



OIL & GAS CONSERVATION COMMISSION  
MEETING: OCTOBER 23, 1992  
STEVE RAHIT- PROGRAM ADMINISTRATOR

1



Fife Symington  
Governor

State of Arizona  
**Arizona Geological Survey**

845 North Park Avenue, #100  
Tucson, Arizona 85719  
(602) 882-4795



Larry D. Fellows  
Director and State Geologist

**NOTICE OF COMBINED PUBLIC MEETING AND POSSIBLE EXECUTIVE SESSION**

**OIL AND GAS CONSERVATION COMMISSION**

Pursuant to A.R.S. § 38-431.02, notice is hereby given to the members of the Oil and Gas Conservation Commission and to the general public that the Oil and Gas Conservation Commission will hold a meeting open to the public on October 23, 1992, at 10:00 a.m. in Room 500 of the State Capitol located at 1700 West Washington, Phoenix, Arizona 85007. As indicated in the agenda, the Oil and Gas Conservation Commission may vote to go into executive session which will not be open to the public to discuss certain matters.

The agenda for the meeting is as follows:

1. Call to Order.
2. Approval of Minutes of Meeting of July 6, 1992.
3. Discussion of SunCor-Melange #32-23 well.
4. Statement of Director and State Geologist.
5. Report of Oil & Gas Program Administrator.
6. Consideration to initiate rule-making proceedings.
7. Oral hearing, close of record, and discussion of rules in September 1992 A.A.R.
8. Adopt rules published in September 1992 A.A.R. subject to certification.
9. Assistant Attorney General report on Contender and Cam-Roy wells.
10. Call to the public.
11. Announcements.
12. Adjournment.

The Oil and Gas Conservation Commission may vote to go into Executive Session, pursuant to A.R.S. § 38-431.03(A)(3), which will not be open to the public to consult with its attorney and receive legal advice with respect to any regular agenda item listed on this agenda.

A copy of the agenda background material provided to Commission members (with the exception of material relating to possible executive sessions) is available for public inspection at the Oil and Gas Program Administrator's office, 845 North Park Avenue, Suite 100, Tucson, Arizona 85719.

The public will be afforded an opportunity to comment on any item on the agenda; however, at the beginning of the meeting, the Commission may vote to set up a time limit on individual comments.

Dated this 9th day of October 1992.

OIL AND GAS CONSERVATION COMMISSION

*Steven L. Rauzi*

Steven L. Rauzi  
Oil and Gas Program Administrator

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



Fife Symington  
Governor

State of Arizona  
**Arizona Geological Survey**

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OIL AND GAS CONSERVATION COMMISSION

*Steven L. Rauzi*

Steven L. Rauzi  
Oil and Gas Program Administrator

# Office of the Governor of the State of Arizona

To all to whom these Presents shall come Greeting:

I, Fife Symington, Governor of the State of Arizona in the name of  
and by the authority of said State, do Commission and Authorize

**ZED VEALE**

to be a member of the

**OIL & GAS COMMISSION**

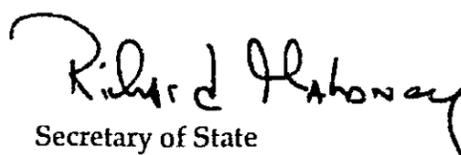
and to discharge, according to law, the duties of said office, and  
to hold and enjoy the same, together with the powers, privileges and  
emoluments thereunto appertaining, until the legal termination thereof,

IN WITNESS WHEREOF I have hereunto set my  
hand and caused to be affixed the Great Seal of  
Arizona done at the Capitol in the City of  
Phoenix, this first day of June in the  
year of our Lord, One Thousand Nine Hundred  
and Ninety Two.



GOVERNOR

Attest:



Secretary of State



# NOTICE OF APPOINTMENT

TO THE SECRETARY OF STATE

This is to notify you that under the provisions of A.R.S. 27-514  
(A.R.S. reference, Exec. Order, Public Law, other)

I have, this 3rd day of June, 1992, appointed Zed Veale  
1490 E. Appalachian, Flagstaff, AZ 86004 (name)  
(mailing address) (city) (zip)

to be a member of the OIL & GAS COMMISSION at a salary as provided by law.

This appointment is to begin January 20, 1992

and expire January 20, 1997

F. Roy Bennett  
Appointing Official Title

Mark the appropriate boxes:

- New Board, Commission, Council or Agency  Reappointment  
 New appointment succeeding Archie Roy Bennett  
 Date of Senate Confirmation \_\_\_\_\_  Confirmation not required

## LOYALTY OATH OF OFFICE

(Please read A.R.S. §38-231 on reverse side of this form.)

I, Zed Veale do solemnly swear (or affirm) that I will support the Constitution of the United States and the Constitution and laws of the State of Arizona; that I will bear true faith and allegiance to the same and defend them against all enemies, foreign and domestic, and that I will faithfully and impartially discharge the duties of my office according to the best of my ability, so help me God (or so I do affirm).

Zed Veale  
Signature of officer or employee

SUBSCRIBED AND SWORN to before me this 11 day of June, 1992

My Commission Expires Oct. 21, 1993

Commission Expires

Nancy Specker  
Notary Public

Filed in the Office of the Secretary of State this 1st day of July, 1992  
at 11:00 A. M.

Richard Hahnway  
Secretary of State

Sec. 38-231, Arizona Revised Statutes:

Sec. 38-231. Officers and employees required to take loyalty oath; form; classification

A. In order to insure the statewide application of this section on a uniform basis, each board, commission, agency, and independent officer of the state, and of any of its political subdivisions, and of any county, city, town, municipal corporation, school district, and public educational institution, shall immediately upon the effective date of this act completely reproduce section 38-231 as set forth herein, to the end that the form of written oath or affirmation required herein shall contain all of the provisions of said section for use by all officers and employees of all boards, commissions, agencies and independent offices.

B. For the purposes of this section, the term officer or employee means any person elected, appointed, or employed, either on a part-time or full-time basis, by the state, or any of its political subdivisions or any county, city, town, municipal corporation, school district, public educational institution, or any board, commission or agency of any of the foregoing.

C. Any officer or employee elected, appointed, or employed prior to the effective date of this act<sup>1</sup> shall not later than ninety days after the effective date of this act take and subscribe the form of oath or affirmation set forth in this section.

D. Any officer or employee within the meaning of this section who fails to take and subscribe the oath or affirmation provided by this section within the time limits prescribed by this section shall not be entitled to any compensation unless and until such officer or employee does so take and subscribe to the form of oath or affirmation set forth in this section.

E. Any officer or employee as defined in this section having taken the form of oath or affirmation prescribed by this section, and knowingly at the time of subscribing the oath or affirmation, or at any time thereafter during his term of office or employment, does commit or aid in the commission of any act to overthrow by force or violence the government of this state or of any of its political subdivisions, or advocates the overthrow by force or violence of the government of this state or of any of its political subdivisions, or during such term of office or employment knowingly becomes or remains a member of the communist party of the United States or its successors or any of its subordinate organizations or any other organization having for one of its purposes the overthrow by force or violence of the government of the state of Arizona or any of its political subdivisions, and said officer or employee as defined in this section prior to becoming or remaining a member of such organization or organizations had knowledge of said unlawful purpose of said organization or organizations, shall be guilty of a class 4 felony and, upon conviction under this section, the officer or employee shall be deemed discharged from said office or employment and shall not be entitled to any additional compensation or any other emoluments or benefits which may have been incident or appurtenant to said office or employment.

F. Any of the persons referred to in article XVIII, section 10 of the Arizona Constitution as amended, related to the employment of aliens, shall be exempted from any compliance with the provisions of this section.

G. In addition to any other form of oath or affirmation specifically provided by law for an officer or employee, before any officer or employee enters upon the duties of his office or employment, he shall take and subscribe the following oath or affirmation: (See reverse).

<sup>1</sup>March 30, 1961.

OIL AND GAS CONSERVATION COMMISSION  
845 North Park Avenue, #100  
Tucson, Arizona 85719

Minutes of Meeting  
July 6, 1992

Present:

Mr. J. E. Warne Jr., Vice-Chairman  
Mrs. Barbara J. Murphy, Member  
Dr. J. Dale Nations, Member  
Mr. Zed Veale, Member  
Dr. Larry Fellows, State Geologist  
Mr. Steven L. Rauzi, Oil and Gas Program Administrator

The regular Commission Meeting of July 6, 1992, was called to order by Dr. J. Dale Nations at 10:10 a.m. in Room 500, State Capitol Building, Phoenix, Arizona.

APPROVAL OF MINUTES OF MEETING OF MARCH 6, 1992

Mrs. Murphy moved, seconded by Mr. Veale:

THAT THE MINUTES OF THE MEETING OF MARCH 6, 1992, BE  
ACCEPTED AS PRESENTED.

Motion carried unanimously.

STATEMENT OF DIRECTOR AND STATE GEOLOGIST

Dr. Fellows reported that the Arizona Geological Survey had experienced a mid-year budget cut of 2%, which has had no impact on the oil and gas program. The Survey's budget for fiscal year 1993 is \$619,800, which is not expected to impact the oil and gas program, and he indicated that he will begin work on the fiscal year 1994 budget in August and that he expects it to be another tight budget year. He reported that Senate Bill 1055, which continues the Survey for another ten years, was passed and signed by the Governor.

REPORT OF THE OIL AND GAS PROGRAM ADMINISTRATOR

The activity report of Mr. Rauzi was sent to the Commissioners and has been made a part of these minutes. Mr. Rauzi reported that TranAm Energy plugged and abandoned their well at Red Lake on June 17, that the semi-annual inspection at the Ferrellgas LPG facility indicated that their storage wells were in good condition, that Arrowhead Oil and Gas applied for a permit to drill a well in sec. 23, T. 2 N., R. 1 W., and that he had field checked the two geothermal wells near Higley. He obtained a cost estimate of \$104,000 to plug and abandon the two geothermal wells. The cost is high because a silica-blended cement is required to prevent its degradation at the higher temperatures present in these deep wells and because the nearest supply point for the necessary services and materials is Farmington, New Mexico. He added that the United Gas Search permit was extended to August 16, 1992, which coincides with the expiration of their Federal permit.

CONSIDERATION TO INITIATE RULE MAKING PROCEEDINGS

The proposed amendments to rules R12-7-102 through R12-7-118 were sent to the Commissioners and have been made a part of these minutes. Mr. Rauzi discussed the informative summary, the proposed changes to individual rules, and the format of the rule package.

Dr. Nations moved, seconded by Mrs. Murphy:

THAT THE OIL AND GAS CONSERVATION COMMISSION APPROVE THE RULES AS PRESENTED AND INITIATE THE RULE MAKING PROCEEDINGS.

Motion carried unanimously.

Mr. Warne signed Form R101, *Notice of Proposed Rule Making* and Mr. Rauzi indicated that he would forward the rules to the Governor's Regulatory Review Council for approval.

ORAL HEARING, CLOSE OF RECORD, AND DISCUSSION OF RULES PUBLISHED IN THE MAY 1992 ISSUE OF THE ARIZONA ADMINISTRATIVE REGISTER (A.A.R.)

Mr. Rauzi reported that no written comments were received on this set of rules, which were filed with the Secretary of State on April 16, 1992. Dr. Nations opened the floor for comments and discussion on these rules. No comments were received.

Mr. Warne moved, seconded by Mrs. Murphy:

THAT THE OIL AND GAS CONSERVATION COMMISSION CLOSE THE RECORD THIS JULY 6, 1992, ON THE RULES PUBLISHED IN THE MAY 1992 ISSUE OF THE ARIZONA ADMINISTRATIVE REGISTER

Motion carried unanimously.

The concise explanatory statement on this set of rules was sent to the Commissioners and has been made a part of these minutes. Mr. Rauzi explained that A.R.S. § 41-1027 requires a concise explanatory statement to be issued by the Commission at the time they adopt a rule.

Mr. Warne moved, seconded by Mrs. Murphy:

THAT THE OIL AND GAS CONSERVATION COMMISSION ADOPT THE CONCISE EXPLANATORY STATEMENT AS PRESENTED

Motion carried unanimously.

ADOPT THE RULES PUBLISHED IN THE MAY 1992 ISSUE OF THE A.A.R.

Mrs. Murphy moved, seconded by Mr. Veale:

THAT THE OIL AND GAS CONSERVATION COMMISSION ADOPT THE

RULES AS PUBLISHED IN THE MAY 1992 ARIZONA ADMINISTRATIVE REGISTER SUBJECT TO CERTIFICATION BY THE ATTORNEY GENERAL

Motion carried unanimously.

Mr. Warne signed Form R102, *Certification of Rules and Order of Adoption* and Mr. Rauzi indicated that he would forward the rules to the Attorney General for certification.

CONTENDER OIL WELL, SEC. 5, T. 10 S., R. 23 W., YUMA COUNTY

Mr. Rauzi reported that Ms. Kate Mead had resigned from the Attorney General's office and that Ms. Karen Clark would be taking over her cases. Ms. Clark reported that to avoid coming on board while a hearing is going forward, she will be filing the complaint prepared by Ms. Mead. She noted that the Corporation Commission had revoked the Corporate status of Contender Oil and indicated that they would still go forward with the complaint except that the name of the person to be served will need to be changed. In response to an inquiry by Dr. Nations, Ms. Clark indicated that this would be completed by their next meeting.

GEOHERMAL WELLS, SEC. 1, T. 2 S., R. 6 E., MARICOPA COUNTY

From her transitional briefing on these cases, it was Ms. Clark's understanding that the bonds on these wells were still a major issue and that another issue was whether an environmental lien could be placed on the property. Dr. Nations replied that the bonds on these wells are not the issue, that the Commission's concern is when will they get some legal action against these people. He questioned the need for an "environmental lien" and indicated that in addition to the environmental concerns, the failure to plug and abandon these wells is in violation of State law, namely the statutes on oil, gas, and geothermal development, which is why the Commission has asked the Attorney General's Office to file a lien on the property. He reemphasized to Ms. Clark that it was the Commission's intention, by filing a lien on this property, to tie up any future exchanges, sales, or development of this land until this problem is resolved.

Mr. Warne moved, seconded by Mr. Veale:

THAT THE OIL AND GAS PROGRAM ADMINISTRATOR DRAFT A LETTER TO THE ATTORNEY GENERAL, FOR CONSIDERATION AND APPROVAL BY THE COMMISSION AT THE NEXT MEETING, OUTLINING THE HISTORY OF THIS PROBLEM AND ASKING THEM TO TAKE DEFINITE ACTION AS SOON AS POSSIBLE

Motion carried unanimously.

CALL TO THE PUBLIC

None.

ANNOUNCEMENTS

The next meeting was scheduled for October 23, 1992, in room 500 of the State Capitol Building.

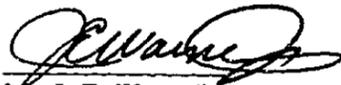
ADJOURNMENT

Mrs. Murphy moved, seconded by Mr. Warne:

THAT THE MEETING BE ADJOURNED.

Motion carried unanimously. Time of adjournment was 11:35 a.m.

APPROVED



Mr. J. E. Warne Jr.  
Vice-Chairman

GUESTS IN ATTENDANCE:

Karen Clark  
Tyrone Mitchell  
Leslie Schwalbe

Attorney General's Office  
Attorney General's Office  
OSPB



Fife Symington  
Governor

State of Arizona  
**Arizona Geological Survey**

845 North Park Avenue, #100  
Tucson, Arizona 85719  
(602) 882-4795



Larry D. Fellows  
Director and State Geologist

TO: Oil and Gas Conservation Commissioners  
FROM: Steven L. Rauzi, <sup>SCR</sup> Oil and Gas Program Administrator  
DATE: October 9, 1992  
SUBJECT: Activity Report

Arrowhead Oil and Gas, Ltd. spudded their SunCor-Melange #32-23 well on September 1, 1992, and completed the well as a dry hole at a total depth of 6650 feet on September 27, 1992. Litchfield Park and Avondale have water wells in section 23 and the officials from these cities expressed concern that Arrowhead's well would contaminate their source of groundwater. I described the casing program to officials from these cities and pointed out that it was sufficiently deep to protect all known and reasonably estimated aquifers in this area. Dr. Fellows received a letter from the City of Avondale which is enclosed along with his response in which he invited Mr. Bates to your October 23 meeting (agenda item 3).

Agenda item 6 is the consideration to initiate rule-making proceedings for the third set of rule revisions to be submitted to the Governor's Regulatory Review Council (GRRC). This set of rules is enclosed for your consideration. As with the first and second sets, if the proposed revisions meet with your approval, you will need to initiate the rule-making proceeding by motion, after which the chair signs Form 101, *Notice of Proposed Rule Making*.

The first set of rule revisions were sent to the Attorney General for certification. I should know if they were certified by October 20, 1992. GRRC approved the second set of rules on August 4, 1992, and they were published in the September 1992 issue of the *Arizona Administrative Register*. The last day for written comments is October 2, 1992. Mr. Bates' letter calling for a bond amount that is 125 percent of engineering and construction cost was the only specific written comment on the rules. Our bond amount is consistent with surrounding states and is enough to plug a currently drilling well should the need arise. Oral proceedings, close of record, and the adoption of the concise explanatory statement on these rule revisions is agenda item 7. Adoption subject to certification by the Attorney General is agenda item 8.

Agenda item 9 is for a report from our Assistant Attorney General on the Contender Oil well near Yuma and the two geothermal wells near Higley. As you requested in your meeting of July 6, 1992, I prepared a letter to the Attorney General for your signature should legal action not be initiated by the time of your October 23 meeting. This letter formally requests his assistance and outlines the history of the matter.



SUNCOR  
DEVELOPMENT  
COMPANY

September 30, 1992

Bill Bates, Public Works Director  
City of Avondale  
525 N. Central Avenue  
Avondale, AZ 85323

RE: SUNCOR -- MELANGE WELL NO. 32-23

Dear Bill:

We have received your letter dated September 21, 1992. The purpose of this letter is to clarify SunCor's involvement in the above-referenced project. As you are probably aware, Arrowhead Resources ceased drilling on September 24. From our perspective, the drilling was conducted with the highest degree of professional responsibility and the exploration was completed without incident.

It is important to note that several years of preparation and planning took place prior to commencing drilling operations on our property. As the largest land owner and holder of the service rights (CC&N) for this area, SunCor spent an inordinate amount of time and effort to ensure that both the surface and subsurface environment was protected. We decided very early on in the process (which started in 1986) that we would not agree to lease land if our concerns could not be alleviated.

The parties involved in this well -- Melange, Arrowhead Resources, Kachina Oil & Gas, and Caddis Resources; brought many years of professional and practical experience to the table. They not only exceeded our expectations, but also went to great expense to take safety precautions not otherwise required by law or contract. Arrowhead and its related companies spent in excess of \$500,000 on this project to ensure that the right people were in charge and the best equipment was in place to do the job correctly and safely. This project could have been drilled at half the expense if Arrowhead did not concern themselves with environmental safety issues. In addition, Arrowhead obtained costly insurance policies with limitations in the millions of dollars.

For the record, Warren Downs manages our farm operations and is not an authority on geotechnical issues. Consequently, your reference to his statement was apparently misquoted and does not support your argument. Also for the record, because of the temporary nature of the drilling operations it was not necessary to obtain permits from Maricopa County and all requirements of the County were satisfied.

Bill Bates

-2-

September 30, 1992

Finally, your attack on the Arizona Geological Survey Department is unfounded and misleading. Mr. Rauzi at AGS verified that all necessary precautions were in place before drilling commenced and continued to follow up on site during operations. It is our understanding that the AGS did an admirable job in protecting State and local interest. Better communications may be in order, but additional legislation would be unnecessary.

Sincerely,

*Steve Gervais*

Steven Gervais  
Vice President  
General Counsel

SG/jeh

cc: Raymond W. Bedoya, Mayor, City of Avondale  
Perry Hubbard, Mayor, City of Litchfield Park

bc: Geoff Appleyard  
Warren Downs  
John Ogden  
Bob Denny, Arizona State Senate  
Greg Eldridge  
Larry Fellows/Steven Rauzi  
Harold Laycraft, Arrowhead Resources  
Rita Pearson, Office of the Governor  
Gary Stewart, Melange



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Larry D. Fellows  
Director and State Geologist

September 30, 1992

Mr. Bill Bates  
Public Works Director  
City of Avondale  
525 North Central Avenue  
Avondale, AZ 85323

Dear Mr. Bates:

I received your letter of September 21, in which you informed me about your objections to the drilling of the SunCor-Melange No. 32-23 oil well and expressed displeasure with the regulatory procedures followed. The Arizona Geological Survey administers and enforces the policies and procedures established by the Arizona Oil and Gas Conservation Commission to regulate the drilling and production of oil, gas, geothermal, and helium resources. The Commission consists of five members appointed by the Governor. I encourage you to attend the next meeting of the Commission to express your concerns. The meeting will be held October 23, 1992, at 10:00 a.m. in room 500 in the State Capitol, West Wing, 1700 West Washington, Phoenix.

Current rules and regulations, which have been in effect for many years, do not require that a public hearing be held before a permit to drill for oil, gas, geothermal, or helium is issued. Drilling an exploratory well is a temporary event that, with current technology and expertise, is accomplished with minimal impact and, for most wells drilled in Arizona, is completed within a month. Likewise, there is no requirement for a public hearing prior to the drilling of water wells.

One of the primary reasons for regulating the drilling and production of oil, gas, geothermal, and helium resources is to protect ground water. When we receive an application for a permit to drill, we routinely check with the Arizona Department of Water Resources to determine the locations and depths of water wells present within a one-half-mile radius of the proposed drilling location. This information is necessary to determine whether the amount of surface casing proposed by the operator is adequate to protect the ground water. We were informed that the deepest water well within a half-mile radius of the SunCor-Melange well is 800 feet. The operator proposed to set casing from the surface to the top of the salt, which was estimated to be at a depth of approximately 2500 feet. This depth has absolutely nothing to do with protecting the structural integrity of the casing from splitting due to "geodetic" forces. You are totally misinformed when you suggest that this portion of our program was established "to protect the pipe over that of our natural resources." Setting 2500 feet of casing to protect ground water in an area where the deepest water well is 800 feet is far in excess of what we would have required of the operator.

At the time the permit to drill was issued, we were informed that negotiations were in progress between the operator and the Grace Drilling Company. Grace, the largest land drilling contractor in the nation, currently has 182 drilling rigs operating worldwide. The operator was expecting to spend a large amount of money, perhaps as much as a half-million dollars or more, to drill the well and was trying to locate an experienced driller with the type of equipment that would be required.

Drilling has been going on routinely for many years and a tremendous amount of expertise, experience, and technology have been developed. In terms of making a profit, or even recovering the initial investment, it is, indeed, a risky venture. The bond required, \$5,000, was determined by the Commission years ago and has been reviewed several times since. That amount is considered to be adequate to plug a well but not too high to discourage a company from drilling. To suggest requiring a bond equivalent to cover, at a minimum, 125% of the cost for engineering and construction of a well is not realistic. Following that guideline, a bond of at least \$625,000 would have been required for this well, based on an estimated engineering and construction cost of a half-million dollars.

It seems unnecessary and unrealistic to me to suggest that monitoring wells should be installed as part of the well construction process. Drilling mud forms a thin seal on the rock in the well bore that prevents contamination of the ground water through an uncased hole. Properly cemented casing is emplaced to protect the ground water from contamination immediately thereafter.

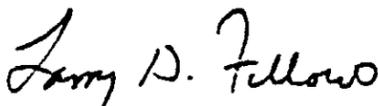
The Arizona Geological Survey takes its responsibility for regulating oil and gas drilling very seriously. This includes the permitting process as well as verifying whether the well is constructed and completed properly. Mr. Steven Rauzi and Mr. Richard Trapp were both present September 8-11, when the casing was set and cemented, and Mr. Rauzi was present when the well was plugged and abandoned September 27. It is not necessary for an inspector to continuously stand on the derrick floor to verify that proper procedures are being followed.

Drilling an oil well is an expensive venture. Once the rig is on location, the operator is concerned that the drilling proceed as expeditiously as possible. The operator is paying for the rig time regardless of whether drilling is in progress. Your suggestion that Arrowhead's interest in getting the drilling accomplished in as short a time span as possible so they could maximize the partnership's profits at the expense of their neighbors is, at best, based on misinformation.

SunCor and Arrowhead cooperated fully with us at all stages of the process, consistently showed concern for protecting the ground water and the environment, in general, and hired a highly qualified drilling contractor, which constructed a well that far exceeded minimum requirements to protect the ground water.

I hope you are able to attend the Commission meeting October 23. In the meantime if you have any questions or would like clarification, please give me a call.

Very truly yours,



Larry D. Fellows  
Director and State Geologist

cc: Jan C. Wilt, Chairman, Arizona Oil and Gas Conservation Commission  
J. Dale Nations, James E. Warne, Jr., Barbara H. Murphy, and Zed Veale, members of the  
Arizona Oil and Gas Conservation Commission  
Joe Lane, Special Assistant, Office of the Governor  
Rita Pearson, Executive Assistant, Environment/Natural Resources, Office of the Governor  
Greg Wallace, Arizona Department of Water Resources  
Bob Denny, Arizona State Senate, District 15 → Austin Turner  
Kyle Hindman, Arizona House of Representatives, District 15 } Overton & King  
Bob Williams, Arizona House of Representatives, District 15 }  
Raymond W. Bedoya, Mayor, City of Avondale  
Carlos Palma, City Manager, City of Avondale  
Perry Hubbard, Mayor, City of Litchfield Park  
Bob Musselwhite, City Manager, City of Litchfield Park  
John Ogden, President, SunCor Development Company  
Harold Laycraft, President, Arrowhead Resources Ltd.

9-29-92

Mt. Jim Mitchell  
City of Avondale  
525 N. Central  
Avondale, Ariz. 85323

Dear Jim,

I've enclosed an article on the use of oil industry technology and expertise in drilling for water at the Grand Canyon in 1986. You may remember when they did this. I thought you would be interested in knowing that the drilling company that drilled the well for the park service was the same drilling company that drilled the hole for Arrowhead Oil & Gas, Brinkerhoff-Signal, now known as Grace Drilling Company.

The Arrowhead well was unsuccessful in finding oil or gas. The likelihood of oil and/or gas production in Maricopa County <sup>is</sup> still very, very remote.

Sincerely, Steve  
Steven L. Ranzi

## An Oil Rig at the Grand Canyon?



Figure 1. Oil rig at Yavapai Point (center) provides solution to water supply problem at Grand Canyon Village (foreground). Photo courtesy of Texas Eastern Corp.



Figure 2. Bit and reamer at breakout point in Cambrian Muav Limestone on canyon's south wall. Photo by Marcia Lattimore.

Oil and water usually don't mix, but on the South Rim of the Grand Canyon, the National Park Service has blended both in a solution to a long-standing problem. The Federal agency asked the oil industry to use its drilling technology and expertise to increase the water supply to Grand Canyon Village. The problem was not lack of a water source, but rather difficulty in bringing the water from the Indian Gardens pump station—2,800 feet down in the canyon—up to the canyon rim.

Roaring Springs, a natural spring that gushes from the rocky North Rim of the canyon, is the source for Bright Angel Creek, which flows through a chasm high on the canyon's north wall. Water from the creek flows mostly by gravity through a pipeline that extends some 12 miles down the north face to the Indian Gardens pump station on the south face. The North Rim is about 1,000 feet higher in elevation than the South Rim.

From Indian Gardens, water had been pumped up to the South Rim through an old pipe system built in the 1930's. Because it was

exposed along the canyon wall, the system was subject to silting, freezing, and damage from rock slides. It also provided an inadequate supply of water.

The Park Service had considered rebuilding the old system or trucking water to the village, but a feasibility study by McLaughlin Water Engineers recommended drilling a directional hole near the canyon face that would emerge near the pump station. The study found that this alternative would not only provide the best, most efficient means of transporting water, but would also be less hazardous for workers, have less impact on the environment, and be less expensive than other proposals. The report noted, however, that conventional water-well drillers could not provide the technology and expertise required for such a project; oil industry drilling methods were needed to meet specifications.

Last year the Park Service asked Grace, Sheursen and Moore, an Oklahoma City petroleum engineering group, to develop plans for a high-angle directional hole. Brinkerhoff-Signal, a drilling subsidiary of Texas Eastern Corp., was then hired to erect an oil rig and begin drilling 250 feet from the canyon's edge (Figure 1).

Drilling the 14½-inch borehole took 49 days. The biggest challenge was drilling at a 65° angle using air, rather than mud, to remove cuttings and to cool and lubricate the downhole motors and equipment. The conventional use of drilling mud would have led to lost circulation because of the highly fractured limestones and large solution cavities in the canyon wall. Drilling with air usually leads to torque and drag build-up on the drillstring. This problem was alleviated by the use of a soap, water, and polymer mist to cool the downhole motor and lubricate the bottomhole assembly.

The borehole penetrated a Paleozoic sequence, from the Permian Kaibab Limestone at the rim to the Cambrian Muav Limestone near the pump station. The hole, just a few feet off target, emerged at an advantageous position to the station (Figure 2). Gyroscope and magnetic single-shot methods were used to guide the direction of drilling. The hole encountered no structural features or faults in its path, which totaled 5,075 measured feet. True vertical depth of the hole is 2,800 feet, with horizontal displacement of 3,800 feet (Figure 3).

The hole has already been set with 10½-inch casing, into which an 8½-inch water line will be installed. The line will be coated inside to prevent rusting.

The project, which should be completed during the summer, will furnish water for the ranger station, tourist lodges, restaurants, and associated services in Grand Canyon Village. The Park Service estimates that between 2 and 3 million persons visit the village each year.

—Excerpted from "High tech delivers results: oil patch helps in Grand Canyon," by Mary Fritz. Published in the February 1986 issue (vol. 7, no. 2) of *Explorer*, the monthly newsletter of the American Association of Petroleum Geologists (AAPG). Used with permission.

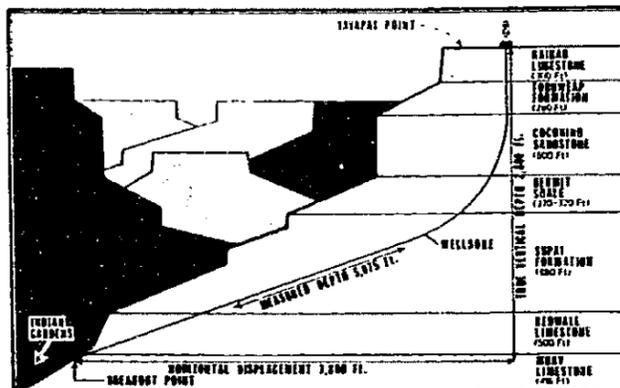


Figure 3. Grand Canyon drilling project.



# CITY OF AVONDALE

INCORPORATED 1946

525 NORTH CENTRAL AVENUE • AVONDALE, ARIZONA 85323 • PHONE: 932-2400

September 21, 1992

MAYOR  
RAYMOND W. BEDOYA

VICE MAYOR  
THOMAS F. MORALES, JR.

COUNCIL MEMBERS  
LON MONTGOMERY

EARL D. COOPER

HENRY BELTRAN

DALE MOXON

ALBERT CARROLL, JR.

CITY MANAGER  
CARLOS V. PALMA

CITY CLERK  
LINDA M. TYLER

CITY ATTORNEY  
FRANK L. ROSS

Arizona Geological Survey  
845 North Park Avenue, #100  
Tucson, Arizona 85719

Attn: Larry D. Fellows, Director and State Geologist

Project: SunCor-Melange Well No. 32-23

Dear Mr. Fellows,

The City of Avondale wishes to express objection to the construction of the wildcat well known as SunCor-Melange No. 32-23. We are displeased with the Arizona Geological Survey (AGS) for issuance of a Permit to Drill without giving the City the opportunity to appear and be heard from at a public hearing. We are concerned about the environmental impact this exploratory well may have on our municipal water supplies.

We feel that the review process employed by the AGS was totally inadequate. To begin with the Application For Permit to Drill Or Re-enter submitted by Arrowhead Resources Ltd. appeared to be incomplete or lacking pertinent information. In the first place, the driller for the proposed 6,000 feet deep well was not known. It seems obvious that the success of a venture of this magnitude would be dependant upon the qualifications of a competent qualified driller to be approved by AGS. Secondly, the Survey map does not depict the impact the wildcat well has on encroaching City property. The City's strip annexation area was not included on the map.

Of greater concern to us is the omission of our primary municipal wells. We have two wells located within 3000 feet of the oil well, one of them being located in section 23. We are dismayed that AGS' research of Arizona Department of Water Resources's records did not acknowledge existence of these wells. Our expressed concern is that these wells provide water for our City's municipal needs from the last good aquifer remaining available to the City. It is imperative for us to insure adequate and complete protection of the water resources available to the city. Yet, AGS's permitting process denied us the opportunity to express these eminent concerns. AGS's rules and regulations must be changed to afford us this capability.



AVONDALE  
A Bicentennial  
Community

This well is in the fringe of Avondale's active and progressive development area. We are concerned not only about aquifer protection issues, but also air and noise pollution issues as well. Yet AGS's permitting policies did not provide a platform for the City to express our concerns. It appears that AGS needs to exercise common sense to revise their policies to account for regional and neighboring community needs.

For AGS to allow foreign limited partnership companies to operate such a risky venture in our neighborhoods under the "protection" of a \$5,000 bond is ridiculous. The acceptance by AGS of this pittance amount for assurance of compliance with oil and gas rules and regulations is unfathomable. In case of an environmental accident, it should not be the responsibility of the local communities to bear the cost of a potential cleanup, letting the foreign companies skate away virtually unscathed. A bonding amount should be provided to cover, at a minimum, 125% of the cost for engineering and construction of the well.

*relating to gravity of geodetic lines - positioning of salt dome of structural integrity & construction*

Talking with Mr. Stephen Rauzi of AGS, we were under the impression that the casing will be a minimum of 2500 feet or to the top of the salt dome if it should be lower. According to Mr. Warren Downs, Manager Farm and Administration for SunCor, the casing was stopped at 2500 feet to protect the structural integrity of the casing from splitting due to geodetic forces. It is a sad commentary that a program could be established to protect the pipe over that of our natural resources. It would appear that if a stronger pipe were required it should be installed.

AGS must be responsible to provide for continuous inspections to insure that the project is being constructed in accordance with the plans, and not just a few critical operations. Cementing procedures are extremely important, but so are the other features of construction, such as verifying actual length of casing being provided, construction practices employed, or dealing with potential hazards that may arise due to construction.

Monitoring of surrounding aquifers needs to be an integral component of the construction program. The last time ADWR took well samples in this area was four years ago. Monitoring wells should be installed as part of the construction process. Water sampling should be completed before, during and after well construction to determine if any deterioration of water supplies is occurring and if clean-up operations are needed.

It is evident that drilling was to continue posthaste regardless of regional concerns. It is unfortunate that the developers did not exhibit the wisdom of approaching the City to obtain project approval. But their lack of regional concern is even more evident in their lack of responsibility to approach Maricopa County Planning Department to obtain all the necessary permits and

approvals. The only interest they expressed is the ability to get the drilling accomplished in as short a time span as possible. Which emphasizes Arrowhead's concern for maximizing the partnership's profits at the expense of their neighbors.

In conclusion, AGS must adopt new rules and regulations to incorporate, and not ignore, the concerns and needs of surrounding communities impacted by drilling endeavors. The permitting review process must be advanced to include regional goals and concepts other than that solely of the wildcatter.

Sincerely,

  
Bill Bates  
Public Works Director

Copies:

- Carlos Palma, City Manager, City of Avondale
- Raymond W. Bedoya, Mayor, City of Avondale
- Bob Musselwhite, City Manager,  
City of Litchfield Park
- John Ogden, President, SunCor Development Company
- Harold Laycraft, President, Arrowhead Resources Ltd.
- Senator Bob Denny
- Representative Kyle Hindman
- Rita Pearson, Governor's Office

suncor23.001



Fife Symington  
Governor

State of Arizona  
**Arizona Geological Survey**

845 North Park Avenue, #100  
Tucson, Arizona 85719  
(602) 882-4795



Larry D. Fellows  
Director and State Geologist

September 3, 1992

Mr. Larry Udall  
2712 North 7th Street  
Phoenix, Arizona 85006

Dear Mr. Udall:

This letter is in response to your telephone call today concerning the oil exploration well being drilled in T. 2 N., R. 1 W., sec 23. Please note that a well drilled for oil is the same as a well drilled for water except that a well drilled for oil is normally drilled deeper and is regulated by a much stricter set of rules and requirements. As you can see from the enclosed rules on casing requirements, these rules are written to ensure the protection of natural resources including all fresh water aquifers. Along with the enclosed rules, I have enclosed a copy of Arrowhead Oil and Gas Ltd's application and their permit to drill.

Note that on the bottom of page 2 of the application, Arrowhead Oil and Gas Ltd's casing program calls for steel pipe (casing) to be set from the surface to a depth of 2,500 feet or wherever they penetrate salt. This casing will be cemented throughout its entire length to seal off and confine all waters to their respective strata as required in R12-7-109. As I mentioned on the phone, a representative of this office will be on site to witness the cementing operation and to make sure that cement is circulated to the surface.

Enclosed with the hard copy of this letter and attachments is (1) a memorandum of my discussion with the Department of Water Resources concerning the freshwater aquifers in the vicinity of this well and (2) the detailed drilling program for this well. Please note that the casing will be cemented in two stages as described on the last page of the drilling program, the first stage from the bottom of the casing to 1,200 feet and the second stage from 1,200 feet to the surface. The two stage cement job reduces the amount of pressure at the bottom of the hole that would otherwise result from a 2,500-foot column of cement.

Sincerely,

Steven L. Rauzi  
Oil & Gas Program Administrator

Enclosures

cc Larry D. Fellows



Fife Symington  
Governor

State of Arizona  
**Arizona Geological Survey**

845 North Park Avenue, #100  
Tucson, Arizona 85719  
(602) 882-4795



Larry D. Fellows  
Director and State Geologist

August 25, 1992

972-1909  
Mr. Jim Mitchell  
Environmental Specialist  
City of Avondale  
525 N. Central  
Avondale, Arizona 85323

Dear Mr. Mitchell:

This letter is in response to your telephone call today concerning the oil exploration well to be drilled in T. 2 N., R. 1 W., sec 23. Please note that a well drilled for oil is the same as a well drilled for water except that a well drilled for oil is normally drilled deeper and is regulated by a much stricter set of rules and requirements. As you can see from the enclosed rules on casing requirements, these rules are written to ensure the protection of natural resources including fresh water. Along with the enclosed rules, I have enclosed a copy of Arrowhead Oil and Gas Ltd's application and their permit to drill.

Note that on the bottom of page 2 of the application, Arrowhead Oil and Gas Ltd's casing program calls for steel pipe to be set from the surface to a depth of 2,500 feet or wherever they penetrate salt. This casing will be cemented throughout its entire length to seal off and confine all waters to their respective strata as required in R12-7-109. As I mentioned on the phone, a representative of this office will be on-site to witness the cementing operation and to make sure that cement is circulated to the surface.

Sincerely,

Steven L. Rauzi  
Oil & Gas Program Administrator

Enclosures

cc Larry D. Fellows

**PERMIT ISSUED TO DRILL OIL WELL NEAR LITCHFIELD PARK**

A permit was issued by the Arizona Geological Survey on July 8 to Arrowhead Oil and Gas, Ltd. to drill an exploration well about 1 mile northeast of Litchfield Park. The well, the 32-23 Suncor-Melange is in T. 2 N., R. 1 W., sec. 23 and has a proposed total depth of 6,000 feet.

In accordance with Arizona Revised Statutes § 27-513, the Arizona Geological Survey issues a permit to drill when proper application for a permit is received and found to be in accordance with rules and law.

The operator of the well, Arrowhead Oil and Gas, Ltd. expects to prepare the location, move in the rig, and start drilling operations sometime during the last week of August. The operator is to notify the Arizona Geological Survey before the drilling operations begin. The operator of the well contacted us this morning, August 21, to report that the location was being prepared and that they hope to start drilling on August 29th.

Our records show that the only previous oil exploration well drilled in the vicinity of this well was the Bob James #1-19 Suncor well, which was drilled in T. 2 N., R. 1 W., sec 23 (4 miles west of this well) in the summer of 1988. The #1-19 well penetrated several thousand feet of salt with minor showings of organic material at several zones, but was plugged and abandoned that summer in compliance with the rules of the Oil and Gas Conservation Commission.

For additional information, contact the Arizona Geological Survey, 845 N. Park Avenue, Suite 100, Tucson, Arizona 85719, phone (602) 882-4795.

151  
Steven L. Rauzi  
Oil and Gas Program Administrator  
August 21, 1992

Monday, August 17, 1992

## Oil well to be sunk in Valley

### Canada wildcatters plan test on long shot

By Guy Webster  
The Arizona Republic

A Canadian company plans to drill for oil within a few weeks about 15 miles west of downtown Phoenix, citing an underground salt dome and other favorable indications, but acknowledging that the project is dicey.

International Dusty Mac Enterprises Ltd. of Vancouver, British Columbia, and partners will bore an exploratory well as deep as 6,000 feet on land owned by Suncor Development Co., Dusty Mac President Harold Laycraft said Friday. Drilling probably will begin by the end of August, he said.

The drilling site is between Dysart and El Mirage roads and between Camelback and Indian School roads, on the former Goodyear Farms near Litchfield Park, Suncor President John Ogden said.

Phoenix-based Suncor, a subsidiary of Pinnacle West Capital Corp., would receive royalties if any oil was produced, but Ogden emphasized that the initiative for the project came from Laycraft's group. Pinnacle West also owns Arizona Public Service Co., the state's largest electric utility.

"There are several indications that could be positive," Laycraft said. The thick, buried layer of salt in the area resembles salt domes associated with major oil finds in Texas, Louisiana and elsewhere, he said.

Also, traces of oil, though not in commercially recoverable amounts, have been found in earlier test wells northwest of the salt dome, he said. The theory behind the project is that oil from sedimentary layers under the salt layer may be trapped just below the impervious salt.

"A wildcat well always involves risk.

— See CANADIAN, page E6

E6 The Arizona Republic

## Canadian wildcatters to drill for oil on former farm in west Phoenix

— CANADIAN, from page E1

but if it were successful, it would be, potentially, a very large discovery," Laycraft said.

He declined to forecast the cost of the exploration project.

Steven L. Rauzi, oil- and gas-program commissioner for the Arizona Geological Survey, estimated that a project of the scope of Dusty Mac's would cost \$500,000 or more, mostly for the drilling. Other costs would cover preliminary seismic testing and mineral-rights leases.

Rauzi identified the Suncor area as a potential oil source in an article published last summer in *Oil & Gas Journal*, a trade publication.

"It's quite a risk, but there is a chance, and it has not really been tested yet," he said Friday.

Rauzi explained that the thick salt deposit appears to have been produced

by an ancient salt lake. Abundant life in that type of lake, such as brine shrimp and plankton, could have produced richly organic sediments. Those sediments, under thousands of feet of salt and other sediments, could have turned into oil held in place by the salt, Rauzi said.

Traces of oil that have been found in wells northwest of the salt deposit, in the Wittman and Beardsley areas, could have migrated from the area of the Suncor land, he said.

A 4,000-foot-deep well drilled in 1988 near the site of Dusty Mac's planned well hit lots of salt but no oil, according to Rauzi's 1991 article.

"The salt in the Suncor well may serve as a trapping mechanism to oil and gas below the salt," the article said.

Nyal Niemuth, resources specialist with the Arizona Department of Mines and Mineral Resources, said that the large salt deposit already is being used commercially for producing salt, and that propane and butane are stored in cavities created by excavating the salt.

Dusty Mac's partners in the project include Vancouver-based Arrowhead Resources Ltd. and Sundance Resources Ltd. They had AMH Group of Calgary, Alberta, make an independent evaluation of the site's potential, Laycraft said. The partners have acquired mineral-rights leases to more than 12,000 acres in the west Valley.

The AMH report said that chances of finding oil are low but that exploration costs also would be low. If oil was found, it could be "one of the largest onshore oil discoveries within the lower 48 states," it said.

Contributing to this article was Terry McDonnell of *The Arizona Republic*.

# No gusher yet, but oil drillers are optimistic

by Dan Nowicki  
staff writer

A wildcat oil well operating on SunCor Development Co.-owned property near Litchfield Park hasn't struck crude yet, but seems to be making progress, according to officials familiar with the project.

"It's still drilling," said John Ogden, president of SunCor Development Co. "Last I heard it was still heading down. A lot of it depends on what kind of dirt and gravel that they run into down there."

The wildcat well, which began drilling Aug. 25, was built by a Canadian-led partnership of private oil-and-gas companies on the longshot hope that a oil deposit is located beneath an underground salt dome discovered in the area.

The site is located on unincorporated county land between Dysart and El Mirage roads and between Camelback and Indian School roads.

The partnership, which consists of Canadian-based Arrowhead Resources Ltd. and two sister companies, and Denver-based Melange Associates Inc., has leased 12,000 acres around the site from SunCor. Should the well find any natural resources, SunCor will get a share of the royalties.

Arrowhead President Harold Laycraft said the \$700,000 enterprise is "going very nicely."

"It is logging well," Laycraft said. "What we've encountered so far has coincided with our seismic information."

Seismic predictions, Laycraft said, are often wildly inaccurate.

As of Friday, the well had reached a depth of 1,649 feet. The project's targeted depth — where oil will be found if there is any — is between 5,500 and 6,000 feet.

Laycraft said the well should be finished drilling within two weeks.

Residents living around the site can rest assured that the well poses no environmental hazard, a state official said.

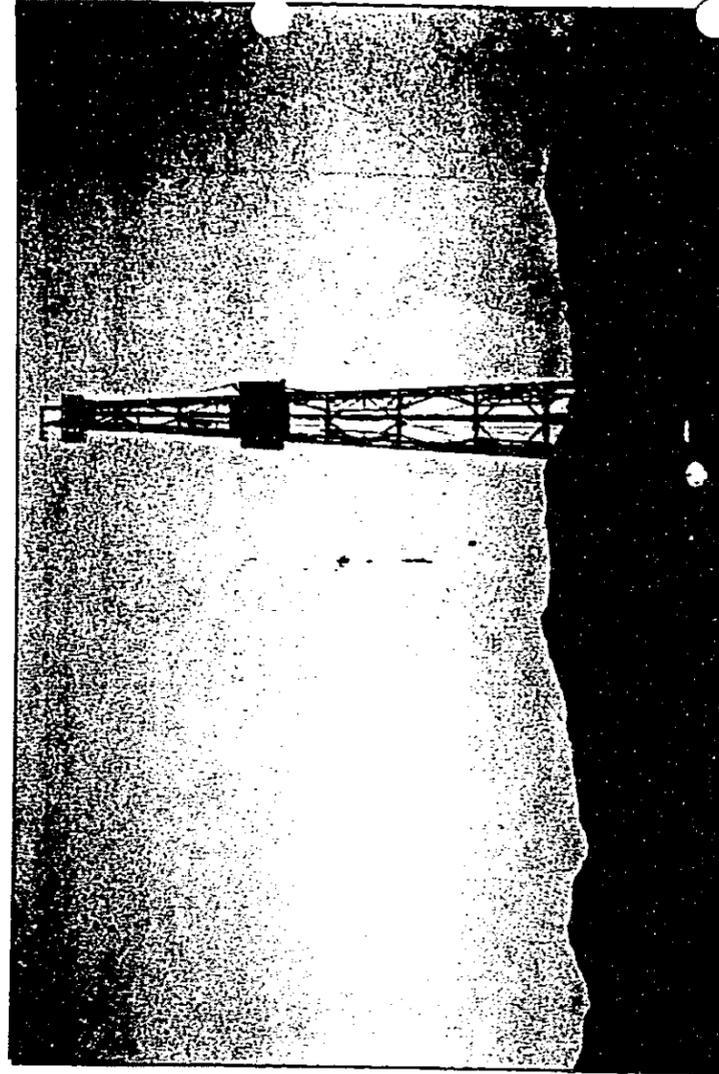
Steve Rauzi, oil and gas program administrator for the Arizona Geological Survey, said the chances of the oil well causing any environmental damage such as groundwater contamination or natural gas seepage are "slim to none."

"Basically, there's no difference between drilling a water well and an oil well," Rauzi said. "It's just a matter of drilling a hole in the ground."

The AGS provides staff and administrative support for the Arizona Oil and Gas Commission.

"We protect fresh water and natural resources," Rauzi said. "They're not supposed to let that stuff escape."

Rauzi said that piping precautions and guidelines are



View photo by Kristi Humphrey Hyde

## China or bust

Towering high above the surrounding landscape near Dysart and Camelback roads is the derrick of the new wildcat oil well which started drilling Aug. 25.

contamination. He also said that after the oil is removed, the commission requires that different fluids be pumped underground to replace it.

This would remove the threat of subsidence in the area, he said.

Rauzi said that the environmental concerns will be rendered moot if no oil is discovered, and he thinks the odds of the well actually striking it rich are very remote.

"It's like winning the lottery," Rauzi said. "That's what keeps these guys going."

# Wildcatters encouraged by west Valley oil project

### Expect to know in days whether drill site is good

By Guy Webster  
The Arizona Republic

Oil prospectors near Litchfield Park said Tuesday that they are encouraged by their first 3,600 feet of drilling, and that they expect to know within a few days whether they've got an oil well or a dry hole.

A contract crew working round-the-clock for the three Canadian firms investing in the project has been sinking the test well about 250 feet per day. The goal is 6,000 feet or so.

The drilling rig rises 130 feet above a surrounding cotton field on land owned by Phoenix-based Suncor Development Co. at Dyart and Indian School roads.

Suncor, sister company to the Arizona Public Service Co. under the Pinnacle West Capital Corp. holding firm, has leased the mineral rights to the wildcatters in return for a share of oil income if the project pans out.

A pulse of excitement passed

— See WILDCATTERS, page E5



Photos by John Serrano/The Arizona Republic

Greg Ethridge, a drilling engineer at the 130-foot oil rig near Litchfield Park, is part of a crew that has been working round-the-clock to sink a test well. Coarse salt (left photo) has been coming up the pipe lately as the drilling rig bores through a thick underground layer of salt deposits, beneath which may lie a reserve of oil.



# Wildcatters encouraged

— WILDCATTERS, from page E1

through the 10 or so men at the site Tuesday morning as, over the roar of generators and motors, the news was shouted from person to person, "There's C2 on the hot wire."

The hot wire is a monitoring system to identify any gas coming out of the hole, explained Greg Ethridge, drilling engineer. Ethane gas is called C2 because it has two carbon atoms per molecule. Until the ethane showed up, the only organic-gas traces had been methane, its one-carbon cousin.

"When you start getting C2, it suggests you're getting into heavier hydrocarbons, and hopefully, moving toward oil," said Harold Laycraft, leader of the three-company partnership putting up the money.

"It's far from definitive, but it is a good sign."

Laycraft is president of Arrowhead Resources Ltd. and International Data. The Enterprises Ltd. He

venture's third partner is Sundance Resources Ltd. All three are based in Vancouver, British Columbia.

The companies have not disclosed how much they are spending on the Litchfield Park gamble. Steven L. Rauzi, oil- and gas-program commissioner for the Arizona Geological Survey, estimated that a project of this scope costs about \$500,000 for drilling and preparatory expenses.

An article that Rauzi wrote for an industry publication last year identified the Litchfield Park area as a potential source of oil trapped beneath a thick underground layer of salt deposits from an ancient lake.

Laycraft said about one of every eight wildcat wells in the United States makes a find that pays off.

"We think our chances of success here are higher than average, by a wide margin," he said.

The favorable indications, Laycraft said, include several nearby occurrences in past decades of oil seeping into surface or well water, traces of natural gas being found in a 1933

foot exploratory well drilled four miles away in 1988, and seismic-testing results consistent with a model of potential oil-bearing layers beneath an underground salt dome.

So far, the layers the drill has hit have matched the predictions, Ethridge said.

The crew from Dallas-based Grace Drilling Co. includes veterans of oil exploration in California, Wyoming, Oklahoma and other states.

Part of the work's appeal, said Gene Kramer, a Grace tool pusher from California, is the suspense of exploring the unknown. A tool pusher is a foreman who supervises drilling operations at an oil well.

Even if the project has the luck to find oil, don't drive out to look for a gusher.

The oil rig includes three systems to contain oil, if there is any, rather than allow the hazard and waste of a blowout, Ethridge explained.

"This isn't the movie *Giant*," he said. "If there were a blowout, I'd probably lose my job."

# Drinking water contamination feared Litchfield Park, Avondale worried about oil drilling

By Jeff Nelson  
THE PHOENIX GAZETTE

City officials in Avondale and Litchfield Park fear a Canadian oil mining operation under way near their cities could contaminate the communities' underground drinking water supply with oil and salt.

"It's (water) the lifeblood of our growing community," Litchfield Park Mayor Perry Hubbard said. "It's worth more than gold, and it's worth more than oil."

The drilling operation sits above a giant underground aquifer, located 400 to 600 feet below the surface, which is the sole source of drinking water for the 3,300 residents of Litchfield Park and the primary source for the 22,000 residents of Avondale.

"Our main concern at this point is to

make sure they do all they're supposed to do," said Bill Bates, Avondale's public works director.

A group of Canadian wildcaters is working around the clock in a cotton field just east of Litchfield Park in hopes of finding an oil field.

The venture is being financed by three Vancouver, British Columbia, companies — Arrowhead Resources Ltd., International Dusty Mac Enterprises Ltd. and Sundance Resources Ltd.

Crews are boring an exploratory well 5,500 to 6,000 feet deep on land owned by Phoenix-based SunCor Development Co. between Dysart and El Mirage, and Camelback and Indian School roads.

SunCor, a major land owner and developer in the West Valley, has leased the mineral rights to the investment group in exchange for royalties if any oil is found.

Robert Musselwhite, city manager of Litchfield Park, said he is concerned the drilling could allow nitrate-contaminated water, located in a less shallow water

table 200 feet below the surface, to mix with the drinking water supply.

Harold Laycraft, president of Arrowhead Resources and International Dusty Mac Enterprises, said modern oil wells are designed to protect the environment and water supplies.

The hole is lined with a special pressure-tested concrete designed to keep the various levels of water and soil from mixing with each other, Laycraft said. A steel pipe inside the concrete casing provides additional protection.

"The engineering with respect to concerns to aquifers is very well-established," Laycraft said. "It is so designed that it completely removes any chance of contamination."

Steven Rauzi, oil and gas commissioner for the Arizona Geological Survey, a state agency that oversees oil and gas mining, said he also believes the ground-water supply is safe.

"This well is just like any other well, it's just dug extra deep," Rauzi said. See ■ WATER, Page C5

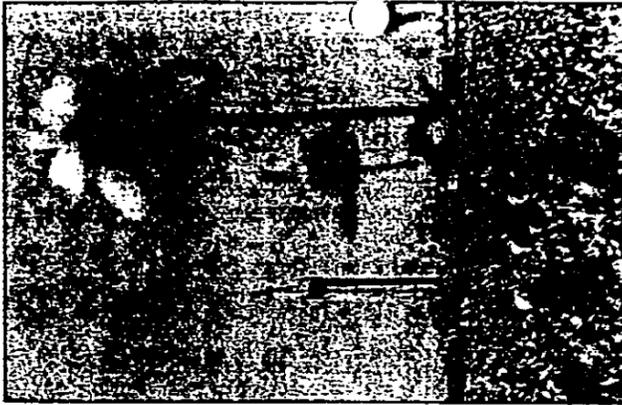
"They're being extra cautious, and I think it's because of the concern."

SunCor President John Ogden said no one has a bigger interest in maintaining a clean water supply in the Litchfield Park area than his company.

A subsidiary of Pinnacle West Capital Corp., which owns Arizona Public Service Co., SunCor is a major home builder in the Litchfield Park area. In addition, the company owns Litchfield Park Service Co., the city's water provider.

"We wouldn't do it if we thought there would be a problem with the water quality," Ogden said.

Jerry Ellsworth, manager of Litchfield Park Service Co., said his company will monitor its wells for oil, salt and other contaminants.



Dana Leonard / THE PHOENIX GAZETTE  
Oil drilling equipment shares a West Valley cotton and sunflower field.

Meanwhile, drilling continues. While crews haven't uncovered a major oil find, they have found lots of salt, Laycraft said.

Investors think this thick layer of salt — believed to have been produced by an ancient salt lake — conceals a huge oil deposit. Salt domes like the one near Litchfield Park have been associated with major oil finds in Texas and Louisiana.

Other indications of an oil deposit include the fact that traces of oil have been found in ground and surface water, Laycraft said. Also, seismic testing has revealed geological conditions common with other oil discoveries.

Arizona has 22 oil wells that produce 120,000 barrels annually, and six natural gas wells that produce 1.5 billion cubic feet of gas

**Notice of Proposed Rulemaking  
Submitted to the Governor's Regulatory Review Council**

Pursuant to A.R.S. § 41-1052

**1. Name of Agency:** Oil & Gas Conservation Commission

**2. Rules Being Submitted to the Governor's Regulatory Review Council:**

- A. Repealed: A.A.C. R12-7-177, Appendix 1 in Article 1, and Article 2 Geothermal Resources R12-7-201 to R12-7-294
- B. Adopted: A.A.C. R12-7-125, R12-7-175, and R12-7-182
- C. Amended: A.A.C. R12-7-101, R12-7-119 to R12-7-122, R12-7-126 to R12-7-129, R12-7-176, and R12-7-178 to R12-7-181
- D. Renumbered: A.A.C. R12-7-181(1)(h) through (1)(m) as R12-7-182

**3. Summary of Rules:** Repealed rule is redundant with R12-7-110, repealed Appendix 1 because all reference to it has been removed, and repealed Article 2 because it has been fully integrated into Article 1. The adopted rules regulate temporary abandonment, permitting of injection wells, and operating and closure of LPG storage wells, respectively. The remaining rules were amended to remove definitions repeated in statutes, update and clarify language, edit for consistency and grammatical accuracy, remove gender-specific terminology, and incorporate language to include geothermal resources.

**4. Date of Governor's Regulatory Review Council meeting at which rules are tentatively scheduled to be heard:** January 5, 1993

**5. Agency Contact Person:**

Name: Steven L. Rauzi, Oil and Gas Program Administrator, Arizona Geological Survey  
Address: 845 North Park Avenue, Suite 100, Tucson, Arizona 85719  
Telephone Number: (602) 882-4795

**6. Authorized Officer:**

\_\_\_\_\_  
Signature of Officer

\_\_\_\_\_  
Jan C. Wilt

\_\_\_\_\_  
Name of Officer (Typed)  
Chairman, Oil & Gas Conservation Commission

\_\_\_\_\_  
Title of Officer (Typed)

\_\_\_\_\_  
Date



State of Arizona  
State Capitol, West Wing, Suite 706  
Phoenix 85007

The Office of The  
Secretary of State

FOR USE BY  
SECRETARY OF STATE

NOTICE OF PROPOSED RULE MAKING

1 Name of Agency OIL AND GAS CONSERVATION COMMISSION (ARIZONA GEOLOGICAL SURVEY)

2 Agency contact person (name, address, phone) STEVEN L. RAUZI, 845 N. PARK AVE., STE 100, TUCSON, ARIZONA 85719 PHONE (602) 882-4795

3 General and Specific Statutory Authority for proposed rule making: A.R.S. § 27-501 to 27-503, 27-515 to 27-517, 27-522, 27-652, 27-653, 27-655, and 27-656

4 Check and complete applicable items below to show proposed rule making (show A.A.C. Rule Numbers):

REPEAL (deleting existing rules) A.A.C. R12-7-177, APPENDIX 1 in ARTICLE 1, and ARTICLE 2 GEOTHERMAL RESOURCES R12-7-201 to R12-7-294

ADOPT (new rules) A.A.C. R12-7-125, R12-7-175, and R12-7-182

AMEND (changing existing rules) A.A.C. R12-7-101, R12-7-119 to R12-7-122, R12-7-126 to R12-7-129, R12-7-176, and R12-7-178 to R12-7-181

RENUMBER EXISTING RULES A.A.C. R12-7-181(1)(h) through (1)(m) as R12-7-182

5  Incorporation by Reference \_\_\_\_\_  
 None \_\_\_\_\_ A.A.C. Rule Numbers

6 Check the following required items to show that they are included in this document:

- Form R101, an original and two copies of the Form and each attachment.
- Informative summary of proposed rule making for publication in *Register*.
- Text of rules.
- Economic impact statement.
- Statement of impact on small business.
- Three copies of incorporation by reference.

7  Check if these rules were previously adopted as an emergency.  Check if change in text.

8 NOTICE is given that any person may file written comments on the proposed rule making with the agency contact person on or before MARCH 1, 19 93.

The agency has scheduled oral proceedings to be held at \_\_\_\_\_  
Address \_\_\_\_\_ City \_\_\_\_\_ Arizona  
at the hour of \_\_\_\_\_ on the \_\_\_\_\_ day of \_\_\_\_\_, 19 \_\_\_\_\_.

The agency has not scheduled oral proceedings but will do so if five or more persons file written requests with the agency contact person within thirty days after this Notice is published in the *Administrative Register*.

9 Certificate of Authorized Officer

Signature of Officer

JAN C. WILT 882-4795  
Typed Name of Officer Telephone

CHAIRMAN  
OIL & GAS CONS. COMM. 10/23/92  
Title Date

### INFORMATIVE SUMMARY

The Oil and Gas Conservation Commission proposes to (1) repeal A.A.C. R12-7-177 in Title 12, Chapter 7, Article 1, because it is redundant with R12-7-110 and R12-7-111, repeal Appendix 1 in Article 1 because all reference to it has been removed, and repeal Article 2, *Geothermal Resources*, because it has been fully integrated into Article 1; (2) adopt A.A.C. R12-7-125 to regulate the temporary abandonment of wells, adopt R12-7-175 to define which types of injection wells require a permit from the Commission, adopt R12-7-182 to regulate the operating requirements of LPG storage-well systems; and (3) amend the title of Article 1 to reflect the incorporation of language to regulate geothermal resources and amend A.A.C. R12-7-101, R12-7-119 through R12-7-122, R12-7-126 through R12-7-129, R12-7-176, and R12-7-178 through R12-7-181 to remove definitions repeated in statute or not used in the rules, update and clarify language, edit for consistency and grammatical accuracy, remove gender-specific terminology, account for currently accepted practices in the regulated industry, and incorporate language to include geothermal resources.

CHAPTER 7

OIL AND GAS CONSERVATION COMMISSION

ARTICLE 1

OIL, GAS, AND HELIUM, AND GEOTHERMAL RESOURCES

Section	
R12-7-101. Definitions	1
R12-7-119. Wellhead and lease equipment	6
R12-7-120. <u>Notification of fires, leaks, spills, and blowouts, and other undesirable events</u>	7
R12-7-121. Well completion <u>and filing requirements</u>	8
R12-7-122. <u>Rework and recompletion — shooting and treating and routine maintenance operations</u>	10
R12-7-125. <u>Temporary abandonment</u>	11
R12-7-126. <u>Intention Application to plug and abandon</u>	11
R12-7-127. Plugging methods and procedures	12
R12-7-128. <u>Stratigraphic, core, and seismic exploratory holes</u>	16
R12-7-129. Wells to be used for fresh water	16
R12-7-175. <u>Injection wells including enhanced recovery, disposal, and storage wells</u>	18
R12-7-176. <u>Permits for injection wells</u>	19
R12-7-177. <u>Casing and cementing of injection wells</u>	36
R12-7-178. <u>Notice of commencement, and discontinuance, and transfer of injection operations</u>	24
R12-7-179. <u>Testing and monitoring of injection wells Records and reports</u>	25
R12-7-180. <u>Supplementary requirements for storage wells</u>	27
R12-7-181. <u>Storage cavity Design and construction of storage wells and cavities</u>	28
R12-7-182. <u>Operation, inspection, and closure of storage-well systems</u>	31
APPENDIX 1 — FORMS	37
ARTICLE 2. GEOTHERMAL RESOURCES	38

1 **R12-7-101. Definitions**

2 ~~In this chapter, unless the context otherwise requires, the words hereinafter defined shall have~~  
3 ~~the following meaning when found in these rules, to wit:~~

4 1. "API" means American Petroleum Institute which is the leading standardizing organization  
5 for the oil and gas industry.

6 ~~1. "Authorized agent" means the Executive Director or his agent, as authorized by the~~  
7 ~~Commission.~~

8 2. "Barrel" means 42 (US) gallons measured at 60 degrees Fahrenheit and atmospheric  
9 pressure at sea level.

10 ~~3. "Certificate of clearance" means a permit approved and issued or registered by the~~  
11 ~~Commission, for the transportation or delivery of oil, gas or products thereof (Form 8, see Appendix 1).~~

12 ~~4. "Certificate of compliance" and "authorization to transport" means a certificate issued by~~  
13 ~~the Commission prior to the connection of an oil or gas well with a pipeline, showing compliance with~~  
14 ~~the conservation laws of the state and conservation rules, regulations, and orders of the Commission~~  
15 ~~(Form 8, see Appendix 1).~~

16 3. "BTU" means British thermal unit and represents the quantity of heat required to raise  
17 the temperature of one pound of water one degree Fahrenheit at or near 39.2 degrees Fahrenheit.

18 ~~5.~~ 4. "Commission or Commissioner" means the State Oil and Gas Conservation  
19 Commission or any person lawfully empowered to act on their behalf.

20 ~~6. "Completion or completed well" shall be defined in Paragraph 38.a. of this Section.~~

21 ~~7.~~ 5. "Condensate" means the liquid hydrocarbons recovered at the surface that result  
22 from condensation due to reduced pressure or temperature of petroleum hydrocarbons existing initially  
23 in a gaseous phase in the reservoir.

24 ~~8.~~ 6. "Cubic foot of gas" means the volume of gas contained in one cubic foot of space

1 at a standard pressure base of 14.73 pounds per square inch absolute and a standard temperature base of  
2 60 degrees Fahrenheit.

3 9. 7. "Day" means a period of 24 consecutive hours from 7 a.m. one day to 7 a.m.  
4 the following day.

5 10. ~~"Developed area or developed unit" means a drainage unit having a well completed~~  
6 ~~thereon capable of producing oil or gas in paying quantities.~~

7 11. ~~"Drainage unit or drilling unit" means the maximum area in a pool which may be drained~~  
8 ~~efficiently by one well so as to produce the reasonable maximum amount of recoverable oil or gas in such~~  
9 ~~area (see R12-7-107.1).~~

10 12. ~~"Driller's log" means the written record progressively describing the strata, water, oil~~  
11 ~~or gas encountered in drilling a well.~~

12 13. ~~"Executive Director" means the Executive Director of the Oil and Gas Conservation~~  
13 ~~Commission.~~

14 14. ~~"F.E.R.C." means the Federal Energy Regulatory Commission established pursuant to~~  
15 ~~42 U.S.C. §§ 7134, 7171.~~

16 15. ~~"Field" means a general area which is or appears to be underlain by one or more pools,~~  
17 ~~including underground reservoirs containing oil or gas or both.~~

18 16. ~~"Fund" means the oil and gas conservation fund.~~

19 17. ~~"Gas" means natural gas, including casinghead gas, and all other hydrocarbons not~~  
20 ~~defined as oil and helium or other substances of a gaseous nature.~~

21 a. ~~"Natural gas" means any combustible gas or vapor composed chiefly of hydrocarbons~~  
22 ~~occurring in a gaseous or vapor phase at initial reservoir conditions.~~

23 b. ~~"Casinghead gas" means any gas or vapor indigenous to an oil stratum and produced from~~  
24 ~~such stratum, with oil.~~

1 18. 8. "Gas well" means any well which produces with a gas-oil ratio in excess of  
2 50,000 cubic feet of gas per barrel of oil, or any well classified as a gas well by the Commission.

3 ~~19. "Geometric center" of a section means that point in the section whose location is~~  
4 ~~established by application of the principles of plane geometry.~~

5 ~~20. "Illegal oil and illegal gas" means oil or gas produced within the State from any well~~  
6 ~~during any time in which the well has produced in excess of the amount allowed by law or any rule,~~  
7 ~~regulation or order of the Commission, or the production of which shall cause waste.~~

8 ~~21. "Illegal product" means any product derived in whole or in part from illegal oil or gas.~~

9 ~~22. 9. "Injection or disposal well" means any well used for the injection of air, gas,~~  
10 ~~water or any other substance into any underground stratum.~~

11 ~~23. 10. "Mcf" means one thousand cubic feet of gas reported at a pressure base of 14.73~~  
12 ~~psia pounds per square inch and 60 degrees Fahrenheit.~~

13 ~~24. "Month" and "calendar month":~~

14 ~~a. "Month" as used in these rules and in orders of the Commission may mean a period of~~  
15 ~~time approximating a calendar month but not necessarily coinciding with "calendar month" for the~~  
16 ~~purposes of reporting production or for any other purpose which the Commission may find appropriate~~  
17 ~~in complying with the provisions of various rules and orders.~~

18 ~~b. "Calendar month" means the period or interval of time from 7 a.m. on the first day of~~  
19 ~~any month of the calendar to 7 a.m. of the first day of the next succeeding month of the calendar.~~

20 ~~25. "N.G.P.A." means the Natural Gas Policy Act of 1978 (PL 95-691-92 Stat. 2073).~~

21 ~~26. "Oil" means crude petroleum oil and all other hydrocarbons, regard less of gravity,~~  
22 ~~produced at a well in liquid form by ordinary production methods and which are not the result of~~  
23 ~~condensation of gas.~~

24 11. "Oil well" means any well which produces with a gas-oil ratio less than 50,000 cubic feet

1 of gas per barrel of oil, or any well classified as an oil well by the Commission

2 27. 12. "Operator" means any person, an owner or person authorized by an owner or  
3 owners, who controls the day-to-day activities of a well or facility. ~~who is engaged in the business of~~  
4 ~~drilling wells for oil, gas and/or helium, or who is duly authorized to develop a lease or to operate a~~  
5 ~~producing well or wells.~~

6 28. ~~"Owner" means the person having the right to drill into, produce, and appropriate the~~  
7 ~~production of oil or gas or both from a pool.~~

8 29. ~~"Person" includes corporation, association, partnership, receiver, trustee, guardian,~~  
9 ~~executor, administrator, fiduciary, representative, or any group acting as a unit, and includes any~~  
10 ~~department, agency, or instrumentality of the state or of any governmental subdivision thereof.~~

11 30. ~~"Pool" means an underground reservoir containing a common accumulation of oil or gas~~  
12 ~~or both, and includes each zone of a general structure completely separated from any other zone in the~~  
13 ~~structure.~~

14 31. ~~"Producer" means the owner of a well capable of producing oil or gas.~~

15 32. ~~"Product" means oil, gas, or any product, by product, mixture, or blend thereof.~~

16 33. ~~"Recompletion or recompleted well" shall be as defined in Paragraph 38.6. of this~~  
17 ~~Section.~~

18 34. ~~"Royalty owner" means a person possessing a royalty interest in the production, but who~~  
19 ~~is not the owner.~~

20 35. 13. "Stratigraphic test or core hole test" means any hole drilled for the sole purpose  
21 of obtaining geological information.

22 36. ~~"U.S.G.S." means the United States Geological Survey established pursuant to PL 87-626~~  
23 ~~(43 U.S.C. § 31, 76 Strat. 427).~~

24 37. ~~"Waste" means and includes:~~

- 1 a. ~~Physical waste, as that term is generally understood in the oil and gas industry.~~
- 2 b. ~~The inefficient, excessive or improper use of, or the unnecessary dissipation of reservoir~~  
3 ~~energy.~~
- 4 e. ~~The locating, spacing, drilling, equipping, operating or producing of any oil or gas well~~  
5 ~~or wells in a manner which causes or tends to cause reduction in the quantity of oil or gas ultimately~~  
6 ~~recoverable from a pool under prudent and proper operations, or which causes or tends to cause~~  
7 ~~unnecessary or excessive surface loss or destruction of oil or gas.~~
- 8 d. ~~The inefficient storing of oil.~~
- 9 e. ~~The production of oil or gas in excess of transportation or marketing facilities.~~
- 10 f. ~~The production of oil or gas when it is unprofitable to dispose of such production.~~
- 11 38. ~~"Well" means and includes any hole drilled or spudded in for the purpose, with the~~  
12 ~~intention, or under the representation of penetrating oil or gas bearing strata or of penetrating any strata~~  
13 ~~in search of stratigraphic data pertinent to the location of oil or gas bearing strata, whether or not, in~~  
14 ~~either case, oil or gas is actually discovered and any hole used in connection with the underground~~  
15 ~~storage of hydrocarbon substances, whether liquid or gaseous, and any hole used in connection with a~~  
16 ~~process to inject any substance for purposes of disposal or to increase recovery, including any hole used~~  
17 ~~for the purpose of secondary or tertiary recovery, and any hole used for the purpose of pressure~~  
18 ~~maintenance. The Commission may, as it shall deem to be to the best interest of the state, determine that~~  
19 ~~any hole drilled or spudded in shall be included within this definition to the extent necessary for the~~  
20 ~~administration and enforcement of the rules required by A.R.S. § 27-516. The determination of the~~  
21 ~~Commission shall be final in any circumstance involving the question of purpose, intent, of representation~~  
22 ~~provided such determination shall be subject to appeal as provided by A.R.S. § 27-520.~~
- 23 a. ~~"Completion or completed well" means a well that meets any of the following conditions:~~
- 24 i. ~~Has produced or is ready to produce new formation hydrocarbons,~~

- 1           ii. ~~Has been declared a dry hole, temporarily abandoned or plugged and abandoned,~~  
2           iii. ~~Has been otherwise readied for operation as in the case of injection and service wells.~~  
3           b. ~~"Recompletion of well" means any well deepened, plugged back, re-perforated or~~  
4           ~~perforated in a different zone.~~

5  
6   **R12-7-119. Wellhead and lease equipment**

7           A. The operator shall install and maintain valves, Christmas-tree fittings, and or wellhead  
8           connections that

9           1. Have a rated working pressure equivalent to at least 100 percent of the calculated or  
10           known pressure in the reservoir from which production is expected exceeding the maximum anticipated  
11           surface pressure to which they may be subjected from the producing zone; shall be installed and  
12           maintained in first class condition so that on flowing wells, tests can easily be made

13           2. Allow well production testing such as periodic production tests, productivity or  
14           deliverability tests, and transient pressure tests; to determine the gas-oil ratio, static bottom hole pressure  
15           or other pressure.

16           3. ~~Valves shall be installed and maintained in good working order to p~~Permit pressures to  
17           be obtained on both casing and tubing; and Each flowing well shall be equipped to

18           4. Control properly the flowing of the oil, gas, or geothermal resources on a flowing well,  
19           and if an oil well, it shall be produced into an oil and gas separator of a type generally used in industry.

20           B. The operator shall produce flowing oil wells into tanks equipped with high-low pressure  
21           and high-low level shut-in controls and shall install a safety valve that automatically closes on the  
22           wellhead in the event of surface production equipment malfunctions.

23           C. The operator shall equip artificial lift wells with wellhead safety sensors to shut off the  
24           source of power in the event of abnormally high or low flowline pressures.

1 **R12-7-120. Notification of fires, leaks, spills, and blowouts, and other undesirable events**

2 **A.** Each operator person controlling or operating shall notify the Commission within 24 hours  
3 of any fire, break, leak, spill, overflow, or other undesirable event that occurs at any oil, gas, or  
4 geothermal drilling, producing, or transportation facility, or at any injection, disposal, or storage facility,  
5 well or pipeline, or receiving tank, storage tank, or receiving and storage receptacle, into which crude  
6 oil is produced, received, or stored, or through which oil is piped or transported, shall immediately notify  
7 the Commission by letter giving full details concerning all fires that occur at such wells, or tanks or  
8 receptacles, on his property, and shall immediately report to the Commission any breaks, or leaks in or  
9 from tanks, receptacles, or pipelines from which oil or gas is escaping or has escaped. If any tank or  
10 receptacle is permitted to run over, the escape occurring shall be reported as in the case of a leak. The  
11 report required as to oil losses shall be necessary only when the oil loss exceeds 50 barrels in aggregate.  
12 The report required as to gas losses shall be necessary when gas loss can be established with reasonable  
13 certainty.

14 **B.** Each operator shall file a final written report within 15 days of resolving incidents  
15 described in subsection (A) giving full details of the incident such as the location by quarter-quarter  
16 section, township and range; date and time of occurrence; specific nature and cause of the incident;  
17 resultant damage; action taken to correct the situation and prevent its reoccurrence; and losses of  
18 hydrocarbons or geothermal resources.

19 In each such report of fires, breaks, leaks, or escapes, or other accidents of this nature, the  
20 location of the well, tank, receptacle, or line break shall be given by section, township, range and  
21 property so that the exact location thereof can be readily located on the ground. Such report shall also  
22 specify the steps that were taken or that are in progress to remedy the situation reported, and shall detail  
23 the quantity of oil or gas lost, destroyed, or that escapes.

24

1 **R12-7-121. Well completion and filing requirements**

2 **A.** For the purpose of this rule only, a well shall be determined to be completed when it is  
3 capable of production or when testing as required by the Commission is concluded; has been temporarily  
4 abandoned for any reason or placed in any other status category; or has been plugged and abandoned.

5 **B.** The operator shall file a completion report on Form 4 (see Appendix 1) shall  
6 be filed with the Commission within 30 days after the completion of a well. Immediately thereafter the  
7 Commission shall, if such a well is a producing well, classify the well as an oil well or a gas well. All  
8 logs and surveys of any description, if taken, and driller's logs as defined herein and certified as to their  
9 correctness. Other well data, including all logs, tests, and surveys shall be filed with the completion report  
10 or within 30 days after the completion of the any well, drilled.

11 **C.** The operator shall furnish samples of all cores and cuttings, at a maximum interval of  
12 ten feet if drilling rate permits, shall be furnished to the Commission within 30 days of the completion  
13 or abandonment of removing the drilling rig from the hole. well from which said samples were taken.

14 All samples and cores for the Commission shall be handled as follows:

15 1. All samples shall be properly washed and dried.

16 2. ~~An amount, the equivalent of two~~ Approximately three tablespoons, of each sample shall  
17 be placed in an envelopes or other suitable wrapping ~~and~~ showing the identification of the well from  
18 which the sample originated, the location of the well, the Commission's permit number, and clearly  
19 ~~identified as to the depth at which the sample it was taken. Envelopes shall be packaged in boxes of~~  
20 sufficient size and shape to accommodate the envelopes.

21 3. Samples shall be properly carefully packaged ~~for transporting in a manner that will in~~  
22 boxes for protection and the individual samples; each pack of samples shall contain the identification of  
23 the well from which the samples originated, the complete location of the well and the Commission's  
24 permit number.

1           4. ~~—~~ Samples of all wells shall be shipped or mailed, charges prepaid to:

2                           Oil and Gas Program Administrator  
3                           Arizona Geological Survey  
4                           845 North Park Avenue, Room 100  
5                           Tucson, AZ 85719  
6                           Oil & Gas Conservation Commission  
7                           Phoenix Office

8                           And to:

9                           Bureau of Geology & Mineral Technology  
10                          University of Arizona  
11                          Tucson, Arizona 85719

12           5.    4.    Core samples may be furnished in chips and suitably packed and shipped as set  
13   forth specified in Paragraphs (2) and (3). ~~and 3. above.~~ Core samples shall be shipped or mailed,  
14   charges prepaid, as indicated in Paragraph 4 above.

15           6. ~~—~~ Any samples so requested which the operator desires to keep confidential shall be  
16   furnished to the Commission at its office within 30 days after completion or abandonment of the well  
17   from which taken.

18           B.    D.    If requested by the person filing an electrical survey or log Upon written request  
19   by the operator, the Commission shall keep such log any well information required in this Section  
20   confidential for a period not to exceed 6 months one year from the completion date of ~~completion~~ of the  
21   well of a stratigraphic or exploratory hole and for a period not to exceed two years from the completion  
22   date of a geothermal resources well. ~~If such electrical and radioactive logs are not run, the driller's log~~  
23   shall be filed with the Commission.

24

1 **R12-7-122. Rework and ~~Re~~completion ~~shooting and treating and routine maintenance operations~~**

2 A. After a well has ~~one~~ been completed, it shall not be deepened, redrilled, plugged back,  
3 ~~or reworked, or recompleted in a different zone, except for ordinary maintenance operations or to be~~  
4 ~~recompleted or reperforated in the same producing pool, without first giving 10 written days' notice to~~  
5 ~~the prior approval by the Commission of a written application showing the character of the proposed~~  
6 ~~work proposed and the time when it will begin, except in an emergency as set out in these rules. The~~  
7 ~~application shall be made on Form 25 (see Appendix 1). The Commission will shall~~ notify the applicant  
8 in writing whether the ~~contemplated~~ proposed work is approved or disapproved.

9 B. In the case of an emergency, the an application may be made by electronic communication  
10 ~~orally or by telegraph~~, and the Commission may by electronic communication ~~orally or by telegraph~~  
11 authorize the work; however, written application ~~must~~ required in subsection (A) shall be filed with the  
12 Commission within ~~40~~ ten days after emergency authorization is given, even though the work has already  
13 been commenced or completed, ~~and a written permit shall be issued which shall contain~~ The Commission  
14 shall confirm the emergency authorization in writing upon receipt of the written application.

15 B. C. Written approval from the Commission is not required on routine well operations  
16 such as acidizing, fracturing, and reperforating designed to induce, restore, or maintain production. The  
17 artificial stimulation of any well shall be carried out in accordance with R12-7-117. Within 30 days after  
18 the shooting or artificial stimulation of a well, if it is recompleted in the same pool, the owner, producer,  
19 or operator in charge of the work shall file with the Commission a report on Forms 4 and 25 (see  
20 Appendix 1).

21 C. D. Within 15 days following the completion of any work described in this Section,  
22 the operator shall file a written report with the Commission identifying the well and fully describing the  
23 work performed. If a the well is recompleted, a revised Form 4 (see Appendix 1) completion report shall  
24 be filed as required in R12-7-121, with the Commission within 30 days following completion of the

1 work.

2

3 **R12-7-125. Temporary abandonment**

4 **A.** When drilling, injection, or production operations have been suspended for 60 days, the  
5 well shall be plugged and abandoned as required in R12-7-126 and R12-7-127 unless the operator obtains  
6 written permission for temporary abandonment from the Commission. On drilling wells, the drilling rig  
7 shall not be removed from the hole until written permission for temporary abandonment is obtained from  
8 the Commission. Permission granted shall be for a period not to exceed one year. One year extensions  
9 may be granted.

10 **B.** When requesting temporary abandonment, the operator shall file with the Commission  
11 a description of the mechanical condition of the well and a current corrosion, caliper, or cement bond  
12 log. The Commission shall not approve temporary abandonment or an extension unless the operator can  
13 show that the mechanical condition of the well will prevent damage to the producing zone, prevent  
14 contamination of fresh waters or other natural resources, and prevent leakage of any substance at the  
15 surface. The Commission may require a mechanical integrity test of the casing before approving or  
16 extending temporary abandonment.

17 **C.** Upon expiration of the period of temporary abandonment or an extension, the well shall  
18 be plugged and abandoned, unless the operator can demonstrate to the Commission why the well should  
19 not be plugged and abandoned, and a further extension issued.

20 **D.** Before reentering any temporarily abandoned well, the operator shall give the Commission  
21 at least ten days written notice detailing the proposed activity.

22

23 **R12-7-126. Intention Application to plug and abandon**

24 **A.** Any drilling well completed as a dry hole, from which the rig is to be removed, shall be

1 ~~mudded and cemented unless authorization to the contrary has been given by the Commission.~~

2 ~~B. A. Before any work is commenced to abandoning any well, drilled, including any~~  
3 ~~well drilled below the fresh water level, the owner and operator thereof shall, prior to the beginning of~~  
4 ~~operations of plugging the well, give written notice on submit an application to plug and abandon to the~~  
5 ~~Commission and obtain approval. The application shall set forth the name and location of the well, the~~  
6 ~~mechanical condition of the well, the productive zone and latest production, and the full details of the~~  
7 ~~proposed work. The plan shall provide for the protection of all formations containing usable-quality~~  
8 ~~water, oil, gas, or geothermal resources. Form 9 (See Appendix 1) of his intention to abandon such well.~~  
9 ~~Upon receipt of said notice, the Commission may send a duly authorized representative to the location~~  
10 ~~specified to be present at the time stated in such notice, to witness the plugging of the well.~~

11 ~~B. In the case of a drilling well or an emergency, the application may be made by electronic~~  
12 ~~communication, orally or by telegraph, and the Commission may by electronic communication orally or~~  
13 ~~by telegraph authorize the work; however, the operator shall file written application ~~must be filed~~ within~~  
14 ~~10 ten days after the emergency authorization is given even though the work has already been commenced~~  
15 ~~or completed, ~~and a written permit shall be issued which shall contain~~ The Commission shall confirm~~  
16 ~~the emergency authorization in writing upon receipt of the written application.~~

17 ~~C. — No surface or production casing shall be pulled from any abandoned well without first~~  
18 ~~filing application on Form 9 (see Appendix 1) and, upon completion of the work, reporting on Form 10~~  
19 ~~(see Appendix 1) the method in which the well was plugged and the amount of pipe pulled.~~

20  
21 **R12-7-127. Plugging methods and procedures**

22 ~~A. — Each abandoned hole or well shall be plugged by or on behalf of the owner, operator or~~  
23 ~~producer who is in charge of the well and responsible therefor. Unless a different method and procedure~~  
24 ~~shall be approved by the Commission upon application by the owner, operator, or producer on Form 9~~

1 (see Appendix 1) the method and procedure for plugging the well shall be as follows:

2 1. ~~The bottom of the hole shall be filled to, or a bridge shall be placed at, the top of each~~  
3 ~~producing formation open to the well bore, and in either event a cement plug not less than 50 feet in~~  
4 ~~length shall be placed immediately above each producing formation open to the well bore.~~

5 2. ~~A continuous cement plug shall be placed through all fresh water strata and shall extend~~  
6 ~~at least 50 feet above and 50 feet below said strata.~~

7 3. ~~A plug not less than 20 feet in length shall be placed at or near the surface of the ground~~  
8 ~~in each hole.~~

9 4. ~~The interval between plugs shall be filled with heavy drilling mud.~~

10 5. ~~An uncased hole shall be plugged with heavy mud up to the base of the surface string,~~  
11 ~~at which point a plug of not less than 50 feet of cement shall be placed in and out of the bottom of the~~  
12 ~~surface pipe. See Rule R12-7-127.A.2. above.~~

13 6. ~~The method of placing cement in the hole shall be by pumping through tubing, pump and~~  
14 ~~plug, or other method approved by the Commission.~~

15 A. Before abandoning any well, the operator shall submit an application to plug and abandon  
16 to the Commission for approval as required in R12-7-126. All down-hole plugging shall be conducted  
17 through drill pipe or tubing, unless otherwise approved by the Commission.

18 B. When drilling operations have been suspended for 60 days, the well shall be plugged and  
19 abandoned unless written permission for temporary abandonment shall be obtained from the Commission.

20 Prior to reentering any temporarily abandoned well, the owner or operator shall give written  
21 notice on Form 9 or Form 25 (see Appendix 1) detailing the proposed activity.

22 B. Open hole

23 1. A cement plug shall be placed to extend at least 50 feet below the bottom, except as  
24 limited by total depth or plugged back total depth, to 50 feet above the top of any zone containing fluid

1 with a potential to migrate, any zone of lost circulation, and any zone containing potentially valuable  
2 minerals, including noncommercial hydrocarbons, coal, and oil shale.

3       2. All freshwater zones shall be plugged with a continuous cement plug which shall extend  
4 from at least 50 feet below to at least 50 feet above the freshwater zone, or a 100-foot plug shall be  
5 centered across the base of the freshwater zone and a 100-foot plug shall be centered across the top of  
6 the freshwater zone.

7       3. Open hole below the shoe of cemented casing shall be plugged with cement which shall  
8 extend from at least 50 feet below to at least 50 feet above the shoe.

9       C. Cased hole

10       1. A cement plug shall be placed opposite all open perforations and extend to a minimum  
11 of 50 feet below, except as limited by total depth or plugged back total depth, to 50 feet above the  
12 perforated interval. In lieu of the cement plug, a bridge plug may be placed within 50 to 100 feet above  
13 the open perforations and followed by at least 50 feet of cement.

14       2. If any casing is cut and recovered, a cement plug shall be placed to extend at least 50 feet  
15 above and below the stub.

16       3. No annular space that extends to the surface shall be left open to the drilled hole below.  
17 If this condition exists, a minimum of the top 100 feet of each annulus shall be plugged with cement.

18       D. Plugging mud having the proper weight and consistency to prevent movement of other  
19 fluids into or within the bore hole shall be placed across all intervals not plugged with cement. In the  
20 absence of other information at the time plugging is approved, plugging mud shall be made up with a  
21 minimum of 15 pounds per barrel of sodium bentonite and a nonfermenting polymer, have a minimum  
22 consistency of 9 pounds per gallon, a minimum viscosity of 50 seconds per quart, and mixed with fresh  
23 water.

24       E. A cement surface plug of at least 50 feet shall be placed in the smallest casing which

1 extends to the surface. The top of this plug shall be placed as near the eventual casing cut-off point as  
2 possible.

3 ~~7.~~ F. ~~The exact location of each~~ abandoned well shall be marked by a piece of metal  
4 pipe not less than 4 four inches in diameter securely set in cement and extending at least 4 four feet above  
5 the general ground level. The well location and identity shall be permanently inscribed as required in  
6 R12-7-106(A). A permanent sign of durable construction shall be welded or otherwise permanently  
7 attached to the pipe, and shall contain information required in Rule R12-7-106.A. An abandoned well  
8 location on tilled or otherwise unique land shall be marked in a manner approved by the Commission.

9 ~~8.~~ G. The drill site of an abandoned well shall be restored as nearly as possible to its  
10 natural state, to the satisfaction of the Commission. All pits shall be filled and all equipment and debris  
11 shall be removed from the location.

12 H. The operator shall notify the Commission at least 48 hours before starting abandonment  
13 operations to allow a representative of the Commission to witness all or part of the operations required  
14 in this Section. If the integrity or placement of any plug is questionable, the representative may order  
15 the plug to be tested.

16 ~~C.~~ I. Within 30 15 days after the plugging of any well, the ~~owner~~ operator, ~~producer~~  
17 responsible therefor shall file with the Commission a plugging record ~~an affidavit on Form 10 (see~~  
18 ~~Appendix 1)~~ setting forth in detail the method used in plugging the well, including the casing record; the  
19 size, kind, and depth of plugs used; and the name and depth interval of each formation containing fresh  
20 water, oil, gas, or geothermal resources.

21 J. Seismic shot holes

22 1. All seismic shot holes shall be plugged and abandoned no more than 30 days after firing.

23 2. Seismic shot holes which do not encounter freshwater zones shall be filled with a high-  
24 grade bentonite slurry or some other comparable plugging material as approved by the Commission.

1           3.     Seismic shot holes which do encounter freshwater zones shall be plugged with cement in  
2 accordance with the applicable provisions of subsections (B) and (D).

3           4.     Seismic shot hole locations shall be restored in accordance with subsection (G) and the  
4 operator shall file a plugging record in accordance with subsection (I).

5  
6 **R12-7-128. Stratigraphic, core, and seismic exploratory holes**

7           A.     Any hole drilled for stratigraphic, core, or seismic purposes ~~must shall~~ comply with all  
8 rules in this Chapter and regulations pertaining to the drilling of a well except those the spacing  
9 provisions of Rule R12-7-107. ~~, pertaining to spacing.~~ Samples and cores shall be submitted within 30  
10 days following the date of completion.

11           ~~If requested by the operator, the Commission may allow an additional six month period during~~  
12 ~~which such information shall be kept confidential.~~

13           B.     Each hole drilled for stratigraphic, core, or seismic exploratory purposes shall be plugged  
14 in accordance with R12-7-126 and R12-7-127. The operator of a stratigraphic or core hole shall submit  
15 samples and cores and file a completion report in accordance with R12-7-121, that penetrates below a  
16 fresh water formation shall not be abandoned until the owner or driller plugs it in a manner that will seal  
17 off all fresh water formations. Within 30 days after plugging, a report on Form 10 (see Appendix 1)  
18 shall be filed with the Commission by the owner or driller, setting forth the method used in protecting  
19 the fresh water formations, the location by quarter quarter section, township and range, of the hole drilled  
20 and plugged.

21  
22 **R12-7-129. Wells to be used for fresh water**

23           ~~When the well or exploratory hole to be plugged may safely be used as a fresh water well and~~  
24 ~~such utilization is desired by the landowner, his agent, or lessee after written approval has been obtained~~

1 from the Arizona Department of Water Resources and said well has been satisfactorily plugged to a point  
2 immediately below the fresh water strata, notice shall be given to the Commission on Form 26 (see  
3 Appendix 1) signed by the landowner, his agent, or lessee and notarized in which the landowner, his  
4 agent, or lessee assumes responsibility for the well and the final plugging. Such filing shall constitute  
5 compliance with the obligation of the landowner, his agent or lessee to plug the well. Further liability  
6 under the oil and gas bond applicable to the well shall terminate. A written statement to that effect shall  
7 be given by the Commission to the bonding company and the operator so that the bond may be cancelled  
8 or made no longer effective with respect to that well.

9 A. The landowner, the landowner's agent, or lessee may use any well or exploratory hole  
10 as a freshwater well provided that

11 1. Written approval has been obtained from the Arizona Department of Water Resources;

12 2. The operator has plugged the well in accordance with R12-7-127 to a point immediately  
13 below the freshwater strata; and

14 3. The landowner, the landowner's agent, or lessee assumes responsibility for the well and  
15 its final plugging in a signed and notarized water-well acceptance form provided by and filed with the  
16 Commission.

17 B. Filing of the notarized water-well acceptance form with the Commission shall constitute  
18 the obligation of the landowner, the landowner's agent, or lessee to plug the well in compliance with the  
19 provisions with the State Water Code, Chapter 1, Title 45, Arizona Revised Statutes.

20 C. Upon filing with the Commission, further liability under the oil, gas, or geothermal bond  
21 applicable to the well shall terminate. The Commission shall so notify the bonding company and operator  
22 in writing so that the bond may be cancelled or made no longer effective with respect to that well.

23

24

1 **R12-7-175. Injection wells including enhanced recovery, disposal, and storage wells**

2 **A. The following injection wells used for enhanced recovery, disposal, or storage shall**  
3 **require a permit from the Commission:**

4 **1. Class II injection wells**

5 **a. Saltwater disposal wells: wells used to return salt water associated with oil and gas**  
6 **production to the subsurface.**

7 **b. Enhanced oil recovery wells: wells used to inject salt water, gases, enhanced waters, and**  
8 **steam in order to maintain and extend oil production.**

9 **c. Hydrocarbon storage wells: wells used for the underground storage of crude oil, liquified**  
10 **petroleum gas (LPG), and other liquid hydrocarbon products in naturally occurring rock formations.**

11 **2. Other injection wells**

12 **a. Geothermal injection wells: Class V wells used to reinject groundwater or geothermal**  
13 **fluids that are used in or are associated with the production of geothermal energy.**

14 **b. Other wells: wells used for the underground storage of any hydrocarbons or non-**  
15 **hydrocarbons that are gaseous at standard temperature and pressure, wells used to dissolve salt to create**  
16 **a cavity to be used for underground storage, and wells used to dispose of brine produced in the course**  
17 **of creating a solution-mined salt cavity.**

18 **B. In addition to being subject to the applicable provisions of this Chapter, the wells listed**  
19 **in subsection (A) shall be subject to the following specific regulation:**

20 **1. Injection wells listed in subsections (A)(1)(a) and (b) and (A)(2)(a) shall be regulated by**  
21 **R12-7-176, R12-7-178, and R12-7-179.**

22 **2. Injection wells listed in subsection (A)(1)(c) and (A)(2)(b) shall be regulated by R12-7-**  
23 **176, R12-7-178, R12-7-179, R12-7-180, R12-7-181, and R12-7-182.**

24 **C. No permits for injection wells other than those described in this Section shall be issued**

1 by the Commission.

2

3 **R12-7-176. Permits for injection wells**

4 A. The injection of any substance into any ~~oil or gas reservoir to increase recovery~~ geologic  
5 formation is prohibited unless first authorized by the Commission after notice and hearing. ~~Not less than~~  
6 ~~15~~ At least 15 days notice shall be given before a hearing is held for drilling a new injection well or for  
7 converting an existing well into an injection well. ~~for processing a permit for an injection or disposal~~  
8 ~~well.~~ A permit shall not be required, ~~however,~~ for substances used utilized in formation fracturing,  
9 acidizationing, or other well stimulation techniques whose physical effects are confined to ~~an~~ the area near  
10 the well bore.

11 B. The application for a permit ~~to~~ for an injection well as defined in R12-7-175 shall be  
12 prepared in accordance with R12-7-104, shall meet all the applicable requirements of this Chapter, and  
13 ~~any substance into any reservoir~~ shall contain the following requirements, where applicable:

14 1. A plat showing the location of the each proposed injection well and or wells, the location  
15 and status of all wells, including drilling wells and dry holes, within one-half mile of the proposed well.  
16 The plat shall include the lease boundary lines, the names of lessees and surface owners, within one-half  
17 mile of the injection well or wells, and the name of each offset operator.

18 2. A geologic study, including but not limited to

19 a. A contour map drawn on a geologic marker at or near the top of each injection zone in  
20 the project area;

21 b. A thickness map of each injection zone in the project area;

22 c. At least one geologic cross section drawn through the site of at least one injection well  
23 in the project area showing structural details, any wells that may be affected by the project, and the  
24 location of the base of any freshwater strata, defined as water having 10,000 ppm or less of total

- 1 dissolved solids, or a statement that no fresh water exists; and
- 2 d. A representative electric log to a depth below the deepest producing zone identifying all  
3 geologic units including the injection and confining zones, freshwater aquifers, and oil, gas, or  
4 geothermal zones.
- 5 2. The formation from which wells are producing or have produced.
- 6 3. The name, description, thickness and depth of the formations to be affected by injection.
- 7 4. The log of the injection well or wells, or such information as may be available.
- 8 3. An engineering study, including but not limited to
- 9 a. A statement of the primary purpose of the project;
- 10 b. The characteristics of the injection and confining zones including porosity, permeability,  
11 thickness, areal extent, fracture gradient, original and present temperature and pressure, and residual oil,  
12 gas, and water saturations;
- 13 c. The reservoir fluid data for each injection zone including oil gravity and viscosity, water  
14 quality, and specific gravity of gas;
- 15 5. d. A description of each injection well's casing, or the proposed casing and  
16 cementing program, and the proposed method of testing the casing before use of the injection wells. The  
17 casing shall be designed and tested in accordance with R12-7-181(C) with respect to the injection zone  
18 and the well shall be tested in accordance with R12-7-179(D) upon completion;
- 19 e. A diagram of the proposed wellhead;
- 20 f. A casing diagram, including cement plugs, and the actual or calculated cement fill behind  
21 the casing of all wells within the area affected by the project, and evidence that abandoned wells in the  
22 area will not cause damage to life, health, property, or natural resources;
- 23 g. The well stimulation program if stimulation is planned; and
- 24 h. The planned well-drilling and abandonment program to complete the project, including

- 1 a flood-pattern map showing all injection, production, and abandoned wells, and unit boundaries. Wells  
2 shall be plugged and abandoned in accordance with R12-7-126 and R12-7-127.
- 3 4. An injection plan, including but not limited to  
4 a. A diagram and plan of the injection facilities;  
5 b. The maximum surface injection pressure expected during the life of the project and the  
6 estimated daily rate of fluid injection, by well. The operator shall provide calculations showing that the  
7 maximum injection pressure will not initiate fractures in the confining zone;  
8 c. A description of the area affected by the volumetric method and by the pressure-buildup  
9 method and the radius affected during the life of the project;  
10 d. The monitoring system or method to be used to ensure that no damage is occurring and  
11 that the injection fluid is confined to the permitted injection zone and to the area controlled by the  
12 operator;  
13 e. The method of injection such as casing, tubing, tubing with packer, between strings, etc.;  
14 f. The protective methods to be used on each injection line and well and a contingency plan  
15 for well failure or a shut-in period, including a plan for disposition of fluids not injected as a consequence  
16 of well failure;  
17 g. The source and chemical analysis of the injection fluid, and chemical analysis of the water  
18 in the injection zone. If the water in the injection zone has 10,000 ppm or less of total dissolved solids,  
19 the applicant shall provide evidence of commercial oil or gas producibility of the zone by means of  
20 historical production in the field or by log information, core data, and values for the porosity and  
21 permeability of the zone; and  
22 h. The location and depth of each water-source well that will be used in conjunction with  
23 the project.
- 24 5. Proof of notification to neighboring operators and surface owners within one-half mile

1 of the proposed well.

2 6. Supplementary data as required in R12-7-180 for storage-well projects.

3 7. Any additional information that the Commission may determine is necessary to adequately  
4 review the application.

5 8. All maps, diagrams, and exhibits required in this subsection shall be clearly labeled as  
6 to scale and purpose and shall clearly identify wells, boundaries, zones, contacts, and other relevant data.

7 C. Permits may be issued for a period up to the operating life of the well with review at least  
8 once every five years. Permits may be modified, reissued or terminated during their term if the  
9 Commission determines that the operator is not in compliance with the requirements of this Chapter.

10 6. Designation of the substance proposed to be used for injection, analysis of the substance  
11 to be injected, the source, and the amount proposed to be injected daily.

12 7. The names and addresses of the operator or operators of the project.

13 8. The source and an analysis of the chemical, physical, radiological and biological  
14 characteristics of the injection fluid (Form 15, see Appendix 1).

15 9. Description of stimulation, if performed (Form 4, see Appendix 1).

16 10. Information showing that injection into the proposed zone will not initiate fractures  
17 through the overlying strata which could enable the injection fluid or formation fluid to enter fresh water  
18 strata.

19 a. When the fluid injection rate is 1,000 barrels per day or less, or equivalent rate for any  
20 fraction of 24 hours, an overlying strata of at least 200 feet in thickness between the lowest base of fresh  
21 water and the top of the proposed interval of injection is considered sufficient evidence of fresh water  
22 protection.

23 b. When the fluid injection is greater than 1,000 barrels per day, or equivalent rate for any  
24 fraction of 24 hours, an overlying strata of at least 500 feet in thickness between the lowest base of fresh

1 ~~water and the top of the proposed interval of injection is considered sufficient evidence of fresh water~~  
2 ~~protection.~~

3 ~~e. — If the thickness of the overlying strata is more than required in R12-7-176.B.10.a. or b.,~~  
4 ~~the Commission may, upon application, approve such injection after hearing if the Commission finds that~~  
5 ~~such injection will not initiate fractures through the overlying strata into fresh water strata. The applicant~~  
6 ~~shall have the burden of furnishing the Commission with such sworn evidence and data necessary to~~  
7 ~~support such findings. The Commission shall consider maximum injection rate, maximum surface~~  
8 ~~injection pressure, injection fluid and the lithology and rock characteristics of the injection zone and~~  
9 ~~overlying strata.~~

10 ~~c. — The Commission upon application may exempt an aquifer from the requirements set forth~~  
11 ~~in R12-7-176.B.10 after due notice and hearing. The application shall include sufficient engineering and~~  
12 ~~hydrological data to justify the requested exemption. Only aquifers approved for exemption by the~~  
13 ~~appropriate agency of the State of Arizona may be exempt.~~

14 ~~D. — Application for enlargement of existing authorized underground disposal sites shall include~~  
15 ~~the following:~~

16 ~~1. — Precise identification of the geological formation to be used for proposed disposal~~  
17 ~~purposes.~~

18 ~~2. — Geological and hydrological data in support of any proposed disposal well.~~

19 ~~3. — Waivers from all operators and surface owners within one half mile of any proposed~~  
20 ~~disposal well or proof to the satisfaction of the Commission that such operators and surface owners were~~  
21 ~~notified by the applicant of any proposed additional disposal well.~~

22 ~~4. — An application for enlargement of an existing authorized underground disposal site may~~  
23 ~~be approved by the Commission without hearing if no protest or request for hearing on such application~~  
24 ~~is received within 20 days after the date of notification to operators and surface owners as referred to in~~

1 ~~B.10.e of this Rule.~~

2

3 **R12-7-178. Notice of commencement, ~~and discontinuance, and transfer of injection operations~~**

4 The following provisions apply to all injection projects defined in R12-7-175:

5 1. ~~Immediately upon the commencement of injection operations,~~ The operator shall notify  
6 the Commission of the commencement date that injection operations will begin.

7 2. ~~Within 10 days after permanent discontinuance of injection operations,~~ The operator shall  
8 notify the Commission of the date that injection operations will cease and provide of such discontinuance  
9 and the reasons therefor for discontinuing the injection operations.

10 3. a. The temporary abandonment of any injection well shall be in accordance with  
11 R12-7-125. Temporarily abandoned injection wells shall meet the testing requirements of R12-7-179(D).

12 b. ~~All Before any injection wells shall be is plugged and abandoned in accordance with R12-~~  
13 ~~7-126 and R12-7-127, notice of intent (Form 9, see Appendix 1) shall be given to the Commission, and~~  
14 ~~the same procedure shall be followed in the plugging and abandonment of the well as provided with~~  
15 ~~respect to the plugging and abandonment of oil and gas wells. (See Rule R12-7-126.)~~

16 4. ~~3.~~ An injection or disposal well shall not be transferred from one operator to another  
17 without the written approval of the Commission.

18 a. The operator shall file the request for transfer of ownership of an injection or disposal  
19 well in triplicate from one operator to another shall be filed with the Commission on a "Designation of  
20 Operator" form in triplicate, at least 45 days before prior to the proposed transfer date. The request shall  
21 include the name, address, and telephone number of the proposed new operator and provide the location  
22 and status of each well involved.

23 b. The proposed new operator shall file with the Commission an organization report as  
24 required in R12-7-194 and bond as required in R12-7-103 before the request for transfer will be

1 considered.

2 c. Within 30 days after such filing, the Commission shall return a one copy of the above  
3 form request for transfer to the former operator and one to the proposed new operator within 30 days  
4 after receipt of the information required in paragraph (3)(a) and (b), designating approval or denial of  
5 the transfer of authority to inject for the subject well.

6 i. If the proposed transfer is approved, a copy of the order authorizing injection if  
7 approved, shall be attached to the returned form approved request for transfer.

8 ii. If the proposed transfer is denied, the Commission shall return one copy of the request  
9 to the operator and one copy to the proposed operator together with the reasons for the denial and the  
10 steps necessary for its approval.

11  
12 **R12-7-179. Testing and monitoring of injection wells Records and reports**

13 A. The operator of an injection well Sundry reports shall file a be filed weekly report with  
14 the Commission on all drilling, completion, recompletion, and workover operations on form 24 (see  
15 Appendix 1).

16 B. The operator of an injection well project shall monitor operations to ensure that injection  
17 pressure at the wellhead does not exceed the maximum pressure authorized in the permit, and that no  
18 injection shall cause movement of injection or formation fluids into an underground source of drinking  
19 water.

20 C. The operator shall keep accurate records of the amount of oil, and gas, water, or  
21 geothermal resources produced, the volumes of substances injected, the amount of water produced, the  
22 average and maximum pressure used for injection, the nature of the injected fluid, and other data the  
23 Commission may require to be reported, on Form 14 (see Appendix 1). The operator of an enhanced  
24 recovery or disposal well shall submit a report as required in R12-7-187. The operator of a storage well

1 ~~shall submit a report as required in R12-7-185. Such report shall be submitted on or before the 25th day~~  
2 ~~of the next succeeding month.~~

3 ~~C.~~ D. The operator shall run the following pressure or monitoring tests ~~shall be~~  
4 ~~performed on new injection wells and disposal wells periodically to establish the mechanical integrity of~~  
5 ~~the tubing, casing, and packer. Existing wells being converted to an injection well or disposal shall be~~  
6 ~~tested in the same manner and shall maintain the same mechanical integrity as a new well.~~

7 1. The casing-tubing annulus above the packer shall be tested ~~not less than upon completion~~  
8 ~~and at least once every 5 five years, under the supervision of the Commission, at a pressure equal to~~  
9 ~~lesser of the maximum authorized injection pressure or at a pressure of 1000 psi, whichever is lesser,~~  
10 ~~provided that no testing pressure shall be less than 300 psi. Documentation of the test shall be submitted~~  
11 ~~to the Commission, if not so supervised. Test pressures shall be applied for a period of 30 minutes. If~~  
12 ~~a drop of more than 10 percent of the test pressure should occur, corrective measures shall be applied.~~  
13 ~~If the tubing, casing, or packer cannot be brought up to standard, the well shall be plugged and~~  
14 ~~abandoned in accordance with R12-7-126 and R12-7-127.~~

15 2. ~~In lieu of casing pressure required under Paragraph 1. of this Subsection, the operator~~  
16 ~~may monitor and record during actual injection the pressure in the casing tubing annulus monthly and~~  
17 ~~report the pressures annually.~~

18 3. 2. The Commission may require the operator to run other surveys such as tracer  
19 ~~surveys, temperature logs, or noise logs. One of the following tests shall be performed to demonstrate the~~  
20 ~~absence of fluid movement in vertical channels adjacent to the injection well, :~~

21 a. ~~Tracer surveys.~~

22 b. ~~Noise logs.~~

23 D. E. Mechanical failure or downhole problems which indicate an injection ~~or disposal~~  
24 ~~well is not, or may not be, directing the injected fluid into the permitted or authorized injection zone may~~

1 be cause to shut in the well. ~~If said condition may endanger the fresh water,~~ The operator shall orally  
2 notify the Commission within 24 hours, ~~of any such failure or problem,~~ followed by A written notice  
3 shall be filed within 5 five days of the occurrence, together with a plan for testing and repairing the well.  
4 If the well cannot be brought up to the standard required in subsection D, it shall be plugged and  
5 abandoned in accordance with R12-7-126 and R12-7-127.

6  
7 **R12-7-180. Supplementary requirements for sStorage wells**

8 ~~A. Application to drill a well for the purpose of storing gas, liquified petroleum gases, or~~  
9 ~~liquid hydrocarbons other than liquified petroleum gases shall be submitted to the Commission for~~  
10 ~~approval. The application shall be made on Form 3 (see Appendix 1). The operator shall submit a plat~~  
11 ~~prepared and certified by a registered surveyor, bearing his certificate number (surveyors registered in~~  
12 ~~other states other than Arizona are acceptable) of the area within one half mile of the proposed well,~~  
13 ~~showing the location of the proposed well and the location of any wells, dry holes and lease ownership.~~  
14 ~~Upon completion of the proposed well, the operator shall submit the log of the well, a diagrammatic~~  
15 ~~sketch of the finished installation, and an estimate of the storage capacity of the cavity. Such storage~~  
16 ~~wells need not comply with the provisions of Rule R12-7-107, insofar as it pertains to spacing and~~  
17 ~~acreage dedication requirements. Upon abandoning the well drilled for storage purposes, full compliance~~  
18 ~~must be made with Rules R12-7-126 and R12-7-127.~~

19 ~~B. Each underground storer of natural gas, liquified petroleum gas or other hydrocarbon~~  
20 ~~gases within the state shall furnish for each calendar month Form 28 (see Appendix 1) which shall be~~  
21 ~~filed on or before the 25th day of the next succeeding month.~~

22 The application for a storage well as defined in R12-7-175(B)(2) shall be prepared in accordance  
23 with R12-7-176 and shall contain the following, where applicable:

- 24 1. Information on any oil or gas production within five miles of each proposed well.

1           2.    Information on the oil and gas reserves of each storage zone before starting injection,  
2 including calculations.

3           3.    A comprehensive plan for disposition of brine and salt produced in the course of creating  
4 a solution-mined salt cavity. Cavities shall be designed and constructed in accordance with R12-7-181.

5           a.    Surface disposition shall be subject to the rules of the Arizona Department of Water  
6 Resources and the Arizona Department of Environmental Quality.

7           b.    Saltwater disposal wells shall be permitted in accordance with R12-7-176.

8           c.    Surface brine reservoirs used in the operation of the storage system and disposal  
9 reservoirs shall be designed to prevent the contamination of air, fresh water, and soil.

10          4.    A list of proposed surface and subsurface safety devices, tests, and precautions to be taken  
11 to ensure safety of the project. The operator shall install a flare or other safety system acceptable to the  
12 Commission at or near each brine pit or at any other location where escape of gases is likely to occur.

13  
14 **R12-7-181. Storage cavity design and construction of storage wells and cavities**

15          A.    The applicant ~~No permit~~ to drill a storage well for the purpose of storing liquid and/ or  
16 gaseous hydrocarbons, or any other substances under the jurisdiction of the Commission, into an  
17 underground storage cavity shall be issued by the Commission until evidence has been presented to the  
18 Commission by the applicant, demonstrating to the Commission that the proposed storage of liquid and/  
19 or gaseous hydrocarbons, or other substance, will follow be conducted in a manner consistent with  
20 established practices to and will preserve the structural integrity of the host rock, including halite,  
21 formation (including halite) to be used for a storage cavity and the overlying sediments. This evidence  
22 presented shall include

23           1.    An investigation to determine the feasibility of a storage system at the particular site; and

24           2.    An assessment of the stability of the each proposed cavity design, particularly with

1 regard to the size, shape and depth of the storage cavity, the amount of separation between storage  
2 cavities, and the amount of separation between the storage cavity and the periphery of the host rock  
3 formation (including halite) to be used for the storage cavity.

4 1. ~~All projects for the storage of liquid and/or gaseous hydrocarbons, or other substances,~~  
5 ~~shall be designed, located, equipped and operated in accordance with the following standards:~~

6 a. ~~Prior to the design and construction of an underground storage cavity, a qualified engineer~~  
7 ~~and/or geologist shall conduct an investigation to determine the feasibility of such a storage system at the~~  
8 ~~particular site.~~

9 b. B. ~~The data obtained during the feasibility investigation shall be considered in t~~ The  
10 design of a solution-mined underground storage system. ~~Design shall be performed by or under the~~  
11 supervision of an engineer or geologist qualified for this type of work, and shall include such factors,  
12 among others, as type of storage use, location of the each cavity(ies), number of cavities, cavity capacity,  
13 and maximum development diameter of the each cavity(ies). The design shall ~~assure~~ ensure that project  
14 development can be conducted in a reasonable, prudent, and systematic manner; and shall stress physical  
15 and environmental safety and the prevention of waste. The design and solutioning mining shall be  
16 continually reviewed throughout the construction phase to ~~take into consideration pertinent additional~~  
17 detailed account for any new subsurface information; and shall include provisions for protection from  
18 damage caused by hydraulic shock. The original development and operational plans shall be modified,  
19 as necessary, to conform with good engineering practice, ~~as necessary.~~ The design shall incorporate the  
20 standards outlined below:

21 e. ~~The wellhead and borehole shall be located so that the storage chamber at maximum~~  
22 ~~development diameter shall not extend closer than 100 feet to the property of others who have not~~  
23 ~~consented to subsurface storage under their land.~~

24 d. 1. The minimum separation between the nearest outer walls of adjacent walls of a

1 storage cavities as measured in any direction shall be established by a qualified engineer, considering:

- 2 i. a. The properties of the host rock; formation (including halite);  
3 ii. b. The elevation of the top and bottom of the adjacent cavities;  
4 iii. c. Their maximum development diameter relative to the spacing of the cavities; and  
5 iv. d. Other considerations deemed appropriate for the specific site; ~~but~~ however, in no

6 case shall such separation at any time during the storage project be less than 200 feet.

7 e. 2. The walls of a storage cavity shall be no less than ~~400~~ 200 feet from the boundary  
8 of the lands included in the storage project on which the chambers are located.

9 f. 3. If the design ~~should involve~~ involves the intentional subsurface connection between two  
10 adjacent storage cavities under one property (e.g., a "U"-tube storage cavity system), the minimum  
11 separation between cavities specified in ~~A-1-d. subsection (B)(1)(d) above~~ shall not apply.

12 g. C. The borehole shall be dually cased from the surface into the cavity in accordance  
13 with R12-7-110 and R12-7-111. At least two strings of casing shall be fully cemented from the surface  
14 into the host rock either during the primary cement job or by remedial action, one casing string being  
15 a surface string, the other being the final cemented string. The surface casing string shall be cemented  
16 from the casing shoe to the surface. Exceptions to this procedure ~~must~~ shall have prior approval of the  
17 Commission.

18 i. 1. The final cemented casing string shall have adequate tensile and collapse  
19 strengths, as approved by the Commission, for the setting depth. ~~This string shall be cemented from~~  
20 ~~casing seat (bottom of string) to ground surface and shall be set a minimum of 200 feet into the formation~~  
21 ~~to be used for the storage cavity. Exceptions to this cementing program must~~ shall have prior approval  
22 of the Commission.

23 ii. ~~The final (production) cemented casing string shall be hydrostatically pressure tested~~  
24 ~~before drilling out the plug (shoe). The test pressure applied at the surface shall be a minimum of 500~~

1 psi. In any event, the test pressure when measured at the surface shall not cause pressure at the casing  
2 seat to exceed 0.9 psi per foot of depth. The test pressure shall be maintained for a minimum of one  
3 hour to verify casing integrity and absence of thread leaks. This test may be made immediately after the  
4 cement is displaced from the casing.

5       iii. 2. The casing seat and cement of the final cemented casing string shall be  
6 hydrostatically pressure tested after drilling out. At least 10 ten feet of into the formation below this  
7 the casing seat shall be penetrated prior to this test. The test pressure calculated at the casing seat shall  
8 equal the proposed maximum operating pressure at that point and shall not exceed 0.9 psi per foot of  
9 depth.

10       3. After the wellhead has been installed and prior to storing before products are stored, the  
11 system shall be hydrostatically pressure tested as a unit.

12       4. All tests required by in this subsection shall be prepared and supervised by a qualified  
13 engineer and shall meet the integrity standards set in R12-7-179(D).

14       n. D. R12-7-181 shall become effective as of midnight, June 1, 1978. The storage  
15 facilities in existence prior to the effective before that date shall not be affected hereby, required to  
16 retroactively meet the planning and construction requirements of subsections (B) and (C) except as to any  
17 for future expansions or additions, and except that existing storage facilities shall comply with  
18 R12-7-182, 181.A.1.h. and i.

19  
20 NOTE \*\*\*\* h. through m. Amended and renumbered as new rule R12-7-182. \*\*\*

21  
22 **R12-7-182. Operation, inspection, and closure of storage-well systems**

23       h. A. The maximum and minimum operating pressures of a storage cavity system shall  
24 be determined by a qualified engineer after considering the lithological characteristics of the formation

1 host rock. The maximum operating pressure (~~gauge~~) at the shallower of the casing seat or cavity ceiling,  
2 whichever is shallower, shall not exceed 0.9 psi per foot of overburden depth.

3 i. 1. The storage cavity system shall not be subjected to pressures ~~in excess of~~  
4 exceeding the maximum operating pressure even for short periods of time, ~~(including pressure pulsation~~  
5 ~~peaks, abnormal operating conditions, etc).~~

6 ii. 2. The wellhead, flowlines, valves, and all related connections shall have a test  
7 pressure rating at least equivalent to 125% of the maximum pressure which could be exerted at the  
8 surface. All valves shall be periodically inspected and maintained in good working order.

9 iii. 3. The wellhead and storage cavities system shall be protected with safety devices  
10 to prevent pressures ~~in excess of exceeding the~~ maximum operating pressure from being exerted on the  
11 storage chamber system, and to prevent backflow of stored products in event of flowline rupture.

12 4. Competent personnel shall be at either the well or other control sites during injection or  
13 withdrawal from any storage well.

14 i. B. The A flare, as required in R12-7-180(4), or other safety system shall be installed  
15 at or near each brine pit or at any other location where the uncontrollable escape of liquified gases is  
16 likely to occur and the flare shall be burned continuously when a liquified gas or other flammable  
17 substance is being injected into a cavern.

18 i. ~~Competent personnel shall be at either the well or other control sites during injection or~~  
19 ~~withdrawal from any storage well.~~

20 ii. ~~Salt water disposal wells shall be drilled and completed in accordance with existing~~  
21 ~~statewide rules and regulations of the Commission. Disposal reservoirs shall be designed to prevent the~~  
22 ~~contamination of air, fresh water or soil, as directed by the Commission.~~

23 iii. C. Each operator of a solution cavern storage well shall conduct semiannual safety  
24 inspections of such their facility; and file with the Commission a written report consisting of the on the

1 inspection procedures and results within ~~30~~ 5 days following the inspection. The operator shall notify  
2 the Commission at least 5 ~~five~~ days ~~prior to such~~ before an inspections ~~so that a Commission to allow~~  
3 a representative of the Commission may be present to witness the inspections. Inspections shall include  
4 but not be limited to, the following:

- 5 (1.) Operation of all manual valves.
- 6 (2.) Operation of all automatic shut-in safety valves, including sounding or alarm devices.
- 7 (3.) Examination of fFlare system or other safety system installation, or hydrocarbon filters.
- 8 (4.) Examination of eEarthen brine pits, tanks, firewalls, and related equipment.
- 9 (5.) Examination of fFlowlines, manifolds, and related equipment.
- 10 (6.) Examination of wWarning signs, safety fences, etc.
- 11 (7.) Examination of housekeeping practices including the removal of weeds, used equipment,  
12 and debris from the area of operations.

13 8. The Commission may require aAdditional inspections ~~may be made by the Commission~~  
14 at any time during regular working hours and upon reasonable notice to the cavern ~~owner~~ operator.

15 iv. D. A capacity determination for each storage cavity shall be made and filed with the  
16 Commission upon completion of the storage cavity. These determinations shall be verified at least once  
17 every 5 ~~five~~ years.

18 v. E. Appropriate safety precaution signs shall be displayed and unauthorized personnel  
19 kept out of the storage area. Each storage wellhead shall be visibly marked with an appropriate  
20 identifying sign and guard rails installed where, in the opinion of the Commission, it is necessary.

21 j. F. ~~Prior to the commencement of plugging operations on any project well or the~~  
22 ~~abandonment of any storage cavity, an application describing the method to be used shall be filed with~~  
23 ~~and approved by the Commission.~~ Storage wells shall be plugged and abandoned in accordance with  
24 R12-7-126 and R12-7-127. However, the Commission may impose different requirements as appropriate

1 for each specific storage well.

2 k. G. Should If the Commission determines that the continued operation of a storage  
3 cavity and/or the product storage well or associated facilities, including, but not limited to, valves, brine  
4 tanks, or pits, flares, dehydrators, and loading and docking facilities, would cause unsafe operating  
5 conditions, waste, pollution, or contamination of air, fresh water or soil, or encroachment on adjacent  
6 property, if the Commission may immediately prohibit further order discontinuance of operations of the  
7 well, or associated wellhead storage facilities or any part thereof until such time as the Commission has  
8 determined that the project can and will be conducted in a physically and environmentally safe manner.  
9 Any accident or malfunction of equipment which causes loss of or endangers life, the environment or the  
10 property of others, involving products or otherwise, shall be reported to the Commission as soon as  
11 practicable.

12 H. The operator shall notify the Commission within 24 hours of every accident or equipment  
13 malfunction which causes loss of life or requires hospitalization of personnel; threatens the public health  
14 and safety; pollutes the air, soil, or fresh water; or causes loss of the stored substance. A final written  
15 report shall be filed with the Commission in accordance with R12-7-120(B).

16 l. If it is determined by the Commission that any unsafe operating condition, waste,  
17 pollution, contamination of air, fresh water or soil, or threat to any other formation is imminent, further  
18 operation of the storage cavity(ies) and/or storage well(s) and associated facilities shall be discontinued  
19 until such time as it is determined by the Commission that the project will be conducted in a physically  
20 and environmentally safe manner.

21 m. I. The Commission may administratively grant Any exceptions to the guidelines and  
22 requirements set forth in R12-7-181 of this Section if the applicant can show may be administratively  
23 granted by the Commission only upon proper showing by the applicant that such the exception is  
24 reasonable, justified by the particular circumstances, and consistent with the intent of these rules

- 1 regarding physical and environmental safety and the prevention of waste. ~~However, upon proper~~
- 2 ~~application~~ An applicant may request a hearing ~~will be called~~ pursuant to A.R.S. § 27-516.B.

2. The formation from which wells are producing or have produced.
  3. The name, description, thickness and depth of the formations to be affected by injection.
  4. The log of the injection well or wells, or such information as may be available.
  5. Description of the injection well's casing, or the proposed casing program, and the proposed method of testing casing before use of the injection wells.
  6. Designation of the substance proposed to be used for injection, analysis of the substance to be injected, the source, and the amount proposed to be injected daily.
  7. The names and addresses of the operator or operators of the project.
  8. The source and an analysis of the chemical, physical, radiological and biological characteristics of the injection fluid (Form 15, see Appendix 1).
  9. Description of stimulation, if performed (Form 4, see Appendix 1).
  10. Information showing that injection into the proposed zone will not initiate fractures through the overlying strata which could enable the injection fluid or formation fluid to enter fresh-water strata.
    - a. When the fluid injection rate is 1,000 barrels per day or less, or equivalent rate for any fraction of 24 hours, an overlying strata of at least 200 feet in thickness between the lowest base of fresh water and the top of the proposed interval of injection is considered sufficient evidence of fresh-water protection.
    - b. When the fluid injection is greater than 1,000 barrels per day, or equivalent rate for any fraction of 24 hours, an overlying strata of at least 500 feet in thickness between the lowest base of fresh water and the top of the proposed interval of injection is considered sufficient evidence of fresh-water protection.
    - c. If the thickness of the overlying strata is more than required in R12-7-176(B)(10)(a) or (b), the Commission may, upon application, approve such injection after hearing if the Commission finds that such injection will not initiate fractures through the overlying strata into fresh-water strata. The applicant shall have the burden of furnishing the Commission with such sworn evidence and data necessary to support such findings. The Commission shall consider maximum injection rate, maximum surface injection pressure, injection fluid and the lithology and rock characteristics of the injection zone and overlying strata.
- C. The Commission upon application may exempt an aquifer from the requirements set forth in R12-7-176(B)(10) after due notice and hearing. The application shall include sufficient engineering and hydrological data to justify the requested exemption. Only aquifers approved for exemption by the appropriate agency of the state of Arizona may be exempt.
- D. Application for enlargement of existing authorized underground disposal sites shall include the following:
1. Precise identification of the geological formation to be used for proposed disposal purposes.
  2. Geological and hydrological data in support of any proposed disposal well.
  3. Waivers from all operators and surface owners within one-half mile of any proposed disposal well or proof to the satisfaction of the Commission that such operators and surface owners were notified by the applicant of any proposed additional disposal well.
  4. An application for enlargement of an existing authorized underground disposal site may be approved by the Commission without hearing if no protest or request for hearing on such application is received within 20 days after the date of notification to operators and surface owners as referred to in (B)(10)(c) of this rule.

**Historical Note**

Former Rule 701; Amended effective September 29, 1982. See also Section R12-7-141 (Supp. 82-5).

**R12-7-177. Casing and cementing of injection wells**

- A. Wells used for injection into producing formation shall be cased with safe and adequate casing or tubing in order to prevent leakage. The casing or tubing shall be so set or cemented that damage will not be caused to oil, gas, or fresh water resources.
- B. Surface casing shall be pressure tested with a minimum of 600 psi for 30 minutes. If a drop of more than ten percent of the test pressure should occur, the casing shall be considered defective and corrective measures shall be applied. In wells drilled with cable tools, casing may be tested by bailing the well dry. The hole must remain satisfactorily dry for one hour before commencing further operations. Results of the above test and any remedial action shall be reported on Form 25 (see Appendix 1) within 20 days following the test.

**Historical Note**

Former Rule 702; Amended effective September 29, 1982 (Supp. 82-5).

**R12-7-178. Notice of commencement and discontinuance of injection operations**

The following provisions apply to all injection projects:

1. Immediately upon the commencement of injection operations, the operator shall notify the Commission of the commencement date.
2. Within ten days after permanent discontinuance of injection operations, the operator shall notify the Commission of the date of such discontinuance and the reasons therefor.
3. Before any injection well is plugged and abandoned, notice of intent (Form 9, see Appendix 1) shall be given to the Commission, and the same procedure shall be followed in the plugging and abandonment of the well as provided with respect to the plugging and abandonment of oil and gas wells. (See rule R12-7-126.)
4. An injection or disposal well shall not be transferred from one operator to another without the approval of the Commission. The transfer of ownership of an injection or disposal well from one operator to another shall be filed with the Commission on a "Designation of Operator" form in triplicate, prior to the proposed transfer date. Within 30 days after such filing, the Commission shall return a copy of the above form to the former operator and the proposed new operator, designating approval or denial of the transfer of authority to inject for the subject well. A copy of the order authorizing injection, if approved, shall be attached to the returned form.

**Historical Note**

Former Rule 703; Amended effective September 29, 1982 (Supp. 82-5).

**R12-7-179. Records and reports**

- A. Sundry reports shall be filed weekly on all drilling, completion, recompletion and workover operations on Form 25 (see Appendix 1).

**R12-7-189. Processor's reports**

A person who is the owner, or who has the control or management of any refinery or processing plant in the state shall keep at his office or other place or business in the state a daily record of:

1. All oil and gas received into the refinery or processing plant.
2. The names and addresses of the persons from whom the oil and gas was received.
3. The quantity and quality of the oil and gas received from each person.
4. Each disposition of a product obtained from refining or processing the oil or gas.

**Historical Note**

Former Rule 902; Amended effective September 29, 1982 (Supp. 82-5).

**R12-7-190. Gasoline plant reports**

Each operator of a gasoline plant, cycling plant, or any other plant at which gasoline, butane, propane, condensate, kerosene, oil or other liquid products are extracted from gas within the state, shall furnish for each calendar month a "Gasoline Plant or Pressure Maintenance Plant Monthly Report" (Form 21, see Appendix 1) containing the information indicated by such form respecting gas and products involved in the operation of each plant during each month. Such report shall be filed with the Commission on or before the 25th day of the next succeeding month.

**Historical Note**

Former Rule 903; Amended effective September 29, 1982 (Supp. 82-5).

**R12-7-191. Reserved**

**R12-7-192. Books and records to substantiate reports**  
Each operator, producer, transporter, storer, refiner, gasoline or extraction plant operator, and initial purchaser of oil and gas within the state shall make and keep appropriate books and records for a period of not less than five years that cover his operations in Arizona, from which he may be able to make and substantiate the reports required by the Commission.

**Historical Note**

Former Rule 1001; Amended effective September 29, 1982 (Supp. 82-5).

**R12-7-193. Written notices, requests, permits and reports**  
The Commission shall adopt such forms of notices, requests, permits and reports as it may deem advisable or necessary in carrying out the provisions of law and its rules and regulations.

**Historical Note**

Former Rule 1002.

**R12-7-194. Organization reports**

Every person acting as principal or as agent for another or who is independently engaged in the drilling operation, production, storage, transportation (except by railroads), refining, reclaiming, treating, marketing, processing of, or scientific exploration for oil or gas shall immediately file with the Commission on the form "Organization Report" (Form 1, see Appendix 1) a statement under oath giving the following information: the name under which such business is being operated or conducted, the name and post office address of such person and the business or businesses in which he is engaged; the plan or organization, and, if a reorganization, the name and address of the previous organization; the state where incorporated, if a foreign corporation, and the name and post office address of the Arizona agent, together with the date of permit to do business in Arizona; the names and addresses of the principal officers or partners

and the names and addresses of the directors thereof. Immediately after any change occur, as to facts stated in the report filed, a supplementary report (Form 1, see Appendix 1) shall be immediately filed with the Commission with respect to such change.

**Historical Note**

Former Rule 1003.

**R12-7-195. Additional information may be required**

These rules shall not be taken or construed to limit or restrict the authority of the Commission to require the furnishing of such additional reports, data or other information relative to production, transportation, storing, refining, processing, or handling of oil, gas or their products in the state of Arizona as may appear to be necessary or desirable, either generally or specifically, for the prevention of waste and the conservation of oil and gas resources.

**Historical Note**

Former Rule 1004; Amended effective September 29, 1982 (Supp. 82-5).

**APPENDIX 1 - FORMS**

Number

1. Organization report  
Rule R12-7-194
2. Performance and surety bond  
Rule R12-7-103
3. Application for permit to drill or re-enter  
Rule R12-7-104, R12-7-107, R12-7-110, R12-7-180
4. Well completion or recompletion report and well log  
Rule R12-7-121, R12-7-122, R12-7-176
5. Well status report and gas-oil ratio tests  
Rule R12-7-135
6. Potential test and request for allowable - oil wells  
Rule R12-7-135
7. Reservoir pressure report  
Rule R12-7-136
8. Operator's certificate of compliance and authorization to transport oil or gas from lease  
Rule R12-7-183
9. Application to plug and abandon  
Rule R12-7-126, R12-7-127
10. Plugging record  
Rule R12-7-126, R12-7-127, R12-7-128
11. Application for multiple completion  
Rule R12-7-116
12. Packer setting report  
Rule R12-7-116
13. Packer leakage test  
Rule R12-7-116
14. Report of injection project  
Rule R12-7-179
15. Application to dispose of salt water by injection into a porous formation  
Rule R12-7-176
16. Producer's monthly report  
Rule R12-7-138, R12-7-151, R12-7-161
17. Certificate for load oil credit and permit to transport recovered load oil  
Rule R12-7-184
18. Multipoint and one point back pressure test for gas well  
Rule R12-7-150
19. Gas purchaser's monthly report  
Rule R12-7-151, R12-7-186
20. Deliverability test report
21. Gasoline plant or pressure maintenance plant monthly report  
Rule R12-7-190

22. Request for gas allowable
23. Purchaser's gas nominations
24. Transporter's and storer's monthly report  
Rule R12-7-142, R12-7-151, R12-7-185
25. Sundry notices and weekly reports on wells  
Rule R12-7-109, R12-7-112, R12-7-114, R12-7-115,  
R12-7-117, R12-7-122, R12-7-137, R12-7-161,  
R12-7-177, R12-7-179
26. Water well acceptance  
Rule R12-7-129
27. Permit to drill  
Rule R12-7-104, R12-7-105, R12-7-128
28. Transporter's and storer's monthly report, gas and/or LPG  
Rule R12-7-180
29. Refinery monthly report  
Rule R12-7-188

## Note

(For the convenience of the operator, the forms and reports in common use by the United States Geological Survey, and for the purpose for which each form was designed, may be submitted in lieu of similar Commission forms. Commission forms No. 1, 2, 3, 4, and 27 must be used for their designated purpose and no substitutes will be acceptable.)

## ARTICLE 2. GEOTHERMAL RESOURCES

## R12-7-201. Definitions

Unless the context otherwise requires, the words hereinafter defined shall have the following meaning when found in these rules, to-wit:

1. "Commission" means the Oil and Gas Conservation Commission.
2. "Completion or completed well" means a well that has produced or is capable of producing geothermal resources or has been determined to be a dry hole, temporarily abandoned or plugged and abandoned, or has been readied for other phases of exploitation.
3. "Drilling unit", that spacing unit established pursuant to rule R12-7-207 for the geothermal area in question.
4. "Environment" means the sum total of all the external conditions which may act upon an organism or community, to influence its development or existence.
5. "Geothermal area" means the same general surface area which is underlain or reasonably appears to be underlain by one or more formations containing geothermal resources.
6. "Geothermal resources" means:
  - a. All products of geothermal processes embracing indigenous steam, hot water and hot brines.
  - b. Steam and other gases, hot water and hot brines resulting from water, other fluids or gas artificially introduced into geothermal formations.
  - c. Heat or other associated energy found in geothermal formations, including any artificial stimulation or induction thereof.
  - d. Any mineral or minerals, exclusive of fossil fuels and helium gas, which may be present in solution or in association with geothermal steam, water or brines.
7. "Operator" means any person drilling, maintaining, operating, pumping or in control of any well and includes the owner, when any well is or has been or is about to be operated by or under the direction of the owner.
8. "Owner" means and includes the operator when any well is operated or has been operated or is about to be operated by any person other than the owner.

9. "Person" means and includes any individual, firm, association, corporation or any other group or combination acting as a unit.
10. "Waste" means any physical waste including, but not limited to, underground waste resulting from the inefficient, excessive or improper use or dissipation of reservoir energy or resulting from the location, spacing, drilling, equipping, operation or production of a geothermal resources well in such a manner that reduces or tends to reduce the ultimate economic recovery of the geothermal resources within a reservoir, and surface waste resulting from the inefficient storage or utilization of geothermal resources and the location, spacing, drilling, equipping, operation or production of a geothermal resources well in such a manner that causes or tends to cause the unnecessary or excessive surface loss or destruction of geothermal resources obtained or released from the reservoir.
11. "Well" means any well drilled in search of geothermal resources or any development well on lands in areas proved to be underlain by one or more formations containing geothermal resources or reasonably presumed to contain geothermal resources or any well drilled for information purposes, or any producing well or re-entered abandoned well used for the injection of fluids into the geothermal formation or disposition of fluids into nongeothermal formations, or any well drilled for the purpose of stimulating the heat of a formation or for the creation of heat in a formation by nuclear or any other form of energy.

- a. "Recompletion of well or recompleted well" -- Any well deepened, plugged back, reperforated or perforated in a different zone will be considered recompleted.

Historical Note  
Former A.

## R12-7-202. General rules applied statewide

- A. Scope of rules. These rules are general rules of statewide application and shall apply to all areas; however, special rules, applicable to particular areas or subject matter, shall prevail over these general rules to the extent that they are in conflict therewith.
- B. Enforcement of laws, rules and regulations dealing with the conservation of geothermal resources. The Commission, by virtue of A.R.S. §27-652 et seq., has jurisdiction and authority over such persons and property deemed necessary to administer and enforce the provisions of the statutes, rules, and regulations relating to the conservation of geothermal resources.
- C. Waste of geothermal resources is unlawful and prohibited.
- D. Classifying and defining areas. The Commission, on its own motion may and on application of any interested person shall, after notice and hearing, determine whether a particular well or area is a geothermal resource well, or a geothermal resource area, or whether a reclassification should be made.
- E. Forms upon request
  1. Forms for written notices, requests and reports required by the Commission will be furnished upon request.
  2. Requiring all forms and reports requested by the Commission to be submitted to the Commission on or before the 20th day of the next succeeding month for monthly reports or within 20 days following the completion of the action requiring the report, except as otherwise provided by the Commission.

Historical Note  
Former B.

**R12-7-203. Bond**

- A. Before any person shall hereafter engage in the business of drilling for or producing a well in this state, such person shall file with the Commission a bond executed by such person as principal and some surety company satisfactory to the Commission as surety, in the principal sum of \$5,000 for each individual well or in the principal sum of \$25,000 as a blanket bond to cover all wells, payable to the Oil and Gas Conservation Commission, state of Arizona, for the use and benefit of the Oil and Gas Conservation Fund. Such bond shall be conditioned on the following requirements:
1. Compliance with all statutes and rules and regulations.
  2. Plugging and abandoning well as approved by the Commission.
- B. Transfer of property does not release the bond. If the property is transferred, and the principal desires to be released from the bond, the procedure shall be as follows:
1. The principal on the bond shall notify the Commission in writing that the well or wells, describing accurately the location of each, and the date and number of each permit to drill, has or have been transferred to a named transferee for the purposes of ownership or operation.
  2. The transferee of any well or of the operation of any such well shall declare in writing his acceptance of such transfer and of the responsibility of such well and shall submit a new bond or bonds unless his blanket bond applies to the well or wells.
- C. When the Commission approves the transfer, the transferor is released from all responsibility thereafter with respect to the well or wells, and the Commission in writing will declare that the transferor's bond or bonds applicable thereto now be released.
- D. The Commission will in writing inform the principal and the surety or sureties of any bond where there is compliance with the conditions of the bond so that liability under the bond may be formally terminated.
- E. The liability under any bond may not be terminated without written approval of the Commission.

Historical Note  
Former Rule G-101.

**R12-7-204. Application to drill and procedure to cancel a permit**

- A. A person desiring to drill a well shall notify the Commission of such intent on a form prescribed by the Commission (Form G-3, see Appendix 1) and shall pay a fee of \$25.00 for each well. Said \$25.00 fee shall be considered earned upon issuance of the permit to drill. The application for permit to drill shall be accompanied by a plat, as provided in rule R12-7-207. The location must be surveyed and the submitted plat certified by a registered surveyor and bear his certificate number. (Surveyors registered in states other than Arizona are acceptable.)
1. Upon receipt of the application, the plat, the fee and bond filed in accordance with the provisions of this Section, the Commission will promptly issue such person a permit to drill, unless the drilling of the well is contrary to law, or to a rule, regulation, or order of the Commission or is not a permitted location under the well spacing as requested in any pending application before the Commission. The drilling of the well is prohibited until a permit to drill is obtained, except in the case of an emergency, and then as the Commission directs. The permit shall be on such form prescribed by the Commission (Form 27, see Appendix 1). If the permit is disallowed, the Commission will immediately notify the person in writing the reasons therefor.

No emergency permit shall be granted for drilling of a well unless such well shall be drilled at a location as provided in rule R12-7-207, or as provided by other order of the Commission, as set forth in rules R12-7-205 and R12-7-207. Upon granting of an emergency permit, such permittee shall within ten days thereafter comply with the requirements of this rule as to filing application, fee, bond, and plat, or the emergency permit shall become null and void and the well shall be plugged and abandoned unless an extension in writing is granted by the Commission.

2. Unless operations are commenced within 90 days after date of approval, the permit to drill will become null and void unless an extension in writing is granted by the Commission.

- B. If a permit has been issued, and in the event a violation of the Commission's rules and regulations or orders occurs, and if the well has been commenced, the Commission may order the permit holder to cease any further work under the permit in question; and the Commission may, after notice and hearing, cancel a permit for any violation of its rules and regulations or orders; may order the well to be plugged and abandoned, and may order the performance of all other obligations required by the rules and regulations or orders of the Commission.

Historical Note  
Former Rule G-102.

**R12-7-205. Change of location**

No person to whom the permit has been issued shall change the location of the well from the location authorized by the permit, until the following requirements have been complied with:

1. If, prior to the drilling of the well, the person to whom the permit was originally issued desires to change the location, or if after commencement of the drilling operations, it is determined that the location is erroneously described on the permit, the permittee shall obtain a new permit (Form 27, see Appendix 1).  
If the new location is at an authorized point in the approved drilling unit as provided in the permit, the application may be made orally or by telegraph and the Commission may orally or by telegraph authorize the commencement or continuance of drilling operations. Within ten days after obtaining oral or telegraphic authorization, the permittee shall file application (Form G-3, see Appendix 1) properly filled out, showing the new location and declaring that he desires a permit for that location. A new permit may be issued and the old permit cancelled without payment of additional fee. If the new location is located outside the approved drilling unit covered by the first permit, no drilling shall be commenced or continued until the new permit is issued.

Historical Note  
Former Rule G-103.

**R12-7-206. Identification of wells**

- A. Every person drilling or operating, owning, controlling, or in possession of any well drilled, shall post on the derrick or in a conspicuous place not more than 20 feet from the well, a sign of durable construction, the lettering thereon to be kept in a legible condition and such lettering large enough to be legible under normal conditions at a distance of 50 feet.  
The sign shall show:
1. The name of the well.
  2. Location of the well by quarter-quarter-quarter section, township and range.
  3. The state's drilling permit number.
- B. All wells shall be named in the following manner:

1. Name of operator.
2. Numerical designation of the well. This designation shall follow a logical sequence and may include letter designations or section numbers.
3. The type of lease, i.e., federal, state, or Indian, and in the case of a well drilled on a fee lease, the lessor's name and indicate that the well is for geothermal purposes.

Historical Note  
Former Rule G-104.

**R12-7-207. Spacing of wells**

- A. The Commission shall administratively approve proposed well-spacing programs or administratively prescribe such modifications to the programs as it determines necessary for proper development, giving consideration to such factors as, but not limited to:
1. Topographic characteristics of the area.
  2. Hydrologic, geologic and reservoir characteristics of the field.
  3. The number of wells that can be economically drilled to provide the necessary volume of geothermal resources for the intended use.
  4. Protection of correlative rights.
  5. Minimizing well interference.
  6. Unreasonable interference with multiple use of lands.
  7. Protection of the environment.
- B. Before commencing the drilling of any well, Application for Permit to Drill (Form G-3, see Appendix 1) shall be filed and the Commission's approval obtained. In addition to the required \$25.00 fee, the application shall be accompanied by a plat prepared and certified by a registered surveyor and bearing his certificate number (surveyors registered in states other than Arizona are acceptable) on which is shown the exact acreage or legal subdivision allotted to and dedicated to the well.
- C. When two or more separately owned tracts of land are embraced within an established drilling unit, persons owning the drilling rights therein and the right to share in the production therefrom may agree to pool their interests and develop their lands as a drilling unit. In the event such persons do not agree to pool their interests, the Commission may, for the prevention of waste, for the protection of correlative rights, or to avoid the drilling of unnecessary wells, enter an order pooling and integrating their interests for the development of their lands as a drilling unit. Orders and agreements effectuating such pooling shall be accomplished and executed as prescribed by A.R.S. § 27-666.

Historical Note  
Former Rule G-105.

**R12-7-208. Pit for clay, shale and drill cuttings**

In order to assure a supply of mud-laden fluid to confine oil, gas, water or other fluids to its native stratum during the drilling of any well, operators shall provide, before drilling is commenced, an adequate pit, either earthen or portable, for the mud-laden fluid or the accumulation of drill cuttings.

Historical Note  
Former Rule G-106.

**R12-7-209. Sealing off strata**

All oil, gas and water above the producing horizon shall be confined to their respective stratum and shall be sealed or separated in order to prevent their contents from passing into another stratum. Shut-offs shall be made by cementing casing and shall be reported to the Commission on a form prescribed by the Commission (Form G-12, see Appendix 1).

Historical Note  
Former Rule G-107.

**R12-7-210. Surface casing requirements**

- A. In areas where pressure and formations are unknown, sufficient surface casing shall be run to reach a depth below all known or reasonably estimated fresh water levels, to prevent blow-outs or uncontrolled flows. The casing shall be of sufficient size to permit the use of an intermediate string or strings of casing. Surface casing shall be set in or through an impervious formation and shall be cemented by the pump and plug method or displacement method with sufficient cement to fill the annulus to the top of the hole.
- B. In areas where sub-surface conditions have been established by drilling experience, surface casing, of a size approved by the Commission, shall be set and cemented to the surface by the pump and plug method or displacement method at a depth sufficient to protect a fresh water and to insure against blow-outs or uncontrolled flows.
- C. Cement shall be allowed to set a minimum of 12 hours under pressure before drilling plug or initiating tests.
- D. The proposed surface casing program shall be specified on a form to be prescribed by the Commission (Form G-3, see Appendix 1) by each applicant for a drilling permit. The issuance of a drilling permit (Form 27, see Appendix 1) shall constitute the approval by the Commission of the surface casing program specified in the application.
- E. Surface casing shall be pressure tested with a minimum of 600 PSI for 30 minutes. If a drop of more than ten percent of the test pressure should occur, the casing shall be considered defective and corrective measures shall be applied. In wells drilled with cable tools, casing may be tested by bailing the well dry. The hole must remain dry, to the satisfaction of the Commission, for one hour before commencing further operations. Results of the above test and any remedial action shall be reported on a form prescribed by the Commission (Form G-12, see Appendix 1) within 20 days following test.

Historical Note  
Former Rule G-108.

**R12-7-211. Casing requirements**

- A. All wells drilled shall be completed with a string of watertight casing that shall be cemented from the maximum setting depth of the casing back to a minimum of 50 feet inside the last previously run string of casing.
- B. Such strings of casing shall stand cemented for at least 12 hours before drilling out the plug or initiating such tests as the Commission may require. Cementing shall be by pump and plug method, or other method approved by the Commission.
- C. Strings of production casing in wells drilled with rotary tools shall be pressure tested. Minimum casing test pressure shall be approximately one-third of the manufacturer's rated internal yield pressure except that the test pressure shall not be less than 600 pounds per square inch. In cases where combination strings are involved, the above test pressures shall apply to the lowest pressure rated casing used. Test pressures shall be applied for a period of 30 minutes. If a drop of more than ten percent of the test pressure should occur, the casing shall be considered defective and corrective measures shall be applied.
1. Casing strings in wells drilled with cable tools may be tested as outlined in subsection (C) above or by bailing the well dry in which case the hole must remain dry, to the satisfaction of the Commission, for a period of at least one hour before commencing any further operations on the well. All tests must be reported on a form prescribed by the Commission (Form G-12, see Appendix 1), within 20 days following such test.

Historical Note  
Former Rule G-109.

**R12-7-212. Defective casing or cementing**

- A. The operator shall notify the Commission by the most expedient manner if any well appears to have defective casing or be faultily cemented or to have corroded casing that will permit or create underground waste. The operator shall proceed with diligence to use the method approved by the Commission to eliminate the hazard. Following any remedial action, casing shall be retested in the manner described in rule R12-7-211.
- B. The result of the remedial actions of the operator shall be reported to the Commission immediately and (Form G-12, see Appendix 1) shall be filed with the Commission within 20 days following completion of the action.
- C. If the hazard cannot be eliminated, the well shall be properly abandoned and plugged in accordance with rule R12-7-232.

Historical Note  
Former Rule G-110.

**R12-7-213. Blow-out prevention**

Any person engaged in the drilling of a well for geothermal resources in an area wherein fluids, gases or steam under high pressure are known to exist, or any person drilling a well for geothermal resources in an area where pressures are not known, shall case in a watertight manner the bore hole to a depth sufficient to protect against surface-cratering in the event of a blow-out with pipe of adequate strength and equip the well with a blow-out preventer and other safety devices, in accordance with pipe and equipment specifications and procedures approved by the Commission and shall further exercise due caution in all drilling operations to prevent blowouts, explosions or fires. All blow-out preventers and related equipment shall be pressure tested to a minimum of 1000 PSIG on installation. The blow-out preventer shall be operated at least once every 24 hours. All equipment shall be kept in good working order at all times.

Historical Note  
Former Rule G-111.

**R12-7-214. Pulling outside strings of casing**

When pulling outside strings of casing from any well, the space outside the casing left in the hole shall be left full of mud-laden fluid or cement of adequate specific gravity to seal off each fresh and salt water stratum, each oil and/or gas bearing stratum and each geothermal stratum from which no production is obtained. This action of the operator shall be reported to the Commission (Form G-12, see Appendix 1).

Historical Note  
Former Rule G-112.

**R12-7-215. Deviation of hole**

- A. Unless the operator shall first have secured the permission of the Commission after notice and hearing for the directional deviation of the well, no drilling well may be directionally deviated from its normal course by any means of deviation, except as provided in subsection (E) hereof.
- B. When a well is intentionally directionally deviated from its normal course for any reason, a complete angular deviation and directional survey of the finished hole shall be made at the expense of the operator and a certified copy of such survey shall be filed with the Commission within 20 days of completion of the survey. Provided, however, that no deviation and directional survey will be necessary if the hole is deviated for short distances, as provided in subsection (E) of this rule.

- C. The Commission may make, or require the operator to make, a directional survey of any hole at such operator's expense. The Commission may require an operator to make a directional survey of any hole at the request of an offset operator, if, in the Commission's opinion, such is necessary but at the expense and risk of the offset operator unless it is found that such well is completed at a point outside the drilling unit, or at an unauthorized point.
- D. All producible wells that are located 300 feet or less from any drilling unit line and that reach a depth of 4000 feet or more shall have directional surveys made to the total depth of the hole before setting the final string of casing. A certified copy of such directional surveys shall be filed with the Commission by the operator within 20 days of completion of the survey.
- E. Wells may without approval of the Commission be intentionally deviated short distances where necessary to straighten the hole, sidetrack junk, or correct other mechanical difficulties. The action of the operator shall be reported to the Commission (Form G-12, see Appendix 1) within 20 days following such action.
- F. Nothing in these rules shall be interpreted to permit the drilling of any well in such manner that it crosses drilling unit lines, except by approval of the Commission, obtained after notice and hearing.

Historical Note  
Former Rule G-113.

**R12-7-216. Shooting and chemical treatment of wells**

If injury results to the producing formation, casing, or casing seat as a result of shooting or treating a well, the operator shall notify the Commission in the most expedient manner and shall proceed with diligence to use the means as approved by the Commission to rectify the damage. If the shooting or chemical treatment results in irreparable injury to the well, the Commission may require the operator to plug and abandon the well. The shooting or chemical treatment of any well shall be reported to the Commission (Form G-12, see Appendix 1) within 20 days following the action.

Historical Note  
Former Rule G-114.

**R12-7-217. Noise abatement**

The operator shall minimize noise when conducting air drilling operations or when the well is allowed to produce while drilling. Welfare of the operating personnel and the public must not be affected as a consequence of the noise created by the expanding gases. The method and degree of noise abatement shall be approved by the Commission.

Historical Note  
Former Rule G-115.

**R12-7-218. Well and lease equipment**

Wellhead fittings or connections that have a test pressure equivalent to at least 100 percent of the calculated or known pressure in the reservoir from which production is expected shall be installed and maintained in first class condition.

Historical Note  
Former Rule G-116.

**R12-7-219. Fires, leaks and blow-outs**

Each person controlling or operating any well or pipeline shall immediately notify the Commission giving full details concerning all fires that occur at such wells on his property and shall immediately report to the Commission any breaks or leaks in or from receptacles or pipelines from which a geothermal resource is escaping or has escaped.

In each such report of fires, breaks, leaks, or escapes, or other accidents of this nature, the location of the well, receptacle, or line break shall be given by Section, Township, Range, and property so that the exact location thereof can be readily located on the ground. Such report shall also specify the steps that were taken or that are in progress to remedy the situation reported and shall detail the quantity of the geothermal resource lost, destroyed, or that escapes.

Historical Note  
Former Rule G-117.

**R12-7-220. Well completion**

- A. A completion report on a form prescribed by the Commission (Form G-4, see Appendix 1) shall be filed with the Commission within 30 days after the completion of a well. Immediately thereafter the Commission, shall, if such a well is a producing well, classify the well as a geothermal well. All logs and surveys of any description, if taken, and driller's logs as defined herein and certified as to their correctness shall be filed within 30 days after the completion of any well drilled.
1. "Driller's Log" shall mean the written record progressively describing the strata, water, oil or gas encountered in drilling a well.
- B. If requested by the person filing an electrical survey or log, the Commission shall keep such log confidential for a period not exceeding two years from the date of completion of the well. If such electrical and radioactive logs are not run, the driller's log, as defined herein, shall be provided to the Commission.
- C. Samples of all cores and cuttings, at a maximum interval of ten feet, shall be furnished to the Commission within 20 days of the completion or abandonment of the well from which said samples were taken. All samples and cores for the Commission shall be handled as follows:
1. All samples shall be properly washed and dried.
  2. An amount, the equivalent of two tablespoons, of each sample shall be placed in envelopes or other suitable wrapping and clearly identified as to the depth of which it was taken.
  3. Samples shall be properly packaged for transporting in a manner that will protect the individual samples; each individual pack of samples shall contain the identification of the well from which the samples originated, the complete location of the well and the Commission's permit number.
  4. Samples of all wells shall be shipped or mailed, charges prepaid to:  
Oil & Gas Conservation Commission  
Phoenix Office  
Add to:  
Arizona Bureau of Mines  
University of Arizona  
Tucson, Arizona 85721
  5. Core samples may be furnished in chips and suitably packed as set forth in paragraphs (2) and (3) above. Core samples shall be shipped or mailed, charges prepaid, as indicated in paragraph (4) above.

Historical Note  
Former Rule G-118.

**R12-7-221. Rework and re-completion -- shooting and treating**

- A. After a well has once been completed, it shall not be deepened, plugged back, or reworked, except for ordinary maintenance operations or to be re-completed or reperforated in the same producing reservoir, without first giving ten days' written notice to the Commission of the character of the work proposed

and the time when it will begin, except in an emergency as set out in these rules. The application shall be made on a form prescribed by the Commission (Form G-12, see Appendix 1). The Commission will notify the applicant in writing whether the contemplated work is approved or disapproved.

In the case of an emergency, the application may be made orally or by telegraph, and the Commission may orally or by telegraph authorize the work; however, written application must be filed within ten days after emergency authorization is given, even though the work has already been commenced or completed, and a written permit shall be issued which shall contain the emergency authorization.

- B. Within 20 days after the shooting or chemical treatment of a well, if it is re-completed in the same reservoir, the owner, producer, or operator in charge of the work shall file with the Commission a report on a form prescribed by the Commission (Form G-12, see Appendix 1) and also (Form G-4, see Appendix 1) if re-completed.
- C. If a well is re-completed, a Revised Well Completion or Recompletion and Well Log (Form G-4, see Appendix 1) shall be filed with the Commission within 30 days following completion of work.

Historical Note  
Former Rule G-119.

R12-7-222. Reserved

R12-7-223. Reserved

R12-7-224. Reserved

R12-7-225. Reserved

R12-7-226. Reserved

R12-7-227. Reserved

R12-7-228. Reserved

R12-7-229. Reserved

R12-7-230. Reserved

R12-7-231. Intention to abandon and plug

- A. Any drilling well completed as a dry hole, from which the rig is to be moved out, shall be mudded and cemented unless authorization to the contrary has been given by the Commission.

- B. Approval of the Commission must be obtained before any work is commenced to abandon any well drilled including any well drilled below the fresh water level. The owner and operator thereof shall, prior to the beginning of operations of plugging the well, give written notice on a form prescribed by the Commission (Form G-9, see Appendix 1) of his intention to abandon such well. Upon receipt of such notice, the Commission may send a duly authorized representative to the location specified to be present at the time stated in such notice to witness the plugging of the well.

In the case of an emergency, the application may be made orally or by telegraph, and the Commission may orally or by telegraph authorize the work; however, written application must be filed within ten days after the emergency authorization is given even though the work has already been commenced or completed, and a written permit shall be issued which shall contain the emergency authorization.

- C. Approval of the Commission must be obtained by filing an application on a form prescribed by the Commission (Form G-12, see Appendix 1) prior to removing any surface or production casing from any well, and upon completion of the work, reporting on a form prescribed by the Commission (Form G-10, see Appendix 1) the method in which the well was plugged and the amount of pipe pulled.

Historical Note  
Former Rule G-201.

R12-7-232. Plugging methods and procedures

A. Upon approval of the Commission, each abandoned hole or well shall be plugged by or on behalf of the owner, operator or producer who is in charge of the well and responsible therefor. Unless a different method and procedure shall be approved by the Commission upon application by the owner, operator, or producer on a form prescribed by the Commission (Form G-9, see Appendix 1), the method and procedure for plugging the well shall be as follows:

1. The bottom of the hole shall be filled to, or a bridge shall be placed at, the top of each producing formation open to the well bore, and in either event a cement plug not less than 50 feet in length shall be placed immediately above each producing formation open to the well bore.
2. A continuous cement plug shall be placed through all fresh water bearing strata and shall extend at least 50 feet above and 50 feet below said strata.
3. A plug not less than 20 feet in length shall be placed at or near the surface of the ground in each hole.
4. The interval between plugs shall be filled with mud weighing 9 pounds per gallon, with not less than 36 viscosity API full funnel method.
5. The method of placing cement in the hole shall be by pumping through tubing, pump and plug, or other method approved by the Commission, such method being at the option of the operator.
6. The exact location of each abandoned well shall be marked by a piece of pipe not less than four inches in diameter securely set in concrete and extending at least four feet above the general ground level. A permanent sign of durable construction shall be welded or otherwise permanently attached to the pipe and shall contain information required in rule R12-7-206(A). An abandoned well location on tilled land shall be marked in a manner approved by the Commission.

B. When drilling operations have been suspended for 60 days, the well shall be plugged and abandoned unless written permission for temporary abandonment shall be obtained from the Commission.

C. Within 20 days after plugging of any well, the owner, operator or producer responsible therefor, who plugged or caused to be plugged the well, shall file with the Commission an affidavit on a form prescribed by the Commission (Form G-10, see Appendix 1) setting forth in detail the method used in plugging the well.

Historical Note  
Former Rule G-202.

R12-7-233. Seismic, core, and other exploratory holes

A. Any hole drilled for stratigraphic purposes provided in a valid and subsisting geothermal resource lease, must comply with all rules and regulations pertaining to the drilling and abandonment of a geothermal well.

B. Each hole drilled for seismic, core, or other exploratory purposes that penetrates below a fresh water formation shall not be abandoned until the owner or driller plugs it in a manner approved by the Commission. Within 20 days after the plugging, a report on the form prescribed by the Commission (Form G-10, see Appendix 1) shall be filed with the Commission by the owner or driller, setting forth the method used in protecting the water-bearing formations, the location by quarter-quarter-quarter section, township and range, of the hole drilled and plugged.

Historical Note  
Former Rule G-203.

R12-7-234. Wells to be used for fresh water

When the well or exploratory hole to be plugged may safely be used as a fresh water well and such utilization is desired by the landowner, his agent, or lessee and after said well has been satisfactorily plugged to a point immediately below the fresh water strata, notice shall be given to the Commission on the form prescribed (Form G-13, see Appendix 1) signed by the landowner, his agent, or lessee and notarized in which the landowner, his agent, or lessee assumes responsibility for the well and the final plugging. Such filing shall constitute compliance with the obligation of such person to plug the well, and further liability under the bond applicable to the well shall terminate. A written statement to that effect shall be given by the Commission so that the bond may be cancelled or made no longer effective with respect to that well.

Historical Note  
Former Rule G-204.

R12-7-235. Reserved

R12-7-236. Reserved

R12-7-237. Reserved

R12-7-238. Reserved

R12-7-239. Reserved

R12-7-240. Reserved

R12-7-241. Measurement of geothermal resources

The lessee shall measure or gauge all production in accordance with methods approved by the Commission or may arrange with the Commission for other acceptable methods of measuring and recording production. The quantity and quality of all production shall be determined in accordance with the standard practices, procedures, and specifications generally used in industry.

Historical Note  
Former Rule G-301.

R12-7-242. Monthly report

The owner or operator of any well producing geothermal resources shall file with the Commission on or before the 25th day of the next succeeding month a Monthly Producers Report (Form G-6, see Appendix 1), setting forth the total production from each well and other information as may be required by the Commission.

Historical Note  
Former Rule G-302.

R12-7-243. Well test and reservoir surveys

When necessary or advisable, the Commission shall require tests, as approved by the Commission, be made to determine the quantity and quality of geothermal resources or reservoir energy. Such test shall be reported to the Commission within 20 days after the completion of such test on a form prescribed by the Commission (Form G-6, see Appendix 1).

Historical Note  
Former Rule G-303.

R12-7-244. Pollution and surface damage

The owner or operator shall take all reasonable precautions to avoid polluting streams, polluting underground water, and damaging soil. If any deleterious substances cannot be treated or destroyed, or if the volume of such products is too great for disposal by the usual methods without damage, other means of disposal, after approval by the Commission, shall be used.

Historical Note  
Former Rule G-304.

**R12-7-245. Disposal of brines and salt water**

Brines and salt water liquids shall be disposed of in the following manner:

1. Disposal in earthen pits. Brines or salt water may be disposed of by evaporation when impounded in excavated earthen pits, that may only be used for such purpose when the pit is underlaid by a tight, impervious soil, such as heavy clay or hardpan, unless the pits be so constructed and maintained as to prevent escape of the contents thereof. Adequate means shall be taken to prevent surface waters from entering any pit. The Commission may require that the use of any pit that does not conform to the requirements of this Section be discontinued.
2. Disposal by injection
  - a. The underground disposal of brines and salt water or other water unfit for domestic, livestock, irrigation or other beneficial use is prohibited unless authorized by the Commission after notice and hearing. Application for such authorization shall be made on a form prescribed by the Commission (Form G-11, see Appendix 1) accompanied by all other documents which may be required by the Commission, including but not limited to, a plat showing the location of the disposal well, the location of all wells within one-half mile of the location, including dry holes, abandoned and drilling wells. The plat shall also show the names of the operators and the names of the surface owners within one-half mile radius of the disposal well.
  - b. The initial authorization for underground disposal in one locality may define a greater geographic area than and specify formation in addition to that covered in the application when data supporting the application merits such defined extension. Subsequent applications for underground disposal in those areas and formations so defined may be authorized administratively, provided, waivers from all operators and surface owners within one-half mile of the disposal well accompany the application; provided, further, no protest or request for hearing is received by the Commission. In lieu of such waivers the applicant may furnish proof of the fact that said offset operators and surface owners were notified of the proposed disposal well provided such proof of the fact is in a manner satisfactory to and prescribed by the Commission.
  - c. Whenever the Commission finds after notice and hearing that it would be in the interest of maintenance of the underground geothermal resource, prevention of substance of the land surface or maintenance of the quality of surface and other ground waters, the Commission may require re-injection of the geothermal effluent or injection of other water supplies into the producing zones.

Historical Note  
Former Rule G-305.

**R12-7-246. Environmental protection**

In the absence of coverage by any other Section of these regulations, the Commission shall require operations under this Chapter to be conducted so as not to pollute land, water or air, pollute streams, damage the surface or pollute the underground water of the land upon which the operations are being conducted, or pollute underground waters of neighboring lands. Federal and state air and water quality standards will be followed unless more stringent requirements are stipulated by the Commission. Plans for disposal of well effluents must take into account the effect on groundwaters, streams, plants,

fish and wildlife and their populations, atmosphere, or any other effects which may cause or contribute to pollution, and such plans must be approved by the Commission before action is taken under them.

Historical Note  
Former Rule G-306.

R12-7-247. Reserved

R12-7-248. Reserved

R12-7-249. Reserved

R12-7-250. Reserved

**R12-7-251. Regulation of geothermal resources production**  
Upon determination by the Commission that geothermal resources production in the state of Arizona, or in a particular geothermal area, is causing waste, the Commission shall limit the total amount of the geothermal resource which may be produced in the state or in a particular geothermal area.

Historical Note  
Former Rule G-401.

**R12-7-252. Monthly producers report**  
Monthly Producers Report (Form G-6, see Appendix 1) shall be filed on each producing lease within the state for each calendar month, setting forth the complete data required by the Commission, including but not limited to the total lease production. If all requirements of the Commission are met, such forms may be filed in its machine version at the option of the producer operator. Said report shall be filed on or before the 25th day of the next succeeding month.

Historical Note  
Former Rule G-402.

R12-7-253. Reserved

R12-7-254. Reserved

R12-7-255. Reserved

R12-7-256. Reserved

R12-7-257. Reserved

R12-7-258. Reserved

R12-7-259. Reserved

R12-7-260. Reserved

**R12-7-261. Permit for injection**

- A. The injection of any substance into any geothermal reservoir to increase recovery of geothermal resources or any other substance is prohibited unless authorized by the Commission after notice and hearing.
- B. The application for a permit to inject any substance into any geothermal reservoir shall contain all information required by the Commission, including but not limited to the following:
  1. Plat showing location of the intake well or wells, and the location of all wells, including drilling wells and dry holes, and the names of the lessees within one-half mile of the intake well or wells, and each offset operator.
  2. The formation from which wells are producing or have produced.
  3. The name, description, and depth of the formation to be affected by injection.
  4. The log of the intake well or wells, or such information as may be available.
  5. Description of the intake well's casing, or the proposed casing program, and the proposed method of testing casing before use of the intake wells.
  6. Description of the substance proposed to be used for injection, the source, and the amounts proposed to be injected daily.

7. The names and addresses of the operator or operators of the injection project.

Historical Note  
Former Rule G-501.

**R12-7-262. Casing and cementing of injection wells**

- A. Wells used for injection into producing formation shall be cased with safe and adequate casing or tubing in order to prevent leakage. The case shall be set and cemented in such a manner that it will be encased in cement from top to bottom (see rule R12-7-211(A)).
- B. Surface casing shall be pressure tested with a minimum of 600 PSI for 30 minutes. If a drop of more than ten percent of the test pressure should occur, the casing shall be considered defective and corrective measures shall be applied. In wells drilled with cable tools, casing may be tested by hailing the well dry. The hole must remain satisfactorily dry for one hour before commencing further operations. Results of the above test shall be reported on a form prescribed by the Commission (Form G-12, see Appendix 1) within 20 days following test.
- C. If any remedial action is shown to be necessary as a result of the test, rule R12-7-212 shall be complied with.

Historical Note  
Former Rule G-502.

**R12-7-263. Notice of commencement and discontinuance of injection operations**

The following provisions apply to all injection projects.

1. Immediately upon the commencement of injection operations, the operator shall notify the Commission of the commencement date.
2. Within ten days after the interruption or discontinuance of injection operations, the operator shall notify the Commission of the date of such discontinuance and the reasons therefore.
3. Before any intake well is plugged and abandoned, Notice of Intent (Form G-9, see Appendix 1) shall be given to the Commission, and the same procedure shall be followed in the plugging and abandonment of the well as provided with respect to the plugging and abandonment of geothermal resource wells. (See rule R12-7-231, et seq.)

Historical Note  
Former Rule G-503.

**R12-7-264. Records and reports**

The operator of an injection project shall keep accurate records of the amount of geothermal resources produced, and volumes of substances injected, and other data that the Commission may require to be reported on a form prescribed by the Commission (Form G-8, see Appendix 1). Such report shall be submitted on or before the 20th day of the next succeeding month.

Historical Note  
Former Rule G-504.

- R12-7-265. Reserved  
R12-7-266. Reserved  
R12-7-267. Reserved  
R12-7-268. Reserved  
R12-7-269. Reserved  
R12-7-270. Reserved

**R12-7-271. Certificate of compliance**

- A. Each producer or operator of any well shall execute under oath and file with the Commission Operator's Certificate of Compliance and Authorization to Transport Geothermal Resources from Lease (Form G-5, see Appendix 1) for each well.
- B. Whenever a change occurs in operating ownership of any developed unit, or whenever a change occurs in the transporter from any developed unit, Operator's Certificate of Compliance and Authorization to Transport Geothermal Resources from Lease (Form G-5, see Appendix 1) shall be executed and filed in accordance with the instructions appearing thereon.
- C. The certificate, when properly executed and approved by the Commission, shall constitute authorization to the pipeline or other transporter to transport geothermal resources from the developed unit named therein. This rule shall not prevent the production or transportation of geothermal resources in order to prevent waste, pending execution and approval of the certificate. Permission for the transportation of such production will be granted in writing if the facts justify.
- D. The certificate shall remain in full force and effect until:
1. The operating ownership of the developed unit changes, or
  2. The transporter changes, or
  3. The certificate is cancelled by the Commission.

Historical Note  
Former Rule G-601.

**R12-7-272. Geothermal purchasers monthly report**

Each purchaser or taker of geothermal resource from any well, lease, reservoir or proration unit within the state shall file for each calendar month Geothermal Resource Purchasers Monthly Report (Form G-7, see Appendix 1) detailing acquisition and disposition of all geothermal resources taken by such person during that month. Such report shall be filed on or before the 20th day of the next succeeding month.

Historical Note  
Former Rule G-602.

- R12-7-273. Reserved  
R12-7-274. Reserved  
R12-7-275. Reserved  
R12-7-276. Reserved  
R12-7-277. Reserved  
R12-7-278. Reserved  
R12-7-279. Reserved  
R12-7-280. Reserved

**R12-7-281. Processor's reports**

- A. A person who is the owner or who has the control or management of any generating or processing plant in the state shall keep at his office or other place of business in the state a daily record of:
1. All geothermal resources received into the generating or processing plant.
  2. The names and addresses of the persons from whom geothermal resources were received.
  3. The quantity and quality of the geothermal resources received from each person.
  4. The price payable in respect of the geothermal resources received from each person.
- B. Unless otherwise directed by the Commission, each plant operator processing a geothermal resource shall file with the Commission, on forms furnished or approved by the Commission (Form G-7, see Appendix 1), not later than the 20th day of each month, a full report of the geothermal resources processed during the preceding month showing:

1. Particulars of the geothermal resources received at the plant.
2. Particulars of the products derived from such geothermal resources and the disposition thereof.
3. Such further particulars as the Commission may require.

Historical Note  
Former Rule G-701.

R12-7-282. Reserved  
R12-7-283. Reserved  
R12-7-284. Reserved  
R12-7-285. Reserved  
R12-7-286. Reserved  
R12-7-287. Reserved  
R12-7-288. Reserved  
R12-7-289. Reserved  
R12-7-290. Reserved

R12-7-291. **Books and records to substantiate reports**  
Each operator, producer, transporter or generating plant operator, and initial purchasers of a geothermal resource within the state of Arizona shall make and keep appropriate books and records for a period of not less than five years that cover his operations in Arizona, from which he may be able to make and substantiate the reports required by the Commission.

Historical Note  
Former Rule G-801.

R12-7-292. **Written notices, requests, permits and reports**  
The Commission shall adopt such forms of notices, requests, permits and reports as it may deem advisable or necessary in carrying out the provisions of law and its rules and regulations.

Historical Note  
Former Rule G-802.

R12-7-293. **Organization reports**  
Every person acting as principal or an agent for another or who is independently engaged in the drilling operation, production, storage, transportation (except by railroads), refining, reclaiming, treating, marketing, processing of, or scientific exploration for geothermal resources shall immediately file with the Commission on the form Organization Report (Form G-1, see Appendix 1) a statement under oath giving the following information: the name under which such business is being operated or conducted, the name and post office address of such person and the business or businesses in which he is engaged; the plan or organization, and if a reorganization, the name and address of the previous organization; the state where incorporated, if a foreign corporation; and the name and post office address of the Arizona agent, together with the date of permit to do business in Arizona; the names and addresses of the principal officers or partners and the names and addresses of the directors

thereof. Immediately after any change occurs as to facts stated in the report filed, a supplementary report (Form G-1, see Appendix 1) shall be immediately filed with the Commission with respect to such change.

Historical Note  
Former Rule G-803.

**R12-7-294. Additional information may be required**

These rules shall not be taken or construed to limit or restrict the authority of the state Oil and Gas Conservation Commission to require the furnishing of such additional reports, data or other information relative to production, transportation, processing, or handling of geothermal resources in the state of Arizona as may appear to be necessary or desirable, either generally or specifically, for the prevention of waste and the conservation of geothermal resources.

Historical Note  
Former Rule G-804.

**APPENDIX 1 - FORMS**

Number

1. Organization report  
Rule R12-7-293
- G-2. Bond  
Rule R12-7-203, 233
- G-3. Application for permit to drill, re-open, plugback or re-enter  
Rule R12-7-204, 205, 207, 210, 233
- G-4. Well completion or recompletion report and well log  
Rule R12-7-220, 221, 233
- G-5. Operator's certificate of compliance and authorization to transport geothermal resources from lease  
Rule R12-7-271
- G-6. Monthly producers report  
Rule R12-7-242, 243, 252
- G-7. Geothermal resources purchasers monthly report  
Rule R12-7-272, 281
- G-8. Report on injection project  
Rule R12-7-264
- G-9. Application to abandon and plug  
Rule R12-7-231, 232, 263
- G-10. Plugging record  
Rule R12-7-231, 232, 233, 263
- G-11. Application to dispose of geothermal resources waste by injection into a porous formation  
Rule R12-7-244, 245
- G-12. Sundry notices and reports on wells  
Rule R12-7-209, 211, 212, 214, 215, 216, 219, 221, 231, 262, 263, 294
26. Water well acceptance  
Rule R12-7-234
27. Permit to drill  
Rule R12-7-204, 205, 233



Fife Symington  
Governor

State of Arizona  
**Arizona Geological Survey**

845 North Park Avenue, #100  
Tucson, Arizona 85719  
(602) 882-4795



Larry D. Fellows  
Director and State Geologist

October 9, 1992

Mr. J. Elliott Hibbs, GRRC Chairman  
Department of Administration  
c/o Office of Strategic Planning & Budgeting  
1700 West Washington, Room 500  
Phoenix, Arizona 85007

Re: **A.A.C. Title 12, Chapter 7, Article 1 *Oil, Gas, and Helium, and Geothermal Resources***

Repeal	R12-7-177, Appendix 1 in Article 1, and Article 2, <i>Geothermal Resources</i>
Adopt	R12-7-125, R12-7-175, and R12-7-182
Amend	R12-7-101, R12-7-119, R12-7-120, R12-7-121, R12-7-122, R12-7-126, R12-7-127, R12-7-128, R12-7-129, R12-7-176, R12-7-178, R12-7-179, R12-7-180, R12-7-181.

Dear Mr. Hibbs:

On behalf of the Oil and Gas Conservation Commission the Arizona Geological Survey respectfully submits the following information to the Governor's Regulatory Review Council in support of its proposal to repeal, adopt, and amend the above referenced rules.

**I. DESCRIPTION OF PROPOSED AND AMENDED RULES; PURPOSE; ACCOMPLISHMENTS:**

A. The Commission proposes to (1) repeal R12-7-177 because it is redundant with R12-7-110 and R12-7-111, repeal Appendix 1 in Article 1 because all reference to it has been removed, and repeal Article 2, *Geothermal Resources* because it has been fully integrated into Article 1; (2) adopt R12-7-125 to regulate the temporary abandonment of wells, adopt R12-7-175 to define which types of injection wells require a permit from the Commission, adopt R12-7-182 as renumbered and transferred to define the operating requirements of LPG storage-well facilities, and (3) amend the remaining rules to remove definitions repeated in statute or not used, update and clarify language, edit for consistency and grammatical accuracy, account for technological advances and currently accepted practices in the regulated industry, and incorporate language to include geothermal resources and amend the title of Article 1 to reflect the incorporation of language to regulate geothermal resources. The rules to be amended regulate the completion and abandonment of wells and the permitting and construction of injection wells including enhanced recovery, disposal, and storage wells. With this final set of amended rules, Article 2, *Geothermal Resources* is fully integrated into Article 1, *Oil, Gas and Helium* and Article 1 is retitled *Oil, Gas, Helium, and Geothermal Resources* with this submission. These rules are authorized pursuant to the Conservation Act of 1951 and are specifically authorized by A.R.S. §§ 27-501 through 27-522 and §§ 27-652 through 27-656.

B. These rules protect public health and safety, protect usable-quality groundwater, and prevent the waste of and ensure the conservation and maximum recovery of the state's oil, gas, and geothermal resources.

Article 1 - Oil, Gas and Helium

II. Costs and Benefits of Enforcement and Implementation

Description of Group Affected	Description of Effect	Increased Costs/ Decreased Revenues	Decreased Costs/ Increased Revenues
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In this economic impact statement, "minimal" means less than \$1,000; "moderate" means between \$1,000 and \$5,000; and "substantial" means more than \$5,000.

A. Agency / Political Subdivision

Arizona Geological Survey Oil and Gas Program	Staff (1.5 FTE) time is required to write and promulgate rules. Printing costs.	Substantial	None
	Staff currently collects and files the required reports and data. Plugging operations and required well tests are witnessed by qualified staff personnel.	None	None
Oil and Gas Conservation Commission	Additional open meetings may be required to review and approve new and amended rules.	Minimal	None

B. Other State Agencies / Political Subdivisions

OSP	Review of repealed and amended rules.	Minimal	None
GRRC	Consideration of repealed and amended rules.	None	None
Secretary of State	Printing and administrative costs.	Minimal	Moderate
Attorney General	Certification of amended rules.	Minimal	None

October 9, 1992

Mr. J. Elliot Hibbs  
Page 3

Article 1 - Oil, Gas and Helium

II. Costs and Benefits of Enforcement and Implementation

Description of Group Affected	Description of Effect	Increased Costs/ Decreased Revenues	Decreased Costs/ Increased Revenues
In this economic impact statement, "minimal" means less than \$1,000; "moderate" means between \$1,000 and \$5,000; and "substantial" means more than \$5,000.			
<b>C. Federal Agencies</b>			
U.S. Bureau of Land Management, U.S. Environmental Protection Agency	Required bonds, applications, reports, and data supplement these agencies' requirements on federal land.	None	None
<b>D. Privately / Publicly Owned Businesses</b>			
Operators and producers	Each currently submits required material, performs required tests and submits the required reports.	None	None
Well service and testing companies	Required testing and monitoring currently provide a market for these businesses.	None	None
Industry Scouting companies	Required applications currently provide a data source for these businesses.	None	None
Surety companies, Arizona banks, and Registered Land Surveyors	Required bonds and surveying of well locations currently provide a market for these businesses.	None	None
<b>E. Consumers</b>	These rules do not directly affect consumers.	None	None
<b>F. Private Individuals</b>	These rules prohibit pollution, hazards, and prevent waste of energy resources.	None	None

**III. ALTERNATIVES**

One alternative considered was to continue with R12-7-181 as a long and cumbersome rule on LPG storage systems. This alternative is not feasible because the title of R12-7-181 fits only subsections (1)(a) through (1)(g), which regulate storage-cavity design and construction. Subsections R12-7-181(1)(h) through (1)(m) regulate the operation and closure of LPG-storage systems and was lost in a rule with a completely unrelated title. R12-7-181(1)(h) through (1)(m) were therefore amended and renumbered as R12-7-182 and assigned an appropriate and related title. Another alternative was to retain Appendix 1 in Article 1; however, this alternative is not feasible because the basic data required in a form is now spelled out in the text of the rules and all reference to Appendix 1 has been removed. Another alternative was to continue with Article 2, *Geothermal Resources*; however, this is not feasible because Article 2 has been fully integrated into Article 1, which has been retitled to reflect this incorporation, and to continue with Article 2 would be redundant and add unnecessary printing and copying costs to the Secretary of State. Another alternative was to continue with the language of the amended rules as currently written. This alternative is not feasible because the rules contain archaic words or phrases, are not gender neutral, or are written in passive voice.

**IV. IMPACT OF THE PROPOSED AND AMENDED RULES ON SMALL BUSINESS**

The majority of firms presently engaged in the exploration and production of oil, gas, and geothermal resources in Arizona are small businesses. Because the Commission's permitting, construction, completion, and abandonment requirements prevent waste and protect public health and safety, they cannot be lessened in the case of a small business; however, the cost of these requirements do depend on the number of wells permitted and drilled, and small operators have less of a burden in both costs and reporting requirements because small operators tend to permit, construct, complete, and abandon fewer wells. Furthermore, these rules are not really burdensome to any operator because to construct, complete, and abandon wells in a manner that will protect the environment and the public health and safety is not only a matter of good business practice but a matter of good public relations as well. Therefore, each operator and producer has been and will continue to be required to permit, construct, complete, and abandon wells consistent with these rules in order to conserve and prevent the waste of oil, gas, helium, or geothermal resources in the state. Each operator and producer will continue to be required to participate in and allow onsite visits and inspections of its drilling operations and facilities and keep and file accurate records with the Oil and Gas Program Administrator.

I anticipate that the proposed and amended rules will not increase or decrease the costs of compliance because all operators and producers already meet the requirements. The proposed amendments to the referenced rules were proposed to make Title 12, Chapter 7, Article 1 more concise, consistent, and understandable, both to the regulated audience and the regulating agency. The resulting clarity will have a positive impact on current small business in the state and may attract more small business by making the regulation easier to understand and follow.

Sincerely yours,



Steven L. Rauzi  
Oil & Gas Program Administrator

cc Larry D. Fellows  
Oil and Gas Conservation Commission:

J. C. Wilt, Chairman  
J. E. Warne, Jr., Vice-Chairman  
B. H. Murphy  
J. D. Nations  
Z. Veale

**AUTHORIZING STATUTES – Article 1 *Oil, Gas, and Helium, and Geothermal Resources***

<u>RULE NUMBER</u>	<u>BRIEF DESCRIPTION</u>	<u>A.R.S. AUTHORITY</u>
R12-7-101	Definitions	27-516; 27-656
R12-7-119	Well & lease equipment	27-503.B(3),(4); 27-516.A(1)(c),(d),(5); 27-656
R12-7-120	Fire, leaks, and blowouts	27-503.A; 27-503.B; 27-516.A(6),(7); 27-652
R12-7-121	Well completion	27-516.A(2); 27-522.B; 27-656
R12-7-122	Recompletion	27-516.A(2),(9); 27-652; 27-655; 27-656
R12-7-125	<i>Temporary abandonment</i>	27-516.A(1),(4),(6); 27-656.A
R12-7-126	Intention to plug	27-516.A(1); 27-656
R12-7-127	Plugging methods	27-516.A(1); 27-656
R12-7-128	Stratigraphic holes	27-501(21); 27-656
R12-7-129	Convert to water	27-516.A(1); 27-656
R12-7-175	<i>Underground injection</i>	27-516.A(20); 27-656.A
R12-7-176	Permit for injection	27-516.A(20); 27-516.B; 27-517; 27-652; 27-656
<del>R12-7-177</del>	<del>Casing of injection</del>	<del>27-516.A(20); 27-656</del>
R12-7-178	Injection operations	27-515.B(3); 27-516.A(2),(8),(20); 27-653; 27-656
R12-7-179	Reports & records	27-503.B(6); 27-516.A(20); 27-653
R12-7-180	Storage wells	27-516.A(20); 27-516.B; 27-517
R12-7-181	Storage well design & construction	27-516.A(20)
R12-7-182	<i>Storage well operation</i>	27-516.A(20)

## ARIZONA REVISED STATUTES

### CHAPTER 4

#### OIL AND GAS

##### ARTICLE 1. PRODUCTION AND CONSERVATION

###### 27-501. Definitions

In this article, unless the context otherwise requires:

1. "Certificate of clearance" means a permit approved and issued or registered by the commission for transportation or delivery of oil, gas or oil and gas products.

2. "Certificate of compliance" means a certificate issued by the commission prior to connection of an oil or gas well with a pipe line, showing compliance with the conservation laws of this state and conservation rules, regulations and orders of the commission.

3. "Commission or commissioner" means the oil and gas conservation commission.

4. "Completed well" means a well that meets any of the following conditions:

(a) Has produced or is ready to produce new formation hydrocarbons.

(b) Has been declared a dry hole and temporarily abandoned or plugged and abandoned.

(c) Has been otherwise readied for operation as in the case of injection and service wells.

5. "Developed area" or "developed unit" means a drainage unit having a completed well capable of producing oil or gas in paying quantities.

6. "Drainage unit" or "drilling unit" means the maximum area in a pool which may be drained efficiently by one well to produce the reasonable maximum amount of recoverable oil or gas in the area.

7. "Field" means the general area which is or appears to be underlain by not less than one pool, including underground reservoirs containing oil, gas or both.

8. "Fund" means the oil and gas conservation fund.

9. "Gas" means natural gas, casinghead gas, all other hydrocarbons not defined as oil and helium or other substances of a gaseous nature. Natural gas and casinghead gas are further defined as follows:

(a) "Natural gas" means any combustible gas or vapor composed chiefly of hydrocarbons occurring in gaseous or vapor phase at initial reservoir conditions.

(b) "Casinghead gas" means any gas or vapor indigenous to an oil stratum and produced from such stratum with oil.

10. "Illegal oil" and "illegal gas" means oil or gas produced within the state from any well during any time in which the well has produced in excess of the amount allowed by law or any rule, regulation or order of the commission or the production of which shall cause waste.

11. "Illegal product" means any product derived, in whole or in part, from illegal oil or gas.

12. "Net drainage" means drainage not equalized by counter-drainage.

13. "Oil" means crude petroleum oil and all other hydrocarbons, regardless of gravity, produced at a well in liquid form by ordinary production methods and which are not the result of condensation of gas.

14. "Owner" means the person having the right to drill into, produce and appropriate production of oil, gas or both from a pool.

15. "Person" includes a corporation, association, partnership, receiver, trustee, guardian, executor, administrator, fiduciary, representative or any group acting as a unit and includes any department, agency or instrumentality of the state or any of its governmental subdivisions.

16. "Pool" means an underground reservoir containing a common accumulation of oil, gas or both and includes each zone of a general structure completely separated from any other zone in the structure.

17. "Producer" means the owner of a well capable of producing oil or gas.

18. "Product" means oil, gas or any product, by-product, mixture or blend of oil or gas.

19. "Royalty owner" means a person possessing an interest in the production but who is not an owner.

20. "Waste" means and includes:

(a) Physical waste, as that term is generally understood in the oil and gas industry.

(b) The inefficient, excessive or improper use of or the unnecessary dissipation of reservoir energy.

(c) The locating, spacing, drilling, equipping, operating or producing of any oil or gas well or wells in a manner which causes or tends to cause reduction in the quantity of oil or gas ultimately recoverable from a pool under prudent and proper operations or which causes or tends to cause unnecessary or excessive surface loss or destruction of oil or gas.

(d) The inefficient storing of oil or gas.

(e) The production of oil or gas in excess of transportation or marketing facilities.

(f) The production of oil or gas when it is unprofitable to dispose of such production.

21. "Well" means and includes any hole drilled or spudded in for the purpose, with the intention or under the representation, of penetrating oil or gas bearing strata or of penetrating any strata in search of stratigraphic data pertinent to the location of oil or gas bearing strata, whether or not in either case, oil or gas is actually discovered, and any hole used in connection with the underground storage of hydrocarbon substances, whether liquid or gaseous, and any hole used in connection with a process to inject any substance for purposes of disposal or to increase recovery, including any hole used for the purpose of secondary or tertiary recovery, and any hole used for the purpose of pressure maintenance. The commission may, as it shall deem to be to the best interests of the state, determine that any hole drilled or spudded in shall be included within this definition to the extent necessary for the administration and enforcement of the rules required by § 27-516. The determination of the commission shall be final in any circumstance involving the question of purpose, intent or representation provided such determination shall be subject to appeal as provided by § 27-520.

**27-502. Declaration of policy**

A. It is the public policy of the state to:

1. Conserve the natural resources of oil and gas and products thereof.

2. Prevent waste of oil and gas resources.

3. Provide for protection and adjustment of correlative rights of owners of land wherein the natural resources lie and of owners and producers of oil and gas resources and products thereof, and of others interested therein.

4. Encourage development of natural resources of oil and gas and their products.

5. Encourage continuous and economic supply thereof and demand therefor.

6. Safeguard the health, property and public welfare of citizens of the state and other interested persons.

7. Promote all purposes indicated by the provisions of this article.

B. This article shall be administered by the oil and gas conservation commission.

C. The legislature finds and declares that oil and gas in commercial quantities have now been discovered and are being produced within this state. 1959

**27-503. Waste of oil or gas prohibited; powers of commissioner to prevent waste**

A. Waste of oil or gas is unlawful and is prohibited.

B. The commissioner shall make inquiries he deems proper to determine whether waste exists or is imminent. In the exercise of such power the commissioner may:

1. Collect data.

2. Make investigations and inspections.

3. Examine property, leases, papers, books and records, including drilling records and logs.

4. Examine, check, test and gauge oil and gas wells, tanks, refineries and modes of transportation.

5. Hold hearings.

6. Require keeping of records and making of reports.

7. Take action he deems necessary to enforce and effectuate the provisions of this article.

C. The commissioner may in order to prevent waste and avoid drilling unnecessary wells, permit the cycling of gas in any pool or portion thereof or the introduction of gas or other substance into an oil or gas reservoir for the purpose of repressuring the reservoir, maintaining pressure or carrying on secondary recovery operations of any type. The commissioner shall permit the pooling or integration of separate tracts when reasonably necessary in connection with the operations.

1955

SB 1055

27-515. Powers and duties of commission; fees; compensation of personnel; publication revolving fund

A. ~~The commission shall have jurisdiction and authority over all persons and property deemed necessary to administer and enforce the provisions of this article and other laws relating to conservation of oil and gas. The commission may, at any time, enter upon property and inspect wells drilled for oil or gas, and well records, and shall control property, machinery and appliances necessary to gauge the wells. The Arizona geological survey shall provide staff support to the commission to administer the provisions of this chapter.~~

B. The commission may:

1. Administer oaths to a witness in any hearing, investigation or proceeding held under this article or other law relating to conservation of oil and gas.

2. Issue subpoenas requiring attendance and testimony of witnesses and production of books, papers and records deemed material or necessary, and direct service of subpoenas by a sheriff or other officer authorized by law to serve process.

3. Prescribe rules and do all acts necessary or advisable to carry out the provisions of this article.

4. Collect such fees as will cover the costs of such services as, but not limited to, reproduction of records or any portion thereof and copies of rules. The monies so collected shall not be subject to the provisions of section 27-523, but shall be transmitted by the commission to the state treasurer for deposit in the fund from which the expenditure was originally made.

5. ~~Publish, in cooperation with the resource analysis division of the state land department, technical maps, cross sections and reports and sell these materials for such fees as will cover the costs incurred in their preparation, reproduction and distribution.~~

C. The commission may enter into cooperative agreements with agencies of the United States government, with agencies of state or local government or with Indian tribes for the purpose of protection of the fresh water supplies of the state from contamination or pollution brought about by the drilling of any well or for any other purpose of this article.

D. The commission may APPLY FOR AND accept gifts, devises and donations of books, well records, maps or other materials. All donated materials shall become public records.

E. Monies collected under subsection B, paragraph 5 of this section shall be deposited in the ~~oil and gas conservation commission publication GEOLOGICAL SURVEY PRINTING revolving fund and SHALL BE used to prepare, reproduce and distribute further publications. Monies in the publication revolving fund are not subject to section 27-523, and are exempt from section 35-198, relating to lapsing of appropriations, except all monies in the revolving fund exceeding five thousand dollars shall revert to the state general fund.~~

**27-516. Rules and regulations**

A. The commission shall make rules and amend them as deemed necessary for the proper administration and enforcement of this article, including the following rules, regulations and orders:

1. Requiring the drilling, casing and plugging of wells in a manner to prevent:

(a) Escape of oil and gas from one stratum to another.

(b) Intrusion of water into an oil or gas stratum from a separate stratum.

(c) Pollution of fresh water supplies by oil, gas or salt water.

(d) Waste.

2. Requiring reports showing the location of oil and gas wells and requiring filing of logs and drilling record within thirty days from the completion of a well drilled for oil or gas.

3. Requiring a reasonable bond with good and sufficient surety conditioned on the performance of the duties prescribed in paragraphs 1 and 2 of this subsection including the obligation to plug each dry or abandoned well.

4. Preventing drowning by water of any stratum or part capable of producing oil or gas in paying quantities and preventing the premature and irregular encroachment of water which reduces or tends to reduce the total ultimate recovery of oil or gas from any pool.

5. Requiring the operation of wells with efficient gas-oil ratio and fixing the limits of such ratios.

6. Preventing blow-outs, caving and seepage.

7. Preventing creation of unnecessary fire hazards.

8. Requiring identification of ownership of oil and gas wells, producing leases, refineries, tanks, plants, structures and storage and transportation equipment and facilities.

9. Regulating shooting, perforating and chemical treatment of wells.

10. Regulating gas cycling operations.

11. Regulating secondary recovery methods, including introduction of gas, air, water or other substance into producing formations.

12. Regulating spacing of wells and establishing drilling units.

13. Limiting, allocating and apportioning production of oil and gas from a pool or field for prevention of waste, and allocating production between tracts of land under separate ownership in a pool on a fair and equitable basis so that each tract will be permitted to produce not more than its just and equitable share from such pool.

14. Preventing, so far as practicable, reasonably avoidable drainage from each developed unit, not equalized by counterdrainage.

15. Requiring a producer of oil or gas to submit for each oil or gas well operated, on a form prescribed by the commission, a monthly report of actual production from each oil or gas well. Such report shall be submitted on or before the twenty-fifth day of the next succeeding month.

16. Requiring persons making settlement with the owner of oil or gas interests to render statements to the owner showing the quantity and gravity purchased and the price per barrel of oil or the price per one thousand cubic feet of gas.

17. Requiring, either generally or in a particular area, a certificate of clearance for transportation or delivery of oil, gas or any product.

18. Requiring the applicant for a drilling permit, if the surface of the land is owned by another not in a contractual relationship with the applicant, to post bond in a reasonable sum with good and sufficient surety conditioned on payment of just compensation to the landowner for actual damages to the surface of or improvements on the land caused by the drilling permittee's operations.

19. Requiring all forms and reports requested by the commission to be submitted to the commission on or before the twentieth day of the next succeeding month for monthly reports or within twenty days following the completion of the action requiring the report, except as otherwise provided by the commission.

20. Requiring the permitting of all wells and the approval of all equipment and methods:

(a) To create or use existing storage space for the underground storage of hydrocarbon substances, whether liquid or gaseous.

(b) Used for the injection of any substance into geological strata for the purpose of pressure maintenance or for the purpose of increasing ultimate recovery.

(c) Used for the purpose of secondary and tertiary recovery.

(d) Used for the disposal of any substance.

B. No rule, regulation or order, or change, renewal or extension, except as otherwise provided by this article, shall, in the absence of an emergency, be made by the commission under the provisions of this article except after a public hearing of which not less than ten days' notice has been given. The public hearing shall be held at such time and place as may be prescribed by the commission, and any interested person shall be entitled to be heard. Notice shall be given by personal service, by publication or by United States mail, addressed, postage prepaid, to the last known mailing address of the person or persons affected. The date of service shall be the date on which service was made in the case of personal service, the date of first publication in the case of notice by publication and the date of mailing in the case of notice by mailing. The notice shall issue in the name of the state, and shall be signed by a member of the commission or its deputy, shall specify the style and number of the proceeding, the time and place of the hearing and shall briefly state the purpose of the proceeding. Should the commission elect to give notice by personal service, such service may be made by an officer authorized to serve process or by the commission in the same manner as is provided by law for the service of process in civil actions in the courts of this state. Proof of service by the commission shall be by the affidavit of the commission or its authorized representative making personal service. If service is made by the sheriff, the proof of service shall be as required by law for service of process in civil actions. If the matter to be heard concerns the adoption, amendment or repeal of a regulation of general applicability, notice shall be by publication.

C. If an emergency is found by the commission to exist, which in its judgment requires making, changing, renewing or extending a rule, regulation or order without first having a hearing, the emergency rule, regulation or order shall have the same validity as if a hearing had been held after due notice. The emergency rule, regulation or order shall remain in force not to exceed thirty days from its effective date but shall expire when a rule, regulation or order with respect to the subject matter of the emergency rule, regulation or order becomes effective after due notice and hearing.

**27-517. Hearings; reporter; fees**

A. Any interested person shall, by written request, have the right to have the commissioner call a hearing for the purpose of taking action in respect to any matter within the jurisdiction of the commissioner. Hearings shall be held at the time and place the commissioner directs, and any person having an interest in the subject matter of the hearing may appear and be heard. Upon receipt of the request, the commissioner shall promptly call a hearing, and, not more than thirty days thereafter shall take action with regard to the matter as he deems appropriate. The request for hearing shall be accompanied by a fee of fifty dollars.

B. The commissioner shall prescribe rules of order and procedure in hearings or other proceedings held under this article. The commissioner shall appoint a competent shorthand reporter to be present throughout all public hearings. The reporter shall be sworn by the commissioner faithfully to perform the duties of a reporter. The commissioner shall have the same control and authority over the reporter as the judge of a superior court exercises over a court reporter, and the duties of the reporter shall, insofar as applicable, be the same as those fixed by law for a court reporter.

C. As soon as possible following the hearing the commission shall bill the person requesting the hearing for the total cost of publication for the notices of such hearing and the total cost of the court reporter's fees less the original fifty dollar fee. The requesting party shall within ten days after receipt of the billing by the commission reimburse the commission the amount of money so billed or be subject to the penalties as prescribed in subsection A of § 27-527. The money so collected by the commission shall not be subject to the provision of § 27-523 but shall be deposited by the commission with the state treasurer to the fund from which the expenditure was originally made.

1973

**27-522. Records**

A. All rules, regulations and orders made by the commission shall be in writing and entered in full in a book kept by the commission. The book shall be a public record open to inspection at all reasonable times during office hours. A copy of any rule, regulation, order or any document whatever on file in the office of the commission certified by the commission shall be received in evidence in all courts of the state with the same effect as the original.

B. Well logs, casing records, compiled data and other information shall be properly indexed and suitably recorded in the permanent records of the commission and shall be open to inspection by the public at all reasonable times during office hours. The well records of a well drilled in unproven territory shall not be subject to inspection until six months after completion. The director of water resources may inspect any and all well records at any time, but shall keep confidential all information that is not subject to inspection as otherwise provided in this section. 1982

#### ARTICLE 4. GEOTHERMAL RESOURCES

##### 27-651. Definitions

In this article, unless the context otherwise requires:

1. "Commission" means the oil and gas conservation commission.

2. "Completion" or "completed well" means a well that has produced or is capable of producing geothermal resources or has been determined to be a dry hole, temporarily abandoned or plugged and abandoned, or has been readied for other phases of exploitation.

3. "Department" means the state land department.

4. "Environment" means the sum total of all the external conditions which may act upon an organism or community, to influence its development or existence.

5. "Geothermal area" means the same general surface area which is underlain or reasonably appears to be underlain by one or more formations containing geothermal resources.

6. "Geothermal resources" means:

(a) All products of geothermal processes embracing indigenous steam, hot water and hot brines.

(b) Steam and other gases, hot water and hot brines resulting from water, other fluids or gas artificially introduced into geothermal formations.

(c) Heat or other associated energy found in geothermal formations, including any artificial stimulation or induction thereof.

(d) Any mineral or minerals, exclusive of fossil fuels and helium gas, which may be present in solution or in association with geothermal steam, water or brines.

7. "Lease" means a geothermal resources development lease issued for state lands pursuant to the provisions of this article.

8. "Lessee" means the holder of a lease or any assignee of an original lease or part thereof.

9. "Operator" means any person drilling, maintaining, operating, pumping or in control of any well, and includes the owner, when any well is or has been or is about to be operated or under the direction of the owner.

10. "Owner" means and includes the operator when any well is operated or has been operated or is about to be operated by any person other than the owner.

11. "Person" means and includes any individual, firm, association, corporation or any other group or combination acting as a unit.

12. "Waste" means any physical waste including, but not limited to, underground waste resulting from the inefficient, excessive or improper use or dissipation of reservoir energy or resulting from the location, spacing, drilling, equipping, operation or production of a geothermal resources well in such a manner that reduces or tends to reduce the ultimate economic recovery of the geothermal resources within a reservoir, and surface waste resulting from the inefficient storage or utilization of geothermal resources and the location, spacing, drilling, equipping, operation or production of a geothermal resources well in such a manner that causes or tends to cause the unnecessary or excessive surface loss or destruction of

geothermal resources obtained or released from the reservoir.

13. "Well" means any well drilled in search of geothermal resources or any development well on lands in areas proved to be underlain by one or more formations containing geothermal resources or reasonably presumed to contain geothermal resources or any well drilled for information purposes, or any producing well or reentered abandoned well used for the injection of fluids into the geothermal formation or disposition of fluids into nongeothermal formations, or any well drilled for the purpose of stimulating the heat of a formation or for the creation of heat in a formation by nuclear or any other form of energy.

1977

##### 27-652. Supervision by commission

A. The commission shall so supervise the drilling, operation, maintenance and abandonment of geothermal resource wells as to encourage the greatest ultimate economic recovery of geothermal resources, to prevent damage to and waste from underground geothermal reservoirs, to prevent damage to or contamination of any waters of the state or any formation productive or potentially productive of fossil fuels or helium gas, and to prevent the discharge of any fluids or gases or disposition of substances harmful to the environment by reason of drilling, operation, maintenance or abandonment of geothermal resource wells.

B. Any person engaged in the drilling of a well for geothermal resources underlying a usable groundwater aquifer shall case the bore hole in a watertight manner from the land surface to the geothermal producing zone or to a depth sufficient to prevent damage or contamination of the aquifer from the escape of geothermal resources from the bore hole. Materials and installation procedures for casing and sealing of the bore hole shall be in accordance with specifications and procedures approved by the commission.

C. Disposal of water or brines obtained from a geothermal well whether by ponding and evaporation, release to a watercourse or other means shall not damage or contaminate the underlying groundwater aquifer or pollute any stream, river or body of surface water. Construction and maintenance of all geothermal water and brine disposal systems and of the devices required to monitor quantity and quality of the waters and brines disposed of in each system shall be in accordance with specifications, procedures and regulations approved by the commission.

D. Whenever the commission finds that it would be in the interest of maintenance of the underground geothermal resource, prevention of subsidence of the land surface or maintenance of the quality of surface and other ground waters, the commission may require reinjection of the geothermal effluent or injection of other water supplies into the producing zones.

1977

##### 27-653. Information; filing; confidentiality

The commission shall collect all information regarding all wells drilled in the state for geothermal resources necessary for the purpose of supervision of such wells. All such data shall be filed in the commission office and, upon request of the operator, shall be kept confidential for a period not to exceed two years following the date of completion of such well. All such data shall also be available to the director of water resources, who shall keep the information obtained confidential when such a request has been made of the commission by the operator.

1967

**27-655. Commission approval prior to operation; information; hearing**

The commission shall have jurisdiction over any stimulation, induction or creation of a geothermal resource. Prior to any operation involving the stimulation, induction or creation of a geothermal resource, or any combination thereof, approval of the commission must be obtained. All information deemed necessary by the commission concerning such operations shall be submitted to the commission in such form as determined by the commission no later than thirty working days prior to a commission hearing to consider approval of said application. No application to stimulate, induct or create a geothermal resource will be approved by the commission except after notice and hearing as set forth in § 27-656. 1972

**27-656. Rules and regulations; hearing**

A. The commission shall promulgate rules and regulations necessary for the proper administration and enforcement of this article.

B. No rule, regulation or order, or change, renewal or extension thereof, except as otherwise provided by this article, shall, in the absence of an emergency, be made by the commission under the provisions of this article except after a public hearing of which not less than ten days' notice has been given. The public hearing shall be held at such time and place as may be prescribed by the commission and any interested person shall be entitled to be heard. Notice shall be given by personal service, by publication, or by United States mail, addressed, postage prepaid, to the last known mailing address of the person or persons affected. The date of service shall be the date on which service was made in the case of personal service, the date of first publication in the case of notice by publication, and the date of mailing in the case of notice by mailing. The notice shall issue in the name of the state, and shall be signed by a member of the commission or its deputy, shall specify the style and number of the proceeding, the time and place of the hearing, and shall state briefly the purpose of the proceeding. If the commission elects to give notice by personal service, such service may be made by an officer or process server authorized to serve process, or by the commission, in the same manner as is provided by law for the service of process in civil actions in the courts of this state. Proof of service by the commission shall be by the affidavit of the commission or its authorized representative making personal service. Where service is made by an officer or process server authorized to serve process, the proof of service shall be as required by law for service of process in civil actions. If the matter to be heard concerns the adoption, amendment or repeal of a regulation of general applicability, notice shall be by publication.

C. If an emergency is found by the commission to exist which, in its judgment, requires making, changing, renewing or extending a rule, regulation or order without first having a hearing, the emergency rule, regulation or order shall have the same validity as if a hearing had been held after due notice. The emergency rule, regulation, or order shall remain in force not to exceed thirty days from its effective date, but in any event shall expire when a rule, regulation or order with respect to the subject matter of the emergency rule, regulation or order becomes effective after due notice and hearing. 1972

**CONCISE EXPLANATORY STATEMENT, Title 12, Chapter 7, Article 1: Oil, gas and helium**

1. The Oil and Gas Conservation Commission, pursuant to A.R.S. § 27-516.A, has adopted the following rules, as amended, to monitor the permitting, drilling, casing, and completion of wells drilled for oil, gas, and geothermal resources to protect all known and reasonably estimated freshwater aquifers, prevent waste, and ensure the conservation and maximum recovery of these resources. A brief description and the specific statutory authority for each rule is as follows:

<u>RULE NO.</u>	<u>BRIEF DESCRIPTION</u>	<u>A.R.S. AUTHORITY</u>
<del>R12-7-102</del>	<del>General rules applied statewide</del>	<del>27-516.A</del>
R12-7-103	Bond	27-516.A(3),(18); 27-523; 27-652; 27-656; 27-659
R12-7-104	Permit to drill	27-513; 27-516.A(2),(20); 27-652; 27-659
R12-7-105	Change location	27-513; 27-516.A(2); 27-652; 27-659
R12-7-106	Identification	27-516.A(8); 27-652; 27-656
R12-7-107	Spacing of wells	27-504; 27-505; 27-506.A; 27-516.A(12); 27-516.B; 27-517; 27-531 through 27-539 27-652; 27-656
R12-7-108	Reserve pits	27-516.A(1)(c); 27-516.A(6); 27-652; 27-656
<del>R12-7-109</del>	<del>Sealing off strata</del>	<del>27-516.A(1)(a),(b)</del>
R12-7-110	Surface casing	27-516.A(1),(6); 27-652; 27-656; 27-660
R12-7-111	Casing & tubing	27-516.A(1),(4),(6); 27-652; 27-660
R12-7-112	Defective casing or cementing	27-516.A(1)(b),(c); 27-651; 27-656; 27-660
R12-7-113	Blowout prevention	27-516.A(6); 27-656; 27-660
R12-7-114	Recovery of casing	27-516.A(1),(6); 27-656
R12-7-115	Deviation of hole	27-506.A; 27-516.A(13); 27-516.B; 27-517 27-652; 27-656
R12-7-116	Multiple completion	27-516.A(1)(a),(13); 27-516.B; 27-517; 27-656.A
R12-7-117	Well stimulation	27-516.A(1),(9); 27-652; 27-655; 27-656
R12-7-118	Hydrogen sulfide environments	27-502.A(6); 27-516.A(7); 27-656.A

After reviewing these rules pursuant to A.R.S. § 41-1054, the Oil and Gas Conservation Commission (1) repealed A.A.C. R12-7-102 and R12-7-109 because R12-7-102 restates law and provides a summary of and is redundant with other rules in Chapter 7 and R12-7-109 is redundant with R12-7-110 and R12-7-111, and (2) amended A.A.C. R12-7-103 through R12-7-108 and R12-7-110 through R12-7-118 to update and clarify language, edit for consistency and grammatical

CONCISE EXPLANATORY STATEMENT, Title 12, Chapter 7, Article 1: Oil, gas and helium  
Page 2

accuracy, remove gender-specific terminology, account for currently accepted practices in the regulated industry, and incorporate language to include geothermal resources.

2. One written comment was received on this group of rules after they were approved by the Governor's Regulatory Review Council on August 4, 1992, and published in the September 1992 issue of the *Arizona Administrative Register*. The comment called for a surety bond to be set at 125 percent of engineering and construction costs of a well. After considering this comment, the Commission decided to retain the surety bond as approved by the Governor's Regulatory Review Council because the bond amount has been effective in ensuring compliance and is consistent with federal bonding requirements and with the bonding requirements in surrounding states. As a result, there is no change in the text of the proposed rules contained in the notice of proposed rule adoption filed with the Secretary of State on August 17, 1992, pursuant to § 41-1022, and the text of the rules as finally adopted by the Oil and Gas Conservation Commission on October 23, 1992.

3. Arguments for the rules are (1) these rules set a reasonable amount of surety bond, define requirements for obtaining a permit to drill, and prescribe minimum spacing for wells, (2) these rules define the drilling, casing, and testing requirements for oil, gas, and geothermal operations and (3) these rules require operators and producers to install proper wellhead equipment to maintain the control of the well and prevent the uncontrolled escape of abnormal pressures or dangerous gases.

OIL AND GAS CONSERVATION COMMISSION

\_\_\_\_\_  
Jan C. Wilt  
Chairman



State of Arizona  
State Capitol, West Wing, Suite 706  
Phoenix 85007

FOR USE BY  
SECRETARY OF STATE

The Office of The  
Secretary of State

CERTIFICATION OF RULES  
AND  
ORDER OF RULE ADOPTION

<input type="checkbox"/> <b>1</b> Name of Agency <u>OIL &amp; GAS CONSERVATION COMMISSION (ARIZONA GEOLOGICAL SURVEY)</u>		
<input type="checkbox"/> <b>2</b> Agency contact person (name, address, phone) <u>STEVEN L. RAUZI, 845 NORTH PARK AVE., STE. 100, TUCSON, ARIZONA 85719 PHONE (602) 882-4795</u>		
<input type="checkbox"/> <b>3</b> General and Specific Statutory Authority for proposed rule making: <u>A.R.S. § 27-502, 27-504 to 27-506, 27-513, 27-516, 27-517, 27-523, 27-531 to 27-539, 27-651, 27-652, 27-655, 27-656, 27-659, and 27-660</u>		
<input type="checkbox"/> <b>4</b> Date Published in <i>Administrative Register</i> : <u>SEPTEMBER 1, 1992</u> A.A.R. <u>92</u> - <u>160 &amp; 161</u> Vol. Page	<input type="checkbox"/> <b>5</b> Close of the Record Mo. Day Year	<input type="checkbox"/> <b>6</b> Date Rules Adopted by Agency Mo. Day Year
<input type="checkbox"/> <b>7</b> Check and complete applicable items below to show rule making (show A.A.C. Rule Numbers): <input type="checkbox"/> REPEALED <u>A.A.C. R12-7-102 and R12-7-109</u> <input type="checkbox"/> ADOPTED _____ <input type="checkbox"/> AMENDED <u>A.A.C. R12-7-103 to R12-7-108 and R12-7-110 to R12-7-118</u> <input type="checkbox"/> RENUMBER EXISTING RULES _____		
<input type="checkbox"/> <b>8</b> <input type="checkbox"/> Incorporation by Reference _____ A.A.C. Rule Numbers <input type="checkbox"/> None		
<input type="checkbox"/> <b>9</b> <input type="checkbox"/> Check if these rules were previously adopted as an emergency. <input type="checkbox"/> Check if change in text.		
<input type="checkbox"/> <b>10</b> Check the applicable item for effective date: <input type="checkbox"/> Date filed with the Office of the Secretary of State <input type="checkbox"/> Other (pursuant to A.R.S. § 41-1032) _____ (Other date)		
<input type="checkbox"/> <b>11</b> Certificate of Authorized Officer  Signature of Officer <u>CHAIR OGCC</u> 882-4795 Title Telephone <u>JAN C. WILT</u> Name (typed) of Officer Date	<input type="checkbox"/> <b>12</b> Certification or rejection by the Attorney General A.G. Rule No. _____ <input type="checkbox"/> Approved <input type="checkbox"/> Rejected this _____ day of _____, 19 _____ Attorney General	



Fife Symington  
Governor

State of Arizona  
**Arizona Geological Survey**

845 North Park Avenue, #100  
Tucson, Arizona 85719  
(602) 882-4795



Larry D. Fellows  
Director and State Geologist

October 23, 1992

Mr. Grant Woods  
Attorney General  
1275 West Washington  
Phoenix, Arizona 85007

Re: **Formal request for legal assistance and representation**

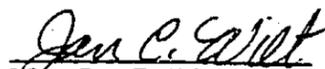
Dear Mr. Woods:

The Oil and Gas Conservation Commission formally requests your assistance in getting two wells, the Cam-Roy Power Ranches #1 and Power Ranches #2, plugged and abandoned. These wells have been in violation of this Commission's order to be plugged and abandoned since February 19, 1988.

This Commission first requested assistance from your office on July 14, 1988. After completing some preliminary matters as advised by Mr. Sheldon Muller and Ms. Carol Lewin of your office, we again requested your assistance on November 16, 1990. Because no legal action had been initiated, we reiterated our request for legal assistance on November 1, 1991. Still lacking legal assistance in the courts, we again requested on March 6, 1992, that your office pursue whatever legal action was necessary to have the wells plugged. In our last meeting, July 6, 1992, this Commission yet again reiterated our desire to have this matter resolved by whatever legal remedy available. A summary of events on this matter as recorded in our minutes of meetings is attached.

Sincerely,

OIL AND GAS CONSERVATION COMMISSION

  
Mrs. Jan C. Wilt  
Chairman

Enclosure

cc **Larry D. Fellows** ;  
Steven L. Rauzi, Oil and Gas Program Administrator  
Joe Lane, Special Assistant, Office of the Governor  
Karen A. Clark, Assistant Attorney General

SUMMARY OF EVENTS REGARDING GEOTHERMAL WELLS AS RECORDED IN  
OIL & GAS CONSERVATION COMMISSION MINUTES OF MEETING  
Page 1

- 09-23-83 1) Doss letter requests information from Bannister regarding temporary abandonment, no response.
- 11-18-83 1) Still no response, Doss suggests Order to Show Cause through Attorney General's office.
- 02-24-84 1) Commission extends temporary abandonment for 1 year to June 30, 1985.
- 02-15-85 1) Pomeroy plan to rehabilitate wells, is having difficulty in arranging financing for project.
- 05-24-85 1) Pomeroy reports that his lease assignments are not valid, nor was the Geothermal Kinetic's lease.  
2) Doss reports that the owners would then be responsible to plug and abandon the wells.
- 08-16-85 1) Commission extends temporary abandonment for 6 months to January 1, 1986.
- 01-17-86 1) Commission extends temporary abandonment for 6 months to July 1, 1986.
- 05-16-86 1) Brennan reports of call from Geothermal Kinetics asking about time limit to plug and abandon wells.
- 07-18-86 1) Commission extends temporary abandonment for 1 year to July 1987.
- 05-15-87 1) Resolve to cooperate with Pomeroy in regard to a DOE grant proposal or funding for development.
- 08-21-87 1) Pomeroy reports quiet title action from owners.  
2) Mr. John Feegan, Assistant Attorney General (AAG), will get information and advise Commission.  
3) Commission extends temporary abandonment for 6 months to February 21, 1988.
- 01-15-88 1) Pomeroy requests extension beyond February 21, Commission holds to extension date of February 21.  
2) Paul Gilbert representing Powers Road Joint Venture, owners of property, opposes further extension.  
3) Commission asks Attorney General to determine legal owner of property & advise on how to proceed.
- 02-19-88\* 1) Commission denies extension of temporary abandonment.  
2) Mr. Sheldon Muller (AAG) advises R12-7-232(B) requires wells to now be plugged and abandoned.
- 03-18-88 1) Commission ratified its 2/19/88 denial of extension of temporary abandonment.
- 07-14-88\* 1) Commission requests Attorney General to file motion to dismiss Cam-Roy vs Commission lawsuit.  
2) Muller advises that no statute gives Commission authority to force plug and abandon geothermal wells.  
3) Commission requests that Attorney General get a court order to plug the wells on the Power Ranches.
- 01-20-89 1) Report that lease termination between Power Ranches and Cam-Roy upheld by Appeals Court.  
2) Report that Cam-Roy Research Corporation is reorganizing because of bankruptcy filing.  
3) Senate Bill 1044 giving Commission enforcement authority in geothermal matters to be heard on 1/29.  
4) Muller advises filing lawsuit against Pomeroy, landowner, or both after SB 1044 is passed.
- 03-17-89 1) Muller advises to let Supreme Court rule on Cam-Roy "Petition for Review" before filing suit.  
2) Ms. Carol Lewin (AAG) may have to file claim in bankruptcy court on Commission's behalf.
- 07-21-89 1) Commission has Brennan request Power Ranches' intention with regard to plugging the wells.  
2) Lewin filed "Controverting Certificate" and motion to have Cam-Roy vs Commission dismissed.

SUMMARY OF EVENTS REGARDING GEOTHERMAL WELLS AS RECORDED IN  
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Page 2

- 09-15-89
- 1) Report that the Cam-Roy vs Commission lawsuit was dismissed.
  - 2) Report that landowners of the Power Ranches are suing Cam-Roy Research Corp to plug the wells.
  - 3) Brennan reports Pomeroy's claim to own the mineral rights and unwillingness to plug the wells.
  - 4) Commission has Brennan send letter to landowners expressing Commission's interest to plug wells.
- 12-15-89
- 1) Report that Keith Powers of Power Ranches requested forms and information on plugging the wells.
- 02-16-90
- 1) Power Ranches bought by Davidson and Davidson, real-estate syndicate who defaulted on payments.
  - 2) Keith Powers hopeful of recovering property, is aware of need to plug wells before selling property.
- 04-20-90
- 1) Lewin advises that enforcement is by injunctive action by the Superior Court,
  - 2) That the Commission get DWR to exempt the wells from Groundwater Code or accept jurisdiction,
  - 3) That there is no statutory authority to file a lien.
  - 4) Monserez advises that property is owned by Gilbert, Arizona-Power Road Properties Joint Venture,
  - 5) And that they have a suit against Pomeroy to clear title & a second suit to have Cam-Roy plug wells.
- 08-17-90
- 1) Commission issues Order #59 to require reinjection of produced water from the geothermal wells.
- 11-16-90\*
- 1) Brennan writes two letters to Monserez to confirm ownership of the property, no response received.
  - 2) Commission refers the matter to the Attorney General to get the wells plugged by filing a suit.
- 02-15-91
- 1) Brennan reports on letter to Ms. Lewin (AAG) confirming request to go to court to require plugging.
- 04-19-91
- 1) Brennan reports on Cam-Roy negotiations, they expect financing to be available in 60 days.
- 11-01-91\*
- 1) Commission reiterated request to have the Attorney General file suit to plug and abandon wells.
  - 2) Commission notes that Attorney General's Office has been slow to act on this matter.
  - 3) Ms. Kate Mead (AAG) advises that an option is to file a court order to plug the well,
  - 4) Have the order recorded in the county as a lien against the property,
  - 5) And thereby encumber the land and its future sale or development.
- 03-06-92\*
- 1) Mead reported that ownership of the property is still in question.
  - 2) Pomeroy provided the Commission with a request for release of the Cam-Roy drilling bonds.
  - 3) Commissioners agreed that bonds are in force until new bonds put up or wells plugged and abandoned.
  - 4) Commission requested that Ms. Mead proceed immediately with legal action to plug wells.
  - 5) Commission moved that the Attorney General pursue the order to plug and abandon, and
  - 6) That the Commission not render a decision or even ask the question at this time of returning bonds.
- 07-06-92\*
- 1) Ms. Karen Clark (AAG) advises that she is replacing Ms. Mead in representing the Commission.
  - 2) Commission notes that the bonds on these wells are not the issue.
  - 3) Commission's concern is "when will they get some legal action to plug and abandon these wells."
  - 4) Commission reiterates intention to file a lien on the property until this problem is resolved.
  - 5) Commission requests formal request letter to Attorney General for signature at next meeting.



Fife Symington  
Governor

State of Arizona  
**Arizona Geological Survey**

845 North Park Avenue, #100  
Tucson, Arizona 85719  
(602) 882-4795



Larry D. Fellows  
Director and State Geologist

September 18, 1992

Ms. Karen A. Clark  
Assistant Attorney General  
Attorney General's Office  
1275 West Washington  
Phoenix, Arizona 85007

Dear Karen:

Enclosed is a copy of the letter to the Attorney General that the Commission requested me to prepare for their signature at their meeting on October 23, 1992.

Sincerely,

Steven L. Rauzi  
Oil & Gas Program Administrator

Enclosure



Fife Symington  
Governor

State of Arizona  
**Arizona Geological Survey**

845 North Park Avenue, #100  
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Larry D. Fellows  
Director and State Geologist

October 23, 1992

Mr. Grant Woods  
Attorney General  
1275 West Washington  
Phoenix, Arizona 85007

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Sincerely,

**OIL AND GAS CONSERVATION COMMISSION**

\_\_\_\_\_  
Mrs. Jan C. Wilt  
Chairman

Enclosure

cc Larry D. Fellows  
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- 11-18-83 1) Still no response, Doss suggests Order to Show Cause through Attorney General's office.
- 02-24-84 1) Commission extends temporary abandonment for 1 year to June 30, 1985.
- 02-15-85 1) Pomeroy plan to rehabilitate wells, is having difficulty in arranging financing for project.
- 05-24-85 1) Pomeroy reports that his lease assignments are not valid, nor was the Geothermal Kinetic's lease.  
2) Doss reports that the owners would then be responsible to plug and abandon the wells.
- 08-16-85 1) Commission extends temporary abandonment for 6 months to January 1, 1986.
- 01-17-86 1) Commission extends temporary abandonment for 6 months to July 1, 1986.
- 05-16-86 1) Brennan reports of call from Geothermal Kinetics asking about time limit to plug and abandon wells.
- 07-18-86 1) Commission extends temporary abandonment for 1 year to July 1987.
- 05-15-87 1) Resolve to cooperate with Pomeroy in regard to a DOE grant proposal or funding for development.
- 08-21-87 1) Pomeroy reports quiet title action from owners.  
2) Mr. John Feegan, Assistant Attorney General (AAG), will get information and advise Commission.  
3) Commission extends temporary abandonment for 6 months to February 21, 1988.
- 01-15-88 1) Pomeroy requests extension beyond February 21, Commission holds to extension date of February 21.  
2) Paul Gilbert representing Powers Road Joint Venture, owners of property, opposes further extension.  
3) Commission asks Attorney General to determine legal owner of property & advise on how to proceed.
- 02-19-88\* 1) Commission denies extension of temporary abandonment.  
2) Mr. Sheldon Muller (AAG) advises R12-7-232(B) requires wells to now be plugged and abandoned.
- 03-18-88 1) Commission ratified its 2/19/88 denial of extension of temporary abandonment.
- 07-14-88\* 1) Commission requests Attorney General to file motion to dismiss Cam-Roy vs Commission lawsuit.  
2) Muller advises that no statute gives Commission authority to force plug and abandon geothermal wells.  
3) Commission requests that Attorney General get a court order to plug the wells on the Power Ranches.
- 01-20-89 1) Report that lease termination between Power Ranches and Cam-Roy upheld by Appeals Court.  
2) Report that Cam-Roy Research Corporation is reorganizing because of bankruptcy filing.  
3) Senate Bill 1044 giving Commission enforcement authority in geothermal matters to be heard on 1/29.  
4) Muller advises filing lawsuit against Pomeroy, landowner, or both after SB 1044 is passed.
- 03-17-89 1) Muller advises to let Supreme Court rule on Cam-Roy "Petition for Review" before filing suit.  
2) Ms. Carol Lewin (AAG) may have to file claim in bankruptcy court on Commission's behalf.
- 07-21-89 1) Commission has Brennan request Power Ranches' intention with regard to plugging the wells.  
2) Lewin filed "Controverting Certificate" and motion to have Cam-Roy vs Commission dismissed.

**SUMMARY OF EVENTS REGARDING GEOTHERMAL WELLS AS RECORDED IN  
OIL & GAS CONSERVATION COMMISSION MINUTES OF MEETING**

Page 2

- 09-15-89      1) Report that the Cam-Roy vs Commission lawsuit was dismissed.  
2) Report that landowners of the Power Ranches are suing Cam-Roy Research Corp to plug the wells.  
3) Brennan reports Pomeroy's claim to own the mineral rights and unwillingness to plug the wells.  
4) Commission has Brennan send letter to landowners expressing Commission's interest to plug wells.
- 12-15-89      1) Report that Keith Powers of Power Ranches requested forms and information on plugging the wells.
- 02-16-90      1) Power Ranches bought by Davidson and Davidson, real-estate syndicate who defaulted on payments.  
2) Keith Powers hopeful of recovering property, is aware of need to plug wells before selling property.
- 04-20-90      1) Lewin advises that enforcement is by injunctive action by the Superior Court,  
2) That the Commission get DWR to exempt the wells from Groundwater Code or accept jurisdiction,  
3) That there is no statutory authority to file a lien.  
4) Monserez advises that property is owned by Gilbert, Arizona-Power Road Properties Joint Venture,  
5) And that they have a suit against Pomeroy to clear title & a second suit to have Cam-Roy plug wells.
- 08-17-90      1) Commission issues Order #59 to require reinjection of produced water from the geothermal wells.
- 11-16-90\*     1) Brennan writes two letters to Monserez to confirm ownership of the property, no response received.  
2) Commission refers the matter to the Attorney General to get the wells plugged by filing a suit.
- 02-15-91      1) Brennan reports on letter to Ms. Lewin (AAG) confirming request to go to court to require plugging.
- 04-19-91      1) Brennan reports on Cam-Roy negotiations, they expect financing to be available in 60 days.
- 11-01-91\*     1) Commission reiterated request to have the Attorney General file suit to plug and abandon wells.  
2) Commission notes that Attorney General's Office has been slow to act on this matter.  
3) Ms. Kate Mead (AAG) advises that an option is to file a court order to plug the well,  
4) Have the order recorded in the county as a lien against the property,  
5) And thereby encumber the land and its future sale or development.
- 03-06-92\*     1) Mead reported that ownership of the property is still in question.  
2) Pomeroy provided the Commission with a request for release of the Cam-Roy drilling bonds.  
3) Commissioners agreed that bonds are in force until new bonds put up or wells plugged and abandoned.  
4) Commission requested that Ms. Mead proceed immediately with legal action to plug wells.  
5) Commission moved that the Attorney General pursue the order to plug and abandon, and  
6) That the Commission not render a decision or even ask the question at this time of returning bonds.
- 07-06-92\*     1) Ms. Karen Clark (AAG) advises that she is replacing Ms. Mead in representing the Commission.  
2) Commission notes that the bonds on these wells are not the issue.  
3) Commission's concern is "when will they get some legal action to plug and abandon these wells."  
4) Commission reiterates intention to file a lien on the property until this problem is resolved.  
5) Commission requests formal request letter to Attorney General for signature at next meeting.