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.
6. Consideration to initiate rule-making proceedings.
10. Call to the public.
11. Announcements.

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. Ruzzi
Oil and Gas Program Administrator

PLEASE NOTIFY THIS OFFICE AS SOON AS POSSIBLE IF YOU ARE UNABLE TO ATTEND THIS MEETING.
NOTICE OF COMBINED PUBLIC MEETING AND POSSIBLE EXECUTIVE SESSION

OIL AND GAS CONSERVATION COMMISSION

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Dated this 9th day of October 1992.

OIL AND GAS CONSERVATION COMMISSION

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
constitutions 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.

[Signature]

GOVERNOR

Attest: [Signature]

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. Appalachean, Flagstaff, AZ 86004

(mail address)

 ___ 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

[Signature]

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.)

Zed Veale

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).

[Signature]

Subscribed and sworn to before me this 11th day of June, 1992

[Signature]

Commission Expires

Filed in the Office of the Secretary of State this 1st day of July, 1992

[Signature]

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 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 for 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).

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. Zad 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 was $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 TransAm 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.
Oil and Gas Conservation Commission Minutes July 6, 1992  Page 2

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. Razzu 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. Razzu indicated that he would forward the rules to the Governor's Regulatory Review Council for approval.


Mr. Razzu 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:


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. Razzu 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.


Mrs. Murphy moved, seconded by Mr. Veale:

THAT THE OIL AND GAS CONSERVATION COMMISSION ADOPT THE
Oil and Gas Conservation Commission Minutes    July 6, 1992    Page 3

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.

GEOTHERMAL WELLS, SEC. 1, T. 7 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 ADJOINED.

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

APPROVED

[Signature]

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

GUESTS IN ATTENDANCE:

Karen Clark  Tyrone Mitchell  Leslie Schwalbe
Attorney General's Office  Attorney General's Office  OSFB
State of Arizona
Arizona Geological Survey
845 North Park Avenue, #100
Tucson, Arizona 85719
(602) 882-4795

File Symington
Governor

Larry D. Fellows
Director and State Geologist

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

Arrowhead Oil and Gas, Ltd. spudded their SunCo 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 5).

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.
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&H) 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.
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,

Steven Gervais
Vice President
General Counsel

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

be: Geoff Appleyard
    Warren Downs
    John Ogden
    Bob Danny, Arizona State Senate
    Greg Eldridge
    Larry Fellows/Steven Rauzi
    Harold Laycraft, Arrowhead Resources
    Rita Pearson, Office of the Governor
    Gary Stewart, Melange
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 300 in the 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
Jan C. Wilk, 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
Kyle Hindman, Arizona House of Representatives, District 15
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.
9-28-92

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

Dear Jim,

We 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-Siegel, now known as Grace Drilling Company.

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

Sincerely,
Steve B. Reuzi
An Oil Rig at the Grand Canyon?

The problem of providing water to Grand Canyon Village has plagued the National Park Service for many years. The solution to this problem was sought through the use of drilling technology and expertise. A new technique was developed that involved drilling a directional hole into the canyon wall, then boring horizontally to reach the water-bearing strata. This method allowed water to be drawn from the subterranean formations, ensuring a stable supply of water for the village.

The hole was drilled into the canyon wall, where the water table was high enough to sustain the rig. The drilling process was challenging due to the difficult terrain and the need to maintain precision in the drilling direction. Once the hole was completed, water was pumped up to the surface, providing a reliable water supply for the village.

The success of this project not only met the immediate needs of the Grand Canyon Village but also set a precedent for future drilling projects. The drilling team, consisting of experienced oil riggers, was able to adapt and innovate to overcome the unique challenges posed by the canyon environment.

The drilling results were a testament to the ingenuity and expertise of the team involved. The drilling rig, equipped with state-of-the-art technology, was able to penetrate the canyon wall efficiently, reaching the desired water-bearing strata. The water that was drawn up from this hole was critical for sustaining the life of the village, providing a reliable source of water for cooking, drinking, and various other domestic purposes.

Field Notes, Spring 1986
September 21, 1992

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-foot 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' 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.
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 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.

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 post haste 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 wildcard.

Sincerely,

[Signature]
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 Laycroft, President, Arrowhead Resources Ltd.
- Senator Bob Denny
- Representative Kyle Hildeman
- Rita Pearson, Governor's Office
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
August 25, 1992

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 Sunco-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 27, 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 Sunco 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.

/5/

Steven L. Rauzi
Oil and Gas Program Administrator
August 21, 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 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 Sunco Resources Ltd., the president of which, Harold Laycraft, said Friday. Drilling probably will begin by the end of August, he said.

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

Phoenix-based Sunco, a subsidiary of Panarite 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. Panarite 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 find sites in Texas, Louisiana and elsewhere, he said.

Also, traces of oil, though not in commercially recoverable amounts, have been found in earlier tests with 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."

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

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. Rastil, 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.

Rastil identified the Sunco 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.

Rastil 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, Rastil said.

Traces of oil that have been found in wells northwest of the salt deposit, in the Wittman and Berylton area, could have migrated from the area of the Sunco 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 Rastil's 1991 article.

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

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

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Nyal Nimitz, resource 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 Sunco 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 2,000 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.

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From page 81

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CATALOGUE, page 81
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 depends on what kind of dirt and gravel that they run into down there."

The wildcard well, which began drilling Aug. 25, was built by a Canadian-based 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 other 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 slowly."

"It is logging well," Laycraft said. "What we've encountered so far has pleased us 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 4,500 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 Ruszi, 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," Ruszi 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," Ruszi said. "They're not supposed to let that stuff escape."

At the well, Ruszi said, "nodes, pressures, pipelines, and ports are controlled.”
Wildcatters encouraged by west Valley oil project

Expect to know in days whether drill site is good

By Guy Whetham

The official word from the Laburnum Oil Field, Inc., said Tuesday that they are encouraged by their first efforts at drilling, and that they expect to know within a few days whether they've got an oil well or a dry hole.

The officials of the company working on the site for the three Canadian firms are running the project have been making the test well about 200 feet per day. The officials said:

"The drilling rig now 130 feet above the surrounding washout area has been moved by the company's equipment to the spot where we now are drilling." The company, which is the most active in the area, is working on the project under the supervision of The Petroleum West Capital Corp.

"This is the first drill site to be used on the site west of the Washout," the company's president said.

"We have made several attempts to locate the oil field, and the company's drilling efforts have been successful. The company's engineers believe that we have struck oil here, and they are planning to drill further to confirm their findings.

The company's president added, "We are very encouraged by these early results, and we look forward to drilling further in the future."
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 community's underground drinking water supply with oil and salt.

"It's (way) the lifeline of our growing community," Litchfield Park Mayor Terry Hubbard said. "It's more than oil, and it's worth more than oil."

The drilling operation sits above a giant underground aquifer, located 400 to 450 feet below the surface, which is the sole source of drinking water for the 1,500 residents of Litchfield Park and the primary source for the 22,500 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 investors 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 Duty Mac Enterprises Ltd., and Sundance Resources Ltd.:

The drillers 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, which is the leading developer in the West Valley, has leased the mineral rights to the investment group in exchange for royalties if any oil is found.

Robert Muscular, city manager of Litchfield Park, said he is concerned that the drilling could allow saline-contaminated water, located in a less shallow water table 200 feet below the surface, to mix with the drinking water supply.

Harold Laryea, president of Arrowhead Resources and International Duty 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 oil from mixing with each other, Laryea said. A steel pipe inside the concrete casing provides additional protection.

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

Steven Ruiz, 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," Ruiz said. See WATER, Page C5

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

Investors think this thick layer of salt - believed to have been produced by an ancient sea lake - conceals a huge oil deposit. Salt domes like the one near Litchfield Park have been associated with major oil fields 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, Laryea 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. Nauzi, 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. Hite

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

________________________
Title of Officer (Typed)

________________________
Date
NOTICE OF PROPOSED RULE MAKING

Name of Agency: OIL AND GAS CONSERVATION COMMISSION

Agency Contact Person: STEVEN L. RAINE, 845 N. PARK AVE., STE 100, TUCSON, ARIZONA 85719, PHONE (520) 882-4795

General and Specific Statutory Authority for proposed rule making: A.R.S § 27-501 to 27-515

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 R12-7-281 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)(b) through (1)(c) as R12-7-182

☐ Incorporation by Reference
   None

☐ Check the following required items to show that they are included in this document:
   ☐ Economic impact statement.
   ☐ Statement of impact on small business.
   ☐ Three copies of incorporation by reference.

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

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, 1993.

☐ The agency has scheduled oral proceedings to be held at
   Arizona at the hour of 1:00 on the 19 day of

☐ 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.

Certificate of Authorized Officer

Signature of Officer

JAN C. HOLT 882-4795

Typed Name of Officer

Telephones

CHAIRMAN

OIL & GAS COMS. 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. R12-7-123 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

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R12-7-101. Definitions

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

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

2. "Authorized agent" means the Executive Director or his agent, as authorized by the Commission.

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

4. "Certificate of clearance" means a permit approved and issued or registered by the Commission, for the transportation or delivery of oil, gas or products thereof (Form 8, see Appendix-I).

5. "Certificate of compliance" and "authorization to transport" means a certificate issued by the Commission prior to the connection of an oil or gas well with a pipeline, showing compliance with the conservation laws of the state and conservation rules, regulations, and orders of the Commission (Form 8, see Appendix-I).

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

7. "Commission or Commissioner" means the State Oil and Gas Conservation Commission or any person lawfully empowered to act on their behalf.

8. "Completion or completed well" shall be defined in Paragraph 38, etc. of this Section.

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

10. "Cubic foot of gas" means the volume of gas contained in one cubic foot of space.
at a standard pressure base of 14.73 pounds per square inch absolute and a standard temperature base of
60 degrees Fahrenheit.

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

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

11. "Drainage unit or drilling unit" means the maximum area in a pool which may be drained efficiently by one well so as to produce the reasonable maximum amount of recoverable oil or gas in such area (see R12-7-107-1).

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

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


15. "Field" means a general area which includes or appears to be underlaid by one or more pools, including underground reservoirs containing oil or gas or both.

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

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

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

19. "Casinghead gas" means any gas or vapor indigenous to an oil stratum and produced from such stratum with oil.
"Gas well" means any well which produces with a gas-oil ratio in excess of 50,000 cubic feet of gas per barrel of oil, or any well classified as a gas well by the Commission.

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

"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.

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

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

"Mcft" means one thousand cubic feet of gas reported at a pressure base of 14.73 psia pounds per square inch and 60 degrees Fahrenheit.

"Month" and "calendar-month":

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

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


"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.

"Oil well" means any well which produces with a gas-oil ratio less than 50,000 cubic feet.
of gas per barrel of oil, or any well classified as an oil well by the Commission
27. 12. "Operator" means any person, an owner or person authorized by an owner or
owners, who controls the day-to-day activities of a well or facility, who is engaged in the business of
drilling wells for oil, gas and/or helium, or who is duly authorized to develop a lease or to operate a
producing well or wells.
28. "Owner" means the person having the right to drill into, produce, and appropriate the
production of oil or gas or both from a pool.
29. "Person" includes 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 of any governmental subdivision thereof.
30. "Pool" means an underground reservoir containing a common accumulation of oil or gas
or both, and includes each zone of a general structure completely separated from any other zone in the
structure.
31. "Producer" means the owner of a well capable of producing oil or gas.
32. "Product" means oil, gas, or any product, by product, mixture, or blend thereof.
33. "Recompletion or recompleted well" shall be as defined in Paragraph 38.6. of this
Section.
34. "Royalty owner" means a person possessing a royalty interest in the production, but who
is not the owner.
35. 13. "Stratigraphic test or core hole test" means any hole drilled for the sole purpose
of obtaining geological information.
36. "U.S.G.S." means the United States Geological Survey established pursuant to PL 87-626
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.

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.

38.—“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 interest 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 A.R.S. § 27-516. The determination of the Commission shall be final in any circumstances involving the question of purpose, intent, of representation provided such determination shall be subject to appeal as provided by A.R.S. § 27-520.

a.—“Completion or completed well” means a well that meets any of the following conditions:

i.—Has produced or is ready to produce new formation hydrocarbons;
ii. Has been declared a dry hole, temporarily abandoned or plugged and abandoned;

iii. Has been otherwise readied for operation as in the ease of injection and service wells.

b. "Recompletion of well" means any well deepened, plugged back, re-perforated or perforated in a different zone.

R12-7-119. Wellhead and lease equipment

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

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

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

3. Valves shall be installed and maintained in good working order to permit pressures to be obtained on both casing and tubing; and each flowing well shall be equipped to

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

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

C. The operator shall equip artificial lift wells with wellhead safety sensors to shut off the source of power in the event of abnormally high or low flowline pressures.
R12-7-120. Notification of fires, leaks, spills, and blowouts, and other undesirable events

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

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

In each such report of fires, breaks, leaks, or escapes, or other accidents of this nature, the
location of the well, tank, 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 oil or gas lost, destroyed, or that escapes.
R12-7-121. Well completion and filing requirements

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

B. The operator shall file a completion report on Form 4-see Appendix I)-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 an oil well or a gas well. All logs and surveys of any description, if taken, and driller's logs as defined herein and certified as to their correctness, Other well data, including all logs, tests, and surveys shall be filed with the completion report or within 30 days after the completion of the well, drilled.

C. The operator shall furnish Samples of all cores and cuttings, at a maximum interval of ten feet if drilling rate permits, shall be furnished to the Commission within 30 days of the completion or abandonment of removing the drilling rig from the hole, 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 Approximately three tablespoons, of each sample shall be placed in an envelopes or other suitable wrapping and showing the identification of the well from which the sample originated, the location of the well, the Commission's permit number, and clearly identified as to the depth at which the sample it was taken. Envelopes shall be packaged in-boxes of sufficient size and shape to accommodate the envelopes.

3. Samples shall be properly carefully packaged for transporting in a manner that will in boxes for protection and the individual samples, each 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 and Gas Program Administrator
Arizona Geological Survey
845 North Park Avenue, Room 100
Tucson, AZ 85719

Oil & Gas Conservation Commission
Phoenix Office

And to:

Bureau of Geology & Mineral Technology
University of Arizona
Tucson, Arizona 85719

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

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

8. D. If requested by the person filing an electrical survey or log Upon written request by the operator, the Commission shall keep such log any well information required in this Section confidential for a period not to exceed 6 months one year from the completion date of completion of the well of a stratigraphic or exploratory hole and for a period not to exceed two years from the completion date of a geothermal resources well. If such electrical and radioactive logs are not run, the driller's log shall be filed with the Commission.
R12-7-122. Rework-and-Recompletion—shooting and treating and routine maintenance operations

A. After a well has once been completed, it shall not be deepened, redrilled, plugged back, or reworked, or recompleted in a different zone, except for ordinary maintenance operations or to be recompleted or reperforated in the same producing pool, without first giving 10 written days' notice to the prior approval by the Commission of a written application showing the character of the proposed 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 Form 25 (see Appendix I). The Commission will notify the applicant in writing whether the contemplated proposed work is approved or disapproved.

B. In the case of an emergency, the application may be made by electronic communication orally or by telegraph, and the Commission may by electronic communication orally or by telegraph authorize the work; however, written application must required in subsection (A) shall be filed with the Commission within 40 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 Commission shall confirm the emergency authorization in writing upon receipt of the written application.

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

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

R12-7-125. Temporary abandonment

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

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

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

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

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

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

B. A. Before any work is commenced to abandoning 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 or submit an application to plug and abandon to the Commission and obtain approval. The application shall set forth the name and location of the well, the mechanical condition of the well, the productive zone and latest production, and the full details of the proposed work. The plan shall provide for the protection of all formations containing usable-quality water, oil, gas, or geothermal resources. Form 9 (See Appendix 1) of his intention to abandon such well. Upon receipt of said 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.

B. In the case of a drilling well or an emergency, the application may be made by electronic communication, orally or by telegraph, and the Commission may by electronic communication orally or by telegraph authorize the work; however, the operator shall file written application must be filed within 10 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 Commission shall confirm the emergency authorization in writing upon receipt of the written application.

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

R12-7-127. Plugging methods and procedures

A. 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 Form 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 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 heavy drilling mud.

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

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

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

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

B. Open hole

1. A cement plug shall be placed to extend at least 50 feet below the bottom, except as limited by total depth or plugged back total depth, to 50 feet above the top of any zone containing fluid
with a potential to migrate, any zone of lost circulation, and any zone containing potentially valuable
minerals, including noncommercial hydrocarbons, coal, and oil shale.

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

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

C. Cased hole

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

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

3. No annular space that extends to the surface shall be left open to the drilled hole below.

If this condition exists, a minimum of the top 100 feet of each annulus shall be plugged with cement.

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

E. A cement surface plug of at least 50 feet shall be placed in the smallest casing which
extends to the surface. The top of this plug shall be placed as near the eventual casing cut-off point as possible.

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

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

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

I. Within 30 days after the plugging of any well, the operator responsible therefor shall file with the Commission a plugging record and affidavit on Form 10 (see Appendix 4) setting forth in detail the method used in plugging the well, including the casing record; the size, kind, and depth of plugs used; and the name and depth interval of each formation containing fresh water, oil, gas, or geothermal resources.

J. Seismic shot holes

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

2. Seismic shot holes which do not encounter freshwater zones shall be filled with a high-grade bentonite slurry or some other comparable plugging material as approved by the Commission.
3. Seismic shot holes which do encounter freshwater zones shall be plugged with cement in accordance with the applicable provisions of subsection (B) and (D).

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

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

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

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

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

R12-7-129. 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 after written approval has been obtained
from the Arizona Department of Water Resources and said well has been satisfactorily plugged to a point immediately below the freshwater strata; notice shall be given to the Commission on Form-36 (see Appendix I) signed by the landowner, his agent, or lessee and notarized in which the landowner, his agent, or lessee assumes responsibility for the well and its final plugging. Such filing shall constitute compliance with the obligation of the landowner, his agent or lessee to plug the well. Further liability under the oil and gas bond applicable to the well shall terminate. A written statement to that effect shall be given by the Commission to the bonding company and the operator so that the bond may be cancelled or made no longer effective with respect to that well.

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

1. Written approval has been obtained from the Arizona Department of Water Resources;
2. The operator has plugged the well in accordance with R12-7-127 to a point immediately below the freshwater strata; and
3. The landowner, the landowner's agent, or lessee assumes responsibility for the well and its final plugging in a signed and notarized water-well acceptance form provided by and filed with the Commission.

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

C. Upon filing with the Commission, further liability under the oil, gas, or geothermal bond applicable to the well shall terminate. The Commission shall so notify the bonding company and operator in writing so that the bond may be cancelled or made no longer effective with respect to that well.
R12-7-175. Injection wells including enhanced recovery, disposal, and storage wells

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

1. Class II injection wells

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

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

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

2. Other injection wells

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

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

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

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

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

C. No permits for injection wells other than those described in this Section shall be issued
by the Commission.

R12-7-176. Permits for injection wells

A. The injection of any substance into any oil or gas reservoir to increase recovery geologic formation is prohibited unless first authorized by the Commission after notice and hearing. Notice shall be given before the hearing is held for drilling a new injection well or for converting an existing well into an injection well, for processing a permit for an injection or disposal well. A permit shall not be required, however, for substances used in formation fracturing, acidization, or other well stimulation techniques whose physical effects are confined to the area near the well bore.

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

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

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

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

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

c. At least one geologic cross section drawn through the site of at least one injection well in the project area showing structural details, any wells that may be affected by the project, and the location of the base of any freshwater strata, defined as water having 10,000 ppm or less of total
d. A representative electric log to a depth below the deepest producing zone identifying all
geologic units including the injection and confining zones, freshwater aquifers, and oil, gas, or
goothermal zones.

3. 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.

3. An engineering study, including but not limited to

a. A statement of the primary purpose of the project;

b. The characteristics of the injection and confining zones including porosity, permeability,
thickness, areal extent, fracture gradient, original and present temperature and pressure, and residual oil,
gas, and water saturations;

c. The reservoir fluid data for each injection zone including oil gravity and viscosity, water
quality, and specific gravity of gas;

d. A description of each injection well’s casing, or the proposed casing and
cementing program, and the proposed method of testing the casing before use of the injection wells. The
casing shall be designed and tested in accordance with R12-7-181(C) with respect to the injection zone
and the well shall be tested in accordance with R12-7-179(D) upon completion;

e. A diagram of the proposed wellhead;

f. A casing diagram, including cement plugs, and the actual or calculated cement fill behind
the casing of all wells within the area affected by the project, and evidence that abandoned wells in the
area will not cause damage to life, health, property, or natural resources;

g. The well stimulation program if stimulation is planned; and

h. The planned well-drilling and abandonment program to complete the project, including
a flood-pattern map showing all injection, production, and abandoned wells, and unit boundaries. Wells shall be plugged and abandoned in accordance with R12-7-126 and R12-7-127.

4. An injection plan, including but not limited to
a. A diagram and plan of the injection facilities;
b. The maximum surface injection pressure expected during the life of the project and the estimated daily rate of fluid injection, by well. The operator shall provide calculations showing that the maximum injection pressure will not initiate fractures in the confining zone;
c. A description of the area affected by the volumetric method and by the pressure-buildup method and the radius affected during the life of the project;
d. The monitoring system or method to be used to ensure that no damage is occurring and that the injection fluid is confined to the permitted injection zone and to the area controlled by the operator;
e. The method of injection such as casing, tubing, tubing with packer, between strings, etc.;
f. The protective methods to be used on each injection line and well and a contingency plan for well failure or a shut-in period, including a plan for disposition of fluids not injected as a consequence of well failure;
g. The source and chemical analysis of the injection fluid, and chemical analysis of the water in the injection zone. If the water in the injection zone has 10,000 ppm or less of total dissolved solids, the applicant shall provide evidence of commercial oil or gas producibility of the zone by means of historical production in the field or by log information, core data, and values for the porosity and permeability of the zone; and
h. The location and depth of each water-source well that will be used in conjunction with the project.

5. Proof of notification to neighboring operators and surface owners within one-half mile
of the proposed well.

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

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

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

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

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 § 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.

The Commission upon application may exempt an aquifer from the requirements set forth
in § 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.

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

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B-10.e of this Rule.

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

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

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

2. Within 10 days after permanent discontinuance of injection operations, the operator shall notify the Commission of the date that injection operations will cease and provide the reasons for discontinuing the injection operations.

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

b. All injection wells shall be plugged and abandoned in accordance with R12-7-126 and R12-7-127. Notice of intent (Form 9, see Appendix 1) shall be given to the Commission, and the 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. a. An injection or disposal well shall not be transferred from one operator to another without the written approval of the Commission.

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

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

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considered.

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

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

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

R12-7.179. Testing and monitoring of injection wells, Records and reports

A. The operator of an injection well shall file a weekly report with
the Commission on all drilling, completion, recompletion, and workover operations on Form 24 (see
Appendix I).

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

C. The operator shall keep accurate records of the amount of oil, gas, water, or
geothermal resources produced, the volumes of substances injected, the amount of water produced, the
average and maximum pressure used for injection, the nature of the injected fluid, and other data the
Commission may require to be reported, on Form 14 (see Appendix I). The operator of an enhanced
recovery or disposal well shall submit a report as required in R12-7-187. The operator of a storage well
shall submit a report as required in R12-7-185. Such report shall be submitted on or before the 25th day of the next succeeding month.

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

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

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

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

a. Tracer surveys.

b. Noise logs.

D. E. Mechanical failure or downhole problems which indicate an injection or disposal well is not, or may not be, directing the injected fluid into the permitted or authorized injection zone may
be cause to shut in the well. If said condition may endanger the fresh water, the operator shall orally
notify the Commission within 24 hours; of any such failure or problem, followed by a written notice
shall be filed within five days of the occurrence, together with a plan for testing and repairing the well.
If the well cannot be brought up to the standard required in subsection D, it shall be plugged and
abandoned in accordance with R12-7-126 and R12-7-127.

R12-7-180. Supplementary requirements for storage wells

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

B.—Each underground storero of natural gas, liquefied petroleum gas or other hydrocarbon
gas within the state shall furnish for each calendar month Form 28 (see Appendix 1) which shall be
filed on or before the 25th day of the next succeeding month.

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

1. Information on any oil or gas production within five miles of each proposed well.
2. Information on the oil and gas reserves of each storage zone before starting injection, including calculations.
3. A comprehensive plan for disposition of brine and salt produced in the course of creating a solution-mined salt cavity. Cavities shall be designed and constructed in accordance with R12-7-181.
   a. Surface disposal shall be subject to the rules of the Arizona Department of Water Resources and the Arizona Department of Environmental Quality.
   b. Saltwater disposal wells shall be permitted in accordance with R12-7-176.
   c. Surface brine reservoirs used in the operation of the storage system and disposal reservoirs shall be designed to prevent the contamination of air, fresh water, and soil.
4. A list of proposed surface and subsurface safety devices, tests, and precautions to be taken to ensure safety of the project. The operator shall install a flare or other safety system acceptable to the Commission at or near each brine pit or at any other location where escape of gases is likely to occur.

R12-7-181. Storage-cavity design and construction of storage wells and cavities
A. The applicant No-permit to drill a storage well for the purpose of storing liquid and/or gaseous hydrocarbons, or any other substances under the jurisdiction of the Commission, into an underground storage cavity shall be issued by the Commission until evidence has been presented to the Commission by the applicant demonstrating to the Commission that the proposed storage of liquid and/or gaseous hydrocarbons, or other substance, will follow be conducted in a manner consistent with established practices to and will preserve the structural integrity of the host rock, including halite, formation (including halite) to be used for a storage cavity and the overlying sediments. This evidence presented shall include
   1. An investigation to determine the feasibility of a storage system at the particular site; and
   2. An assessment of the stability of the each proposed cavity design, particularly with
regard to the size, shape and depth of the storage cavity, the amount of separation between storage
cavities, and the amount of separation between the storage cavity and the periphery of the host rock.
formation (including halite) to be used for the storage cavity.

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

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

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

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

d. The minimum separation between the nearest outer walls of adjacent wells of a
storage cave in as measured in any direction shall be established by a qualified engineer, considering:

i. a. The properties of the host rock; formation (including halite);

ii. b. The elevation of the top and bottom of the adjacent cavities;

iii. c. Their maximum development diameter relative to the spacing of the cavities; and;

iv. d. Other considerations deemed appropriate for the specific site; but however, in no case shall such separation at any time during the storage project be less than 200 feet.

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

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

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

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

ii. — The final (production) cemented-casing string shall be hydrostatically pressure-tested before drilling out the plug (shoe). The test pressure applied at the surface shall be a minimum of 500
psi. In any event, the test pressure when measured at the surface shall not cause pressure at the casing seat to exceed 0.9 psi per foot of depth. The test pressure shall be maintained for a minimum of one hour to verify casing integrity and absence of thread leaks. This test may be made immediately after the cement is displaced from the casing.

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

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

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

m. R12-7-181 shall become effective as of midnight, June 1, 1978. The storage facilities in existence prior to the effective before that date shall not be affected hereby, required to retroactively meet the planning and construction requirements of subsections (b) and (c) except as to any for future expansions or additions, and existing storage facilities shall comply with R12-7-182,184,185,187-189, and 191.

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

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

h. The maximum and minimum operating pressures of a storage cavity system shall be determined by a qualified engineer after considering the lithological characteristics of the formation.
host rock. The maximum operating pressure (gauge) at the shallower of the casing seat or cavity ceiling,
whichever shallower, shall not exceed 0.9 psi per foot of overburden depth.

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

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

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

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

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

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

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

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

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

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

E. The Commission may require additional inspections as may be made by the Commission
at any time during regular working hours and upon reasonable notice to the cavern owner or operator.

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

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

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

k. Should the Commission determine that the continued operation of a storage cavity-and/or-the-product-storage well or associated facilities, including, but not limited to, valves, brine tanks, or pits, flares, dehydrators, and loading and docking facilities, would cause unsafe operating conditions, waste, pollution, or contamination of air, fresh water or soil, or encroachment on adjacent property, it the Commission may immediately prohibit further order discontinuance of operations of the well, or associated wellhead storage facilities or any part thereof until such time as the Commission has determined that the project can and will be conducted in a physically and environmentally safe manner.

Any accident or malfunction of equipment which causes loss of life or endangers life, the environment or the property of others, involving products or otherwise, shall be reported to the Commission as soon as practicable.

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

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

m. The Commission may administratively grant any exceptions to the guidelines and requirements set forth in R12-7-181 of this Section if the applicant can show may be administratively granted by the Commission only upon proper showing by the applicant that such the exception is reasonable, justified by the particular circumstances, and consistent with the intent of these rules.
regarding physical and environmental safety and the prevention of waste. However, upon proper 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 shall be identified.
3. The name, description, thickness and depth of the formations to be affected by injection shall be identified.
4. The log of the injection well or wells, or such information as may be available shall be submitted.
5. The description of the injection well, the proposed casing program, and the proposed method of testing casing before use of the injection well shall be submitted.
6. Designation of the manner proposed to be used for injection, analysis of the substance to be injected, the source, and the amount proposed to be injected daily shall be submitted.
7. The names and addresses of the operator or operators of the project shall be submitted.
8. The plans and an analysis of the chemical, physical, radiological, and biological characteristics of the injection fluid (Form 12, see Appendix 1) shall be submitted.
9. Description of stimulation, if performed (Form 4, see Appendix 1) shall be submitted.

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 shall be submitted:

a. When the fluid injection rate is 1,000 barrels per day or less, or equivalent sea for any fraction of 24 hours, an overlying strata of at least 300 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 rate is greater than 1,000 barrels per day, or equivalent sea 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 R12-1.7-176(B)(1)(a) or (b), the Commissioner may, upon application, approve such injection after he receives the application, as long as the Commissioner finds that such injection will not initiate fractures through the overlying strata into fresh-water strata. The application shall have the burden of furnishing the Commissioner with such sworn evidence and data necessary to support such findings. The Commissioner shall conduct a ground-water test to verify the adequacy of the overlying strata.

The following provisions apply to all injection projects:

1. Immediately upon the commencement of injection operations, the operator shall notify the Commissioner of the commencement date.

2. Within ten days after permanent discontinuance of injection operations, the operator shall notify the Commissioner of the date of discontinuance and the reason thereof.

3. Before any injection well is plugged and abandoned, notice of intent (Form 9, see Appendix 1) shall be given to the Commissioner, and the same procedures shall be followed as in the case of the plugging and abandonment of the well as provided with respect to the plugging and abandonment of oil and gas wells. (See rule R12-1.7-126.)

4. An injection or disposal well shall not be transferred from one operator to another without the approval of the Commissioner. The transfer of ownership of an injection or disposal well from one operator to another shall be filed with the Commissioner on a "Designation of Operator" form in triplicate, prior to the proposed transfer date. Within 30 days of such filing, the Commission shall return a copy of the above form to the former operator and the proposed new operator, stating 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 return form. (See rule R12-1.7-126.)

Records and 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
2.2. 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 such 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, bitumen, propene, butadiene, ketone, 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 mandated by such form respecting gas and products
involved in the operations 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, stores, 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 five years from the dates on which he has 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. 83-3).

R12-7-193. Written notices, requests, permits and reports
The Commission shall adopt such forms of notices, requests, permits
and reports as it deems 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 (by roadways), refining, reclaiming, treating,
mixing, processing, 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 each
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. If any new corporation, or 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
There rules shall not be taken or construed as 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
descendants 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 safety bond
Rule R12-7-103
3. Application for permit to drill or re-enter
Rule R12-7-104, R12-7-105, R12-7-107, R12-7-108
4. Well completion or re-completion report and well log
Rule R12-7-121, R12-7-122, R12-7-123
5. Well status report and gas-oil ratio report
Rule R12-7-135
6. Potentiometer test and request for allowable - oil wells
Rule R12-7-132
7. Reservoir pressure report
Rule R12-7-136
8. Operator's certificate of compliance and authorization
to transport oil or gas from lease
Rule R12-7-143
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 re-completion
Rule R12-7-115
12. Packet setting report
Rule R12-7-116
13. Packet leakage test
Rule R12-7-116
14. Report of injection project
Rule R12-7-116
15. Application to dispose of salt water by injection into a
porous formation
Rule R12-7-176
16. Production monthly report
Rule R12-7-151, R12-7-151, R12-7-151
17. Certification for load oil credit and permit to transport
overflowed crude oil
Rule R12-7-164
18. Maxiwell and one point back pressure test for gas well
Rule R12-7-164
19. Gas well a monthly report
Rule R12-7-151, R12-7-151
20. Deliverability test report
Gasoline plant or pressure maintenance plant monthly report
Rule R12-7-190
ARTICLE 2. GEOThERMAl RESOURCES

R12-7-201. Definitions.

Unless the context otherwise requires, the words hereinafter defined shall have the following meanings when so used:

1. "Commission" means the Oil and Gas Conservation Commission.

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

3. "Drilling unit" means the area 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, in influence its development or existence.

5. "Geothermal area" means the area on the surface area which is underlain by a geothermal formation containing geothermal resources.

6. "Geothermal resources" means:
   a. All products of geothermal processes embracing steam, hot water and hot brines.
   b. Any gas, excepting methane, carbon dioxide, and nitrogen, and the associated silica, alumina, magnesium, calcium, strontium, iron, and other elements as may be found in geothermal waters or brines.

7. "Operator" means all persons drilling, maintaining, owning, or operating any well or 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. "Persons" means and includes any individual, firm, association, corporation or any other group or combination acting as a unit.

9. "Waste" means any physical waste including, but not limited to, underground waste resulting from the inefficient, excessive or improper use or disposal of waste water or resulting from the location, storage, drilling, equipping, operation or production of geothermal resources in such a manner that tends to reduce the ultimate economic recovery of the geothermal resources within a reservoir, or which waste results from the inefficient storage or utilization of geothermal resources and the location, testing, drilling, equipping, operation or production of geothermal resources in such a manner that causes or tends to cause the unnecessary or excessive surface heat or destruction of geothermal resources obtained or released from the reservoir.

10. "Well" means any well drilled for the exploitation of geothermal resources or any development well on lands in an area proved to be underlay by one or more formations containing geothermal resources and is reasonably presumed to contain geothermal resources in an area 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 disposal of fluids into geothermal formations, or any well drilled for the purpose of stimulating the heat of a formation or the creation of heat in a formation by nuclear or other form of energy.

a. "Recompletion of well or completed well" means a well well deepened, plugged back, reperforated or performed in a different zone will be considered recompleted.

Historical Note
Former A.

R12-7-202 General rules applicable statewide.

A. Scope of rules. These rules are general rules of statewide application and shall apply in 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. 11-1408 and related rules and regulations relating to the preservation of geothermal resources.

C. Waste of geothermal resources is unlawful and prohibited.

D. Classification of drilling 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 area, or whether a reclassification should be made.

E. Forms upon request.

1. Forms for written notice, requests and reports required by the Commission will be furnished upon request.

2. Preparing all forms and reports required by the Commission to be submitted to the Commission on or before the 25th day of the month following a monthly report 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 in the sum of $5,000 for each well to be drilled or by each joint venture or partnership to guarantee the execution of this chapter, or shall post a bond in the sum of $25,000 as a blanket bond to cover all wells payable to the Oil and Gas Conservation Commission, state of Arizona, and to the OAGCF. Such bond shall be conditioned on the following requirements:
1. Compliance with all statutes and rules and regulations.
2. Plugging and abandoning wells as approved by the Commission.

B. Transfer of property does not release the bond. If the property is transferred, 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 of the transfer of the well or wells. If the transfer is not made in writing, the Commission reserves the right to deny the transfer.
2. The transferee of any well or of the operation of any well shall declare in writing his acceptance of the transfer and of the responsibility of the transferee wells and shall submit a new bond or bonds unless his blanket bond applies to the new well.

C. When the Commission approves the transfer, the transferee shall be released from all responsibility therefor with respect to the transferred wells, and the Commission in writing will declare that the transferee’s bond or bonds applicable therefor shall be released.

D. The Commission will in writing inform the principal and the transferee of any condition 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.

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 in a form prescribed by the Commission (Form G-1, see Appendix 1) and shall post a bond in the sum of $25,000 as a blanket bond to cover all wells payable to the Oil and Gas Conservation Commission, state of Arizona, and to the OAGCF. The location must be surveyed and the application must be made in writing and approved by the Commission prior to drilling.

B. The permit shall be in such form prescribed by the Commission (Form G-1, see Appendix 1) and shall be issued upon approval of the application. A permit shall not be denied for any reason other than the application is not accompanied by a bond in the sum of $25,000. A permit may be cancelled without payment of additional fees.

R12-7-205. Change of location
A. No person to whom the permit has been issued shall change the location of the well from the location authorized by the permit, unless the following requirements have been complied with:

R12-7-206. Identification of wells
A. Every person drilling or operating, owning, controlling, or in possession of any drilled, shall post on the drilled 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 letters to be at least 4 inches high and capable of being legible under normal conditions at a distance of 50 feet.

B. All wells shall be named in the following manner:

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.
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 lessee’s name and indicate that the well is for geothermal purposes.

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. Reasonable interference with multiple use of lands.
7. Protection of the environment.

B. Before commencing the drilling of any well, Application for Permit (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 plot prepared and certified by a registered surveyor and bearing his certificate number (surveyors licensed in states other than Arizona are acceptable) to which is shown the exact acreage or legal subdivisions allocated to and dedicated to the well.

C. When two or more separately owned tracts of land are encompassed within an established drilling unit, persons owning the drilling rights thereto and the right to share in the production therefrom may agree to pool their interests and develop their wells 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.

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

In order to assure a supply of drill-laden fluid to confine oil, gas, water or other fluids in 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.

R12-7-209. Scaling off strata

All oil, gas and water above the producing horizon shall be confined by the producing stratum and shall be sealed or expressed in order to prevent the 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).

R12-7-210. Surface casing requirements

A. In areas where pressure and formation water levels are unknown, sufficient surface casing shall be run to reach a depth below all known or reasonably estimated fresh water levels, to prevent blowouts or uncontrollable flows. The casing shall be of sufficient strength to permit the use of an intermediate string of strings of casing. Surface casing shall be set in or through an impermeable 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 all fresh water and to insure against blow-outs or uncontrollable 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 tests 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.

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 another test at the Commission’s request. 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 pressures 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.
R12-7-212. Defective casing or cementing
A. The operator shall notify the Commission by the most expeditious manner if any well appears to have defective casing or be faulty cemented or 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, said well 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.

R12-7-213. Blow-out prevention
Any person engaged in the drilling of a well for geothermal resources in an area wherein fluids, gas 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 to a watertight manner the bore hole to a depth sufficient to prevent surface-exploding 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 PSI on installation. The blow-out preventer shall be operated at least once every 30 hours. All equipment shall be kept in good working order at all times.

R12-7-214. Pulling outside strings of casing
When pulling outside string of casing from any well, the space outside the casing string in the hole shall be left full of anled fluid or cement of adequate specific gravity to seal off each fresh and salt water stratum, each oil and 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).

R12-7-215. Deviation of hole
A. Unless the operator shall first secure 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 approved by the Commission (B) 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 survey.
C. If the hole is deviated for short distances, as provided in subsection (B) of this rule.
In each such report of fire, breaks, leaks, or escapes, or other accidents of this nature, the location of the well, reservoir, 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 escaped.

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 to as to the 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 status, water, oil, or gas encountered in drilling a well.
2. 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.
3. All electrical and radioactive logs and other logs of the well shall be kept for a period of not less than five years and shall be submitted to the Commission at such intervals as the Commission shall require.
4. Samples of all cores and cuttings, at a maximum interval of ten feet, shall be furnished to the Commission within 30 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 account 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 prevent the individual samples from being damaged. Each individual sample shall be contained within 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 by the Commission.

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, enlarged, re-lined, back-filled, or subjected to any well work operations or to be re-completed or reperfomed in the same producing reservoir without first giving ten days’ written notice to the Commission and the owner 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 to 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.

B. With ten 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 well shall file with the Commission a report on a form prescribed by the Commission (Form G-12, see Appendix 1). This report shall be filed with the Commission within 30 days of the completion of the work. 

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.
R12-7-232. 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 are approved by the Commission, 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 in 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 in 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 30 volume API fluid filled 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 point of pipe not less than four inches in diameter securely set in concrete extending at least 40 feet above the ground level. A permanent sign or 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 oil and gas 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 is obtained from the Commission.

C. Within 30 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 in a form prescribed by the Commission (Form G-10, see Appendix 1) setting forth in detail the method used in plugging the well.

R12-7-233. 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 nor toward in which the landowner, his agent, or lessee assumes responsibility for the well and the final plugging. Such filling shall constitute compliance with the obligation of each 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.

R12-7-234. Well test and reservoir surveys

When necessary or advisable, the Commission shall require tests on a form prescribed by the Commission (Form G-6, see Appendix 1) setting forth the total production from each well and other information as may be required by the Commission.

R12-7-235. 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 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.

R12-7-236. Pollution and surface damage

The owner or operator shall take all reasonable precautions to avoid polluting streams, polluting underground water, and damaging wells. If any deleterious substances cannot be treated or destroyed, or if the volume of such produce is too great for disposal by the usual methods without damage, other means of disposal, after approval by the Commission, shall be used.
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 shall be disposed of by evaporation when impounded in excavated earthen pits, but only in such a manner as to not be used for such purpose when the pit is undermined by a tight, impervious soil, such as heavy clay or sand, unless the pit 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 shall be confined to natural aquifers, drainage basins, livestock or other beneficial use is prohibited unless authorized by the Commission after notice and hearing. Applications for such authorization shall be made in a form prescribed by the Commission. (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 all aquifers, and the surface owners within one-half mile radius of the disposal well.

b. The initial authorization for underground disposal in one locale may define a greater geographic area than and specify in addition to that covered in the application when data supporting the application merits such definition. 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 any waiver, the application may submit a proof of the fact that said affect operators and surface owners were notified of the proposed disposal well provided such proof of the fact is in a manner satisfactory to the Commission.

c. Whenever the Commission makes an order 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 effluents into producing reservoirs.

R12-7-246. Environmental protection

In the absence of coverage by any other Section of these regulations, the Commission may require operations under this Chapter to be conducted so as to not to pollute land, water or air, pollute streams, damage the surface or pollute underground water of the land upon which the operations are being conducted, or pollute underground water at neighboring lands. Federal and state air and water quality standards will be followed unless more stringent requirements are specified by the Commission. Fees for pollution and 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-303.

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 are in the state of Arizona, any 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-403.

R12-7-252. Monthly producers report

Monthly Producers Report (Form G-D, see Appendix 1) shall be filed on each producing lease within the state for each calendar month, setting forth all 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 such manner as 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. Permits for injection

A. The injection of any substance into a 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 a geothermal reservoir shall contain all information required by the Commission, including but not limited to the following:

1. A 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 operators within one-half mile of the intake well or wells, and each affected area.

2. The formation from which the 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 input wells.

6. Description of the substance proposed to be used for injection, the source, and the amount proposed to be injected daily.
7. The names and addresses of the operator or operators of the injection project.

   Historical Note
   Former Rule 6-501.

R12-7-262. Casting and cementing of injection wells

A. Wells used for injection into producing formation shall be cast 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. Wells drilled with cable tools, casing may be added by bail-out the well dry. This hole must remain satisfactorily dry for one hour before commencing further operations. Results of the test required to 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 6-502.

R12-7-263. Notices 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 commencement or discontinuance of injection operations, the operator shall notify the Commission of the date of each discontinuance and the reasons therefore.

3. Before any injection well is plugged and abandoned, notice is given to the Commission (Form G-9, see Appendix 1) shall be given to the Commission, and the same procedure shall be followed with respect to the plugging and abandonment of geothermal resource wells (see rule R12-7-231 et seq.)

   Historical Note
   Former Rule 6-503.

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 reports shall be submitted on or before the 20th day of the next succeeding month.

   Historical Note
   Former Rule 6-504.

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 authorize 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 canceled by the Commission.

   Historical Note
   Former Rule 6-601.

R12-7-272. Geothermal purchasers monthly report

Each purchaser or taker of geothermal resources from any well, lease, reservoir or production 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 6-602.

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:

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Arizona Administrative Code
Oil and Gas Conservation Commission

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 gathering plant operator, and
and initial purchaser of a geothermal resource within the state
from which he may be able to make and submit the reports
required by the Commission.

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

R12-7-293. Organization reports
Every person acting as principal or agent for another or who is
independently engaged in the drilling, operation, production, storage,
transportation, except by cultivating, refining, reclaiming, treating,
marketing, processing oil, or geothermal exploration for geothermal
resources shall immediately file with the Commission the form
Organization Report (Form G-1), see Appendix 1 in the
appendix giving the following information: the name under which such
business is being operated or conducted, the name and post office
address of each officer and the business or businesses in which he is
engaged; the date 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
oficers or partners and the names and addresses of the directors

APPENDIX 1 – FORMS

1. Organization report
   Exception: R12-7-293

2. G-2. Bond
   Rule R12-7-203, 233

3. G-3. Application for permit to drill, re-open, plugback or
       re-enter.
   Rule R12-7-204, 205, 207, 210, 253

4. G-4. Well completion or repletion report and well log
   Rule R12-7-210, 221, 223

5. G-5. Owner’s certificate of compliance and
       authorization to transport geothermal resources from lease
   Rule R12-7-271

   Rule R12-7-242, 243, 252

   Rule R12-7-272, 241

   Rule R12-7-264

   Rule R12-7-273, 276

   Rule R12-7-231, 232, 233, 263

       by injection into a porous formation
   Rule R12-7-244, 245

12. G-12. Sundry notices and reports on wells
   Rule R12-7-249, 211, 212, 214, 215, 216, 219, 221, 231,
        262, 265, 254

   Rule R12-7-234

   Rule R12-7-204, 205, 233
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, Geothermal Resources

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 reitled 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 §§ 27-622 through 27-655.

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.
II. Costs and Benefits of Enforcement and Implementation

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<thead>
<tr>
<th>Description of Group Affected</th>
<th>Description of Effect</th>
<th>Increased Costs/Decreased Revenues</th>
<th>Decreased Costs/Increased Revenues</th>
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<td>In this economic impact statement, &quot;minimal&quot; means less than $1,000; &quot;moderate&quot; means between $1,000 and $5,000; and &quot;substantial&quot; means more than $5,000.</td>
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A. Agency / Political Subdivision

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

B. Other State Agencies / Political Subdivisions

<table>
<thead>
<tr>
<th>Description of Group Affected</th>
<th>Description of Effect</th>
<th>Increased Costs/Decreased Revenues</th>
<th>Decreased Costs/Increased Revenues</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSPB</td>
<td>Review of repealed and amended rules.</td>
<td>Minimal</td>
<td>None</td>
</tr>
<tr>
<td>GRRC</td>
<td>Consideration of repealed and amended rules.</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Secretary of State</td>
<td>Printing and administrative costs.</td>
<td>Minimal</td>
<td>Moderate</td>
</tr>
<tr>
<td>Attorney General</td>
<td>Certification of amended rules.</td>
<td>Minimal</td>
<td>None</td>
</tr>
</tbody>
</table>
II. Costs and Benefits of Enforcement and Implementation

<table>
<thead>
<tr>
<th>Description of Group Affected</th>
<th>Description of Effect</th>
<th>Increased Costs/ Decreased Revenues</th>
<th>Decreased Costs/ Increased Revenues</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Bureau of Land Management, U.S. Environmental Protection Agency</td>
<td>Required bonds, applications, reports, and data supplement these agencies' requirements on federal land.</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>D. Privately / Publicly Owned Businesses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operators and producers</td>
<td>Each currently submits required material, performs required tests and submits the required reports.</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Well service and testing companies</td>
<td>Required testing and monitoring currently provide a market for these businesses.</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Industry Scouting companies</td>
<td>Required applications currently provide a data source for these businesses.</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Surety companies, Arizona banks, and Registered Land Surveyors</td>
<td>Required bonds and surveying of well locations currently provide a market for these businesses.</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>E. Consumers</td>
<td>These rules do not directly affect consumers.</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>F. Private Individuals</td>
<td>These rules prohibit pollution, hazards, and prevent waste of energy resources.</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

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.
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 on-site 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. Rausch
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
<table>
<thead>
<tr>
<th>RULE NUMBER</th>
<th>BRIEF DESCRIPTION</th>
<th>A.R.S. AUTHORITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>R12-7-101</td>
<td>Definitions</td>
<td>27-516; 27-656</td>
</tr>
<tr>
<td>R12-7-119</td>
<td>Well &amp; lease equipment</td>
<td>27-503.B(3),(4); 27-516.A(1)(e),(o),(s); 27-656</td>
</tr>
<tr>
<td>R12-7-120</td>
<td>Fire, leaks, and blowouts</td>
<td>27-503.A; 27-503.B; 27-516.A(6),(7); 27-652</td>
</tr>
<tr>
<td>R12-7-121</td>
<td>Well completion</td>
<td>27-516.A(2); 27-522.B; 27-656</td>
</tr>
<tr>
<td>R12-7-122</td>
<td>Recompletion</td>
<td>27-516.A(2),(9); 27-652; 27-655; 27-656</td>
</tr>
<tr>
<td>R12-7-125</td>
<td>Temporary abandonment</td>
<td>27-516.A(1),(4),(o); 27-656.A</td>
</tr>
<tr>
<td>R12-7-126</td>
<td>Intention to plug</td>
<td>27-516.A(1); 27-656</td>
</tr>
<tr>
<td>R12-7-127</td>
<td>Plugging methods</td>
<td>27-516.A(1); 27-656</td>
</tr>
<tr>
<td>R12-7-128</td>
<td>Stratigraphic holes</td>
<td>27-501(21); 27-656</td>
</tr>
<tr>
<td>R12-7-129</td>
<td>Convert to water</td>
<td>27-516.A(1); 27-656</td>
</tr>
<tr>
<td>R12-7-175</td>
<td>Underground injection</td>
<td>27-516.A(20); 27-656.A</td>
</tr>
<tr>
<td>R12-7-176</td>
<td>Permit for injection</td>
<td>27-516.A(20); 27-516.B; 27-517; 27-652; 27-656</td>
</tr>
<tr>
<td>R12-7-177</td>
<td>Casing of injection</td>
<td>27-516.A(20); 27-656</td>
</tr>
<tr>
<td>R12-7-178</td>
<td>Injection operations</td>
<td>27-515.B(3); 27-516.A(2),(8),(20); 27-653; 27-656</td>
</tr>
<tr>
<td>R12-7-179</td>
<td>Reports &amp; records</td>
<td>27-503.B(6); 27-516.A(20); 27-653</td>
</tr>
<tr>
<td>R12-7-180</td>
<td>Storage wells</td>
<td>27-516.A(20); 27-516.B; 27-517</td>
</tr>
<tr>
<td>R12-7-181</td>
<td>Storage well design &amp; construction</td>
<td>27-516.A(20)</td>
</tr>
<tr>
<td>R12-7-182</td>
<td>Storage well operation</td>
<td>27-516.A(20)</td>
</tr>
</tbody>
</table>
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 rendered 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 or more wells 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 underlaid 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 byproduct 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 indigestible 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.
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 instrumentalities 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 quality 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 interest 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 § 27-523.
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 thereof.
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.

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 substances 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.
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 maps 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 375-109, relating to leasing of appropriations, except all monies in the revolving fund exceeding five thousand dollars shall revert to the state general fund.
27-518. Rules and regulations
A. The commission shall make rules and amend
them as deemed necessary for the proper administra-
tion and enforcement of this article, including the
following rules, regulations, and procedures:
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.
   (e) Reporting wells showing the location of oil
       and gas wells and requiring filing of logs and
       drilling record within thirty days from the comple-
tion of a well drilled for oil or gas.
   (f) Requiring a reasonable well with good and suf-
cient assurance on the performance of the
       owner as prescribed in paragraphs 1 and 2 of this
       subsection including the obligation to plug each dry
       or abandoned well.
   (g) Preventing dewatering by water of any stratum
       or part of the producing oil or gas in paying quan-
tities and preventing the premature and irregular
       erosion of water which reduces t Possible to
       recover the ultimate recovery of oil or gas from any
       pool.
   (h) Requiring the operation of wells with efficient
       gas-oil ratio and fixing the limits of such ratios.
   (i) Preventing blowouts, caving and seepage.
   (j) Preventing creation of unnecessary fire hazards.
   (k) Requiring identification of ownership of oil and
       gas wells, producing leases, refineries, tanks, plants,
       storage and transportation equipment and facilities.
   (l) Requiring shooting, perforating and chemical
       treatment of wells.
   (m) Requiring gas cycling operations.
   (n) Requiring secondary recovery methods, in-
       cluding introduction of gas, air, water or other sub-
       stance into producing formations.
   (o) Regulating spacing of wells and establishing
       drilling units.
   (p) Limiting, allocating and apportioning produc-
       tion of oil and gas from a pool or field for prevention
       of waste, and allocating production between tracts of
       land under separate ownership to a pool on a fair and
       equitable basis so that each tract is permitted to
       produce not more than its just and equitable share
       from such pool.
   (q) Preventing, so far as practicable, reasonably
       avoidable drainage from each developed unit, not
       equipped by counterdrains.
   (r) 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 produc-
       tion from each oil or gas well. Such report shall be
       submitted on or before the twenty-fifth day of the
       next succeeding month.
   (s) Requiring persons making settlement with the
       owner of oil or gas interests to render statements to
       the owner showing the quantity and gravity pur-
       chased and the price per barrel of oil or the price per
       one thousand cubic feet of gas.
   (t) 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
solvency conditioned on payment of just compensation
in case of damage to the landowner for actual damages
in the surface or improvements on the land caused by the
drilling permitted's operations.

19. Requiring all forms and reports requested by
the commission to be submitted to the commission
before or before the twentieth day of the next succeeding
month for monthly reports or within twenty days fol-
lowing the completion of the action requesting the re-
port, 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,
    whatever liquid or gaseous.
(b) Used for the injection of any substance into geo-
    logical strata for the purpose of pressure mainten-
    ance 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 extenstion, except as otherwise provided by this ar-
ticle, 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 pre-
scribed 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 time and place of the hearing and
shall briefly state the purpose of the proceeding. Should
the commission elect to give notice by personal ser-
vice, such service may be made by an officer autho-
rized 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 repre-
sentative 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, amend-
ment or repeal of a regulation of general applicabil-
ity, notice shall be by publication.

C. If an emergency is found by the commission to
exist, which in its judgment requires making, chang-
ing, 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 emerg-
cency 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, so far as applicable, be the same as those fixed by law for a court reporter.
C. As soon as possible following the hearing the commissioner shall bill the person requesting the hearing for the total cost of publication for the notice 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 pay 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 commissioner shall not be subject to the provisions of § 27-523 but shall be deposited by the commission with the state treasurer to the fund from which the expenditure was originally made.

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.
ARTICLE 4. GEOTHERMAL RESOURCES

27.651. Definitions
In this article, unless the context otherwise requires:
1. "Commission" means the oil and gas conserva-
tion commission.
2. "Completion" or "completed well" means a well
that has been or is capable of producing geother-
mal resources or has been determined to be a dry
hole, temporarily abandoned or plugged and aban-
donned, or has been ready for other phases of exploi-
tation.
3. "Department" means the state land depart-
ment.
4. "Environment" means the sum total of all the
external conditions which may act upon an organism or
community, to influence its development or exis-
tence.
5. "Geothermal area" means the same general sur-
face 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 artifi-
cially introduced into geothermal formations.
(c) Heat or other associated energy found in ge-
othermal formations, including any artificial stimula-
tion or induction thereof.
(d) Any mineral or minerals, exclusive of fossil
fuels and helium gas, which may be present in solu-
tion or in association with geothermal steam, water
or brines.
7. "Lease" means a geothermal resources develop-
ment lease issued for state lands pursuant to the pro-
visions of this article.
8. "Lease" means the holder of a lease or any as-
signee of an original lease or part thereof.
9. "Owner" means anyone operating, main-
taining, developing, leasing, and/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 disposi-
tion of reservoir energy or resulting from the loca-
tion, spacing, drilling, equipping, operation or pro-
duction of a geothermal resource well in such a man-
ner that reduces or tends to reduce the ultimate eco-

nomic recovery of the geothermal resources within a
reservoir, and surface waste resulting from the insuffi-
cient storage or utilization of geothermal resources
and the location, spacing, drilling, equipping, opera-
tion or production of a geothermal resource well in
such a manner that causes or tends to cause the un-
necessary or excessive surface loss or destruction of
geothermal resources obtained or released from the
reservoir.
13. "Well" means any well drilled in search of geo-
thermal resources or any development well on lands in
area proved to be underlain by one or more forma-
tions containing geothermal resources or reasonably
assumed to contain geothermal resources or any
well drilled for information purposes, or any produc-
ting well or reoriented 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
best of a formation or for the creation of heat in a
formation by nuclear or any other form of energy.

27.652. Supervision by commission
A. The commission shall supervise the drilling,
operation, maintenance and abandonment of geo-
thermal resource wells as to encourage the greatest ulti-
mate economic recovery of geothermal resources, to
prevent damage to and waste from underground geo-
thermal reservoirs, to prevent damage to or contami-
nation 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, mainte-
nance or abandonment of geothermal resource wells.
B. Any person engaged in the drilling of a well for
geothermal resources underlying a usable ground-
water aquifer shall cause the bore hole to be in a watertight
manner from the land surface to the geothermal pro-
duction zone or to a depth sufficient to prevent dam-
age or contamination of the aquifer from the escape of
groundwater resources from the bore hole. Materia-
als and installation procedures for casing and sealing
of the bore hole shall be in accordance with specifica-
tions and procedures approved by the commission.
C. Disposal of water or brines obtained from a geo-
thermal well whether by piping and evaporation,
release to a watercourse or other means shall not
cause or contaminate the underlying groundwater
aquifer or pollute any stream, river or body of surface
water. Construction and maintenance of all geo-
thermal water and brine disposal systems and of the de-
vice required to monitor quantity and quality of the
waters and brines disposed of in each system shall be
in accordance with specifications, procedures and reg-
ulations approved by the commission.
D. Whenever the commission finds that it would be
in the interest of maintenance of the underground
groundwater resource, prevention of subsidence of the
land surface or maintenance of the quality of surface
and other ground waters, the commission may re-
quire re-injection of the geothermal effluent or injec-
tion of other water supplies into the producing zones.

27.653. Information; filing; confidentiality
The commission shall collect all information re-

garding all wells drilled in the state for geothermal
resources necessary for the purpose of supervision of
such wells. All such data 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.
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, induce or create a geothermal resource will be approved by the commission except after notice and hearing as set forth in § 27-656.

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 state 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 elect 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.
CONCISE EXPLANATORY STATEMENT, Title 12, Chapter 7, A.C.R.E. 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:

<table>
<thead>
<tr>
<th>RULE NO.</th>
<th>BRIEF DESCRIPTION</th>
<th>A.R.S. AUTHORITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>R12-7-102</td>
<td>General rules applied statewide</td>
<td>27-516.A</td>
</tr>
<tr>
<td>R12-7-103</td>
<td>Bond</td>
<td>27-516.A(3),(18); 27-523; 27-652; 27-656; 27-659</td>
</tr>
<tr>
<td>R12-7-104</td>
<td>Permit to drill</td>
<td>27-513; 27-516.A(2),(20); 27-652; 27-659</td>
</tr>
<tr>
<td>R12-7-105</td>
<td>Change location</td>
<td>27-513; 27-516.A(2); 27-652; 27-659</td>
</tr>
<tr>
<td>R12-7-106</td>
<td>Identification</td>
<td>27-516.A(8); 27-652; 27-656</td>
</tr>
<tr>
<td>R12-7-107</td>
<td>Spacing of wells</td>
<td>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</td>
</tr>
<tr>
<td>R12-7-108</td>
<td>Reserve pits</td>
<td>27-516.A(1),(c); 27-516.A(6); 27-652; 27-657; 27-656</td>
</tr>
<tr>
<td>R12-7-109</td>
<td>Sealing-off stages</td>
<td>27-516.A(4),(a),(b)</td>
</tr>
<tr>
<td>R12-7-110</td>
<td>Surface casing</td>
<td>27-516.A(1),(6); 27-652; 27-656; 27-660</td>
</tr>
<tr>
<td>R12-7-111</td>
<td>Casing &amp; tubing</td>
<td>27-516.A(1),(4),(6); 27-652; 27-660</td>
</tr>
<tr>
<td>R12-7-112</td>
<td>Defective casing or cementing</td>
<td>27-516.A(1),(b),(c); 27-651; 27-656; 27-660</td>
</tr>
<tr>
<td>R12-7-113</td>
<td>Blowout prevention</td>
<td>27-516.A(6); 27-656; 27-660</td>
</tr>
<tr>
<td>R12-7-114</td>
<td>Recovery of casing</td>
<td>27-516.A(1),(6); 27-656</td>
</tr>
<tr>
<td>R12-7-115</td>
<td>Deviation of hole</td>
<td>27-506.A; 27-516.A(13); 27-516.B; 27-517; 27-652; 27-656</td>
</tr>
<tr>
<td>R12-7-116</td>
<td>Multiple completion</td>
<td>27-516.A(1),(a),(13); 27-516.B; 27-517; 27-656.A</td>
</tr>
<tr>
<td>R12-7-117</td>
<td>Well stimulation</td>
<td>27-516.A(1),(6); 27-652; 27-655; 27-656</td>
</tr>
<tr>
<td>R12-7-118</td>
<td>Hydrogen sulfide environments</td>
<td>27-502.A(6); 27-516.A(7); 27-656.A</td>
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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

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
The Office of The Secretary of State

CERTIFICATION OF RULES AND ORDER OF RULE ADOPTION

☐ Name of Agency: OIL & GAS CONSERVATION COMMISSION (ARIZONA GEOLOGICAL SURVEY)

☐ Agency contact person (name, address, phone): STEVEN L. RAUL, 845 NORTH PARK AVE., STE. 100, TUCSON, ARIZONA 85719 PHONE (520) 882-4795


☐ Date Published in Administrative Register: SEPTEMBER 1, 1992

A.A.R. 

Vol. 92 Page 160 

☐ Close of the Record ☐ Date Rules Adopted by Agency

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

☐ REPEALED A.A.C. R12-7-102 and R12-7-109

☐ ADOPTED

☐ AMENDED A.A.C. R12-7-103 to R12-7-108 and R12-7-110 to R12-7-118

☐ RENUMBER EXISTING RULES

☐ Incorporation by Reference

☐ None

☐ Check if these rules were previously adopted as an emergency. ☐ Check if change is text.

☐ Check the applicable item for effective date:

☐ Date filed with the Office of the Secretary of State

☐ Other (pursuant to A.R.S. §41-1032) (Other date)

☐ Certification or rejection by the Attorney General

A.G. Rule No.

☐ Approved ☐ Rejected

[Signature of Officer]

[Name of Officer]

[Title]

[Telephone]

[Date]

[Signature of Officer]

[Name of Officer]

[Title]

[Telephone]

[Date]
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-Ray 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  

[Signature]  
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
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2) Mr. John Feegan, Assistant Attorney General (AAG), will get information and advise Commission.

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.

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2) Muller advises that no statute gives Commission authority to force plug and abandon geothermal wells.
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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.

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1) Lewin advises that enforcement is by injunctive action by the Superior Court.
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4) Monserez advises that property is owned by Gilbert, Arizona-Power Road Properties Joint Venture.
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1) Commission issues Order #59 to require reinjection of produced water from the geothermal wells.

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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.
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1) Mead reported that ownership of the property is still in question.
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5) Commission requests formal request letter to Attorney General for signature at next meeting.
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,

Steve

Steven L. Rauzi
Oil & Gas Program Administrator

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