant / Edward E. Monteith, Jr.—President, Thomson-Monteith / John E. Motica—Senior Vice President, Geology, Ranchers Exploration & Development Corporation / Edward McL. Tittmann—Mining Consultant OFFICERS / Maxie L. Anderson—President / Herbert M. Campbell II—Vice President and Secretary / Leland O. Erdahl—Senior Vice President, Finance / David K. Hogan—Vice President, Engineering / M. K. Kaiser—Vice President & Treasurer / Paul A. Matthews—Vice President, Operations / John E. Motica—Senior Vice President, Geology / James M. Rosel—Assistant Vice President & Assistant Secretary.

RANCHERS (PLORATION AND DEVELOPMENT CORPORATION

1776 Montano Road, N.W. Albuquerque, New Mexico 87107

TO OUR SHAREHOLDERS:

The Company earned \$1.44 per share (undiluted) in the six months ending December 31, 1979, including \$.80 in the first quarter and \$.64 in the second. Net income totaled \$2,066,840 on revenues of \$15,345,550. A year ago, the Company earned \$1.65 per share on net income of \$2,382,563 and revenues of \$21,736,446.

Uranium royalties were the most important factor in earnings for the half, totaling \$2,629,573, compared to \$953,387 last year. A substantial factor in this increase was a one-time payment received in connection with settlement of long-standing litigation with United Nuclear Corporation over royalties from Company properties mined by United in northwest New Mexico.

Income from the Bluebird Mine totaled \$5,548,364, an increase of 60 percent over the \$3,460,597 received a year ago when the mine had not yet been returned to full production. Selling prices were also higher, \$.964 per pound vs. \$.668 last year. Johnny M Mine uranium oxide sales were \$4,573,450, down 36 percent from \$7,178,299 of a year ago, and sales from the Hope Mine, a small uranium producer, were also lower, totaling \$741,286, compared to \$1,338,878 last year. Other income included interest of \$789,999, Big Mike Mine copper sales of \$235,362, Old Reliable Mine copper sales of \$377,212, miscellaneous income of \$310,909, Ran-Con mine contracting sales of \$65,211, and Durita uranium oxide inventory sales of \$74,184. The Durita project, which involved treatment of uranium mill tailings at Naturita, Colorado, was not in production as it was a year ago when it had sales of \$8,145,848. Production at the site was concluded in the prior fiscal year.

Operations

Progress in developing its gold and silver properties was one of the most significant developments of the Company's first half. Trial mining of the Alaskan placers, which began during the summer, was completed in September, with processing of about 45,000 yards of gravel and recovery of approximately 600 ounces of gold. Success of this operation, combined with further increases in gold prices, led to a decision to expand the operation this coming summer. Plans call for processing about 250,000 yards of gravels in a sluicing operation to recover some 5,000 ounces of gold. A crew will arrive at the site in mid-May and work will continue until late September, if weather and water availability permit. Minimum gold prices in the range of \$400 to \$450 per ounce should enable production to continue at the site for several years.



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8-11-78

DEPT. MIMERAL RESOURCES
PHOENIX, ARIZONA

1776 Montano Road, Northwest / Albuquerque, New Mexico 87107 / Post Office Box 6217 / Phone (505) 344-3542

1978 Earnings: \$2.72 Fourth Quarter: \$1.16

The Company finished the year on a strong note, earning \$1.16 per share in the fourth quarter. This lifted earnings for the year to a record \$2.72 per share, an increase of 164 percent over the \$1.03 per share earned last year. Net for the year was \$3,916,986; gross was \$34,444,496, an increase of 63 percent over the \$21,160,930 grossed a year ago.

The fourth quarter results were largely attributable to shipments of uranium oxide from the Durita uranium mill tailings project at Naturita, Colorado. Production began at the project in January, but no shipments were made to Kerr-McGee's conversion facility in Oklahoma until May. By June 30, nearly 200,000 pounds of uranium oxide had been produced and most of it shipped. Sales for the quarter totalled \$7,406,079. Nearly 900,000 pounds of vanadium was also produced. The project is continuing to operate smoothly and will again be a major contributor to income in 1979.

The other major source of company income during 1978, the Johnny M Mine, performed well throughout the year. Production from the Mine, jointly owned by HNG Oil Company, totalled 924,973 pounds of uranium oxide in ore, half of which was for the Company's account. Income from the Company's share of production totalled \$12,308,474. Other income derived from uranium during the year included \$1,829,397 from royalties and \$1,749,577 in sales from the Hope Mine.

Copper sales, the mainstay of company income since 1964, fell below uranium for the first time. Sales for the year totalled \$8,655,120, with most of this amount coming from the Bluebird Mine. Because of low copper prices, which averaged only \$.54 for production sold during the year, the Bluebird operation was curtailed, with the result that output totalled only 14,794,827 pounds. This represented a reduction of 17 percent from the 17,916,207 pounds produced last year. The Mine remains in production, however, and the recent firming in copper prices provides some optimism that the property will again be a major contributor to the Company's income.

The Company expects another good year in 1979, with the Durita and Johnny M operations, as well as uranium royalties, being the chief source of earnings. There is also some possibility that milling arrangements will be completed for uranium ore stockpiled at the Small Fry Mine. Mining and stockpiling has been halted until such arrangements can be made.

August 4, 1978

Maxie L. Anderson, President

DIRECTORS / Maxie L. Anderson—President, Ranchers Exploration & Development Corporation / Frank Coolbaugh—Mining Consultant / Phil S. Cross—Vice President, Kerr Addison Mines Limited / Robert M. Haldeman—Mining & Management Consultant / Edward E. Monteith, Jr.—Executive Vice President, Republic National Bank, Dallas Texas / John E. Motica—Senior Vice President, Geology, Ranchers Exploration & Development Corporation / Edward McL. Tittmann—Mining Consultant OFFICERS / Maxie L. Anderson—President / Herbert M. Campbell, II—Vice President and Secretary / Leland O. Erdahl—Vice President, Finance / David K. Hogan—Vice President, Engineering / M. K. Kaiser—Treasurer / Paul A. Matthews—Vice President, Operations / John E. Motica—Senior Vice President, Geology

ATE OF ARIZONA

DEPARTMENT OF MINERAL R. OURCES

MINERAL BUILDING, FAIRGROUNDS PHOENIX, ARIZONA 85007

July 20, 1976

Mr. Kenneth L. Power General Manager Bluebird Mine Ranchers Development Coporation Box 880 Miami, Arizona 85539

Dear Mr. Power:

Thank you very much for furnishing the Department of Mineral Resources with the 1975 production data for your Arizona mining operations.

Enclosed is a copy of the completed 1974-1975 tabulations for all large Arizona copper producers.

If the Department, or I, can be of assistance to you at any time, please contact us.

Sincerely,

Glenn A. Miller Mineral Resources Specialist

Enclosure

GAM:jm File Ranchers Bluebird Mine
Yellow Alpha "R", Copper Report, GAM files

STATE OF ARIZONA

DEPARTMENT OF MINERAL RESOURCES

MINERAL BUILDING, FAIRGROUNDS PHOENIX, ARIZONA 85007

April 21, 1976

Mr. Kenneth L. Power, General Manager Ranchers Development Corporation Box 880 Miami, Arizona 35539

Dear Mr. Power:

Last year you kindly gave us the tons of ore mined, tons of overburden removed and pounds of copper produced at the Bluebird Mine in the calendar year 1974, (see attached copy of letter).

We would appreciate receipt of like figures for the calendar year 1975. In addition, we would appreciate copper production figures from the Old Reliable for calendar year 1975, if available.

Thank you very much.

Sincerely,

Glenn A. Miller Mineral Resources Specialist

jm

cc: Pink Reading, Yellow Alpha "R"
Copper Report file
Ranchers file



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ΔPR 1 9 1978

DEPT. MINERAL RESOURCES
PHOEIXX, ARIZONA

1776 Montano Road, Northwest / Albuquerque, New Mexico 87107 / Post Office Box 6217 / Phone (505) 344-3542

THIRD QUARTER EARNINGS RISE; URANIUM TRIALS CONSOLIDATED

The Company experienced a strong third quarter, with earnings for the three months ending March 31 estimated to be about \$.65 per share. First and second quarter earnings were \$.27 and \$.56 per share, respectively. With earnings for the first nine months already running well ahead of those for the preceding 12 months, it is apparent that the Company's earnings for fiscal year 1978 will exceed by a substantial margin the \$1.03 per share earned a year ago.

Earnings for the third quarter reflect the continuing satisfactory performance of the Johnny M uranium mine, where the Company's share of production sold for the quarter is about 115,000 pounds of uranium oxide. This compares to the approximately 111,000 pounds sold in the second quarter and the 73,000 pounds sold in the first quarter. Mining at the Hope and Small Fry mines also continued during the quarter, with output from the latter again going into stockpile.

Third quarter results do not contain any contribution from the Durita uranium mill tailings project at Naturita, Colorado, except for vanadium sales. Uranium recovered from the tailings via leaching and solvent extraction totalled about 90,000 pounds of uranium oxide by the end of March. Production began in late December and is presently averaging about 1,000 pounds per day. It is expected that uranium sales will begin in late April when initial shipments commence to Kerr-McGee's conversion facilities in Oklahoma. Vanadium, now being recovered at the rate of about 4,600 pounds per day, is being shipped in liquid form to Union Carbide's plant at Rifle, Colorado, for conversion to vanadium flake. The flake is being sold for \$2.30 per pound. Production through March totalled about 475,000 pounds, 250,000 pounds of which was shipped in the quarter.

URANIUM LITIGATION

A trial on the commercial issues in the Company's suit with General Atomic Company over certain production from the Johnny M Mine has been delayed as the result of a decision by the presiding judge to combine the commercial issues with anti-trust issues in the case. The trial on the commercial issues had been scheduled to begin in New Mexico State Court on May 1; a date had not been set for trial of the anti-trust issues. The trial on the combined issues has now been scheduled for mid-October. The litigation concerns mine output in excess of the three million pounds of uranium oxide committed to Gulf States Utilties by the Company in September, 1976.

April 5, 1978

Maxie L. Anderson, President

DIRECTORS / Maxie L. Anderson—President, Ranchers Exploration & Development Corporation / Frank Coolbaugh—Mining Consultant / Phil S. Cross—Vice President, Kerr Addison Mines Limited / Robert M. Haldeman—Mining & Management Consultant / Edward E. Monteith, Ir.—Executive Vice President, Republic National Bank, Dallas Texas / John E. Motica—Senior Vice President, Geology, Ranchers Exploration & Development Corporation / Edward McL. Tittmann—Mining Consultant OFFICERS / Maxie L. Anderson—President / Herbert M. Campbell, II—Vice President and Secretary / Leland O. Erdahl—Vice President, Finance / David K. Hogan—Vice President, Engineering / M. K. Kaiser—Treasurer / Paul A. Matthews—Vice President, Operations / John E. Motica—Senior Vice President, Geology

Pink - Reading
Alpha - P
Subject - Bluebird Mine
Copper Report
Copy - GM

April 22, 1977

Mr. Kenneth L. Power General Manager Bluebird Mine Ranchers Development Corporation Box 880 Miami AZ 85539

Dear Mr. Power:

The Department of Mineral Resources is compiling data for its annual report on the copper industry, A PROFILE OF ARIZONA'S PRIMARY COPPER INDUSTRY FOR 1976, VOLUME I.

Mr. Micheal Attaway, Mine Engineer, reported in his letter of April 27, 1975, (1) tons of ore mined, (2) tons of overburden removed, and (3) pounds of copper produced at the Bluebird Mine for 1975 (see attached copy of letter). We would appreciate receipt of like figures for 1976. In addition, we would appreciate the production figures for the Old Reliable Mine, if production was resumed after July 1975, or during 1976. Conversely, if there was no production at the Old Reliable, we would also appreciate that information.

Similar requests are being sent to all Arizona copper producers and a copy of the completed 1976 tabulations will be returned to you.

Thank you very much.

Sincerely,

Glenn A. Miller Mineral Resources Specialist

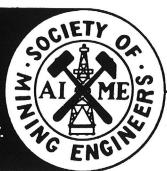
GAMSKIR

enclosure

PREPRINT NO.

SOCIETY OF MINING ENGINEERS of AIME

345 EAST 47TH STREET, NEW YORK 17, N.Y.



HEAP LEACHING COPPER ORE AT RANCHERS BLUEBIRD MINE
MIAMI, ARIZONA

Arthur Miller Vice President

Ranchers Exploration and Development Corporation Albuquerque, New Mexico

This paper is to be presented at the SME Fall Meeting-Rocky Mountain Minerals Conference, Las Vegas, Nevada, September 6-8, 1967

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DEPARTMENT OF MINERAL RESOURCES STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine BLUEBIRD MINE

Date 9/27/63

District Miami-Globe Dist. Gila County

Engineer Lewis A. Smith

Subject: Visit 9/27/63 Conferences with Bert Reed, and Stovall Mining Company official, John McClure (John is supervising the leaching).

Attempts to contact David McCrilles, Geologist for Callahan Lead-Zinc Co., failed. (Office at 503 Sullivan St., Miami, Arizona).

Stovall Copper Company, so far, had made 13 shipments of cement copper to Inspiration Smelter, according to Bert Reed, Chief Geologist, Inspiration Copper Company.

These averaged 35-40 tons and ranged in grade from 60-75 percent in copper content.

Difficulty was had with rusty cans, causing incomplete replacement of them by copper.

The supply of old cans is nearly used up and it believed that new cans will materially raise the grade of the cement copper. Percolation in the leach dumps has continued to be good. A new dump, west of the original leach dump is being constructed. This will permit the use of alternate "drying out" and "wetting" periods. "Drying-out" means that no leach solution will be put on a dump for a period of 3 months, or more. During this "drying out" period copper sulphate effloresces out of the rock, by capillary movement, and forms a coat on open surfaces. At the same time the rock decrepitates or spalls, creating new surfaces that the leaching solution can attack. When the leaching solution is returned the pregnant solution grade is usually increased.

Callahan Lead-Zinc Company has optioned the Bluebird, Fritz, and Schultze properties. They have, so far, drilled 11 core drill holes. Joy Mfg. Co., Wm Scott, Driller is doing the drilling with an NX bit (2 1/8 inch core) that ranged from 100 to 400 feet in depth at the Bluebird. Due to the intimate fracture pattern in the Schultze Granite, and the high kaolin content in that rock the core recovery has not, to date, been good. According to McClure the reserves, thus far developed, total nearly 4,000,000 tons that average about 0.8 percent copper. McClure said that two holes drilled immediately east of the core limit showed only low grade. He said that, since the ore on the west side of the ore zone is thicker and it is suspected that the ore zone may possibly pitch westward. The hole now being drilled, should help to verify this theory. He said Callahan was now setting up to drill the adjoining Schultze property, to the west.

It is hoped, that the unprospected area, north of the ore body, will also be test drilled, although the topography drops off in that direction.

DEPARTMENT OF MINERAL RESOURCES

FIELD ENGINEERS REPORT

Mine

Blue Bird, Pit & Leach Plant

Date

January 29, 1963

District

Miami District, Gila County

Engineer

Lewis A. Smith

Subject:

Visit with Tillson and Harmon Keyes

The high dump recently slumped during heavy rains when the high kaolin rock became "greased." This covered two pumps and some pregnant solution collection vats.

Since then the dump has been cut down into two 25 foot benches by spreading the old dump over more area mainly along the west side. Here it somewhat overlaps the polyethylene base cover. This should not cause serious loss since the overlap lies on nearly impervious compacted clay. The area that can be sprinkled has been increased 4 to 5 times. The shallower dumps will be more permeable and less apt to sluff. The period of ultimate extraction should be materially lessened. A new dump of similar character has been started northeast of the present dumps. This has a clay base that is believed to be sufficiently tight to have little loss of solution. When this is finished it can be leached while the other dump is drying out.

So far 1 shipment of 39 tons of precipitates has been sent to the Inspiration smelter. This ran 72.6 per cent copper. A second similar shipment is stored on the drying platform.

Coarse screened rock is now being screened and spread over the leach surface. When this is finished the 2 inch plastic water spray pipes will be reset. This should be finished in a week or ten days. The pumps and pregnant solution vats are about ready.

BLUE BIRD GROUP

MIAMI DISTRICT, GILA CO.

Stovall has 26 men at work and estimated that the leaching would begin in about 3 weeks. He has built a heap-leach dump containing 70,000 tons that is estimated to run about 0.80 percent copper. In the small immediate pit, the grade varies from 0.4 to 2 percent. The various grades are being mixed with the view to averaging 0.8 to 0.9 percent copper. The mining plan is coming along well. The heap area was lined with cardboard, coated by polyethylene, then by cardboard and plywood.

Al estimates a reserve of about 5-6 million tons.

Interview with Al Stovall and Mine Visit 9-26-62.

LEWIS A. SMITH - MEMO

Ariz. Development Digest 6-62

Oct. 14, 1962

Harmon Keyes - His patented process of agglomeration will take care of the clay problem.

Installing plastic pipe for solution distribution & other work proceeding well.

FPK.

See: MINING WORLD, July, 1962, p 41

DEPARTMENT OF MINERAL RESOURCES STATE OF ARIZONA FIELD ENGINEERS REPORT

Mine

Blue Bird (Stovall Leach Operation)

1

Date

May 21, 1962

District

Miami Dist., Gila County

Engineer

Lewis A. Smith

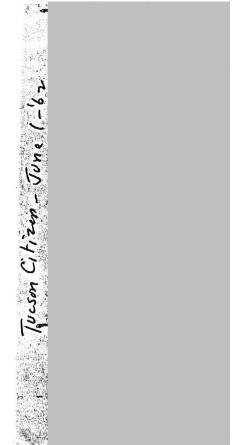
Subject:

Mine and Plant Visit and Conferences with Officials 5-18-62.

The pit stripping has advanced considerably since the March visit. Two holes further north have disclosed good thicknesses of ore. Further drilling, in that direction, is contemplated in the near future.

A conference with Al Stovall and Harmon Keyes relative to mine planning, resulted in a double entry road system up waste ridges on the east and west sides of the pit, with access roads approaching each bench from both sides. This would permit entry from two directions and remove interference by empty trucks with loaded trucks, and would prevent loss of access in case of stoppage on one ramp system. The two ramp systems would be connected by a service road above the pit, and at the bottom. The ramp haulage will converge at the heap leach dump in a flat area. The filled area, upon which the heap-leach dump will be built, is leveled and diked. This will be lined by polyethylene and cardboard. The pregnant solution will be delivered to the precipitation vats by acid-proof pipe by an acid proof pump. The final installation of pipe is now being started. Experiments with leaching solutions are still under way, now yielding about 75 percent, copper. The ore grade is tentatively calculated at about 1 percent. The ore appears to fragment well when blasted. It is hoped that the ore can be adequately fragmented so as to not require crushing. I advanced the idea that, if the ore was crushed, the charging of the heap-leach piles would lead to much less chance of damaging the polyethylene lining. Such damage could lead to serious loss of pregnant solutions, due to leakage. Extreme care will, in any event, be required to prevent such damage.

As now planned, no cement vat leaching is contemplated, as was originally planned.



DEPARTMENT OF MINERAL RESOURCES STATE OF ARIZONA FIELD ENGINEERS REPORT

Mine Bluebird Mine

Date January 12, 1962

District Miami District, Gila Co.

Engineer LEWIS A. SIITH

Subject: Interview with Al Stovall

Al Stovall stated that he has drilled four additional deeper holes, all of which showed a good thickness of ore. The first hole showed 385 feet of ore which averaged $l\frac{1}{2}$ per cent copper. The other holes are being evaluated. He now estimated 7,000,000 tons of over 1 per cent ore and is constructing leaching vats and precipitation cells. He is employing 10 men. Harmon Keyes is the consultant metallurgist for Al. Al figures that he has 15 years of operations at the mining rate he wants to use. He is also stripping some overburden. He will be in shortly to give us the latest information.

DEPARTMENT OF MINERAL RESOURCES STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Blue Bird Group

Date March 23, 1962

District Miami District, Gila Co.

Engineer Lewis A. Smith

Subject: Mine visit with Harmon Keyes, Consulting Metallurgist for Al Stovall.

Stripping: An area of approximately 1000 feet long and 600 feet wide has been stripped. The average depth of the exposed ore will exceed 100 feet. From a few to ten feet of waste capping was removed and piled in a canyon northeast of the ore area. Access can be established from the south, or north for benches in waste material. The northwest and north side of the ore area was drilled by relatively deep holes, both of which showed over 250 feet of ore. A considerable area, which has not been drilled, lies between the developed areas and Inspiration's open pit. Further drilling in this direction appears to be feasible in the near future. The waste capping has been leveled off along with a low hill for space for the heap leach operation and a screening plant. The ore in the pit is in intensely shattered Shultz Granite. The oxidized copper minerals (chrysocolla, malachite, azurite and some melaconite and residual chalcocite) are both disseminated throughout the granite and in veinlets on the fracture planes. Of the minerals azurite may be the toughest to leach. The granite is strongly kaolinized. The waste material from a small experimental heap leach operation shows very little remaining in the rock. According to Mr. Keyes an anticipated recovery of 75 to 80 per cent should be realized. The mineralized area trends roughly N-S. The fracture pattern appears to have resulted from a combination of shearing and conjugate fracturing. The limonite, left in places, indicates high iron-copper mineralization. The ore runs from .3 to 0.4 per cent copper up to over 1 per cent. Some of the better grade ore will probably be vat leached. In this case the material will be sized by crushing. The intimate fracture pattern indicates a fine breaking situation. The property is equipped with a 15 ton carry-all and cat, $3 - 1\frac{1}{2}$ yard Allis Chalmers loaders, 2 RD8 cats and trucks. Richard Chilson is the local manager, and John'Allan is the mine superintendant.

The precipitation plant vats were being poured at the time of the visit. These consist of 7 double cells 30 feet long, 3 feet wide and 6 feet deep. Each double cell group is 6 inches higher than the next group. The double cells have a gate for solution transfer between the two halves. Precipitation will be by tin cans. The bottom of the cells slope gently in and each cell will have two troughs for discharge of the pregnant solutions.

The heap leach dump will be set up so as to overlap the older ore pile with new piles as shown on the diagrams.

Stacker

Loaded at upperend
and spread with Cat.

Or Loader.

Programt
Solution
Sump.

Old ore

New orc

New orc

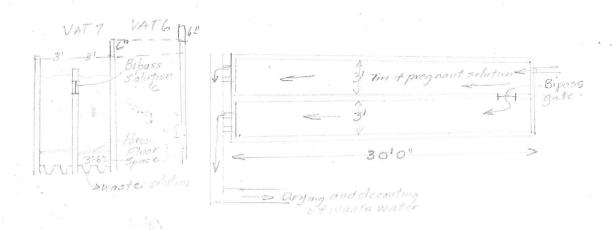
Stacker

Pregnant Solution

Blue Bird Group (continued)

The dirt leach vats for the heap leach ore will be lined with polyethylene sheets. The leach dumps will range from 5000 to 20,000 tons of ore depending upon the final rate of operation. The head of the dumps will be equipped with stackers for ore piling. The lower end will have lined troughs for handling the pregnant solution which will be eventually delivered to the precipitation vats.

The pit could be easily developed for 25 foot benches which could be approached from two directions. The ore probably will be drilled with wagon drills. Much of the ore would break to less than four inches in diameter.



DEPARTMENT OF MINERAL RESOURCES STATE OF ARIZONA FIELD ENGINEERS REPORT

Mine Blue Bird

Date

Movember 29, 1962

District Miami Dist., Gila Co.

Engineer

Lewis A. Smith

Subject: Mine visit and interviews with Al Stovall, Harmon Keyes and Charles Tillson (Mine Supt.)

The first leach dump, containing an estimated 130,000 tons, is rapidly being readied for leaching. The top of the dump has a flat pit with dikes around it. Two flat terraces circle the dump at intervals of 25-30 feet below the crest pit. Plastic pipe (2-inch) is being laid on the upper pit and the terraces. The pipe has sprinklers at 3-foot intervals and the pipes and sprinklers are laid out in a pattern that is calculated to spread the sulphuric acid solution spray evenly over the dump. The solution, that will have a PH of 3.0 (or 4.0) is pumped from a storage tank under pressure to the leach dump. The dump is perhaps 80 feet high at the deepest place. The ore carries considerable kaolin content, necessitating the agglomeration of the fines in order, if possible, to prevent sealing of the dump after a period of leaching. The surface of the leaching pits was coated by 4-8 inches of coarser rock. Tests on a shallow column of similar ore indicated good percolation and that the ore will leach readily. At the bottom of the dump several interconnected vats were erected and polyethylene lined ditches will deliver the pregnant solution to these collection vats. The vats are constructed of redwood timber (2" x 6" inches). Each is about 4 x 6 feet in section and are 4 feet deep. They are connected to 4-inch discharge pipes which in turn are tied to two plastic 4-inch lead lines which are connected with a collection vat. The pregnant solution is then pumped to the precipitation vats. The precipitation will be done with shreaded tin cans which are furnished by a California concern at \$60-65 per ton. A stock pile of cans has been accumulated at the pit. The sulphuric acid is stored in a lead lined tank that is about 8 feet in diameter and 15 feet long.

The leach dump is said to average about 0.85 percent copper and thus far no notable sulphides have been seen. Some very narrow seams in the bottom of the pit may possibly be, in part, "sooty" chalcocite. The most prevalent minerals are agurite and chrysocolla, with a little malachite, cuprite and sparse lindgrenite (?). The orebody appears to occupy a down dropped block bordered in places by shear zones that are most evident along the east and west borders of the ore area. The shear beds are thin and numerous where they are uncovered. The ore also shows some evidence of local shearing. The country rock, as seen by present development, is almost entirely composed of Schultze granite, which in part may be porphyritic. The granite after severe shattering, was apparently hydrothermally altered by strong hypogene kaolinization and some silicification prior to the introduction of the copper minerals. The feldspars were broken down into kaolin and secondary silica and the mica was almost obliterated. Calcium carbonate was formed as one of the end products. Supergene copper-bearing solutions then invaded the "basin" and due to the altered granite's chemical reactivity dropped out oxidized copper minerals. Notably there is insufficient iron oxides in the ore and in the very measer leached capping, to account for the original presence of sulphides of sufficient volume to have yielded the volume of oxidized copper found. No relicit sulphides, of observable consequence, were found. This leads to the belief that the source copper was derived from some locality not immediately within the presently developed ore area. The other alternative is that

Blue Bird (continued)

if sulphides were once present, the ore area was completely oxidized and would then represent the roots of a previously sulphide mineralized area. The deficiency of iron minerals lends substance to the first view. In the Inspiration pit relicit sulphides are prevalent well up toward the top of that orebody in many places. The large cla/ content of the Stovall ore area coupled with structural dams probably caused the concentration of ore minerals in the so-called "basin". The kaolin is well impregnated by copper oxidized minerals out from the fractures, but the copper value becomes less in proportion to the distance from the fractures. Preliminary study of the area north and east of the pit indicates that further drilling is in order there. The ridge east of the pit, part of which may later be covered by part of a second leach dump should first be drilled since there are some indications of continued mineralization at least half way up the west slope. A test hole, sunk on the east flank of the ridge, shows sub-economic material (C.1 to C.2 percent copper). This hole was shallow and may not have penetrated to the better ore zone that appears to deepen to the eastward in this area. Further deep drilling is certainly recommended to the north since the last test holes in that direction showed thick sections of ore (up to over 375 feet thick). Whether or not other orebodies lie between the Stovall Pit and the Inspiration Pit is not known, as this area has not been too extensively prospected by drilling. However, it is entirely possible that no other relatively ideal depositional areas, such as were present in the Blue Bird may be found although the rock character is not unfavorable.

Report on the Property

of the

RANSOM COFFER COMPANY

at

MIANI, ARIZONA

TYPE OF MINE

This is a low grade disseminated copper deposit in Pinal schist and Schultze granite porphyry.

The holdings of this company cover large outcrops of exidized copper which can be recovered by leaching with sulphuric acid solution. This company has worked out methods to leach the ore in place after caving the main mass, by spraying the sulphate solution over the broken ore and allow it to percolate down through the caved area to a sump or catch basin at the bottom of the oxidized ore zone, and then pumped it to the surface where the copper content precipitates out on scrap iron, or some other suitable precipitant.

The one removed from the underground workings preparatory to caving will be spread out on the surface in the canyons, or in large dumps and heap-leached there.

LOCATION

This property is situated in the Mismi Mining District, Gila County, Arizona, extending from 1.5 mile to 3 miles southwest of the town of Mismi, and embraces a portion of one of the largest disseminated copper ore bodies known.

The group of claims held by the Ranson Copper Company cover the extensive outcrops of exidized ore running in a general southerly direction adjacent to and running along the east boundary line of the mining property owned and operated by the Inspiration Consolidated Copper Company, and cover the south extention of their Live Cak ore body.

The holding of the Ranson Copper Company, an Arizona Corporation, consists of 34 unpatented mining claims, all held without dispute or litigation, comprising an area of approximately 625 acres. On the map, the claims of this

company are colored red. The outerops of the oxidized ore are tinted blus.

There is an estimated tonnage of more than twenty-five million (25,000,000) tons of oxidized one with an average copper content of one and one-half per cent (1.5%) copper.

The copper minerals contained in the ore are excrite, malachite, cuprite, melaconite, chrysocolla, and some native copper. The gangue materials are Pinal schist and granite perphry. The ore is perfectly amenable to leaching. A large tennage of the same kind of ore is now being leached profitably by both the Mismi Copper Co. and the Inspiration Copper Co.

The property is very conveniently located, and there is at hand every facility for cheap and efficient mining and leaching the ore.

The Live Oak Canyon branch of the Southern Facific Railroad runs within 1,000 feet of the north end of the claims. The south end is crossed by the Mismi-Superior State Highway, recently paved and improved. The main power transmission line of the Salt River Valley Water Users Association also traverses the property just west of the highway.

The International Smelter is about four (4) miles away.

OFE

There are good access roads running to all parts of the ore bodies.

This group of claims cover what was at one time a widespread zone of secondary enrichment and bed of chalcocite, which exidized in place without much downward migration of the copper contents.

Portions of the ground have been prospected by churn drill holes. During the boom days of Miami, about 10 or 12 holes were drilled on the places most favor-oxidized able for chalcocite enrichment. Neither them nor at any time since, has the/leaching ores received any attention except as a subsidiary leaching operation carried on in conjection with the floatation of sulphide ores.

Drillers and samplers report that the zone of oxidization extends down to a depth varying from 150 to 850 feet below the surface, and that average of the

oxidized ore was a little better then 1.5% copper. Many of the holes penetrated the enriched chalcocite blanket and the primary sulphides.

WATER

In nearly all the holes heavy flows of water were encountered. This is very important, since water for leaching and all other operations will have to be pumped from the underground supply. Water will be about the only limitation on the smount of one that can be treated daily. All mining and milling operations in the Globe-Missi districts depend for their water supply on wells and mine workings. The underground reservoir furnish all the water used both for demostic consumption and mining and the treatment of one. Exploratory churn drill holes could be used as water supplys.

GEOLOGY

of copper in the world. Heny able and exhaustive reports have been written on it, but the most comprehensive and dependeble is Dr. V. L. Ransom's Professional Paper 115, on "INS COPPER DEPOSITS OF THE RAY AND MIAMI, ARIZONA" of the U. S. Geological Survey. The following are excerpts below from this classic:-

"Chapter VIII. - Shape and Goolegie of the Ore Redies.
"FORM AND DIMERSIONS.

"The bodies of the disseminated ore in the Ray and Michael districts may be characterized in general terms as undulating, flat-lying masses of irregular outline and of variable thickness. As a rule these masses lack definite boundaries. No readily recognizable distinction in color, texture, or general appearance marks them off sharply from the enclosing rock, and closely spaced sampling and assays prove that the passage from one to country rock is in most places gradual.

"In some places, particularly in the Ray district, there is an abrupt change from the practically barron, rusty-brown "copping" to

gray sulphide ore. The same sharp contact between leached exidized material and ore occurs at several placed in the Mismi district, but a study of all the aveilable oburn drill records of this district shows that out of 191 holes which penetrated the ore, 154, or about 80 per cent, passed through material containing carbonates and silicates of copper, or mixed carbonates, silicates, and sulphides before reaching ore. This material may contain as much copper as the normal sulphide ero, but inassuch as it is not especially amenable to the same milling treatment, it is not at present classed as ore (for the floatation milles) or is considered separately from the predominately sulphide ore. ***there is no regular relation between the ore bodies and the ground water level beyond the fact that the ore as a rule lies deeper to the west. whoreas the water surface gets deeper to the east. Ore may occur high above the water level. ** This irregularity supports the suggestion that the enrichment which produced the ore bodies was effected in the main before the development of the present topegraphy.

"RELATION TO KINDS OF COUNTRY ROCK.

The rocks intimately associated with the disseminated ores, in the Mismi district, are the Pinal schist and the Schultze granite perphyry. In the Mismi district the ore in a general way occupies a marginal position with reference to the extreme north lobe of the Schultze granite, being chiefly granite perphyry. It does not follow the contact closely, however, nor is it entirely in one rock. The main Mismi ore body is chiefly in schist, although a granite perphyry dike which cuts the schist has, like that rock, been converted into ore. In both Ray and Mismi districts schiat and porphyry have apparently been equally susceptible to metallization, and

there is no essential difference between ore in schist and ore in porphyry.

"Chapter IX. - Protore, ore, and capping.

"In practice it will be sufficiently accurate under the present conomic conditions to refer to rock carrying less than 1.3 per cent copper as protore, while that containing 1.3 per cent or more of copper will be classed as ore.

"TENOR OF THE ORE

"In tenor the ore ranges from any lower limit that any be set, usually some figure between 1.0 and 1.6 per cent of copper, up to about 10.0 per cent.

MOST CENTER OF AND LEAGUED ROCK

From the complete oxidisation of the protore and the ore two general kinds of material results. One is a rock brilliantly colored with malachite and chrysocolla containing approximately as much copper as the ore but in a form not susceptible to satisfactory concentration by the process applied to the sulphides. In a few places it has been rich enough to mine in a small way and ship to the smaller.

lets of chrysocolla, is abundant in the Mismi district, generally in or close to the granite perphyry, and was what first attracted attention to the economic possibilities of the district. *** Such brilliant coloring indicates that much of the copper instead of migrating downward to form chalcocite, has been fixed near the surfaced as silicate and carbonate in a form that under the present economic conditions and metallurgic practice is not yet available as ore, although much of it will be utilized in time. It indicates also as will be more fully shown later, that the material exidized

in place where the silicate and carbonate of copper abound was not pyritic but had previously undergone chalcocitization — in other words, that erosion had overtaken and encreached upon the downward enrichment."

This property is notable in possessing the following distinct advantages:-

- 1. The extremely low cost of mining w \$0.20 a ton.
- 2. Small capital investment in equipment and machinery.
- 3. The cheapest method yet devised for the extraction of the copper contained in the ore \$0.40 a ton.
- 4. Small man powor requirements 20 men.
- 5. The speed and unusually short time required to put the property in production sixty days or less.
- 6. It is only four miles from a smelter.
- 7. It is a substantial portion and part of one of the largest disseminated copper deposits in the world, proven to be such by twenty-five years of successful mining and milling operations.
- 8. Copper produced here will receive the highest premium.
- 9. It is crossed by a paved highway and high potential power transmission line, and is less than 1,000 feet from a railroad.
- 10. Timber and lumber readily available at the sawnills 50 miles North of Mismi at \$40.00 a thousand feet.
- 11. Mining equipment and material can be bought locally.
- 12. City accomodations and housing facilities are accessible in Globe and Miami nearby.
- 13. The best of technical telent is sveilable here.
- 14. The metallurgy has been worked out by the other large companies.
- 15. The ore is exposed at the surface and is ready to mine.
- 16. There is more than twenty-five million tons of ore that will pay a profit better than \$1.00 a ton.
- 17. Can obtain the highest priority rating.
- 18. The mine can be closed down and reopened again without loss or

incurring any additional expense.

- 19. Low tex retes.
- 20. The War Production Board and otherGovernment Agencies will lend every effort to put this mine into immediate production.

Ira W. Wagnon

Mismi, Arizona Dec. 14, 1942 Edia N + Mining Jul - 2422 No Little In

BLUE BIRD PROPERTIES

GILA COUNTY

MAP

SENT MO REPORT TO

Mr. J. L. Carrow - Common Box 1105
Miami, Ariz.

Info. LAS 1-24-58

J. C. Anglin sold in 1944 to: FRANK CARROW, Box 1655 Globe, Arizona

BLUE BIRD GROUP

Mb-Pd

LEPARTMENT OF MINERAL RESURCES STATE OF ARIZONA MINE OWNERS REPORT

MINE OWNER'S REPORT

Date December 6,19420

1. Mine Blue Bird Mine

2. Location Two miles west of the Town of Miami. 3/4 mile

3. Mining District & County Miami District, Gila County

north of Highway 60.

4. Former name Unknown

5. Owner J. C. Anglin

7. Operator No operation

9. President, Owning Co. Not Incorporated

10. Gen. Mgr.

11. Mine Supt.

12. Mill Supt.

13. Men Employed None

18. Operations: Present None

- 6. Address (Owner) J. C. Anglin
 Box 172, Globe, Ariz.
- 8. Address (Operator) No operation
- 9A. President, Operating Co.
- 14. Principal Minerals Copper
- 15. Production Rate
- 16. Mill: Type & Cap. small asserthmed
- 17. Power: Amt. & Type

- 19. Operations: Planned Considering shipping ore direct to International Smelter at Miami. Smelter about 3½ miles from mine. Will work mine open pit method on higher grade portions of the ore body
- 20. Number Claims, Title, etc. Three unpatented claims
- 21. Description: Topography & Geography This property is located at an elevation of 3600 feet above sea level in the Miami Mining District of Gila Co. Arizona. The low point on the property is approximately 3500 feet above sea level and the high point about 3750 above sea level. The three claims cover an area 1500 feet by 1800 feet, a part of which might be described as rolling and a part as rugged or steep. The claims are 1 and 2 miles south of Inspiration mine and 2 and 2 miles southwest of Miami mine 22. Mine Workings: Amt. & Condition

There is a tunnel on the property which cross cuts the ore body a distance of about 150 feet. This tunnel is open and accessable for examination. There is an old shaft on the property reported to have been sunk to a depth of 100 feet. This shaft has caved and will not be accessable for examination There is two shallow surface exceptions on the property. Both show ore

23. Geology & Mineralization A f. stiking northeast to so west and dipping to the northwest at an angle of about forty degrees forms the footwall or southeast limit of this ore deposit. Values are in Copper deciminated in Schultz granithis granite could probably be more properly classified as a porphyry. Value occur in the form of malachite and azurite very equally distributed throughouthe porphyry mass. Values are entirely in oxidized form.

24. Ore: Positive & Probable, Ore Dumps, Tailings

Ore is exposed over a wide surface area, approximately two hundred feet wide and one thousand feet long. Engineers have estimated more than a million tons of ore in the first hundred feet of depth averaging 1.5 per cent copper or 30 pounds per ton. There are dumps of any considerable tonnage on the property. Probably eight to ten million tons could be devel

24A. Dimensions and Value of Ore body

The dimensions of the ore body is as described above about 200 feet wide by 1000 feet long. The greatest depth attained is in a 150 foot cross cut tunne which at the deepest point is about 50 feet from surface. Ore is exposed the full lentgh of the tunnel. Average values are about 1.5 per cent copper in exposed areas of the ore body

exposed areas of the ore body

25. Mine, Mill Equipment & Flow-Sheet No mill on property

- 26. Road Conditions, Route This property is located about one mile from Highway 60 which is a paved Highway. The mile of road from Highway to the claims is in a wide canyon and through low hills. The material is decomposed granite and is good when kept in repair. Road is rough now because of not being repaired since summer rains
- 27. Water Supply There is no developed water supply. Water can be developed by drilling on the property
- 28. Brief History These penalms; was at one time a part of the Miami Consolidated Copper Company property and was churn drilled about 30 years ago by that company. Drilling records are not available as the company went cut of existence years ago and the man that had charge of the work died several years ago. Oxidized copper ores could not be successfully treated at that time which no doubt is the reason the ore body was not worked by that Company

29. Special Problems, Reports Filed The only real problem is financing. This class of ore has been successfully treated by the Inspiration Con. Copper Co. and the Miami Copper Co. in their leaching plants over a period of several years so there should not be any metallurgical problems involved. A serious shortage of materials for construction of plants exists therefore serious consideration of heap leaching methods may solve that problem in any plan of production from

of heap leaching methods may solve that problem in any plan of production from 30. Remarks

This property can be worked by open pit method. Very little stripping would be necessary to start production of 1000 to 1500 tons per day. Stripping would be light for the first two or three million tons mined. It may be possible to ship a considerable tonnage ore direct to the International Smelter at Miami from

31. If property for sale Price terms and address to depotate. Three per cent ore should be profitable This property is for sale. Price is Fifteen Thousand Dollars. Terms 10 per cent at time of signing contract. Balance in equal monthly payments over a three year period. Considerable reduction in this price if parties want a cash deal. Address: (J, F). Anghin, P. O, Box 172 Globe, Arizona. Phone 158, Globe.

32. Signature / Maghin

33. Use additional sheets if necessary.

MB-69

DEPARTMENT OF MINERAL RESOURCES STATE OF ARIZONA MINE OWNER'S REPORT

Date February 22, 1941

1. Mine: Blue Bird Group 2. Location: 2 miles in a westerly direction from Miami and 1 mile north

3. Mining District & County: Miami Mining of Miami-Superior Highway.
District - Gila County

4. Former name:

5. Owner: J. C. Anglin 6. Address (Owner) Globe, Arizona

7. Operator: 8. Address (Operator)

President, Owning Co. 9A. President, Operating Co.

10. Gen. Mgr. 14. Principal Minerals: copper

11. Mine Supt. 15. Production Rate

12. Mill Supt. 16. Mill: Type & Cap.

13. Men Employed 1.7. Power: Amt. & Type

1.8. Operations: Present

19. Operations: Planned

Number Claims, Title, etc. 3 unpatented claims

21. Description: Topography & Geography

20. Mine Workings: Amt. & Condition

- 23. Geology & Minerali. ion: Copper values occur in extensive zone of highly fractured, Schultz Granite (local name). The ore bearing material could probably be more properly classified as monzonite porphyry. This same ore bearing material forms an important part of the Miami Copper Company's ore body. The Miami Mine is located about three miles in a northeasterly direction from this property. Copper values occur as Oxides, Azurite and Malachite, disseminated through this fractured zone. A leaching test made on this ore showed 1.72 total copper 1.68 of the copper content was in oxide form. The mineralized zone is about 300 feet wide. An extensive fault striking northeast to southwest and dipping northwest at an angle of about 45 degrees forms the south boundary or footwall of the ore deposit. The deposit is exposed along this fault for distance of about 1000 feet. There is a possibility of greater length but surface is covered by eroded material from a higher range of hills in a southwesterly direction. The ore is higher grade nearer the fault and grades down in a northwesterly direction at right angles to the fault. There is an exposed area along the strike of the fault about 100 to 150 feet wide that will average about 12 per cent copper, according to numerous samples I have taken from the property.
- 24. Ore: Positive & Probable, Ore Dumps, Tailings
- 24.A.Dimensions and Value of Ore body: I would say that two or three hundred thousand tons of the above grade of ore can be mined from this property by open pit method. There is no development work on the property that would give any information as to values or extent of this ore deposit at depth. The deepest development work on the property is a tunnel that exposes the ore at a depth of not more than fifty feet. There are several open cuts and other shallow excavations on the ore body that show good values. Erosion has exposed a great part of this deposit. From this exposed area it is possible to estimate probable tonnage that can be mined by open pit method. Development work will be necessary before any underground mining operation can be estimated. Methods of treatment of this character of ore by leaching have been developed by the major copper producing companies of Arizona and have been in daily use, treating large tonnages of exidized copper ores for many years, therefore there is no metallurgical problem involved in the treatment of this ore.
- 25. Mine, Mill Equipment & Flow-Sheet
- 26. Road Conditions, Route: Fair roads to property.
- 27. Water Supply: Sufficient water for mining and leaching operations could be developed by churn drilling northwest of the fault on the property or in a nearby canyon that drains a large area.

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and the fact of the

- 28. Brief History.
- 29. Special Problems, Reports Filed
- 30. Remarks
- 31. If property for sale: Price, terms and address to negotiate: Price of property will depend on terms of lease and option. The time element would be the major factor in determining the price. On any reasonable time limit I would price the claims at \$2,500.00 each or \$7,500.00 for the group of 3 claims.

Signed: J. C. Anglin



3. Mining District & County

4. Former name

5. Owner J. C. anglin

7. Operator

9. President, Owning Co.

10. Gen. Mgr.

11. Mine Supt.

12. Mill Supt.

13. Men Employed

18. Operations: Present

19. Operations: Planned

20. Number Claims, Title, etc.

21. Description: Topography & Geography

22. Mine Workings: Amt. & Condition

7et: 22, 1941

6. Address (Owner)

8. Address (Operator)

9A. President, Operating Co.

14. Principal Minerals

15. Production Rate

16. Mill: Type & Cap.

17. Power: Amt. & Type

(over)

23. Geology & Mineralization				
			40	
24. Ore: Positive & Probable, Ore Dumps,	Tailings			
24A. Dimensions and Value of Ore body	*2			a .
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25. Mine, Mill Equipment & Flow-Sheet				
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	road toja			
27. Water Supply Cover of the property of the	sain fort sinille	the protection of the	t of the	mit m
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33. Use additional sheets if necessary.				

STATE MINE INSPECTOR

Tom C. Foster

PHOENIX, ARIZONA

Globe, Arizona Feb, 22rd, 1941

Blue Bird Group of Claims

This property consists of three unpatented mining claims, located in the Miami Mining district, Gila County, Arizona about two miles in a westerly direction from the town of Miami and one mile north from the Miami - Superior highway. There is a fair road to the property. This property is owned by J.C. Anglin of Globe, Arizona.

Copper values occur in an extensive zone of highly fractured, Shhultz Granite (local name). The ore bearing material could probably be more properly classified as monzonite porphyry. This same ore bearing material forms an important part of the Miami Mopper Companys ore body. The Miami Mine is located about three miles in a northeasterly direction from this property.

Copper values occur as Oxides, Azurite and Malachite, disseminated through this fractured zone. A leaching test made on this ore showed 1.72 total Copper 1.68 of the Copper content was in Oxide form. The mineralized zone is about 300 feet wide. An extensive fault striking Northeast to Southwest and dipping Northwest at an angle of about 45 degrees forms the South boundary or footwall of the ore deposit. The deposit is exposed along this fault for distance of about 1000 feet. There is a possibility of greater length but surface is covered by eroded material from a higher range of hills in a Southwesterly direction. The ore is higher grade nearer the fault and grades down in a Northwesterly direction at right angles to the fault. There is an exposed area along the strike of the fault about 100 to 150 feet wide that will average about $1\frac{1}{2}$ per cent Copper, according to numerous samples I have taken from the property.

I would say that two or three hundred thousand tons of the above grade of ore can be mined from this property by open pit method. There is no development work on the property that would give any information as to values or extent of this ore deposit at depth. The deepest development work on the property is a tunnel that exposes the ore at a depth of not more than fifty feet. There are several open cuts and other shallow excavations on the ore body that show good values. Erosion has exposed a great part of this deposit. From this exposed area it is possible to estimate probable tonnage that can be mined by open pit method. Development work will be necessary before any underground mining operation can be estimated. Methods of treatment of this character of ore by leaching have been developed by the major Copper producing Companies of Arizona and have been in daily use, treating large tonnages of Oxidazed copper ores for many years, therefore there is no metall-urgical problem involved in the treatment of this ore.

STATE MINE INSPECTOR

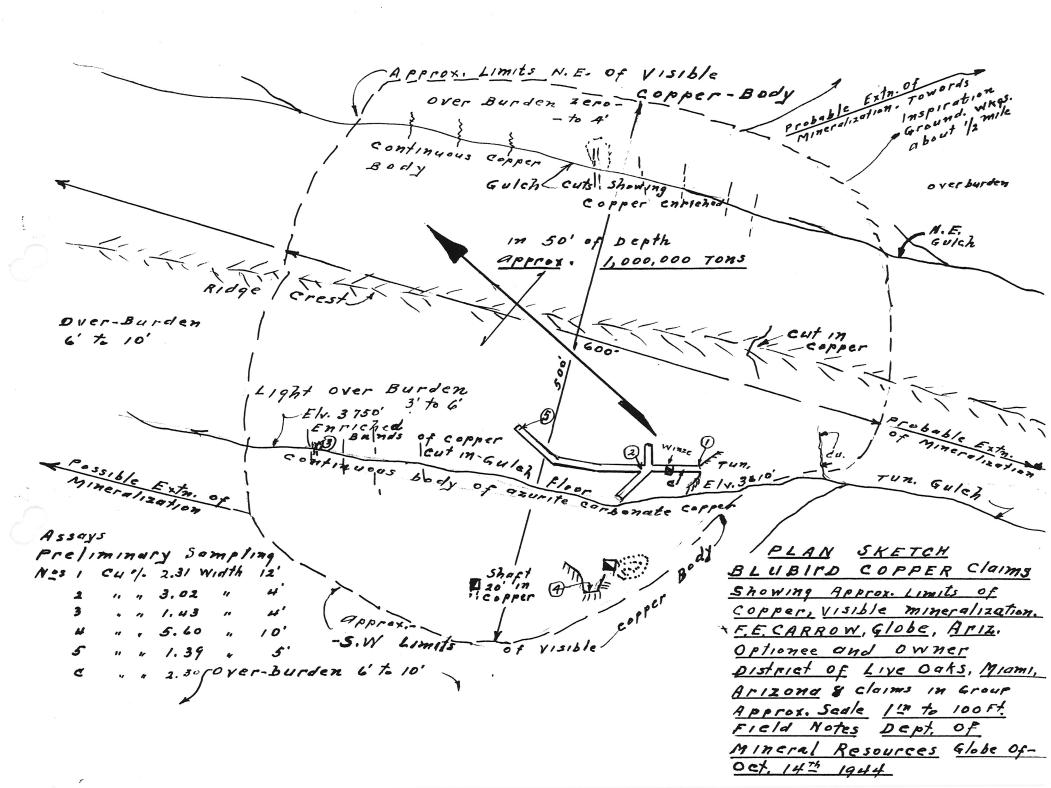
Tom C. Hoster

PHOENIX, ARIZONA

Electric power would be available for mining and leaching operations from the power line of the Salt River Valley Water Users Association, which is near the property. It is my opinion that sufficient water for mining and leaching operations couldbe developed by churn drilling north west of the fault on the property or in a nearby canyon that drains a large area.

Price of the property will depend on terms of lease and option. The time element would be the major factor in determining the price. On any reasonable time limit I would price the claims at \$2500.00 each or \$7500.00 for the group of three claims

J.C. Anglin



October 30, 1944

MEMORANDUM

TO: W. C. Broadgate

FROM: Chas. H. Dunning

Frank Carrow of Globe owns the Bluebird Mine in the Miami District adjoining the Inspiration. This is apparently a typical porphyry copper similar to the big mines in the district. Macfarlane made a recent report, a copy of which is enclosed.

Carrow has been trying to get the U. S. Bureau to do some drilling on the property so he would have something better to present but they are quite cold and state "the deposit was indicated to contain a relatively small tonnege of low grade oxidized copper ore" - and "was not recommended because the limited funds", etc.

You know how loath other companies are to go into the back yard of one of the big ones and also how oftentimes the big ones, knowing this, figure that sooner or later they can get adjoining ground for nothing.

Under the circumstances what do you advise that Carrow do?

CHD:LP

CC: Mr. Frank Carrow

DEPT. HIMERA, RESOURCES

Box 1433 Globe, Arizona October 28th, 1944

Department Of Mineral Resources
Mr Chas. Dunning Director.

Dear Mr Dunning;

The attatched letter of J.H. Hedges Dist. Engr. of the US Beaurau of Mines expresses an entire indifference and coldness towards the further prospecting of the Bluebird Copper claims.

His statement that one of their engineers examined this ground sometime ago and found same to be a small tonnage of low grade copper ore and was not recommended for drilling by the Bureau due to lack of funds etc.

This statement is not in conformity with the exposed copper mineralization visible within the Bluebird ground, the report of your Field Engr. Macfarlane is a more correct summary of the probable value of this ground.

I will appreciate if your Dept. will mail all the information you have to our Mr Broadgate in Washington, recomending that he obtains the aid of our Congressmen, to have the US Bureau Of Mines drill this ground.

These claims are situated immediately southwest of the Inspiration Copper Companies holdings in proven copper territory and are certainly a legitimate proposition for development.

Thanking you and your Department for your best efforts in behalf of the Bluebird drilling application, I am.

Yours very truly.

Frank E. Carrow

Frank E. Carrow,

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

SOUTHWEST EXPERIMENT STATION

WESTERN REGION

BOX 4097
UNIVERSITY STATION
TUCSON, ARIZONA
October 25, 1944

Mr. Frank E. Carrow, Box 1433, Globe, Arizona.

Dear Mr. Carrow:

Your letter of October 23, requesting that the Blue Bird claims in the Miami district be drilled by the Bureau of Mines, has been received.

The Blue Bird property was examined and sampled about a year ago by an engineer from this office. The deposit was indicated to contain a relatively small tonnage of low grade oxidized copper ore. It was considered as a possible drilling project but was not recommended because the limited funds available to the Bureau for exploratory work could be more advantageously applied elsewhere. Only a very few of the most promising proposals submitted to the Bureau can be included in the drilling program.

Yours very truly,

J. H. Hedges, District Engineer.



December 10,1942

Mr. J. C. Anglin Box 172 Globe, Arizona

Dear Mr. Anglin:

This is to acknowledge receipt of your mine owner's report on the Blue Bird Mine. Many thanks for sending this.

I will try to interest someone to look into the question of considering your suggestion of heap leaching.

With best wishes and kindest regards, I am

Very truly yours,

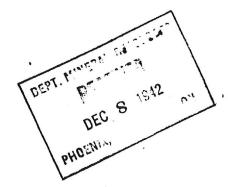
J. S. Coupal Director

JSC:kk

Dear Mr. Coupal

Feel that I should explain delay in getting this report to your office. I was out of Globe several days after our telephone conversation and have been ill since returning here. A bad case of flu. Hope the delay has not inconvenienced you and wish to thank you for your interest and help in this matter

J. C. Anglis



Sat. : MB-69 : - C S-13-1942 Die E. Butnam

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Fooruary 27,1941

J. C. Anglin 7 0 Box 172 Globe, Ariz.

Dear Mr. Anglin; -

Many thanks for your letter of February 22nd with the description of the Blue Bird Group.

I am enclosing a mine owners report blank and would appreciate your filling this form out oriefly in accodance with the items asked for so that we may place it with your letter on file as relating to your property.

I will call this to the attention of the parties mentioned as soon as he returns to the office and hope to be able to refer some live inquiries to you.

Very truly,

J. S. Coupal.

STATE MINE INSPECTOR

Tom C. Hoster

PHOENIX, ARIZONA

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Globe, Arizona Feb. 22, 1941

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

Dear Sir:

I am enclosing description of Blue Bird Group of claims as per your request. I have tried to be conservative as tonnage and grade and I am quite sure, from the limited amount of sampling I have done on the property, that it will stand up to this estimate.

If you should have an opportunity to interest any one in the property, at least to the point of making an examination, I will appreciate it very much.

Assuring you of my appreciation of your efforts in this matter, I am

ery Truly Yours

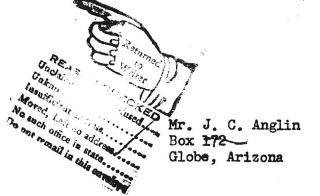
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I sild Blue Birdgroup to Frank Carrow o Globe in Rec. 1944 His aldaress is Frank Carrow, Globe