OFFICE OF
Oil and Gas Conservation Commission
STATE OF ARIZONA
4515 NORTH 7TH AVE.
PHOENIX, ARIZONA 85013
PHONE: (602) 273-5161

AGENDA

Meeting
December 15, 1972
4515 N. 7th Avenue, Phoenix, Arizona

10:00 a.m. Call to order
1. Approval of minutes of meeting of
   November 17, 1972
2. Report of Executive Secretary
3. Report of Enforcement Section
4. Report of Geology Section
5. Old Business: [Handwritten note: LENDING.RES.]
6. New Business: [Handwritten note: CHARGE for Svcs.]
7. Adjourn

[Handwritten note: TRIG]
[Handwritten note: NEW READER INDEX]

IF YOU ARE UNABLE TO ATTEND THIS MEETING, PLEASE NOTIFY
THIS OFFICE AS SOON AS POSSIBLE.

[Handwritten note: Microfilming finished]

[Handwritten note: Max needs finished]
December 7, 1972

Memo: Commissioners
From: John Bannister

There has been some delay in the meeting to be called by the Navajo Indian Tribe concerning revamping of the leasing procedures on the Reservation. At the last meeting of this Commission, I was authorized to attend the proposed meeting in Albuquerque.

I attended the Interstate Oil Compact Commission meeting held in Houston December 3-4-5. At this meeting, the following governors were present: Preston Smith, Texas; Bruce King, New Mexico; Stanley Hathaway, Wyoming, who is the current Chairman of the Compact; and David Hall, Oklahoma. Governor Bruce King of New Mexico was elected as the next Chairman of the Compact and will serve for the year 1973. The regular meetings for 1973 will be held June 10 in Tulsa, Oklahoma and December 2 in New Orleans.

I attended the meeting of the Regulatory Practice Committee. During this meeting, the State of Tennessee reviewed its new rules and regulations, recently adopted. They gave much credit to the Interstate Oil Compact Commission's recommended rules. This was followed by a talk by Mr. Robert Harris from the Railroad Commission of Texas concerning the effects of Texas' increased pro-ration allowances on conservation practices. The general conclusion of Mr. Harris as to this was that due to the national situation the overall effect of tax 100% allowable quota has not had too great effect on Texas' regulation problems.

The Honorable John Conley addressed the Compact. His topic was the importance of energy and how it will affect practically all Federal policies within the next few years. Mr. Conley is well known as an advocate of oil and gas interests and it was his feeling that an increase in the price of crude oil and natural gas is desirable and most necessary for the health of the industry as well as the good of national security.
Memo: Commissioners
12-7-72
Page 2

Senator Henry Jackson of Washington also spoke to the Compact. He felt that the political situation in Washington will be most responsive to the oil industry, however he did warn there would be short-sighted opponents who would seek further cuts in oil tax advantages and depletion allowances. He indicated the oil industry must improve its public image and must fight the inroads that might be made in Washington. It was his feeling that the people who would attack the industry through Washington would do so through lack of knowledge of the industry and its true plight.

The meeting was not as well attended as normal, probably due to the not too interesting location, i.e., Houston, and also due to the approaching holidays.

As directed by the Commission in our meeting of November 17th, I contacted the Attorney General concerning the microfilming of our records. At that time I submitted a proposed letter agreement, incorporating the suggestions made by the Commission. The Attorney General approved the microfilming and the suggested letter agreement. The agreement was then forwarded to Petro-Well Data Libraries Ltd. for execution and I hope to have it back here for execution by the Commission prior to our next meeting. After approval of the Attorney General, the microfilm work was begun. It is anticipated that the work will be completed prior to our December meeting. The young ladies involved have been most cooperative and have not in any manner been a disruptive factor in the work of this Commission. Once the filming has been accomplished, we will have ideal protection of our records, not only in the fact that we will have copies of the film but also that Petro-Well Data Libraries Ltd. will have additional copies of our records located in several places and the likelihood of all our records being destroyed would be almost nil.

I am very pleased to note that a request has been made for a state lease for geothermal purposes. I am sure Mr. Allen will make further comment concerning this.

You will find in your folder a letter addressed to Mr. Conley from the USGS complimenting him on the county geological maps he has prepared. My feeling is that a commendation from this source is an excellent recommendation of the work being done by this Commission and by Mr. Conley and his staff.

There will be certain geological meetings in the future which I feel we should attend: 1. February 28, 1973 - Salt Lake City, Utah; 2. May 3, 1973 - Boulder, Colorado. 3. May 14, 1972 - Anaheim, California. These meetings are all of the
Memo: Commissioners
12-7-72
Page 3

American Association of Petroleum Geologists organization and concern themselves with the Rocky Mountain section of our Nation. These trips have been budgeted for and permission is requested for approval of our staff to attend.

On behalf of the staff and myself, I would like to wish each of you a Most Merry Christmas and a Very Happy and Prosperous New Year.
December 6, 1972

Memo from W. E. Allen, Director
Enforcement Section

Due to national concern over the ever increasing tax burden and the corresponding demand for tax reforms, it behooves all of us and especially those of us connected with the oil and gas industry, to be aware of any penalizing reforms aimed at one of the favorite whipping boys of some of the leading advocates of tax reforms - the petroleum industry.

The reduction in the percentage depletion rate of some 27½% to 22% in 1969 has made it significantly more difficult for the industry to generate capital that will be required if our nation is to maintain an adequate degree of self-reliance in supplying its energy requirements.

The overall tax burden of the petroleum industry is higher than that of other industries. A survey by the Petroleum Industry Research Foundation shows that in the years 1967-69, petroleum companies paid 5.9% of their gross revenues in taxes (excluding motor fuel and other excise taxes), while the average tax payment for all U. S. business corporations was only 4.7% of gross revenues.

Recent visitors to this office have included three oil men headed by Mr. Braxton Gregory from Louisiana. The purpose of their visit was to determine Arizona requirements for a permit to drill for oil and gas. The locality of their interest was in the northwest portion of Coconino County.

A letter recently received from Donald P. X. Finn, Executive Director of the Geothermal Energy Institute, was very complimentary regarding our Geothermal Rules and Regulations. Mr. Finn's letter said in part, "I commend your efforts on the Rules and Regulations governing Arizona's development of its geothermal energy resources. They are clear and concise to the extent that the developer can fully understand his legal obligations. Chanced violations because of ambiguities in the written Rules and Regulations are minimized."

The girls with Petro Well have been busily engaged in microfilming our well files for the past 10 days. The job is expected to be completed by the end of the week.
We have been involved with setting up files for geologically significant water wells in Apache, Coconino, Navajo and Navajo Counties. Because of the scarcity of information on the majority of these wells, Jack Conley and I designed a form that will contain the well information and the forms will be filed in loose leaf notebooks for easy accessibility and also to save file space.

Humble Oil has requested a new proposed total depth of 13,000' for their State 32 No. 1, located in the NE/SW Section 5-T16S-R15E, Pima County. As of this date they were drilling 6 3/4" at 11,919'.

Universal Resources Navajo Tribal 1-15, NW/SW Section 15-T14N-R29E, is drilling below 5458'. Shows have been reported in the Ismay from 4830' to 35' and Desert Creek 4941'-55'. A drill stem test from 5282' to 5306' flowed gas at the rate of 76 MCFPD, stabilized rate. This well is running slightly higher than Cities Service gas discovery in Section 21-T40N-R29E.

P & H Development, Inc. has resumed drilling operations at their P & H Federal No. 1 test in the NW/SE Section 30-T25S-R16W, Maricopa County. A string of 7" casing has been run in this hole to isolate a string of drilling tools that the operators were unable to recover.

Eastern Petroleum has shut-down their operations in the Navajo Springs area until after the first of the year.

Astro-Tox after coring their Astro-Tex Federal No. 1 in the NW/NE Section 31-T15N-R17E, Gila County to 2995' have a core barrel stuck and were attempting to jar it free at last report.

Recent communication with Curtis Little indicates that he plans another test in the general area of the Dineh-Bi-Keyah Field. You will recall Curtis has been active over the past several years in the general area.

Reed Nix, a geologist from Globe, has recently made application for a geothermal resources lease on 940 acres of State land near Indian Hot Springs in Graham County. I have been informed that the State Land Department anticipates no difficulty in approving this application.

Geothermal Kinetics Systems Corp. has also been making inquiries to the Land Department regarding the leasing of State land for geothermal exploration.
December 6, 1972

ACTIVITY REPORT

J. N. Conley
Director, Geology Section

PUBLICATIONS

The Yuma County Well Location Map and Records Tabulation has been printed and a partial distribution made. The Subsurface Temperature Map of Arizona (preliminary) was also completed recently. A limited distribution only is planned for this map, which will be placed on "open-file", and may be copied at the expense of the interested person. The Pinal County Well Location Map and Records Tabulation will be ready for printing next week. The pipeline map of the State is now being drafted.

EXPLORATION ITEMS

G.S.I. (Geophysical Services, Inc.) is making a "speculative" Dino-Seis seismograph profile from Tucson southeastward from Tucson thence on east to New Mexico. A gravity meter survey may also be made along the route of the seismograph profile. The results, of course, will not be available to this Commission, but if they are good G.S.I. may be able to interest major companies in making extensive geophysical surveys in the south-central and southeast portions of the State.

****

Humble Oil and Refining Company's third stratigraphic test hole, located in 5-16S-15E, at last report was drilling below 11,800 feet. The projected total depth has now been revised to 13,000 feet. The original projection was 8,000 feet. This emphasizes the difficulty of determining the thicknesses of sediments in the valleys and local basins in the Basin and Range province seismically without any velocity control. Published sedimentary rock thickness estimates based on gravity and magnetic data will require extensive revisions.
GEOPHYSICAL INVESTIGATIVE PROJECTS

Dr. John Sumner reports that the investigation in the general Holbrook area will be completed soon. A report will be submitted by the end of this year. Dr. H. Wesley Peirce has generously helped the Geophysical Laboratory with the geological phases of the report.

The other investigations are progressing satisfactorily, although absence of traversable roads and trails in one area in Cochise County is presenting problems in acquiring needed gravity control.

RECORDS FILMING PROJECT

Petro-Well Data Libraries, Ltd. will complete microfilming our records this week. Data sheets of selected water wells throughout the State have been prepared and have been microfilmed along with the logs and records of holes drilled for oil, gas, helium and other purposes.

GENERAL

Visitors to our office this past month included three Phillips Petroleum Company men from the home office in Bartlesville, Oklahoma. They are members of an exploration staff of scientists that assist division and district offices with exploration problems. In this instance they are helping the geothermal staff in San Diego, California. They seemed to be particularly interested in getting the geological and geothermal data furnished by water and other holes drilled on the Papago and San Carlos Indian reservations.

** * * * * *

Mobil is apparently still conducting investigations in the southeast part of Arizona. We recently received a request for copies of some electric logs.

** * * * * *

The NASA photography of Arizona has not been completed due to unusual weather in the State this year. Copies of what was taken in May and August, however, are available for viewing and use at the Arizona Resources Information System office, the State Land Department, and in the Federal Building office of Herb Schumann, Phoenix Area Coordinator, Arizona Regional Ecological Test Site. We eventually expect to obtain and use some of this photography.

** * * * * **
Trial on the Forest Service land "freeze" obtained by the Sierra Club through a temporary restraining order has been scheduled in U. S. District Court in San Francisco December 11. The decision could affect exploration for oil and gas and geothermal resources in several large areas under the jurisdiction of the Forest Service in Arizona.

J. N. C.

JNC:st
The Commission is releasing in open file the following map and records tabulation:


Data assembled from electrical, radioactivity and temperature logs includes, when available: temperature in degrees Fahrenheit, depth and sea level datum at which temperature was recorded, geologic age of rock opposite thermometer, time in hours after circulation stopped and temperature gradient. The locations and temperatures of hot springs are also shown on the map. The data is presented graphically for all counties in the State excepting Apache and Navajo, which are in tabulated form.

Copies are available for inspection in the offices of The Arizona Oil and Gas Conservation Commission.

Material from which copy can be made at private expense ($1.75 postpaid) is available in the offices of Hook, Rockwell and Zuendel, Attention: Chief Technician, Cartography Department, 3511 East Indian School Road, Phoenix, Arizona 85018, Telephone (602) 954-3108.
Private firms search state

Geothermal energy sought

By SAM NEGRI
Tucson Daily Citizen
12-4-72

Since 1968 Jerome G. Wright, a University of Arizona geologist, has made periodic visits to Indian Hot Springs to take the earth's temperature.

Wright is one of several scientists across the nation with a specialized interest in geothermal energy—the science dealing with the massive reservoir of heat under the earth's crust.

A few years ago Wright went back to Indian Hot Springs, 19 miles southwest of Safford, and found another geologist there with his own thermometer. A chain broke the connection to the spring that Wright wanted to test. When he arrived, he was approached by someone he didn't know who told Wright to take his thermometers and disappear.

"There was a consultant there for one of the major oil companies," Wright said, "and he was checking for sources of geothermal energy."

"Work is quiet"

According to Wright, several large petroleum companies have consultants exploring the geothermal potential in Arizona at this time.

They tend to work very quietly," he notes. One major company, he says, now has a consultant with at least two dozen geologists exploring geothermal in this state. He would not identify the company.

Geothermal is earth heat accumulated over millions of years from volcanic action. Scientists, the U.S. government and a number of corporate giants have maintained a quiet, sometimes secret, and persistent interest in geothermal exploration in recent years. Some indication of the government's interest can be seen in the fact that the geothermal research program at the U.S. Geological Survey in Menlo Park, Calif., was given $200,000 for its research last year and three times that amount this year.

Some people liken the quest for geothermal resources to the adventures of the petroleum prospectors or their predecessors, the gold miners. To the corporations, geothermal means money. It also means a relatively clean source of energy that can be used to turn turbines and generate electricity at considerably less expense than fossil fuels.

Pollution free

It is nearly "pollution free," industry, therefore, sees it as both an economical possibility as well as a way to quiet a society that is becoming increasingly upset about the depletion and destruction of the nation's natural resources.

In recent years there has been considerable talk about the potential for geothermal exploration in Arizona. The comments have come basically from two different groups. One group consists of scientists at universities and those connected with the U.S. Geological Survey (USGS). The second group is referred to by the first group as "promoters."

What both groups know is that there is a tremendous reservoir of heat under the earth's crust; that this heat is wet (as steam) in some places, and dry in others, and that all of these areas are in the western half of the nation. Both groups also know that it is difficult to tell from surface tests whether there is a true source of geothermal energy down below. The only way to know for certain, according to Wright and other geologists, is to bore a hole to the earth and drive a drill nearly a mile into the ground.

In Arizona — the promoters are generally more enthusiastic than the scientists — Wright, who does not consider himself a promoter, also is optimistic. He spent some time in the last
Taking earth's temperature


text in Arizona is not as good as it is in the east. The climate in the west is more dry and dusty, which is not ideal for growing plants. However, the state is known for its beautiful landscapes and outdoor activities.

Whether geothermal energy will eventually become an alternative to fossil fuels is a matter of debate. Critics argue that it is not a sustainable or eco-friendly source of energy, while proponents believe it can help reduce carbon emissions and provide reliable energy.

For now, Arizona is in the process of developing its geothermal energy potential. The state is home to several geothermal energy projects, including the Mohave Generating Station, one of the largest geothermal plants in the world.

In conclusion, geothermal energy is a promising source of energy in Arizona. However, further research and development are needed to fully harness its potential and make it a viable alternative to fossil fuels.
OIL AND GAS CONSERVATION COMMISSION
4515 N. 7th Avenue
Phoenix, Arizona 85013

Minutes of Meeting
November 17, 1972

Present:
Mr. Ralph W. Bilby, Chairman
Mr. W. Roger Hafford, Vice Chairman
Mr. Robert A. Bledsoe, Member
Mr. F. Keith Benton, Member

The regular Commission meeting for the month of November, 1972
was called to order by Chairman Ralph Bilby at 10:00 a.m.

Minutes of the meeting of July 21, 1972 were approved as written.

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

Approval was given for two out of state trips by the Executive
Secretary; one to Albuquerque, New Mexico the latter part of
November to attend a meeting concerning revamping of Navajo
Indian leasing procedures and the other to attend a meeting of
the Interstate Oil Compact Commission December 3 to 5, 1972.

Executive Secretary introduced Mr. Lester M. Duckett, President
of Petro-Well Data Libraries, Ltd., Denver, Colorado. Mr.
Duckett advised that his company has compiled a microfilm li-
brary of pertinent records in the files of regulatory agencies
from Canada down through southern Colorado and Utah. It is now
their desire to film records in Arizona, New Mexico and West
Texas. Large oil companies subscribe to the services offered
by Petro-Well Data Libraries, Ltd.; smaller companies and indi-
viduals may purchase whatever information they desire.

Mr. Duckett proposed that in exchange for the Commission's per-
mission to film the records in its files (which are public
information), Petro-Well Data Libraries, Ltd. will give the
Commission a complete set of the microfilm. All confidential
files would be withheld by the Commission until such time as
they become public information.

While special 3 mm machinery is required to utilize the micro-
film, several states are using their sets for security, only.
The State of Montana now has three sets of machinery and charges
25¢ for each print, which helps to pay for the equipment and
supplies.

Executive Secretary was instructed to contact the Attorney General
Minutes of Meeting
November 17, 1972
Page 2

concerning microfilm of records and, should the Attorney General approve allow the microfilming to proceed at once. Mr. Duckett indicated that Petro-Well Data Libraries, Ltd. would contact the Corporation Commission concerning what was necessary for them to qualify to do business within the State of Arizona.

Meeting adjourned at 11:30 a.m.

APPROVED

Ralph W. Bilby, Chairman

* (Following phrase added 12-15-72:
    . . . should the Attorney General approve
    the letter agreement, allow the micro-
    filming to proceed at once. . . . )
### MONTHLY FINANCIAL REPORT

#### RECEIPTS

<table>
<thead>
<tr>
<th>CLASSIFICATION</th>
<th>APPROPRIATED RECEIPTS</th>
<th>TOTAL RECEIPTS YEAR TO DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permits to Drill</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### EXPENDITURES

<table>
<thead>
<tr>
<th>FUND TITLES</th>
<th>TOTAL AMOUNT AVAILABLE YEAR TO DATE</th>
<th>CLAIMS PAID YEAR TO DATE</th>
<th>OUTSTANDING ENCUMBRANCES</th>
<th>UNENCUMBERED BALANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Services</td>
<td>12,400.00</td>
<td>12,400.00</td>
<td>0.00</td>
<td>2,160.30</td>
</tr>
<tr>
<td>Emp. Related Exp.</td>
<td>3,513.00</td>
<td>3,058.13</td>
<td>0.00</td>
<td>3,157.87</td>
</tr>
<tr>
<td>Professional Services</td>
<td>1,150.00</td>
<td>1,661.00</td>
<td>1,380.01</td>
<td>1,335.30</td>
</tr>
<tr>
<td>Travel - State</td>
<td>4,000.00</td>
<td>2,785.15</td>
<td>303.86</td>
<td>2,765.79</td>
</tr>
<tr>
<td>Travel - Out of State</td>
<td>2,451.11</td>
<td>965.25</td>
<td>893.24</td>
<td>893.24</td>
</tr>
<tr>
<td>Other Operating Exp.</td>
<td>19,600.00</td>
<td>17,291.11</td>
<td>965.25</td>
<td>965.25</td>
</tr>
<tr>
<td>Capital Outlay-Equip.</td>
<td>4,310.00</td>
<td>0.00</td>
<td>3,429.19</td>
<td>885.46</td>
</tr>
</tbody>
</table>

#### TOTALS

<p>| TOTALS                     | 84,477.00                         | 61,660.55                | 6,101.80                 | 17,318.65            |</p>
<table>
<thead>
<tr>
<th>CLAIMS PAID YEAR TO DATE</th>
<th>OBJECT CODE NO.</th>
<th>DISTRIBUTION OF EXPENDITURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>7,200.00</td>
<td>7111 1</td>
<td>Per Diem: Commission Members</td>
</tr>
<tr>
<td>7,532.20</td>
<td>7112 2</td>
<td>Salaries: Employees</td>
</tr>
<tr>
<td>1,311.70</td>
<td>7151 3</td>
<td>Industrial Insurance</td>
</tr>
<tr>
<td>947.28</td>
<td>7153 4</td>
<td>F.I.C.A.</td>
</tr>
<tr>
<td>1,557.20</td>
<td>7155 5</td>
<td>Retirement</td>
</tr>
<tr>
<td>7136 6</td>
<td>Health Insurance</td>
<td></td>
</tr>
<tr>
<td>7159 7</td>
<td>Personnel Commission</td>
<td></td>
</tr>
<tr>
<td>7215 9</td>
<td>Professional Services: Engineer</td>
<td></td>
</tr>
<tr>
<td>7219 10</td>
<td>Professional Services: Other</td>
<td></td>
</tr>
<tr>
<td>7221 12</td>
<td>Travel - State: Mileage</td>
<td></td>
</tr>
<tr>
<td>637.20</td>
<td>7222 13</td>
<td>Subsistence</td>
</tr>
<tr>
<td>7223 14</td>
<td>Public Transp.</td>
<td></td>
</tr>
<tr>
<td>604.86</td>
<td>7224 15</td>
<td>Vehicle Expense</td>
</tr>
<tr>
<td>46.80</td>
<td>7225 16</td>
<td>Reg. Fees; Parking; etc.</td>
</tr>
<tr>
<td>259.68</td>
<td>7232 17</td>
<td>Travel - Out of State: Subsistence</td>
</tr>
<tr>
<td>7233 18</td>
<td>Public Transp.</td>
<td></td>
</tr>
<tr>
<td>7234 19</td>
<td>Airport Parking</td>
<td></td>
</tr>
<tr>
<td>76.00</td>
<td>7235 20</td>
<td>Reg. Fees; Telephone; etc.</td>
</tr>
<tr>
<td>12,946.82</td>
<td>7251 21</td>
<td>Occupancy: Office Rent</td>
</tr>
<tr>
<td>7261 22</td>
<td>Warehouse Rent</td>
<td></td>
</tr>
<tr>
<td>7263 23</td>
<td>Warehouse Mtn. &amp; Repair</td>
<td></td>
</tr>
<tr>
<td>236.00</td>
<td>7272 24</td>
<td>Mtn. &amp; Repairs: Furn. &amp; Equip.</td>
</tr>
<tr>
<td>7280 25</td>
<td>Office Supplies</td>
<td></td>
</tr>
<tr>
<td>7280 27</td>
<td>Field Supplies: Film; Am.Strat.; P.I., etc.</td>
<td></td>
</tr>
<tr>
<td>7300 28</td>
<td>Printing: Reports; Large Maps; etc.</td>
<td></td>
</tr>
<tr>
<td>7331 29</td>
<td>Legal Advertisement</td>
<td></td>
</tr>
<tr>
<td>7332 30</td>
<td>Court Reporter, Notary Commission, etc.</td>
<td></td>
</tr>
<tr>
<td>7334 31</td>
<td>Postage</td>
<td></td>
</tr>
<tr>
<td>7335 32</td>
<td>Telephone</td>
<td></td>
</tr>
<tr>
<td>7337 33</td>
<td>Oragage; Express; etc.</td>
<td></td>
</tr>
<tr>
<td>7349 34</td>
<td>Rental, Misc.</td>
<td></td>
</tr>
<tr>
<td>7360 35</td>
<td>Dues &amp; Subscriptions</td>
<td></td>
</tr>
<tr>
<td>7418.00</td>
<td>7913 42</td>
<td>Revolving Fund</td>
</tr>
</tbody>
</table>