

OIL & GAS CONSERVATION COMMISSION
Meeting: August 19, 1977
Mr. John Bannister, Exec. Sec.



OFFICE OF

Oil and Gas Conservation Commission

STATE OF ARIZONA

1645 WEST JEFFERSON, SUITE 420

PHOENIX, ARIZONA 85007

PHONE: (602) 271-5161

A G E N D A

Meeting
August 19, 1977
1645 West Jefferson, Suite 420
Phoenix, Arizona

10:00 a.m.

Call to order

- 1 ✓ Approval of minutes of meeting of June 10, 1977 *OK*
- 2 ✓ Report of Executive Secretary
- 3 ✓ Report of Enforcement Section
- 4 ✓ Report of Geology Section
- 5 ✓ Old Business
- 6. New Business
 - A. Consider tentative budget for Fiscal Year 1978-1979 *Approved*
- 7. Adjourn

Hand out fuel value Seminar 21st Sept Anchorage - OKed

Executive Session

Sept 2 ND Flag - Jack Maloney report



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ACTIVITY REPORT

August 10, 1977

John Bannister
Executive Secretary

The next Commission meeting will be held on August 19, 1977 in the meeting room on the 4th Floor near our offices at 10:00 a.m. It was necessary to cancel the arrangements previously made for Show Low.

At the forthcoming meeting it will be necessary to approve the budget for the 1978-79 fiscal year. For your convenience, I am enclosing pertinent sheets of the budget as proposed by the staff. It will be necessary to have an executive session following the regular Commission meeting to discuss salaries. I do not anticipate a lengthy meeting at this time.

As previously reported to you, we have been authorized the position of a Geologist II to commence July 1, 1977. In June, we requested the Personnel Division to begin process for this new position. To date, we have received no lists from them. In order to fill a new position it is necessary to submit specifications for the new job to the Personnel Division. They are responsible for doing such advertising as is necessary and furnishing the requesting agency a list of potential applicants. Instructions are to choose one of the first three most qualified applicants, if possible, from this list. If that is not possible you may continue down the list past the first three. I know of no way to speed up this process at this time. Jack Conley feels it might be necessary to begin the starting salary of this position at a higher level than specified. If this is so, we can perhaps hire at a higher step with money available from the vacancy savings. It is really too early to speculate on this at this time.

The IOCC is meeting in executive session in Anchorage, Alaska on September 15th. This is one of the four trips budgeted for

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Executive Secretary
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me annually and permission is requested to attend this meeting.

As to the budget, we are essentially asking for \$9,600 more than allowed in the current year. Our request does not include any new personnel. The \$9,600 additional primarily is made up of salary and related expenditure increases, per Personnel Division direction, of approximately \$4,000; and approximately \$5,000 for additional travel - \$3,000 this has been requested for out-of-state travel to allow Jack to attend some of the important geological meetings and to allow Bill and me to get to one or two of the more important independent producers' meetings. Other small increases requested primarily reflect price increase costs.

We have worked closely with the executive budget analyst assigned to this Commission and I feel our proposed budget will adequately meet our projected needs and should go through without much trouble. We are well within the designed increase limits sent with our budget instructions.

The federal government is planning to use storage areas in salt beds for the establishment of strategic petroleum reserves. A report reached my desk wherein it was stated that Arizona has no salt beds suitable for this purpose. I took the liberty of sending an exhaustive report of the massive salt areas in Arizona near pipelines which would be suitable for the establishment of reserves for this purpose to the Administrator of the Strategic Petroleum Reserves, Federal Energy Administration, in Washington, D.C. I also notified Governor Castro and our congressional delegation as to this matter. It develops now that the federal government feels that reserves in Arizona would be too remote from refining facilities and that creating the necessary large storage caverns would not be feasible. Consequently, they have declined to become interested in us. I would like to commend the excellent help that we received from our senators and representatives in Washington.



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ACTIVITY REPORT

August 5, 1977

W. E. Allen
Enforcement Section

Several days were spent recently in the Navajo Springs area while Eastern Petroleum Company was attempting to plug one of its wells in the Navajo Springs unit. Eastern had requested permission from the Commission to attempt to plug the wells in a rather unorthodox manner. The method chosen by Eastern, if successful, would have resulted in a considerable savings in money.

After spending two days on one well and only cementing up the bottom 400 feet of the well, it was decided to change methods and resort to an orthodox and accepted method of plugging. Due to the necessity of Eastern raising additional funds to complete plugging operations within this unit, additional time has been granted the company. It is anticipated that all the wells will be plugged by the last of September.

Pyramid Oil Company has temporarily suspended drilling operations on its Federal No. 2 located in the NE/SW/4 Sec. 18, T40N, R9W. Because of the inefficiency and incompetence of the drilling contractor who started this hole, Pyramid decided to release the rig and secure another contractor. Pyramid was unable to get a contractor with an Arizona license so they are in the process of getting an Arizona contractors license for themselves and moving in their own rig.

It would seem to me that since Arizona has no qualified licensed oil and gas drilling contractors the Registrar of Contractors could or would grant reciprocity to the licensees in surrounding states. They won't even discuss the possibility with me.

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Enforcement Section
August 5, 1977

Energy Reserves Group has been unable to secure a contractor to drill its Navajo "0" No. 5 located in the NE/NE/4 Sec. 26, T41N. R30E.

The pilot water flood that the Commission granted Kerr-McGee to initiate in the Dineh-Bi-Keyah field has shown no results as of now. This is understandable however, Kerr-McGee is only injecting some 10 to 12 thousand barrels of water each month.

The Land Department is drafting rules governing the sale of leases for geothermal exploration. We recently inquired of a representative of the department what kind of response they had since the passing of legislation authorizing leasing for geothermal exploration. Reluctantly, the answer was - not one inquiry has been received.

The Department of Geology and Mineral Technology, formerly the Arizona Bureau of Mines, recently requested that the Commission staff submit a profile and future plans of the Commission. Jack Conley and I collaborated in preparing the article for their publication "Field Notes".

There has been a good number of visitors in the office recently seeking information on wells which have been drilled in the state. Sadly, their interest hasn't been in oil, gas or geothermals, but in various other minerals, primarily uranium.



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ACTIVITY REPORT

August 10, 1977

J. N. Conley
Director, Geology Section

PUBLICATIONS

Sales this past month amounted to only \$78.24. However, we are anticipating a large increase in sales within the next 90 days. Announcements of the availability of our new publications reported in last month's activity report have been sent to the Oil & Gas Journal, Petroleum Information, World Oil, and Western Oil Reporter. Normally we receive numerous requests for new publications soon after publication of their availability in these trade journals.

An up-to-date list of the Commission's available publications accompanies this report.

OIL & GAS LEASING ACTIVITY

None reported.

ENERGY-RESOURCE & MINERAL EXPLORATION

Oil and Gas. "Sonoita Basin" Area - Curtis Little, Albuquerque consulting geologist and independent operator, is attempting to promote a drilling deal on or near the so-called Klene anticline in the south half of T. 19 S., R. 18 E., Pima County. Mountain States 1-A State, the deepest test drilled to date on this structure, bottomed in Cretaceous rocks at a depth of 4410 feet. Minor shows of oil, ranging from dead oil staining to positive light oil staining, were noted in the drill-bit cuttings in several zones below 1250 feet.

A Cretaceous section 8825 feet thick has been measured in the nearby Whetstone and Huachuca Mountains bounding the northeast and southeast sides of the "Sonoita" basin, respectively. The lowermost 4500 feet of this section consists predominantly of petroliferous black shales. Tentative correlations suggest that the Mountain States borehole might have been close to the top of this petroliferous shale at total depth.

Potash. St. Joe American is still actively assessing the potential reserves of potash in the Permian Supai evaporite basin in east-central Arizona. The State Land Department has not taken any action to date relative to St. Joe's request to convert 28 one-section prospecting permits to mineral leases.

Halite. Dr. Kenneth Johnson, consulting geologist and University of Oklahoma instructor, is continuing his investigation of the distribution, thickness, depth, and other factors of the halite (salt) bodies in the Permian Supai evaporite basin in east-central Arizona. The objective is to determine sites suitable for the storage of petroleum products in created caverns.

Activity Report
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Uranium. Industry - Exploration for subsurface deposits of uranium in the general common-corner Yuma-Mohave-Yavapai-Maricopa area continue to be active. The serious search for uranium in this area commenced about two years ago. Companies involved include: Minerals Exploration, Public Service Co. of Oklahoma, Lucky MC Uranium Corp., Uranerz USA, Cyprus Mines, Homestake Mines, Exxon, Phillips Petroleum, Urangesellschaft MGH, United Nuclear, Sohio Petroleum, and Atlas Consolidated Mining & Development.

Unconfirmed reports indicate that three of the companies involved in the search have discovered up to 60-million pounds of uranium oxide. The all-time cumulative production in the state amounts to about 18-million pounds.

Another unconfirmed report is that Minerals Exploration (a subsidiary of Union Oil Co. of California) and partners plan to commence open-pit mining operations upon approval of the required environmental statements.

Government - Livermore Laboratories, California, has a grant from Earth Resources and Development Administration (ERDA) to search for areas with uranium-productive potentialities in several western states, including Arizona. Western Coconino is the first area being investigated in Arizona. We have furnished some water-well data to one of the investigators.

Geothermal. The Arizona Bureau of Geology and Mineral Technology (formerly Arizona Bureau of Mines) has been granted \$100,000 by ERDA to make an assessment of Arizona geothermal resources. The results of geothermal energy-resource studies in Arizona made to date by the USGS and ERDA will be furnished to the Bureau. Our Commission will be allocated a maximum of \$1,000 for preparing a report based on the temperature and temperature-gradient data we have assembled. A very preliminary analysis of these data indicates that there are several potentially prospective areas in southern Arizona for non-electrical (low temperature) geothermal energy. A brief discussion of temperature requirements for non-electrical geothermal energy systems and relatively high subsurface temperatures found to date in southern Arizona is presented later in this report (see page 3).

The potential for non-electrical geothermal energy systems and systems hot enough for the generation of electricity remain to be assessed in Arizona. To date we have no information suggesting that we have steam or hot water systems with temperatures in excess of 320°F (160°C). Assuming that such systems do not exist, there is still the possibility that we do have hot dry rock from which geothermal sources capable of generating electricity could be created using oil-field technologies.

In a previous Activity Report (June 1, 1977) we described briefly a project in New Mexico (Fenton Hill, Valles Caldera area west of Santa Fe) designed to test a method for extracting geothermal energy from hot and essentially impermeable rocks at moderate depths. According to a news item attached, the scientists at Los Alamos have proved that a geothermal well can be created using adaptations of oil-field drilling techniques.

Geologic, geochemical, and geophysical techniques were used to identify and characterize the hot dry rock (HDR) part of the total geothermal system related to the Valles Caldera. Much of the information gained and tested at Fenton Hill now can be applied to the search for other HDR sites.

The USGS has defined a zone in the San Francisco volcanic field in Arizona that may offer promising HDR sites (Activity Report, March 15, 1977).

GENERAL

Prudhoe Bay Crude Oil - Transportation Across Arizona. It is becoming increasingly evident that California intends to block by whatever means possible plans to transport Prudhoe Bay crude oil across Arizona to Midland, Texas. Attached is an editorial and two pertinent trade journal articles concerning the present status of the long-planned project which would help Arizona economy.

Geothermal. Non-electrical or low-temperature systems are considered to be those with temperatures below 320°F (160°C). Generally, heat cannot be extracted from waters with temperatures below 122°F (50°C). However, Iceland utilizes some waters with temperatures as low as 117°F (47°C) for circulation through radiators for city-wide space heating. Klamath Falls, Oregon, space heats mostly through one-building systems with waters ranging from 140-237°F (60-114°C). Thermal waters have been pumped from irrigation wells near Coolidge, Arizona, for a number of years. More than a dozen wells have discharged waters with temperatures between 95-149°F (35-65°C) at drilled depths of 1200-3000 feet.

Deep Well Temperatures in Arizona. Currently a minimum of 320°F (160°C) system temperature is considered necessary for the generation of electricity. The highest temperatures recorded to date in Arizona were in the following wells in southern Arizona:

- Cochise County: (1) Waddell-Duncan 1 McComb, T. 13 S., R. 24 E., sec. 23, 188°F (87°C) @ 6650 feet.
- Maricopa County: (2) Geothermal Kinetics Systems 1 Power Ranches, T. 2 S., R. 6 E., sec. 1, 262.2°F (128°C) @ 9050 feet in volcanic rock. On pumping tests, discharge water temperatures up to 212°F (100°C) were measured.
- (3) Geothermal Kinetics Systems 2 Power Ranches, T. 2 S., R. 6 E., sec. 1, maximum temperature measured to a depth of 9126 feet in igneous rock by geophysical surveys was 248°F (120°C). The operator reported a maximum temperature of 365°F (185°C) at total depth of 10,454 feet in volcanic rock.
- Pima County: (4) Humble 1 State, T. 16 S., R. 15 E., sec. 5, 296°F (147°C) @ 12,001 feet in igneous rock.
- Pinal County: (5) Humble 1 State, T. 8 S., R. 8 E., sec. 2, 230°F (110°C) @ 10,154 feet in metamorphosed igneous rock.
- (6) Geothermal Kinetics Systems & Amax Exploration 1 Pima Farms, T. 7 S., R. 8 E., sec. 8, 236°F (113°C) on a drill-stem test of an interval from 5194-8024 feet. On pumping tests of fractured metamorphic rocks below 7560 feet the discharged water had a maximum outlet temperature of 180°F (82°C).
- Yuma County: (7) Exxon Corp. 1 Yuma-Federal, T. 11 S., R. 24 W., sec. 8, 280°F (138°C) @ 10,554 feet in sedimentary rock.

These wells are shown on Exhibit A, a temperature map of thermal wells and springs which was prepared several years ago. The map illustrates the widespread distribution of selected wells and springs with temperatures in excess of 90°F (32°C).

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August 10, 1977
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VISITORS

Roy B. Ralston, consultant, Phoenix
W.R. Hahman, Sr., geologist, Arizona Bureau of Geology & Mineral Technology
Bill Roberts, Sohio Petroleum Co., Albuquerque
Chuck Stevens, Marathon Steel Co. Phoenix
Mike Winston, Gulf Mineral Resources, Denver
Rick Standish, Rocky Mountain Energy Co., Denver
Bill Wiley, Hydrology Dept., University of Arizona
Lloyd R. Stahl, independent gas producer, Laredo, Texas

JNC:os


J.N.C.

Man-made geothermal energy source uses oil-field know-how

MODIFIED oil-well drilling and fracturing techniques have been used by the Los Alamos, N.M., Scientific Laboratory (LASL) to create a man-made geothermal-energy source.

Scientists there recently drilled a geothermal-well system 2 miles deep near the Valles Caldera in the Jemez Mountains of New Mexico by producing a fracture system in hot granite.

LASL Director Dr. Harold M. Agnew said two wells drilled into the west flank of the Valles Caldera were connected by a significant water flow. The water flashed to steam as it was diverted to a nearby holding pond.

Temperatures of 265° F. were recorded after 20 hr of pumping. Based on preliminary measurements of water flow, over 92% of the water injected into one well will be recovered in the second well after a month of

operation.

"We have proven that we can create a geothermal well using adaptations of oil-field drilling techniques without the use of explosives," Dr. Agnew says.

The method. LASL's system involves two holes drilled almost 2 miles deep that are separated at the surface by about 250 ft. Water under high pressure hydraulically fractures a system of cracks in the hot granite bedrock, exposing a large heat-exchange surface of rock with a temperature of about 400° F. Cold water was pumped down the hole at 900-1,000 psi.

Water circulated through the crack system, was heated, and flowed from the second hole at a temperature of 265° F. Back-pressure was applied to the second hole to keep the water from boiling until pressure was released at the surface. END

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THE OIL & GAS JOURNAL
July 18, 1977

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Carter mulls U.S. funds for big Mexico-to-Texas gas line

A PROPOSAL that the U.S. help finance a \$1-billion natural-gas pipeline from Mexico to Texas may get serious consideration from the Carter administration.

Jim Harris, press secretary to Louisiana Gov. Edwin Edwards — a strong supporter of such action—says the governor "was heartened" following a discussion with James Schlesinger, President Carter's top energy advisor.

Harris says the governor "got a good indication that something might come of the proposal." Edwards discussed his plan with the administration and state governors during the National Governors Conference in Washington.

Especially encouraging, Harris says, is a possible presidential visit to Louisiana within the next several

weeks. The visit is seen as a follow-up of the pipeline discussions, as well as an opportunity for Carter to tour petroleum exploration and production facilities.

Harris says no date has been set, "but a Carter visit seems almost certain."

Edwards' proposal calls for the federal government to set up a fund to allow financing of a 750-mile pipeline from Mexico's prolific Reforma fields to the Texas border. Should the administration decide against total federal funding, Edwards proposes that Louisiana and Texas fund the project concurrently with the federal government.

Harris says the Mexican consulate in New Orleans July 8 issued a "favorable comment" about the Edwards proposal. The consulate says

THE OIL AND GAS JOURNAL — JULY 18, 1977

(OVER)

Foes to Sohio line conversion take new tack

CALIFORNIA energy and air-pollution authorities appear intent on blocking the long-planned crude line from Long Beach to Midland, Tex.—whatever the means.

The California Air Resources Board, headed by Tom Quinn, and the California Energy Commission, chaired by Richard L. Maullin, last week introduced a new element into their opposition to the conversion to crude service of a surplus El Paso Natural Gas Co. natural-gas line with construction of connecting lines on both ends to Long Beach and Midland.

They express opposition now on grounds that California might need the gas line in the future to keep from losing potential new gas supply—perhaps from Mexico via the proposed Mexican trunkline from the Chiapas-Tabasco producing area to the Texas border with connections from the border to present systems serving California.

The opposition previously had been mounted on charges of massive potential pollution.

Sohio Transportation Co., sponsor of the conversion project to move Alaskan North Slope oil to Southwest, Midwest, and Gulf Coast markets, has been working hard to meet the ARB's air-emissions offset requirements, and it claims now to have succeeded.

It feels, a company official told the Journal last week, that the ARB may think so also in view of the new gas-supply issue the board and the energy commission raised last week.

"Even if the air-pollution reduction standards are met—and they have not been met in what we've heard so far—we would have to turn down the Sohio proposal if it would cause California to lose natural-gas supplies," Quinn told the press last week following a hearing.

Bob Shaadt, Sohio Transportation Co. manager in Long Beach, said the company doesn't feel the project is dead by any means, as indicated by general press stories last week.

"We feel we have met the emissions-offset requirements and intend to push the project hard," Shaadt said. Company officials were to testify before the Southern California air-quality-management district July 22.

Shaadt said the company plans to reduce hydrocarbon emissions in the terminal area via an agreement to install vapor-recovery systems on several dry-cleaning plants.

It will reduce area nitrogen-oxide emissions via a deal with Lomita Gas Co., a gas producer in the area, to

make combustion modifications on its compressors using an ammonia-injection system.

And it will cut sulfur-dioxide emissions via an agreement with an industrial plant in the Wilmington area, Shaadt said.

The company, he said, isn't divulg-

ing the cost of emissions-offset program to Sohio.

The gas-supply issue, he said, is not an issue. El Paso Natural, he said, has plenty of spare capacity in its system—even with the conversion—to haul all the gas California is likely to get.

THE ARIZONA REPUBLIC July 31, 1977 Editorials

Where Will The Oil Go?

OIL from the North Slope has at last reached the port of Valdez after a troubled 800-mile journey through the \$10-billion Alaska pipeline from Prudhoe Bay.

The journey took 38 days and was beset by accidents, but the hot, black crude is now gushing from the pipeline into huge storage tanks at the rate of 200 barrels a minute.

And the question arises: What will the nation do with it?

West Coast refineries will need only about 30 per cent. Where will the rest go, and how?

Standard Oil of Ohio wants to pump it from Long Beach, Calif. through an already-existing natural-gas pipeline that would be modified for the purpose to refineries in Texas.

The pipeline runs through Arizona, and there has been talk of building a refinery here.

Californians, led by Gov. Jerry Brown, don't like the idea, and that's putting it mildly.

Unloading the crude at Long Beach would create problems of air and water pollution, they say. Tankers emit fumes, they spill oil, sometimes they have accidents.

What are the alternatives?

Richard Maullin, chairman of the California Energy Commission, has suggested exporting the oil to Japan.

That would be all right with the oil companies. They don't care whom they sell to. However, it wouldn't lessen the nation's dependence on imports.

The second alternative is shipping the crude to Houston via the Panama Canal.

The objection to this is that it would be costly.

The cost of shipping the crude from Valdez to Houston by tanker and pipeline has been estimated at \$1.82 a barrel.

Shipping it via the Canal would cost between \$2.15 and \$2.45. Naturally, consumers in the Midwest and the East would have to foot the added bill.

President Carter has vetoed the idea of exporting the oil to Japan. He believes Sohio should be permitted to use the pipeline.

This has set the stage for a bitter battle between him and the governor. Not only is principle involved but politics, as well. Brown covets the presidency. Carter beat him for the Democratic nomination last year, but 1980 is coming up fast.

We'll be rooting for Carter.

The Midwest and the East need the oil, even if California doesn't, and the more cheaply they can get it, the better.

California is playing dog-in-the-manger against the nation's best interests.

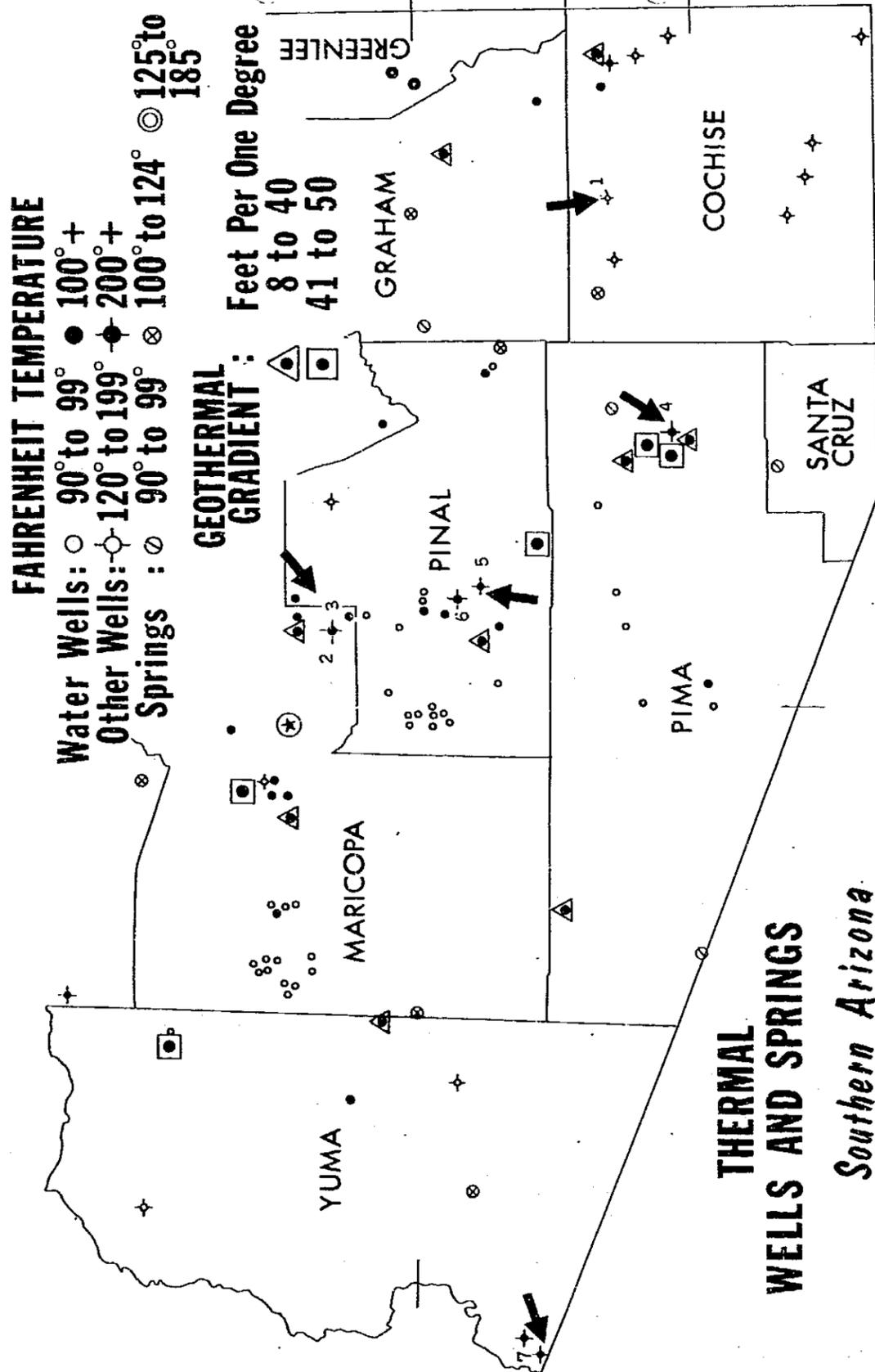


EXHIBIT A. - WELLS LISTED IN TEXT INDICATED BY ARROWS

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**LIST OF AVAILABLE PUBLICATIONS
AUGUST 1977**

**ARIZONA OIL AND GAS CONSERVATION COMMISSION
1645 WEST JEFFERSON STREET, SUITE 420
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REPORT OF INVESTIGATION

- RI-3. A geophysical and geological investigation of potentially favorable areas for petroleum exploration in southeastern Arizona, by Carlos L. V. Aiken and John S. Sumner, 1974; 39 pages, 17 figures, 4 tables, and 3 plates at scale of 1:500,000 (1 in. = approx. 8 mi.) also available as separates:
- Pl. 1. Bouguer gravity anomaly map (see GG-3 for description)
 - Pl. 2. Residual aeromagnetic map (see GG-4 for description)
 - Pl. 3. Drill hole map (see A-2 for description)
- RI-4. Selected Paleozoic stratigraphic sections in Arizona, by Edward A. Koester, 1973; 24 pages and 4 tables; 323 sections keyed to map; scale 1:1,000,000 (1 in. = approx. 16 mi.).
- RI-5. Arizona well information, Supplement 1--Records of wells drilled for oil, natural gas, helium, and stratigraphic information since publication of Arizona Well Information (Arizona Bureau of Mines Bulletin 185, 1972), by James R. Scurlock, 1973; 28 pages.

SPECIAL PUBLICATION

- SP-1. Review of the development of oil and gas resources of northern Arizona, by J. N. Conley, 1974; 10 pages, 5 figures, and 3 tables.
- SP-2. Structure map of folds in Phanerozoic rocks, Colorado Plateau tectonic province of Arizona, by George H. Davis and Charles W. Kiven, 1975; satellite image base printed in color, scale 1:500,000 (1 in. = approx. 8 mi.).
- SP-3. Index of maps selected for energy-resource investigations in the State of Arizona, June 1976, by J. N. Conley, J. R. Scurlock, and O. A. Stacey, 1976; 3 plates, 6 figures, and 9 tables. Maps indexed: geologic, aeromagnetic, gravity, structure, lineament, and fracture systems; temperature; and oil, natural gas, and helium development.

MAPS - WELL LOCATION

State Series

3. Wells drilled for oil, natural gas, helium, and stratigraphic information in Arizona, 1972; base printed in color, scale 1:1,000,000 (1 in. = approx. 16 mi.). Tabulation on reverse side of map lists supplementary well information pertaining to identification number, name, total depth, completion date, and status.
4. (Available October 1977) Wells drilled for oil, natural gas, helium, and geothermal resources; and selected wells drilled for potash, halite, and stratigraphic information, 1977; blue-line print, scale 1:750,000 (1 in. = approx. 12 mi.); oil, natural gas, and helium pools shown at enlarged scales. Companion text contains tabulated well data pertaining to identification number, location, name, elevation, completion date, status as of June 1977, total depth, and stratigraphic unit or geologic system at total depth.

County Series

Maps show the location of wells drilled for oil, natural gas, helium, and geothermal resources; most of the wells drilled for potash, halite, stratigraphic, structural, and aquifer information; and selected wells drilled for water; scale 1:500,000 (1 in. = approx. 8 mi.). Except for No. 9, supplementary tabulated well data printed on map or on a separate sheet: identification number; location; type of well; elevation; completion date; total depth; geologic age or lithology of rock at total depth; and availability of geophysical, lithologic, and drillers' logs, and samples of drill-bit cuttings.

1. Maricopa, by J. N. Conley and Edward A. Koester, 1972; 2 sheets
2. Yuma, by J. N. Conley and Edward A. Koester, 1972
3. Pinal, by Edward A. Koester and J. N. Conley, 1972
4. Cochise, by Edward A. Koester and J. N. Conley, 1972
5. Yavapai, by Edward A. Koester and J. N. Conley, 1973
6. Mohave, by Edward A. Koester and J. N. Conley, 1973
7. Pima and Santa Cruz, by J. N. Conley and Edward A. Koester, 1974
8. Graham and Greenlee, by J. N. Conley and Edward A. Koester, 1974
9. Apache, Coconino, Navajo, and portions of Gila, Mohave, and Yavapai, by J. N. Conley, 1975 (oil, natural gas, and helium pools shown at enlarged scales); in envelope with 45-page bound text and well-data tabulation.

Pool Series - Oil, natural gas, and helium

Maps of the pools listed below and pools near the extreme northeast corner of Apache County (Four Corners region) which include data through June 30, 1977, are shown on State Map No. 4.

- P-1. Pinta Dome-Navajo Springs-East Navajo Springs helium gas pools, Apache County, Arizona, by J. N. Conley, 1974; scale 1:63,360 (1 in. = 1 mi.).
- P-2. Dineh-bi-Keyah oil field, Apache County, Arizona, by Charles E. Druitt, 1974; scale 1:63,360 (1 in. = 1 mi.).

MAPS - REGIONAL

Eastern Mogollon Slope region, east-central Arizona

(Encompasses Permian Supai evaporite basin)

Well-data tabulation for Eastern Mogollon Slope region maps, 1976; 18 pages.

- A-1. Well location map, 1976 (revision of former Holbrook area, 1975). Blue line print shows: wells drilled for oil, natural gas, and helium; information pertaining to potash, structure, and stratigraphy; and selected water wells penetrating the Permian Coconino Sandstone; scale 1:250,000 (1 in. = approx. 4 mi.).
- G-6. Structure map--Top of Permian Coconino Sandstone, by J. N. Conley and J. R. Scurlock, 1976; contour interval 100 feet; scale 1:250,000 (1 in. = approx. 4 mi.).
- G-6A, G-7, G-8. Set of three structure maps (also available as separates); scale 1:500,000 (1 in. = approx. 3 mi.):
- G-6A. Top of Permian Coconino Sandstone (reduction of G-6).
- G-7. Base of Permian Fort Apache Member of Permian Supai Formation, by J. N. Conley, 1977; contour interval 200 feet.
- G-8. Top of basement, by J. N. Conley, 1977; contour interval 200 feet.

Southeastern Arizona

- A-2. Drill hole map of southeastern Arizona, by J. N. Conley, 1974; separate of Plate 3, Report of Investigation 3; scale 1:500,000 (1 in. = approx. 8 mi.). Map covers Cochise County and portions of adjacent counties and shows: location of all wells drilled for oil, natural gas, and stratigraphic information; selected wells drilled for water; and data pertaining to shows of oil and gas and geologic age of rock at total depth. Companion tabulation presents supplementary data, including available information as to geologic age or lithology of rock encountered beneath the valley-fill.

MAPS - GEOPHYSICAL

- GG-3. Bouguer gravity anomaly map of southeastern Arizona, by Robert E. West and others, 1973; separate of Plate 1, Report of Investigation 3. Printed in color, map shows: areas of pre-Cenozoic sedimentary, volcanic, and intrusive rocks; station control; lines of gravity/aeromagnetic profiles; and wells referred to in text; contour interval 5 milligals; scale 1:500,000 (1 in. = approx. 8 mi.).
- GG-4. Residual aeromagnetic map of southeastern Arizona, by William A. Sauck and John S. Sumner, 1970; separate of Plate 2, Report of Investigation 3; contour interval 25 gammas; scale 1:500,000 (1 in. = approx. 8 mi.).

MAPS - TEMPERATURE

- GT-2. Mean annual temperature map, State of Arizona, by Charles E. Druitt, 1976; isotherm interval 5° Fahrenheit; scale 1:2,000,000 (1 in. = approx. 32 mi.).
- GT-3. Set of two subsurface temperature maps, State of Arizona, by J. N. Conley and O. A. Stacey, 1977:
- GT-3A. Temperature map of subsurface basement rocks
 - GT-3B. Temperature map of subsurface suprabasement rocks

By keyed symbols, maps present bottom-hole temperature in wells measured by geophysical surveys and bottom-hole or shallower temperatures measured in connection with drill-stem or reservoir productivity tests. Keyed patterns show areas of Quaternary volcanic rocks and areas of Tertiary/Laramide orogeny volcanic and intrusive igneous rocks. Companion tabulation presents data pertaining to: well identification and location, mean annual temperature, measured temperature and depth, temperature gradient, lithology of basement, and geologic system opposite temperature measurements above basement rocks.

GEOLOGIC STRUCTURE/CORRELATION SECTIONS

- GXS-1. Set of 4 sections across portions of the eastern Mogollon Slope region in east-central Arizona, by J. N. Conley, 1977.

MISCELLANEOUS

Chart: C-1. Oil and natural gas occurrence in Arizona, by J. N. Conley, 1974.

- Catalogs:
1. Index of samples of drill-bit cuttings and/or cores of wells drilled in Arizona, by J. N. Conley, 1971.
 - 1-A. Index of samples of drill-bit cuttings and/or cores of wells drilled in Arizona, July 1971 through September 1975.
 2. Index of samples of drill-bit cuttings and/or cores of wells drilled in southwestern Colorado, northwestern New Mexico, and southeastern Utah, by Jack N. Conley, 1971.

Directory: Sources of information on exploration for petroleum and geothermal resources in the State of Arizona, 1974.

MONTHLY FINANCIAL REPORT

RECEIPTS MONTH OF July 1977	CLASSIFICATION	APPROPRIATED RECEIPTS	UNAPPROPRIATED RECEIPTS	TOTAL ALL RECEIPTS YEAR TO DATE
25 00	1 Permits to Drill			25 00
	2			
	3			
	4			
	5			
	6			
	7			
	8			
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
25 00	TOTAL CURRENT MONTH RECEIPTS		25 00	XXXXXXXX
	TRANSFERS IN			
XXXXXXXX	BALANCES BROUGHT FORWARD		3,701 83	XXXXXXXX
25 00	TOTALS - MONTH AND YEAR TO DATE		3,726 83	25 00

CLAIMS PAID MONTH OF July 1977	FUND TITLES	TOTAL AMOUNT AVAILABLE YEAR TO DATE	CLAIMS PAID YEAR TO DATE	OUTSTANDING ENCUMBRANCES	UNENCUMBERED BALANCE
3,754 96	1 Personal Services	29,200 00	3,754 96		25,445 04
628 91	2 Emp. Related Exp.	5,030 00	628 91		4,401 09
	3 Professional Services	925 00			925 00
	4 Travel - State	1,725 00		1,500 00	225 00
490 25	5 Travel - Out of State	2,000 00	490 25		1,509 75
2,584 66	6 Other Operating Exp.	7,069 90	2,584 66	837 80	3,647 44
	7 Capital Outlay-Equipment	800 00			800 00
	8				
	9				
	10				
	11				
	12				
	13				
	14				
	15				
	16				
	17				
	18				
	19				
	20				
	21				
	22				
	23				
	24				
	25				
	26				
	27				
	28				
	29				
7,458 78	TOTALS	46,749 90	7,458 78	2,337 80	36,953 32

AGENCY Oil & Gas Conservation Commission

DIVISION _____

IDENTIFICATION () DE NO. _____

1	2	3	4
CLAIMS PAID YEAR TO DATE	OBJECT CODE NO.	DISTRIBUTION OF EXPENDITURES CLASSIFICATION	CLAIMS PAID MONTH OF July 1977
	71140	1 Per Diem: Commission Members	1
3,754 96	71150	2 Salaries: Staff	2 3,754 96
24 11	71510	3 Workmens Comp.	3 24 11
22 55	71520	4 Unemployment Insurance	4 22 55
219 65	71530	5 F.I.C.A.	5 219 65
262 85	71542	6 Retirement	6 262 85
99 75	71550	7 Health Insurance	7 99 75
	71570	8 Personnel Comm. Pro Rata Charges	8
	72167	9 Professional Services: Engineer	9
	72199	10 Professional Services: Cartographer	10
	72511	11 Travel-State: Mileage - Private Vehicles	11
	72512	12 Mileage - State Vehicles	12
	72520	13 Subsistence	13
	72531	14 Air Fare	14
	72541	15 Registration Fees	15
	72543	16 Parking	16
172 00	72560	17 Travel-Out of State: Subsistence	17 172 00
266 00	72571	18 Air Fare	18 266 00
27 25	72574	19 Taxis	19 27 25
25 00	72581	20 Registration Fees	20 25 00
	72589	21 Other-Telephone, etc.	21
	72711	22 Occupancy: Office Rent	22
	72713	23 Warehouse Rent	23
	72821	24 Mtn. & Repairs: Furniture	24
	72823	25 Adders & Calculators	25
	72826	26 Copy Machine, Other	26
	72827	27 Mimeo, Reader-Printer, etc.	27
	73111	28 Office Supplies: Printed Stationery & Envelopes	28
	73113	29 Carbon & Ribbons	29
	73117	30 Reproduction Supplies	30
	73119	31 Misc.	31
	73259	32 Field Supplies: Logs, etc.	32
	73514	33 Printing - Large Maps, etc.	33
53 91	73524	34 Legal Advertising	34 53 91
	73531	35 Subscriptions: Newspaper	35
	73533	36 Technical Journals	36
	73541	37 Postage Stamps	37
36 98	73551	38 Telephone Service: Central System	38 36 98
80 55	73552	39 Equipment Rental	39 80 55
29 22	73553	40 Long Distance	40 29 22
34 00	73554	41 ATS Service Charge	41 34 00
1,500 00	73720	42 Organization Dues	42 1,500 00
	73730	43 Technical or Reference Books	43
600 00	73741	44 Insurance	44 600 00
250 00	79220	45 Revolving Fund	45 250 00
	74312	46 Capital Outlay: Map Cabinet	46
		47	47
		48	48
		49	49
		50	50
		51	51
		52	52
		53	53
		54	54
		55	55
7,458 78		TOTAL	7,458 78

OFFICE

(DO NOT WRITE BELOW THIS LINE)

FIELD

OIL AND GAS CONSERVATION COMMISSION
1645 West Jefferson Street
Suite 420
Phoenix, Arizona 85007

Minutes of Meeting
June 10, 1977

Present:

Mr. Ralph W. Bilby, Chairman
Mr. Hal Butler, Vice Chairman
Dr. J. Dale Nations, Member
Mr. Robert A. Gallaher, Member

Absent:

Mr. Norman D. Levitt, Member

The regular Commission meeting of June 10, 1977 was called to order by Chairman Ralph Bilby at 10:00 a.m.

Minutes of the meeting of March 25, 1977 were approved as written.

Reports of Executive Secretary, Enforcement Section and Geology Section were accepted.

The Chairman welcomed Mr. Robert A. Gallaher as the new member of the Commission.

Executive Secretary advised that the Commission's budget allotment for the 1977-78 fiscal year has been received. The request for an additional Geologist II was approved. For the most part, the funds requested by the Commission were allowed.

Mr. Allen, Director of the Enforcement Section, advised that Kerr-McGee Corporation has plugged and abandoned all of its helium wells in the Pinta Dome unit of the Navajo Springs area and is in the process of cancelling its leases. The Kerr-McGee helium plant has been shut down since February 26, 1976, so no helium has been produced or marketed since that time. Eleven wells remain to be plugged - ten belonging to Eastern Petroleum Corporation and one belonging to Western Petroleum Corporation. Arrangements are now being made to plug and abandon these wells, which will end helium production in Arizona for the time being.

The potential storage of federal strategic petroleum reserves in suitable salt deposits in Arizona was discussed.

The Commission determined that the long range plans as currently being developed by the Commission staff are satisfactory and that no further action should be taken at this time in this matter. Satisfaction was expressed for the progress and actions of both the Enforcement and Geology Sections.

Minutes of Meeting
June 10, 1977
Page 2

The Executive Secretary was instructed to confer with Dr. Drescher, Director of the Arizona Bureau of Mines, and offer the Commission's full support in the newly created Arizona Bureau of Geology and Mineral Technology.

The next meeting of the Commission will be August 19, 1977 in Show Low, Arizona, at which time the staff's proposed budget for the 1977-78 fiscal year will be considered.

Approval was given for the Executive Secretary to attend the annual meeting of the Interstate Oil Compact Commission to be held in Nashville, Tennessee on July 9 to 13, 1977.

The request of the Executive Secretary to use unexpended funds in the out-of-state travel allotment for the 1976-77 fiscal year to reimburse Mr. Conley for a trip to Denver to attend the annual meeting of the American Association of Petroleum Geologists was approved.

Mr. Hal Butler was elected Vice Chairman of the Commission.

The meeting adjourned at 11:35 a.m.

APPROVED



OFFICE OF

Oil and Gas Conservation Commission

STATE OF ARIZONA

1645 WEST JEFFERSON, SUITE 420

PHOENIX, ARIZONA 85007

PHONE: (602) 271-5161

ACTIVITY REPORT

July 6, 1977

John Bannister
Executive Secretary

Following our meeting of June 10, 1977, I met with Dr. William Dresher, Director of the Arizona Bureau of Geological and Mineral Technology (effective August, 1977) and Dr. Richard Moore of the Bureau. At that time, I proposed that the geological project discussed with you at the meeting by Jack Conley be planned for submission to the Legislature the first of 1978. The initial plan calls for the use of space imagery together with ground truth, which will result in a new geological map of the state wherein specific geological formations are identified and accurately traced.

In addition, the project will encompass certain geological exercises, all of which will be aimed at locating and mapping more accurately potential sources of energy. I have contacted other state agencies and have been assured of their support and backing in attempting to secure the necessary finances from the Legislature.

Accordingly, Jack Conley and Dr. Richard Moore will meet soon to begin specific planning which will eventually result in the product that will be presented to the Legislature. The final request to the Legislature will also include specific uses by other agencies. The project, as envisioned at this time, involves not only the Oil and Gas Commission and the Arizona Bureau of Geological and Mineral Technology and additional state agencies, but the United States Geological Survey and perhaps other sources of funding as well.

In my initial contact with Dr. Dresher, it was assumed that the Oil and Gas Commission will be the agency funded for the project and that the Bureau of Geological and Mineral Technology will be the agency contacted to perform the work. You will be kept advised as to the progress of this effort.

Page 2
Executive Secretary
July 6, 1977

I am pleased to report that the Finance Department did approve reimbursing Jack Conley for his trip to Denver to attend the meeting of the American Association of Petroleum Geologists and he has been paid.

I feel that it is most necessary in our forthcoming budget that we secure a larger appropriation for out-of-state travel so that the staff may attend more necessary functions than just our statutory commitments to the Interstate Oil Compact Commission.

As authorized, I will attend the Interstate Oil Compact Commission meeting in Nashville beginning July 9th. As usual, a report of this trip will be made to you.

I am very pleased to report that after much haggling we have secured a Royal RBC III copy machine. As you are aware, our old copy machine was pretty well worn and the source of much trouble. This new machine was selected after a great deal of research and it should prove satisfactory. I hope you will notice the improved quality of the reproduced copies furnished you from time to time.

The next meeting of the Commission will be in Show Low on August 19th at 10:00 a.m. I will get together with Commissioner Butler early in August to make the final arrangements for this meeting. Prior to that time, I will contact each of you to make certain the housing arrangements you will need. Hopefully, we can meet with our wives and accordingly we will plan some social function for Thursday night, August 18th.

The proposed budget for the 1977-78 fiscal year is now being formulated and we should be able to present our suggested budget for your approval at the August 19th meeting. This probably will be the most important item of our agenda.

We are getting persistent rumors of potential drilling activities in the strip country. Mr. Dick Ruberts, scout for Shell Oil Company, spent considerable time with me last week and indicated that Shell is expecting continued activity in this area.

Initial steps have been taken to comply with all the Personnel Division requirements to bring our new Geologist II on board. A full report on this will be made to you in August.



OFFICE OF
Oil and Gas Conservation Commission
STATE OF ARIZONA
1645 WEST JEFFERSON, SUITE 420
PHOENIX, ARIZONA 85007
PHONE: (602) 271-5161

ACTIVITY REPORT

July 6, 1977

W. E. Allen
Enforcement Section

Attached to this report is an article from a recent issue of "The Landman" which points up just some of the problems oil and gas explorationists have in getting a permit to drill on federal lands. Some of the problems mentioned in this article have been mentioned from time to time in our Commission meetings, however Mr. Eliason states these problems more succinctly than we have been able to.

If we are really interested in alleviating our energy situation, it would be well to let our representatives in Washington know that there is opposition to the many restrictive and punitive regulations imposed on the oil industry by the various federal agencies.

Now, to step down from my soap box and get to the business at hand, a permit has been issued to Energy Reserves Group for a Lower Ismay test in the Teec Nos Pos field. This well is located in the NE/NE/4 Sec. 26, T41N, R30E, Apache County. This location is a southeast offset of their Navajo "0" No. 4 well.

Pyramid Oil is drilling below 1400' on its Federal No. 2 located in the NE/SW/4 Sec. 18, T40N, R9W, Mohave County. This well is approximately 33 miles south of Hurricane, Utah and some 50 miles north of the Colorado River.

Information received from Mr. Henry Fullop, Eastern Petroleum Company, indicates that Eastern will start plugging operations on their ten wells in the Navajo Springs unit the latter part of this month.

Page 2
Enforcement Section
July 6, 1977

Scientists at the Los Alamos (N.M.) Scientific Laboratory have recorded a significant breakthrough in the quest for geothermal energy. They have created a man-made geothermal well system two miles deep near the Valles Caldera by producing a fracture system in the hot dry granite. This is considered a major achievement in the Energy Research and Development Administration's hot dry rocks geothermal energy program.

Two holes were drilled below 10,000 feet in the hot rocks. These holes were 250 feet apart. The two wells were connected by hydraulic fracturing. Cold water is pumped down one well and circulated through the fracture system and returned to the surface through the second well. After testing this system, plans are to drill deeper in order to pick up additional heat and then an electric generating plant will be built at the site.



OFFICE OF

Oil and Gas Conservation Commission

STATE OF ARIZONA

1645 WEST JEFFERSON, SUITE 420

PHOENIX, ARIZONA 85007

PHONE: (602) 271-5161

ACTIVITY REPORT

July 6, 1977

J. N. Conley
Director, Geology Section

PUBLICATIONS

To date this fiscal year we have received 220 requests for our publications. In instances where we do not have publications requested, we have been able to furnish information as to where they are available.

Reprints - depleted stock. Printers have delivered reprints of the three publications mentioned in last month's activity report.

New. These new publications have been printed:

Eastern Mogollon Slope region, east-central Arizona

Geologic Map G-6a, Structure top Permian Coconino Sandstone

Geologic Map G-7, Structure base of Fort Apache Member of
Permian Supai Formation

Geologic Map G-8, Basement topography

Four structure and correlation sections across portions of
the region

Unforeseen cartographic delays prevented us from getting copy-ready material to the printer in time for printing the subsurface temperature maps and companion temperature-data tabulation this fiscal year.

OIL & GAS LEASING ACTIVITY

P. J. Farrelly, Denver, Colorado, has assembled through brokers several blocks of oil and gas leases on State and Federal lands totaling approximately 160,000 acres. These lease blocks are in the Sulphur Springs Valley in Cochise County.

I have no information on Farrelly. However, I have been informed that he is backed financially by Duncan Oil Company, a reputable firm.

Activity Report
June 27, 1977
Page 2

ENERGY-RESOURCE NEWS ITEMS

Coal. The Federal Trade Commission has approved Kennecott Copper's plan to sell Peabody Coal to Peabody Holding Co., Inc., which is owned by Newmont Mining Corp, the Williams Companies, Bechtel Co., the Boeing Co., Fluor Corp., and the Equitable Life Assurance Society of the United States.

Peter McDonald, Chairman of the Navajo Tribal Council, in a recent TV interview, stated that the Council plans to request the Federal Government to instigate proceedings to renegotiate the royalty the Tribe receives for coal mined on the reservation in northwestern New Mexico. The Peabody coal mining operation in Navajo County, Arizona, is on the Navajo Indian Reservation.

Holbrook area. St. Joe Mining Co. has made application to the Arizona State Land Department to convert 28 one-section prospecting permits for potash to mining leases. The lands involved are east of the Petrified Forrest National Park.

Salt River Project's proposed railway line to transport coal to its electricity-generation plant at St. Johns crosses the lands to be mined by St. Joe. The possibility of subsidence along the railway right-of-way resulting from mining the underlying potash occasioned some concern until recently. It now appears that Salt River will not oppose mining operations.

VISITORS

Curtis J. Little, Geological Consultant, Albuquerque, N. M.
Roy B. Ralston, Geological Consultant, Phoenix
W. R. Hahman, Sr., Arizona Bureau Geol. & Min. Tech., Tucson

A total of 117 visitors signed our Geology Section register this fiscal year.

JNC:os


J.N.C.

MONTHLY FINANCIAL REPORT

1 RECEIPTS MONTH OF June 19 77		2 RECEIPTS CLASSIFICATION		3 APPROPRIATED RECEIPTS		4 UNAPPROPRIATED RECEIPTS		5 TOTAL ALL RECEIPTS YEAR TO DATE	
100	00	1						425	00
		2							
		3							
		4							
		5							
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		11							
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		15							
		16							
		17							
100	00	TOTAL CURRENT MONTH RECEIPTS				100	00	XXXXXX	
XXXXXX		TRANSFERS IN							
XXXXXX		BALANCES BROUGHT FORWARD				325	00	XXXXXX	
100	00	TOTALS - MONTH AND YEAR TO DATE				425	00	425	00

6 CLAIMS PAID MONTH OF June 19 77		7 EXPENDITURES FUND TITLES		8 TOTAL AMOUNT AVAILABLE YEAR TO DATE		9 CLAIMS PAID YEAR TO DATE		10 OUTSTANDING ENCUMBRANCES		11 UNENCUMBERED BALANCE	
6,879	38	1	Personal Services	103,600	00	84,381	35			19,218	65
993	80	2	Emp. Related Exp.	15,500	00	11,467	71	250	00	3,782	29
1,012	50	3	Prof. Services	3,700	00	3,113	00	97	00	490	00
438	80	4	Travel - State	8,000	00	6,658	25	1,016	00	325	75
320	85	5	Travel - Out of St.	2,000	00	1,519	10			480	90
2,038	55	6	Other Operating Exp.	28,857	29	24,571	01	1,126	22	3,160	06
		7	Cap. Outlay - Equip.	3,900	00			3,570	00	330	00
		8									
		9									
		10									
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		29									
		30									
11,683	88	TOTALS		165,557	29	131,710	42	6,059	22	27,787	65

AGENCY Oil & Gas Conservation Comm.

DIVISION _____ IDENTIFICATION CODE NO. _____

1		2		3		4	
CLAIMS PAID YEAR TO DATE	OBJECT CODE NO.	DISTRIBUTION OF EXPENDITURES CLASSIFICATION		CLAIMS PAID MONTH OF June 19 77			
810 00	7111	1	Per Diem: Commission Members	1	210 00		
83,571 35	7112	2	Salaries: Employees	2	6,669 38		
		3		3			
320 01	7151	4	Industrial Insurance	4			
301 14	7152	5	Unemployment Insurance	5			
3,922 69	7153	6	F.I.C.A.	6	391 94		
5,850 17	7155	7	Retirement	7	466 86		
833 70	7156	8	Health Insurance	8	75 00		
240 00	7159	9	Personnel Comm.	9	60 00		
		10		10			
	7215	11	Professional Services: Engineer	11			
3,113 00	7219	12	Professional Services: Other	12	1,012 50		
		13		13			
856 50	7221	14	Travel-State: Mileage	14	174 30		
1,423 50	7222	15	Subsistence	15	205 00		
53 00	7223	16	Public Transportation	16	53 00		
4,255 45	7224	17	Vehicle Expense	17	2 50		
69 80	7225	18	Reg. Fees; Parking; etc.	18	4 00		
		19		19			
527 50	7232	20	Travel-Out of State: Subsistence	20	122 50		
910 25	7233	21	Public Transportation	21	142 00		
9 35	7234	22	Airport Parking	22	9 35		
72 00	7235	23	Reg. Fees; Telephone; etc.	23	47 00		
		24		24			
16,088 80	7251	25	Occupancy: Office Rent	25			
1 00	7261	26	Warehouse Rent	26			
	7263	27	Maintenance & Repairs	27			
285 50	7272	28	Mtn. & Repairs: Furniture & Equipment	28	82 50		
2,636 72	7280	29	Office Supplies	29	746 56		
	7280.1	30	Orthophoto Quads.	30			
338 35	7300	31	Field Supplies: Film; Am.Strat; P.I.; etc.	31			
1,195 20	7331	32	Printing: Reports; Large Maps; etc.	32	843 50		
243 21	7332	33	Legal Advertisement	33			
81 75	7333	34	Court Reporter	34			
400 70	7334	35	Postage	35	90 00		
2,496 18	7335	36	Telephone	36	525 97		
	7337	37	Drayage; Express; etc.	37			
	7339	38	Rental, Misc.	38			
141 60	7360	39	Dues & Subscriptions	39			
662 00	7370	40	Insurance Coverage	40			
	7431	41	Capital Outlay: Office Equip.	41			
	7434	42	Spec. Equip. (Geol.)	42			
	7436	43	Automobile	43			
		44		44			
	7913	45	Revolving Fund	45	(250 00)		
		46		46			
		47		47			
		48		48			
		49		49			
		50		50			
		51		51			
		52		52			
		53		53			
		54		54			
		55		55			
131,710 42		TOTAL			11,683 88		

OFFICE

DO NOT WRITE BELOW THIS LINE

FIELD

AVAILABILITY OF PUBLIC LANDS

By Max D. Eliason

President, Rocky Mountain Oil & Gas Association
Senior Vice President, Skyline Oil Company
Salt Lake City, Utah

(The following presentation was made last fall in Salt Lake City in response to the Secretary of the Interior's establishment of a Departmental Task Force on the Availability of Federally-Owned Mineral Lands and the resulting public hearings. The hearings were prompted by public concern over the availability of public lands for mineral development under the General Mining Law 30 U.S.C. 21 and the Mineral Leasing Laws 30 U.S.C. 181-287, 351-359, 1001-1025. No action has been taken by the Task Force at this time.)

As a representative of the Rocky Mountain Oil and Gas Association, I appreciate every opportunity to comment on the problems relating to the availability of federal lands for mineral exploration and development. Our members are vitally concerned with the management programs affecting the public lands, since they comprise a large portion of the lands where our activities are concentrated.

Even though I appreciate this opportunity, I question whether the government pays much attention to testimony presented at many of its hearings. The oil and gas industry has been warning for years about the continual deterioration of this country's energy supplies, but the response of the U. S. Congress and the executive branch has been to increase the number of statutes, rules and regulations which stifle efforts to develop our energy reserves. As an attorney, I am particularly aware of the morass of federal legislation and regulations which have been adopted in recent years affecting the public lands.

Red Tape

Until such time as the leaders of this nation decide that the energy shortage problems of America should be given a high priority, our energy resource development programs will continue to be frustrated by bureaucratic red tape. We, in industry, are becoming more convinced each day that the U. S. government does not have a strong commitment to the development of our natural resources in order to bring this country to relative energy self-sufficiency.

In many cases, industry is in an adversary position with respect to governmental personnel. We must deal with federal employees who are immersed by a multitude of laws and regulations which have a vague and undefined application to the decisions which they are called upon to make. These employees frequently are afraid to make controversial decisions which could adversely affect their careers. It is natural, in such situations, that the decisions made are conservative and make it more costly and difficult to develop our minerals.

Bias

In addition, many public officials have a definite bias against minerals development activities on the public lands, and when such parties are in decision-making positions, they can effectively halt or unduly delay exploration and development programs.

It is fair to say that most of the problems which have arisen with respect to the development of the public domain stem from the tremendous increase in concern for the protection of the environment. We recognize, as do other responsible citizens, the importance of protecting the environment. But this should be only one of the considerations involved in managing the public lands.

Consequences

If the majority of the citizens of this country are willing to let environmental concerns have an overriding influence on all other considerations, then we as a nation should recognize the consequences and make plans accordingly.

The political leaders of this country should tell the American people that a continuation of the policies which are restricting the development of our resources will reduce the standard of living of our citizens and result in the loss of many jobs. Our country will become increasingly dependent on other countries for our energy supplies, and we will no longer be the leading military and economic power in the world. This nation will continue to become more vulnerable to military attack by its enemies, and our hard-won freedoms may be lost.

Files

The Secretary of the Interior does not have to hold hearings to get a true picture of the adverse impact which governmental policies are having on access by private industry to public lands. He needs only to go to the files of the Bureau of Land Management, the U. S. Geological Survey, the Forest Service and other governmental agencies and study the case files to determine the nature of the decisions being made daily which are hampering the developing of mineral resources.

Restrictions on the right of access to the public domain do not arise only from formal withdrawals such as the creation of national parks and monuments by the U. S. Congress and by executive withdrawals. Such restrictions also result from de facto withdrawals made by administrative decisions leading to delays and additional expenses which make the projects economically unfeasible.

Recommendations

On the assumption that the administration is serious about making changes to facilitate accessibility by private industry to the public domain, we wish to make the following recommendations, which certainly are not an exhaustive listing.

1. THE NATIONAL ENVIRONMENTAL POLICY ACT OF 1969 (NEPA) SHOULD BE AMENDED:

(a) to more clearly define the extent and scope of environmental studies and impact statements required to be made thereunder;

(b) to require administrative agencies to make decisions and conclude studies required by NEPA within precisely defined time periods;

(c) to require consideration to be given to the economic, social, and national security impacts of failure to approve projects because of environmental considerations; and

(d) to require any party which seeks an injunction on environmental grounds to stop a project to post a bond in a significant amount, and if subsequent legal proceedings determine that the action is unfounded or frivolous, the suing party will be liable for damages to the parties injured by the resulting delays.

The oil and gas industry is committed irrevocably to conducting its operations so as to cause no unreasonable adverse impacts upon the environment. However, the construction of new facilities and projects has been delayed, and often times stopped, by various federal agencies which claim to have acted pursuant to the provisions of NEPA.

The lengthy delays resulting from unreasonable requirements under this Act would read like a horror story if they were all compiled in a book. These have affected adversely the drilling of wells, the construction of pipelines and refineries and many other activities of our industry.

Unfortunately, the NEPA and other legislation created by Congress have been used effectively by vociferous minorities to make unreasonable demands for environmental studies and to institute legal actions to thwart new industrial projects. Many of these detractors adhere to the "no-growth philosophy" with respect to industrial expansion, and use whatever means is available to stop industrial developments.

Example

One of the best examples of the results is the case of the construction of the Alaskan oil pipeline. The delays in building this pipeline caused by bureaucratic red tape and environmentalists lawsuits resulted in more than a seven-fold increase in costs, and contributed significantly to the present dependence of the United States on the importation of foreign oil. After a five-year delay, it took a special Act of Congress to overcome the delaying tactics of the environmentalists so that construction of the pipeline could begin.

One vivid example of delays caused by environmental objections which is familiar to the citizens of the State of Utah was the two-year delay in the construction of a 10-mile, comparatively short stretch of pipeline from Coalville, Utah, to the Bountiful, Utah area.

Cost Increase

Approval was finally obtained in late fall of 1975 only after an extensive lobbying and public relations effort was made by Mountain Fuel Supply Company, other members of the oil industry, Gov. Calvin L. Rampton, and the entire Utah delegation to Congress.

A significant part of this pipeline was, as a result, built under severe winter conditions at a much greater cost than if it had been constructed in favorable summer weather. Additionally, the ability of Mountain Fuel to meet peak demand and unexpected emergencies was impaired while this project was delayed by bureaucratic foot dragging.

Caution

The public officials who are charged with the administration of NEPA are frequently so worried about their own jobs, or that they might be criticized for decisions which they make, that they are reluctant to do anything which might be, or cause more to always the threat of litigation by environmental groups.

When charges of inadequacy of environmental statements are made, the normal and natural reaction of these officials is to require further studies. As a result, there never seems to be an end to the process, and costs multiply and delays are added to delays.

The suggested changes to NEPA outlined above would add more certainty to the application of this law and would greatly simplify the administration thereof.

2. THE PROCEDURES FOR OBTAINING AUTHORIZATION TO DRILL OIL AND GAS WELLS SHOULD BE SIMPLIFIED.

The paperwork and red tape involved in obtaining approval to drill an oil and gas well is continually increasing. The requirements of the Notice to Lessees (NTL) regulations promulgated by the U. S. Geological Survey continue to increase in number and complexity.

The NTL's are requiring significantly larger numbers of government employees to inspect the locations for proposed wells, and just the logistical problem of coordinating a visit to proposed drill sites by all of the parties concerned, results in lost time and added expense to both the drilling party and the government.

Critical

This process is costing the drilling party as much as \$3,000 per well, but the attendant delays are also very critical. After a discovery is made in an area, it is usually desirable to keep a drilling rig busy moving continually from one location to another. Otherwise, the drilling rig must be moved out of the area and then moved back in when a new location has been approved.

Such moving costs run into the tens of thousands of dollars for each such move, and often times the rig is not readily available when needed because it gets involved elsewhere on another well.

Advance Stake

When it takes as much as 45 days to gain approval for the drilling of a well, such continued drilling operations are not possible unless several wells are staked long in advance. This makes it extremely difficult to plan drilling schedules unless as many as four or five wells are staked in advance.

Consider the waste in having to stake five wells in advance at \$3,000 per well, or a total of \$15,000, and then drilling a dry hole which establishes that these five wells should not be drilled. This \$15,000 loss to the operator does not take into account the cost to the taxpayers for the personnel and costs needed to administer the programs.

3. LOCAL OFFICIALS SHOULD BE GIVEN MORE DISCRETION IN WAIVING REQUIREMENTS, UNDER STIPULATIONS AND REGULATIONS WHEN SUCH REQUIREMENTS ARE CLEARLY INAPPLICABLE, OR WHERE THEY WILL RESULT IN AN ECONOMIC WASTE TO EITHER THE GOVERNMENT OR THE OPERATOR.

For example, there are a number of areas in the country where it is clear that the location of a well has no archaeological importance and in such areas the locations could be approved without being inspected by an archaeologist.

One of the members of RMOGA applied for a permit to drill a well in New Mexico this summer in an area where there are no known areas of archaeological significance. NTL-6 requires that a joint surface inspection by the Bureau of Land Management and the Geological Survey be made on all new exploratory locations. A meeting was then set up for such a surface inspection.

Inspection

Ten people were finally involved in making this surface inspection, which made it difficult to coordinate schedules. The company was represented by an engineer, a landman, a dirt contractor and the drilling contractor. The company felt they needed these four representatives in order to protect the company's position.

The Geological Survey was represented by an inspector, an assistant to the inspector and a summer employee. The Bureau of Land Management was represented by an acting surface manager, an archaeologist and the area representative.

Sheep Pen

The archaeologist found a collapsed rock sheep pen located near the proposed drill site, which was considered to be of archaeological significance. The company was advised that if the drill site pad had encroached upon the pen, the location would not have been approved. The archaeologist reported that any artifact which is dated prior to 1950 could be of significance. The rock pen was probably about 20 years old.

It is absurd that NTL-6 could be interpreted to mean that the preservation of a sheep pen in an unaccessible area is more important to the public than the drilling of a one-half million dollar gas well. But such conclusions are being reached daily.

Simplification

It is most difficult to adopt standard requirements for the drilling of wells which will apply to all situations. Therefore, standard sets of simplified regulations and stipulations should be adopted, but local personnel who are close to a particular situation should have the authority to waive certain requirements in specific instances. There may also be certain situations where the local official should be allowed to specify additional requirements.

4. A SIMPLE AND EXPEDITIOUS PROCEDURE SHOULD BE ESTABLISHED FOR APPEAL FROM A DECISION BY A LOWER ECHELON GOVERNMENT EMPLOYEE.

There are many cases where a company has invested significant amounts of money in a drilling program, only to have a lower echelon official representing the government make an unreasonable demand upon the operator. The company then has the choice of either acceding to the demand or else abandoning its program.

This situation arises, for example, when a representative of the Forest Service decides that it would be nice to have a wide and deluxe access road built into an area where an operator wants to drill a well. The requirements placed on the company in such a situation are to build a road which is much more elaborate than would be required for the operator's needs, but which will better serve the purposes of some governmental program.

Caught

In such a case, if the operator wants to move forward on his drilling project, he must either agree to the demands of the Forest Service representative at substantial additional cost, or else delay or abandon his project, in which case he also will suffer serious damages.

A vivid example of what happens when a governmental agency makes unreasonable demands upon an operator involved my own company. In 1971, after several years of work and the expenditure of approximately \$100,000, Skyline Oil Company had successfully assembled a block of leases covering over 10,750 acres on the Escalante Anticline in Garfield County, Utah.

Acreage

Skyline negotiated with the owners of other leases on this structure in order to put together a block of acreage containing approximately 20,000 acres. We then located a major oil company which was willing to commit to drill a 4,500-foot Cedar Mesa test well on this geological structure. Their commitment was based upon their estimate that the road building costs would be approximately \$50,000.

Costly Road

The major company then started working with the Forest Service to determine the exact route for this road and the requirements which would have to be met. After analyzing these requirements and the proposed route, the major company found that the road building cost would be approximately \$200,000. Alternative proposals were made to the Forest Service for other less expensive access routes to the drill site, but these were rejected.

As a result, the well was never drilled, and the 20,000-acre leasehold block was lost, including the large investment which had been made therein.

5. ADDITIONAL WITHDRAWAL OF PUBLIC LANDS FOR NATIONAL PARKS, MONUMENTS AND RECREATION AREAS SHOULD BE DRastically CURTAILED, SO THAT MULTIPLE USE PROGRAMS CAN BE IMPLEMENTED ON OUR REMAINING AVAILABLE PUBLIC LANDS.

The President's recent proposal to double the amount of lands contained in the national parks may have temporary political appeal, but it would be a grave mistake to make such grandiose withdrawals. When such withdrawals are made, the minerals in the lands withdrawn are locked up and are no longer available for use.

A decision must be made as to how much of the public lands we can afford to place off-limits for minerals development in light of our nation's growing needs for energy supplies. Our opinion is that further withdrawals of this kind should be kept to an absolute minimum.

6. LIMITATIONS SHOULD BE PLACED UPON FUTURE EXECUTIVE WITHDRAWALS OF PUBLIC LANDS AND PROVISIONS SHOULD BE MADE FOR A THOROUGH REVIEW OF ALL EXISTING EXECUTIVE WITHDRAWALS.

The Executive Branch should be required to obtain congressional approval for the withdrawal of tracts of public lands in excess of 5,000 acres and all present and future executive withdrawals should be limited to a period of not to exceed ten years.

Precise guidelines should be adopted to govern the withdrawal of public lands by executive order, and these should be subject to review by public hearings and congressional action. It might be well to limit withdrawals to purposes such as to facilitate national defense programs or to protect the health and safety of the public.

7. THE DISCRETION OF GOVERNMENTAL AGENCIES IN MAKING TEMPORARY WITHDRAWALS FOR PURPOSES OF PLANNING AND STUDY SHOULD BE LIMITED AND DELINEATED.

In 1973, the BLM office in Utah undertook to categorize all public lands within the state into one of the following-listed categories:

- a. Open lease areas (standard stipulations)
- b. Restricted lease areas (special stipulations)
- c. No surface occupancy areas
- d. No leasing areas

The BLM placed a total of approximately five million acres in the "no leasing" or the "no surface occupancy" categories which resulted in the effective withdrawal of these lands from mineral development. These five million acres were, for the most part, in areas of Utah which are considered to be highly prospective for exploration.

The Bureau claimed that these classification procedures were being followed in order to comply with the mandates of such laws as the National Environmental Protection Act, the Rare and Endangered Species Act, and the Antiquities Act.

This categorization procedure was conducted without the holding of adequate public hearings and with little or no consideration being given to the need for minerals development. The categorization was made in order for the lands to be studied further, instead of having the studies made prior to the categorization being made.

8. THE SCOPE OF THE APPLICATION OF LEGISLATION SUCH AS THE RARE AND ENDANGERED SPECIES ACT MUST BE DELINEATED AND LIMITED.

Acting under the directives of this act, animals, fish and birds are being continually added to the list of species which are to be protected. Now the Fish and Wildlife Service is proposing to designate approximately 1700 plants in the U. S. which they consider to be endangered. The discovery of such an endangered species in an area can result in the halt to any planned development project.

A hearing was held last month here in Salt Lake City on the detailed development plan for federal oil shale lease tracts U-a and U-b, which contain approximately 10,400 acres in Uintah County, Utah. This plan includes a proposal to build a dam on the White River to supply water for the oil shale project.

Blockers

A representative of an environmental group spoke against the plan. He did not have any knowledge that any endangered fish species were present in the river, but he urged that further studies be made in order to determine if there are any endangered fish species there. This river is extremely muddy for most of the year and a very inhospitable environment for fish. Studies to identify the species in this area already had been made. Nonetheless, further studies were urged in an effort to delay or block the oil shale development programs in the area.

More consideration is sometimes being given to the welfare of animals and plants than to the welfare of our people. A more balanced approach is needed.

9. CONSIDERATION SHOULD BE GIVEN TO THE EFFECT OF GOVERNMENTAL POLICIES UPON THE OWNERS OF PRIVATELY-OWNED AND STATE LANDS ADJOINING THE PUBLIC DOMAIN.

In many areas in the Rocky Mountains, federal lands are interspersed with privately-owned and state-owned lands. The policies adopted by the federal government have a direct effect upon the development of these adjoining lands.

For example, no leases have been issued by the federal government in recent years on so-called bituminous sands or tar sands. This has made it relatively impossible to develop bituminous sands deposits in the West.

Leases

I received a telephone call from the owner of some privately-owned lands in the P-R Springs Area of southern Uintah County, Utah, where rich bituminous sands deposits are known to exist. He inquired as to whether our company has any bituminous sands leases in the area.

I explained that a good portion of the lands there are owned by the federal government, which does not issue bituminous sands leases. I told him that the State of Utah does issue leases on their bituminous sands deposits, and that he should carefully check to see if there might be some State of Utah lands in the area on which he could get a bituminous sands lease for development along with his fee lands. I told him, however, that based on our own investigations, his program will be thwarted by the unavailability of the federal lands there.

Oil Shale

Another good example is the case of State of Utah oil shale lands. All federal lands were withdrawn from oil shale leasing in 1930 by President Hoover so that they could be subjected to "investigations, examinations and classification." This withdrawal has been in effect for the intervening 46 years, except that four tracts were leased by the federal government in 1974.

The State of Utah owns a large number of scattered tracts which are prospectively valuable for oil shale development and are under lease to private parties. However, these lands are for the most part surrounded by federal lands which are unavailable for leasing for oil shale and, hence, it is not possible to develop the state-owned lands.

CONCLUSION

The enlightened utilization of the public lands in this country has played a vital role in making the United States the leading economic and political nation in the world.

So long as the free enterprise system is allowed to function in a political atmosphere with a minimum of controls and restrictions, these lands will continue to be developed efficiently and profitably so as to enable this country to meet the tremendous challenges which lie ahead.

This objective can be achieved, while at the same time protecting the environmental quality of our lands for use by future generations.