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34TH

FISCAL YEAR 1972 - 1973

ANNUAL REPORT



ARIZONA DEPARTMENT OF MINERAL RESOURCES

Fairgrounds

Phoenix, Arizona

JOHN H. JETT, DIRECTOR

Honorable Jack Williams
Governor of Arizona
Capitol Building
Phoenix, Arizona 85007

Dear Governor Williams:

In accordance with ARS 27-106 we are pleased to submit the annual report of the Department of Mineral Resources. The report covers the Department's activities for fiscal 1972-1973, the quarterly reports of the director and a complete financial statement, all as required by ARS 27-106.

BOARD OF GOVERNORS,
ARIZONA DEPARTMENT OF MINERAL RESOURCES

William T. Elsing, Chairman
Robert C. Bogart
Robert E. Heineman
Walter E. Heinrichs, Jr.
Ronald F. Teissere

BOARD OF GOVERNORS

William T. Elsing - Chairman - Phoenix
(Term expires January 31, 1976)

Robert C. Bogart - Bagdad
(term expires Jan. 31, 1974)

Walter E. Heinrichs, Jr. Tucson
(term expires Jan. 31, 1977)

Robert E. Heineman - Tucson
(term expires Jan. 31, 1975)

Ronald F. Teissere - Kingman
(term expires Jan. 31, 1978)

PERSONNEL

Phoenix Office - Mineral Building, Fairgrounds

John H. Jett
Mrs. Glenn W. Pare
Fremont T. Johnson
Glen Walker
Ken A. Phillips
Mrs. Pauline Halloren
Mrs. Gina Schillereff
Mrs. Judy McClish

Director
Adm. Assistant
Field Engineer
Field Engineer
Mineral Resources Spec.
Secretary
Secretary
Secretary

Frank P. Knight

Consultant

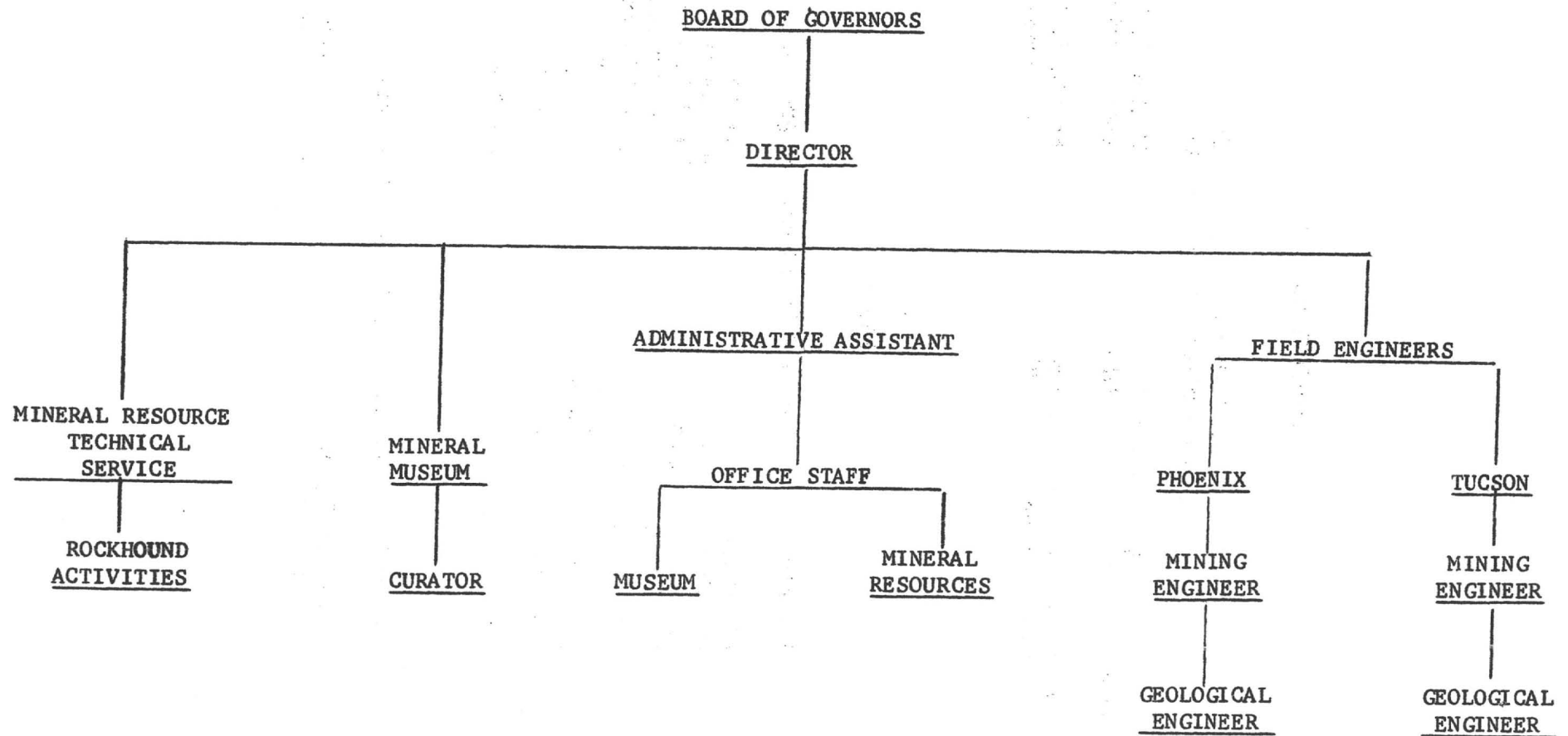
Tucson Office - Room 208, State Office Building

Gerald W. Irvin
Robert E. Lehner

Field Engineer
Field Engineer

ORGANIZATION CHART

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STATUTORY POWERS AND DUTIES

Aid in the promotion and development of the mineral resources of the State.

Conduct studies of the economic problems of prospectors and operators of small mines for the purpose of assisting in their solution.

Assist in discovering sources of supply for persons desiring to buy minerals.

List and describe available mining properties.

Make mineral resource surveys and conduct other investigations which may interest capital in the development of the state's mineral resources.

Serve as a bureau of mining information in conjunction with Arizona Bureau of Mines.

Publish and disseminate information and data necessary or advisable to attain its objectives.

Cooperate with the State Land Department to encourage mining activity on state lands.

Cooperate with the corporation commission in its investigations and administration of laws relating to the sale of mining securities.

Cooperate with the Arizona Bureau of Mines, and deliver to the bureau problems which the field work of the division shows to be within the scope of the activities of the bureau.

Cooperate with federal and other agencies designed to develop mines and minerals.

Oppose congressional acts favoring reciprocal or duty free imports of foreign minerals.

Use its authority in other ways to assist in more extensive exploration and development of the mineral resources of the state.

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VALUE OF MINERAL PRODUCTION
IN ARIZONA 1/

	<u>1971</u>	<u>1972</u>	Increase or <u>Decrease</u>
Copper	\$852,978,000	\$930,419,000	\$77,441,000+
Molybdenum	39,872,000	46,791,000	6,919,000+
Sand & Gravel	24,391,000	32,420,000	8,029,000+
Silver	9,538,000	11,210,000	1,672,000+
Stone	5,848,000	8,018,000	2,170,000+
Gold	3,879,000	6,036,000	2,157,000+
Lime	4,474,000	6,024,000	1,550,000+
Zinc	2,499,000	3,589,000	1,090,000+
Petroleum	3,918,000	3,226,000	692,000-
Pumice	625,000	722,000	97,000+
Lead	237,000	530,000	293,000+
Clays	84,000	355,000	271,000+
Gem Stones	160,000	168,000	8,000+
Value of items that cannot be disclosed			
Asbestos-cement-fire clay-diatomite-feldspar-			
fluorspar-gypsum- Helium-mica (scrap)-perlite-			
pyrites-coal-iron ore-natural gas	32,364,000	41,496,000	9,132,000+
TOTAL	981,020,000	1,091,004,000	109,984,000+

1/ Source - U. S. Bureau of Mines

ARIZONA MINERAL PRODUCTION

The value of Arizona's total mineral production in 1972 was \$1,091,000,000. This was an increase of \$109,840,000 (11%) over 1971. However, it was a decrease of \$75,703,000 (6%) from 1970, the record year.

Copper accounted for \$930,419,000 which was a \$77,441,000 (9%) increase over 1971. A complete detailed report on copper is published by the Department and is available on request.

By-products of copper mining include molybdenum, which was the second largest dollar producer at \$46,791,000, gold valued at \$6,036,000 and silver valued at \$11,210,000.

Sand and gravel production was valued at \$32,420,000, a dramatic 30% increase of \$8,029,000 over 1971. Stone production increased in value to \$8,018,000. Lime production was valued at \$6,024,000 followed by zinc valued at \$3,589,000.

With the exception of the natural gas and petroleum, all minor and non-metallic minerals were processed at a higher production rate and a higher total value. Details of the value of mineral production is shown on page

Total value of mineral excluding copper, increased \$42,365,000 to \$160,585,000.

Preliminary mine plant valuation for taxation increased 15% to \$912,000,000. Mine facilities are taxed at 60% of appraised value.

The mineral industry employment was approximately 25,000 in the mines and mills, 6,700 in smelters and refineries and 4,300 in stone and clay plants. An estimated 3,000 were employed in plant construction.

ARIZONA'S MINERAL ACTIVITY

A listing of the Active Mines in Arizona is a part of this report. It includes only the ~~m~~ines in continuous production and does not include the small prospector or mines under development.

The Active Mine list shows seventy-one mines, of which thirty are metal mines, forty-one are non-metallic and one coal mine. Thirty-nine operations employ from 0-20, four employ from 20-50, one employs from 50-100 and twenty-seven employ more than 100.

There are five major copper mines in various stages of development not included.

A list of major exploration companies is a part of the report. The list show forty-eight major active companies. There are a number of smaller intermittently active groups not listed. Neither are individuals listed.

The summation of active mines and exploration companies are in great demand from the public, mining industry, businessmen, other government agencies, etc. Therefore, they are presented as a separate publication in order to meet the need and demand and permit ample distribution.

Included for the first time is a Directory of Rockhound Clubs in the State. There are more than forty with more being organized. The phase of the mineral industry is becoming a very significant fact in the economics of the industry and must be acknowledged.

MINING HIGHLIGHTS

July - 1972

Construction was completed on flood control dam on Big Box Canyon on Mineral Creek above the Ray Mine of Kennecott Copper Corporation. It is designed primarily for flood control and to protect the working area of the open pit mine.

Copper price reduced 2 cents to a range of 50 cents per pound. Various smelter operations started preparation for impending natural gas shortage by adding increased fuel oil storage capacity.

Inspiration Consolidated Copper Company awarded last contract on estimated \$50,000,000 electric furnace smelter facility to replace gas-fired reverberatory furnace.

American Metal Climax Company optioned the property under and around Miami, Arizona for an exploration project.

The Phelps Dodge-Asarco joint venture pilot plant to convert sulphur dioxide into elemental sulphur temporarily shut down due to equipment failure. It will resume testing when a new reactor is available.

Lummus Company of Bloomfield, New Jersey opened offices in Tucson.

August - 1972

Pre-production stripping began at the New Pinto Valley mine of Cities Service Company. When operational this new copper facility will include a 40,000 TPD mine and mill complex with annual production rate of 125 million pounds of recoverable copper and some molybdenum.

Operators of Arizona's copper smelters filed suit in the U.S. Court of Appeals in San Francisco. The suit requests the court to review the data the federal EPA used to justify the rejection of Arizona's implementation plan and regulations for air quality control.

Continental Materials Corporation resumed exploration work in the Catalina Mountains. An underground mining method is being studied for this project.

AMAX reached an agreement with Banner Mining Company to acquire all of its assets. In addition AMAX will become an operating partner with Anaconda Company of all the property Anaconda has under lease from Banner.

Kennecott Copper awarded contracts for two major air pollution control projects at their smelter in Hayden. A gas collection system and an expansion of the acid plant are the two projects.

Magma Copper Company completed work on their new mill at Superior. The mine is approximately one year behind schedule.

Stripping continued at the new Sacation mine of American Smelting and Refining Company. \$36,000,000 will be spent to bring this 9,000 TPD open pit mine into production. It will be phased into an underground operation in 1979.

It is estimated a year will be required to complete the new vat-leaching plant and related facilities of A. S. & R. for its Mission mine south of Tucson. It will process the oxide ores from the San Xavier mine. This unit will produce approximately 1,000 TPM of cement copper.

September - 1972

EPA extened deadline for submitting comments on proposed regulations relating to copper smelters.

Hearings were held in Phoenix and Tucson on proposed air facilities standards for the state's copper smelters. The State and smelter personnel raised many objections. Chief objection was a charge that a defective instrument was used as a basis for setting the proposed standards.

House Interior Committee ordered a bill to regulate surface coal mining areas, reported to the House.

A bill which would provide Federal regulation of strip mining has been approved by the Senate Interior Committee.

An amendment to the Code of Federal Regulations makes it possible for cancellation of a mining claim for failure to perform annual assessment work.

A Federal Trade Commission order preventing the merger of Kennecott Copper Corporation and Peabody Coal Company has been upheld by the 10th U. S. Circuit Court of Appeals.

The Department of Mineral Resources received copies of more than 100 engineering and geological reports on old Arizona mining properties.

October - 1972

Cyprus Mines Corporation started construction on a 9 million dollar pilot plant to develop a pollution free method of extracting copper and other metals from ore.

Action was deferred on the Senate and House bills to regulate strip mining.

The Senate and House agreed on a compromise version of a bill to amend the Mining and Mineral Policy Act of 1970. The purpose of the amendment is to provide "a more adequate national program of mining and mineral resources research through the establishment of research centers throughout the United States and to promote the training of mining and mineral engineers, scientists and technicians".

The Mineral Park mine of Duval Corporation has increased its production by approximately 12%.

The Pinal County Industrial Development Authority and Magma Copper Company have signed a \$30,000,000 low-interest loan agreement. The money will be used to pay for air pollution equipment.

November - 1972

Mining and smelting operations were hit by natural gas curtailment due to cold weather. Smelters switched to fuel oil, previously stored in the summer months.

Bagdad Copper Company evaluates RLE for its operation at Bagdad.

The bill to establish and support mineral research and training institutes received the President's "pocket veto".

Private ownership of gold recommended.

Tailings Symposium held in Tucson.

Humble Oil and Refining Company is drilling a wildcat well southwest of Tucson.

Kerley Chemical Corporation announced installation of experimental unit to recover sulphur from copper concentrates.

December - 1972

Phelps Dodge Corporation accepted terms of a one year permit to operate the Douglas smelter and proceeded with plans to bring the smelter into compliance with State air quality standards.

A. S. & R. was granted a one year extension of a permit to operate the Hayden smelter.

Arizona Portland Cement Company was granted a one year extension of its permit to operate intermittently two older kilns.

A 400 foot section of a tailings pond dike of Ray Mines Division collapsed. Ore shipments were cut off for 18 hours due to damage to the railroad track.

The State Legislature drafted a bill that would create a Natural Resources Department and a State Land Board.

Phelps Dodge Corporation requests a land exchange with the Federal

Government for lands owned by the company. The land is required for support facilities for a possible future mining operation in Copper Basin area.

January - 1973

Copper prices increased by 2-1/2 cents per pound.

El Paso Natural Gas assumes a working interest in the Lake Shore mine development.

Cyprus Mines Corporation and Bagdad Copper Company announced an agreement in principle to merge Bagdad into Cyprus.

Hollis Dole, assistant Secretary of the Interior (Mineral Resources) resigned.

39 roadless areas within National Forests in Arizona and New Mexico are under study for possible inclusion in the wilderness system.

Kennecott re-opened its molybdenum plant at Ray Mines Division.

Anaconda announces it will build a full size hydro-metallurgical plant to process copper concentrates.

AMAX announced \$93,000,000 expansion of the Twin Buttes mine operated by Anaconda.

Geothermal Kinetics announced exploratory drilling operations for a possible geothermal energy source.

Capitol Foundry announces a \$1.5 million expansion to increase its capacity for grinding balls.

February - 1973

Copper prices increased 3 cents per pound.

Phelps Dodge announces their new Metcalf property is slated to begin production in the latter part of 1974, at a rate of 50,000 TPY of copper. Total investment will be \$180,000,000.

Ranchers Exploration and Development Company have reached preliminary

agreement with Mitsubishi International Corporation on possible joint venture.

Senate Interior Committee held hearings on a possible BLM organic act.

Treasury Department requested Congress to pass legislation to raise price of gold to \$42.22 an ounce. At the time free market price was approximately \$74.00 an ounce.

AMAX and Anaconda announce \$59 million oxide copper plant to produce approximately 30,000 TPY of copper.

Mining in the Lavender Pit will be extended through the year.

March - 1973

Copper prices increase to 60 cents per pound.

Asarco starts construction of 1000 foot stack at Hayden smelter.

S. 1640 - the Mineral Leasing Act of 1973 was introduced. It would place all minerals under a leasing system.

Magma Copper Company received one year renewal permit for its smelter operation.

Mining industry leaders testified in Washington on State and Federal surface mine legislation.

Phelps Dodge Corporation completed construction of a realignment of U. S. Highway 666. This work was necessary for development of the Metcalf mine.

Arizona Portland Cement Company completes expansion of its facilities to a capacity of 5.3 million barrels of cement annually. Hazen Research of Golden, Colorado opens offices in Tucson by acquiring a local company.

Million ton rock-slide in Lavender Pit at Bisbee.

April - 1973

A major copper producer (Inspiration Consolidated Copper Company), for the first time ever, held its annual stockholders meeting in Arizona.

Duval Corporation announces construction of a \$22 million chemical reduction plant capable of producing 32,000 TPY of copper.

The Senate voted to end the ban on private ownership of gold by U. S. citizens. This action is opposed by the Administration.

Banner Mining Company stockholders voted approval of a merger with AMAX Copper Mines.

Record rainfall hampered operations at some of the copper leaching operations.

A subsidiary of a London company is conducting an exploration program in the State.

The Bureau of Land Management requested public assistance in developing land use plan for three separate areas in Arizona - almost 2,000,000 acres are involved.

The world's largest non-atomic blast was set off at the Zonia mine; over 4,000,000 lbs. of explosives were used.

May - 1973

The Department of the Interior announced the mine safety rules enforcement and educational activities of the Bureau of Mines is being moved to a newly created Mining Enforcement and Safety Administration.

Phelps Dodge Corporation was granted permission by U. S. Forest Service to conduct an exploration project in the Blue Range Primitive Area. However, it was recommended, men, equipment and supplies be flown into the area by helicopter rather than build roads.

The State Supreme Court upheld constitutionality of a State law permitting loan to private organizations by public corporations for pollution control facilities.

Phelps Dodge announced plans to continue operations at the Copper Queen Branch through 1973.

June - 1973

American Smelting and Refining Company dedicated their San Xavier Leach Plant. This plant will consume an estimated 50,000 tons of sulphuric acid per year in producing 15,000 tons of copper precipitates.

AMAX and Anaconda jointly announced their total investment for expansion of the Twin Buttes mine will be an estimated \$244 million.

The Department of Property Valuation released figures that have established the full cash value of Arizona's mines at \$940,530,975 an increase of more than \$31 million over the previous year.

The House rejected a move to allow U. S. citizens to own gold next year.

Planned copper price increases were stopped by Presidential freeze on prices.

Bagdad Copper Corporation and Cyprus Mines Corporation completed their merger after receiving a favorable response from the Justice Department's Anti-Trust Division.

EXPLORATION AND DEVELOPMENT HIGHLIGHTS

Asarco located a number of claims in the vicinity of the Copper Cities operation.

Experimental leaching conducted at the Gibson mine.

Kennecott Copper Corporation located claims near the Christmas mine.

Miami East project continues development. This will be an underground cut-and-fill operation.

AMAX drills Van Dyke property at Miami. Claim staking, I.P. surveys, and joint venture exploration are included in their other activities.

Two small pilot plant leach operations start up in Trilby Wash near Wickenburg.

Considerable activity in gold prospecting in Congress area.

Louisiana Land and Exploration Company core drilled near Phelps Dodge's Ajo pit. They also explored Swansea area.

Red Hills Mining drilled deep exploration holes near Florence.

Yellow Jacket Gold Copper mine did some underground development.

Cactus Mining Company processed some scheelite ore at Wikieup.

Phelps Dodge explores apparent copper deposit in Copper Basin near Prescott.

Anaconda Company is core drilling near Jerome.

Exxon Corporation is drilling in Copper Basin near the Crown King mine.

American Selco Ltd. located and are drilling on a number of claims north of Mayer.

U. V. Industries completed deep drill hole near Gold Road mine.

One small miner attempted an electro-winning of copper from leach solutions.

Beaver Exploration Company starting aerial photography survey prior to exploration in Tortolita Mountains.

C.F. & I. optioned claims near Glove mine. Drilling on an I.P. anomaly.

Continental Copper is phasing out surface drilling and starting underground tunnel.

Continental Oil Company, Metallics Division, is continuing development work at Florence. Exploration activity include drilling in Tucson Mountains, claim staking in Avra Valley, claim locating and deep drilling in Little Hill Mines area.

Essex International Corporation exploration drilling in Graham County.

Exxon Corporation claim locating and exploration drilling in Graham County.

Kerr McGee Corporation located a number of claims in Kelvin area and San Simon Valley. Continued work in Patagonia area.

Keystone Minerals doing some work on oxide ore body with plans to drill deep for sulfide potential.

Knox-Arizona Corporation drilling southeast of Ajo.

Phelps Dodge started joint venture with Bell Western to explore property east of Florence. I. P. survey and drilling will be conducted. Also joint venture drilling program in Graham County. Also located claims in several areas throughout the state. Drilling continued near Prescott.

Quintana has optioned claims at Copper Butte and drilling a property in Graham County.

Rosaria Exploration Company is drilling near Indiana Shaft.

Ranchers Exploration and Development exploring Head Center mine.

Sierra Mineral Management is erecting a mill and doing extensive sampling in Tombstone area.

Superior Oil Company has a joint venture drilling program in Dragoon Mountains.

Utah International has a drilling project in southern Arizona.

DIRECTOR'S ACTIVITIES REPORT

FISCAL YEAR 1972-1973

First Quarter

The most important happening of the quarter was the actual appointment of a new Board of Governors member. A tremendous addition has been made to the department.

The second big event in the Department for this quarter was the purchase of a duplicating machine. We bought an "Old Town" copier for \$1,100 (list \$1495). The public has been penalized for many years by our lack of a machine. It is an asset to all.

We were able to secure a number of the files and bookcases from the U.S. Bureau of Mines office in Tucson when it was closed in July. We received complete sets of the I.C.'s, R.I.'s and other publications. We will retain the I.C.' and R.I.'s. We also received many valuable mine maps, map cases and some miscellaneous books. Two map cases and one bookcase was left in the Tucson office. The confidential files were moved to Phoenix. They are in the office of the Bureau of Mines Liaison officer. Indications are we have an excellent chance of eventually getting these files.

Several meetings were held with Dr. George Leaming, University of Arizona, to publish a condensed version of the Arizona section of the 4-corner report. The Director and the engineers visited the Highway Department to look at the NASA photos taken for ARIS (Arizona Resources Information Service). We could not see any possibility of using them at this time.

The Director attended meetings of or held meetings with the following:

- Arizona Administrators Association
- Personnel Commission
- Joint Legislative Budget Committee Analyst
- Finance member on budget
- Employment Security Investigators
- Joint Legislative Budget Committee financial consultant
- AIME

Meetings were held with officers of Cyprus Mines Corporation relating to their new Cymet process. He set up appointments for them with State Health Department and Land Department.

We set up and conducted two series of meetings for the Bureau of Land Management as training sessions for new mineral examiners; one meeting involved a number of state offices concerned with mining and the other was with small miners and exploration personnel.

The Director was asked to be on an advisory committee for the new Aravaipa campus of the Central Arizona College. It will work towards turning out possible employees for the mineral industry.

The Director attended the American Mining Congress meeting in San Francisco. The Western Gov. mining advisory committee and the meeting of the mining officials of State organizations were held at the same time and attended by the Director.

A meeting was held with a Mr. George Leiphart, Planning Division of Finance Department Buildings and Grounds, for information.

Publications issued by the Department during first quarter are:

Exploration Companies Active in Arizona
Release for Exploration Companies
Consulting Mining, Metallurgical and Geological
Engineers Registered and Residing in Arizona
Release for Engineers

Second Quarter

The Director attended committee meetings for the Pacific Southwest Minerals Industry Conference to be held in April. This meeting was originally planned as a Copper Symposium but has now expanded to include energy and environment. Allan Bowman of Banner Mining Company is the General Chairman.

Glen Walker substituted for the Director at a meeting of the curriculum advisory committee for the Aravaipa Campus of Central Arizona College. This campus is being established near Mammoth and will be oriented to turning out potential employees for the mining industry.

Mr. Ken Phillips was added to the staff for the new position of Mineral Resources Specialist. This position will replace the consultant we have had in the past and will do the statistical work in addition to other duties.

A film presentation and short talk was given to the Young Phoenixians Womens Club, and arrangements were made for Dr. Leaming to speak at the Hiram Club in Phoenix.

The semi-annual meeting of the Arizona Conservation Education Advisory Council was attended. This group has been meeting for several years to produce a guide for teachers in teaching about the environment. The final draft will be distributed in December of 1972. We worked with Mr. Peplow of the Arizona Mining Association on the minerals portion.

An invitation came from the Governor's office to attend a two day meeting of the Arizona Council of Intergovernmental Relations. The Director spent two days trying to figure out why he was there. Even with the help of Mr. Goss, Ed Peplow and N. Visnes of Asarco, no answer was reached.

We are in the process of copying the engineering reports of Shattuck Denn Mining Corp. We bring about 15 reports at a time to our office for reproduction, then return them and bring back more.

Two meetings were attended as a member of the Advisory Committee to the financial economist of the Joint Legislative Budget Committee. Senator Tenney attended the last session.

Mr. Jack Brenner is the Joint Legislative Budget Committee budget analyst assigned to the Department of Mineral Resources. Meetings were held with Mr. Brenner concerning the proposed 1973-1974 budget. We took him on a trip to the Tucson office to see the facilities there - stops at San Manuel, Superior and Ray were included.

Astral Glass Company is doing experimental work relating to possibility of a small glass factory in Arizona.

The Mining Museum in Bisbee requested our help for displays. We were able to put them in contact with organizations that made several excellent donations.

Kennecott Copper Corporation borrowed some of our films for the AIME Regional Meeting.

An interim committee meeting of the Senate Natural Resource Committee was attended. A conference was held with Senator Mack, Senator Turley and Dr. Drescher after the meeting.

Third Quarter

Several meetings were held with the Arizona Mining Association to explore possibilities of the Department of Mineral Resources taking over the administration of the Mineral Museum. It appears feasible and practical. A firm proposition should be made soon.

A Board of Governors meeting was held in Tucson with some members attending the SMEA luncheon prior to the meeting.

In cooperation with the Arizona Bureau of Mines, we scheduled speakers for several grade schools in the area.

The Director presented programs at Phoenix County Day School, Douglas Rotary Club and Scottsdale Kiwanis Club.

One Field Engineer and the Director attended the Western Mining Conference in Denver. It is planned to continue the policy of sending field engineers to technical meetings.

The WGMAC committee met with the Governor to present their report. This was due to the cancelling of the annual Governors Conference last October.

The Director attended an AMC sponsored meeting of the Association of State Mining Officials. Purpose was to aid the AMC draft a reply to proposed mining legislation to amend or change the mining law.

The Director met with two board members and discussed the State proposed Natural Resources bill. Mr. Heinrichs and the Director both testified. Mr. Heinrichs and the Director drafted a short statement to be given in response to a Land Use Planning bill sponsored by Senator Fannin. In a spirit of cooperation and in order not to be repetitious, we had the State Land Department incorporate our statement in their presentation.

Other conferences attended by the Director included Arizona Commission on Arizona Environment, Governors Conference on Revenue Sharing, State Personnel Commission, Arizona Administrator Association, Financial Advisory Committee to Joint Legislative Budget Committee, local Engineers meeting, Arizona Mining Association dinner honoring the legislators, Phelps Dodge annual luncheon, DEPAD - State wide planning meeting and met with legislators twice.

A number of manufacturing industries are beginning to depend on the Department to aid them in their business forecasts. Meetings were held with Allis Chalmers, Ingersoll-Rand, Empire Machinery and Caterpillar.

We published a Summary of Gold Regulations and a list of Gold Buyers. The popularity of this publication was unbelievable. Requests came in from California, Ohio, New York, Pennsylvania and many other states. The Director was interviewed by seven TV or radio newsmen.

Work has been continued on copying the Iron King files of Shattuck Denn.

We are investigating the U_3O_8 in the Muggins Mountain area. If we can verify some tonnage, perhaps we can get the area released.

Los Angeles office of Parsons-Jurden has borrowed some of our film to help orient their new engineers. They have recently opened an office in Tucson.

Personnel from the Auditor General's office spent six days in the office auditing our records. A report was issued. Nothing out of line.

Publications issued by the Department during third quarter:

Report on Arizona Lands Including Inventory of Arizona
Lands as of June 30, 1971
Arizona Dealers in Lapidary Material, Rocks and Minerals
Arizona Dealers in Mineral Specimen
Book List for Rockhounds
Possible Buyers of Gold
Summary of U.S. Government Regulations Pertaining to the
Mining, Processing and Marketing of Gold
The Copper Industry
Directory of County, State and Federal Agencies in Arizona
of Interest to Mining.

Fourth Quarter

The Department welcomed a new Board of Governor member, Mr. Ronald Teissere from Kingman. It was with much regret that Mr. Lamb was not reappointed but his appointment originally was for the Kingman area. There is no question that Mr. Teissere will be a very satisfactory replacement for Mr. Lamb. We are looking forward to working with him.

Many meetings have been held relating to the transfer of the Mineral Museum to the Department of Mineral Resources. Flagg Foundation, Arizona Mining Association, State Personnel Commission and the Attorney General's office have all been concerned. Inventories were checked and the transfer will be made on July 1. Details of the transfer will be made in the next report.

An attempt is being made by the Department to evaluate uranium exposures in the Muggins Mountain north of Welton. Some hand picked samples were sent (by the Department) to the A.E.C. in Grand Junction, Colorado. It assayed 0.65 chemical. The Director and Field Engineer Walker walked the property and took six samples. These were submitted to a commercial assayer. Nothing higher than 0.10 resulted. We are continuing work on this project. The area concerned is in a withdrawal.

The Pacific Southwest Mineral Industry Conference was held by the Maricopa AIME Subsection. Attendance was over 400 registered. The Director was the secretary for the project. All expenses were met and a small profit was left. Part of this convention was a program put on by the WAAIMES. It was called

"Engineers for Tomorrow". It was quite successful. The Director participated with a career counseling type program and later presented a program to six different classes at Moon Valley High School and three programs at Central High. Mr. Jay Datson of the Arizona Bureau of Mines joined the Director in the Moon Valley program.

The Director also presented a program at Trevor Browne High School, Phoenix Country Day School, Arivaca ASMOA Council, Bisbee-Douglas AIME Subsection and participated in the State ASMOA meeting.

The Director attended the A. S. & R. San Xavier mine and plant dedication.

A meeting was held with Mr. Wayne Burt, President of Magma Copper to try and obtain permission to micro-film records from the Superior smelter. Our particular interest is possible production records from small mines operating in the earlier years. The project was turned over to Mr. Chilton with permission granted.

Two Department films were loaned to Magma Copper for training film. Two more films were loaned to Parsons-Jurden in Los Angeles for training film.

The Department participated in meetings with the following:

- Advisory Commission of Arizona Environment
- Central Arizona College, Aravaipa Campus, Curriculum Advisory Committee
- Arizona Advisory Education Council on Environment
- Arizona Bureau of Mines
- State Personnel Commission

Meetings were held with Yavapai College to plan a community service program, a one unit course on prospecting. Nothing was finalized.

Our release on gold regulations and buyers was an extremely popular item. It was reprinted in several state organization journals, plus mining newspapers in Colorado and California. It resulted in approximately eight news interviews and requests came from many eastern states as well as the west.

We set up the Shattuck-Denn Mining Company exploration files for micro-filming. We then had the Arizona Bureau of Mines micro-film the complete files. We will buy a set of the micro-film from the ABM. This is what we plan to do with the Magma smelter files if needed.

The Director flew to Black Mesa and toured the coal mine. This was done at the invitation of Peabody Coal Company. Several public relations type people also made the trip.

Publications issued by the Department during the fourth quarter:

Copper & Molybdenum Production of large Arizona Copper Mines
Arizona Leach Copper Production
Assayers and Assay Offices in Arizona
Environmental Guidelines for Mineral Exploration
List of Publications

STATISTICAL OPERATING DATA

Office Visitors:

Phoenix	1,191
Tucson	177

Information contacts received:

Phoenix	3,625
Tucson	608

Letters answered (other than literature requests)	1,958
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Publications printed	21
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Publications distributed	20,400
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Field Activities:

Arizona Small Mine Operators Meetings	88
Other Meetings	22
Mine plant visits and field contacts	516

STATEMENT OF EXPENDITURES

APPROPRIATION - Fiscal 1972-1973

\$ 144,733.00

EXPENDITURES

Personal Services	\$ 105,718.00
Employee Related Expenditures	12,384.00
Professional Services	3,000.00
Travel - State	6,819.00
Travel - Out of State	799.00
Other Operating Expenditures:	
Utilities	2,167.00
Telephone	1,870.00
Postage	313.00
Office Supplies	1,845.00
Janitor Supplies	319.00
Maintenance & Supplies	1,671.00
Insurance	71.00
Subs & Dues	261.00
Books & Pubs	338.00
Education Supplies	78.00
Printing	1,755.00
Rent - Tucson	600.00
Other	406.00
Total	11,694.00
Capital Outlay	1,572.00

TOTAL EXPENDITURES

141,986.00

Balance - returned to General Fund

2,747.00

\$ 144,733.00