NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

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BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

2007 APR 12 AM 9 21

Mark E. Fesmire, P.E.
Director
Oil Conservation Division

April 12, 2007

Oil Conservation Commission
1220 S. St. Francis Drive
Santa Fe, NM 87505

Hand-delivered

Re: Case No. 13817, In the Matter of the Application of Harvey E. Yates Company for an Exemption to Commission Rule 19.15.2.50(A)

Honorable Commissioners:

For your convenience, attached are courtesy copies of the documents cited in the Oil Conservation Division's Reply in Support of Motion to Dismiss.

Sincerely,

Gail MacQuesten,
OCD Attorney

Cc with attachments: Cheryl Bada, Oil Conservation Commission Attorney, hand-delivered
Earl DeBrine, counsel for Harvey E. Yates Company, via FAX

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION COMMISSION

IN THE MATTER OF THE APPLICATION
OF HARVEY E. YATES COMPANY FOR AN
EXEMPTION TO COMMISSION RULE
19.15.2.50(A)

CASE NO. 13817

Documents cited in Reply in Support of Motion to Dismiss

Documents from Case 13269 (Rulemaking Proceeding for Rule 21)

OCD Ex. 3: Executive Order 2004-005
Tr. Vol. 1, p. 40: Direct examination of William Olson by Gail MacQuesten
Tr. Vol. 1, p. 47-62: Direct examination of William Olson by Gail MacQuesten
Tr. Vol. 1, p. 223: Examination of Robert Sivinski by Commissioner Bailey
Tr. Vol. 2, p. 312: Examination of Rachel Jankowitz by Commissioner Bailey
Order R-12172

Documents from Case 12969 (Rulemaking Proceeding for Rule 50)

Order R-12011-B (incorrectly cited in reply as R-11847

OCD Exhibit No. 3
Case 13269

State of New Mexico

Office of the Governor

Bill Richardson
Governor

EXECUTIVE ORDER 2004-005

STATE AGENCIES ACT TO CONSERVE AND PROTECT RESOURCES OF OTERO MESA

WHEREAS, the Chihuahuan Desert is among the globally significant ecoregions identified by the World Wildlife Fund as an area deserving protection so that we pass a whole and healthy earth onto future generations; and

WHEREAS, the remnant desert grasslands of the Otero Mesa and Nutt areas of Otero and Sierra Counties are valuable as unfragmented examples of the Chihuahuan Desert; and

WHEREAS, New Mexico ranchers, wilderness and conservation advocates, plant and animal conservation societies, and outdoor enthusiasts of all kinds value the unique characteristics of this desert and grasslands; and

WHEREAS, the region has relatively low probability of producing economically recoverable quantities of oil and gas; and

WHEREAS, recognition of the ecological significance of this area has grown significantly in recent years; and

WHEREAS, the region has valuable underground water resources that should be protected from contamination; and

WHEREAS, significant oil and gas exploration and development activities could upset the condition of these lands, including through the introduction of non-native species;

NOW THEREFORE, I, Bill Richardson, Governor of the State of New Mexico, by virtue of the authority vested in me by the Constitution and the laws of the State of New Mexico do hereby direct all appropriate and relevant state agencies including the Energy, Minerals and Natural Resources Department, the Environment Department, the Game and Fish Department, the State Engineer's Office, the Agriculture Department, and the State Historic Preservation Office to provide support for the utmost protection of these grasslands as a matter of state policy; and furthermore, hereby order the following:

1) All appropriate and relevant state agencies listed above shall officially relay their concerns about development of this area to federal agencies, including the Bureau of Land Management in the United State Department of the Interior; and

2) All appropriate and relevant state agencies listed above shall participate in the development of a management alternative to be presented to the Interior Department no later than March 2004; and

EXAMINATION

BY COMMISSIONER CHAVEZ:

Q. Yes, Mr. Olson, on Exhibit Number 4 -- this is a bit of minutiae, maybe -- there at the southwest corner of Sierra County the hachured area extended a little bit south out of Sierra County, that's not intended, really, to designate that the area out of Sierra County is included; is that just a mapping issue?

A. I think that's just a glitch in the mapping. This Rule is intended for the portions of Sierra and Otero County. It is not proposed to go outside of those two counties.

COMMISSIONER CHAVEZ: Okay, thank you.

CHAIRMAN FESMIRE: I have no questions.

DIRECT EXAMINATION (Resumed)

BY MS. MacQUESTEN:

Q. I'd like to turn, then, to the issue of prohibiting pits in the area that we've prescribed. Now this proposed Rule would prohibit all pits that are permitted under the Oil and Gas Act; is that right?

A. That's correct.

Q. For these two counties in the area that we have defined?

A. That's correct.

Q. Could you give us a little background, please, on

clear, there is a big distinction with this.

Q. When did Rule 50 take effect?

A. Rule 50 took effect on April 15th of 2004.

Q. So that Rule 50 represents a very recent change in the requirements for pits?

A. Yes, it does. It requires permitting of all pits and has specific requirements for locations and lining requirements and things like that.

Q. So the numbers on this slide relate to pits that were in place before that rule took effect?

A. That's correct.

Q. So when we're looking specifically at the disposal and storage pits -- and those are the long-term pits you talked about?

A. Yes, this is broken down here for long-term and what would be considered short-term pits, which would be the drilling and workover pits.

Q. And you're telling us that most of the pits that are represented in those columns for the disposal and storage pits were before Rule 50, so the contamination represented here, you hope would not have happened if Rule 50 had been in place?

A. That's correct.

Q. Can you give us an example, then, of any long-term disposal and storage pit that showed contamination

that -- a pit that would have satisfied Rule 50 but still caused contamination?

A. We do have several pits -- Some of our brine pits, which are double-lined pits with leak-detection, actually have been constructed in accordance with -- or they say they were constructed for Rule 50, they were done under discharge permits, under the Water Quality Control Commission Regulations. But the requirement for secondary containment and leak detection would be the same for those permits as under OCD Rule 50.

And we have several types of brine pits which are essentially containing saturated brine, up around 180,000 to 200,000 TDS, and we have several of those that have caused groundwater contamination, even though they were designed and constructed to prevent that. There is a potential for contamination even from those types of facilities.

Q. So even though Rule 50 was enacted to try to prevent this sort of contamination, there have been cases where a pit that would satisfy Rule 50's requirements could still cause contamination?

A. Yes, there is. I think that largely comes in through not inspecting or leak detection that -- actually to catch it and keep fluids out of those secondary containment systems. If you keep fluids out, you shouldn't

really be having much of a problem, and then you could even -- through to repair those, those systems. But it can happen.

Q. And just to clarify things, the pit you're talking about wouldn't be under Rule 50, it also wouldn't be under this Rule either; is that right?

A. That's correct, those are sites that have been permitted under the Water Quality Control Commission Regulations for discharge permits.

Q. So you're using that pit just to illustrate the potential problems still associated with double-lined pits with leak detection?

A. That's correct.

Q. Let's look now at the short-term pits, the drilling and workover pits. The chart shows 14 cases of contamination, but two cases -- only two of those cases were groundwater contamination; is that right?

A. That's correct.

Q. Can you tell us about those two cases?

A. Well, in one of those cases we had a salt contamination of the groundwater. What actually had happened and brought it to our attention was, the landowner had come onto the site. This is a well that was plugged and abandoned. And to the best of everybody's ability, it appears that this was actually placed through the -- He

came in and it was the only level area out in some of the sandhill country, and he decided that was a good place to put a stock well. And so it appears that he put a -- he drilled a stock well right through the vicinity of the former drilling pit. And at that site we do have contamination of groundwater with chlorides above the Water Quality Control Commission groundwater standards.

The second site is a site that had -- it was actually in a relatively shallow groundwater area, and at that site we -- during the remediation of that site it was discovered to have contamination in the groundwater with benzene from the drilling pit.

Q. That was the known carcinogen you mentioned earlier?

A. Yes, it is.

Q. Are there other problems that you have seen associated with short-term pits that aren't showing up on this chart?

A. Yes, there are. I guess maybe one would be on the next slide, we have a few pictures of some. Here's -- One of the common problems out there is with pits that may be around for some period of time. And this is just a, you know, pit that's had the liner torn and it's been -- well, a common problem up there also, a common problem for potential source of contamination of the soils resulting in

having to do remediation at a site.

Q. Is this an example -- Is this a short-term pit or a long-term pit?

A. This would be what we consider a short-term pit.

And going along with this, this is actually a drilling pit here that was put in this last year during some drilling in the Crow Flats area. And Crow Flats is in the southeast portion of the salt basin, which on the map, the large-scale map we gave you earlier, it's going to be down in the southeast quarter of this area. And it doesn't show up real well in this picture, but the liner itself was just laid right over a lot of rock.

You can see -- actually, some of those little things you see sticking up are just the rocks poking up in through the liner at this point. And we had no indication that this leaked, but this just points out the problems with potential for leaks from single-lined systems like this.

Q. And this particular slide shows a pit that is within the defined area for this Rule?

A. Yes, this is a pit that was drilled in the area that's proposed for this Rule.

Q. Did you happen to see this pit yourself?

A. Yes, I did, that's actually me on the far side of the pit in the picture.

Q. Why do you worry about pits that are built on a rocky area like that?

A. Mostly just for maintaining the integrity of the pit, especially after -- as our Rule 50 goes, and we now have in our OCD guidance for closure of pits. It's just a potential for breaching of the integrity of the liner. And if you do have salts in the pits, there's a potential for future migration of contaminants from the pit such that -- in this case the pit was buried on site, and if the liner has been breached and its integrity breached, there's a potential for migration of contaminants from those in the future.

Q. This pit was supposed to be buried on site?

A. Yes, that's the way the BLM permits -- what they have allowed for. Now, I don't know if this one buried. This company had drilled two pits out in this area. One they had problems with in terms that they had some question about some of the types of waste that went into them, and in that case that one was being required to be hauled off.

I don't know if there was a similar requirement for this one. I had not heard that there was. But there was no reflection of that in the well file, that it was going to be removed from the site.

Q. If this had been buried on site under BLM requirements, what would they do to bury it?

A. Typically you just go and you fold the liner back. You might be trying to mix some material with that to solidify once it dries out, the mud and the cuttings. And then essentially pushing the thing in on itself and covering it with clean soil, is a common closure of petroleum pits.

Q. So the contents and liner would remain --

A. The contents and the liner would remain, right, that's correct.

Q. Are you aware of any wells that were -- or pits, short-term pits, that were constructed like the one on the slide that caused contamination?

A. The -- Yes, we've had one recently in the Lea County area, which was a similar constructed pit, a single-lined drilling pit, that before the rig was brought onto the site they lost all the water and -- all the fresh water and brine that had been placed in the pit, and I guess they assumed at that point that somebody had stole the fluids, so they came back and filled it up again and lost the fluids a second time, as I understand. And at that site, just in a short period of time, they lost 5000 barrels of fresh water and 820 barrels of brine water.

At this point we don't know what the extent of contamination is at that site, because they've just completed the drilling of the well. They came back and

actually emptied the pit and re-lined it, so they're -- to be able to use that for the drilling of that pit, means they had the rig coming on.

And then once the contents are removed, we'll be looking at investigating what the extent of contamination is at that. But they lost a relatively large volume of fluids in a short period of time.

Q. Are there alternatives to using pits like these?

A. The alternative to drilling pits would be the use of closed-loop systems with mud pits.

Q. When you say closed-loop, could you describe basically what a closed-loop system looks like?

A. A closed-loop system is essentially a system that's carried out in -- they're simply open-top tanks that the system is carried out there, set on the surface of the ground.

Q. All right. Is there an alternative to long-term storage pits?

A. The alternative to long-term type of pits would be the injection systems, and disposal of the fluids into a Class II UIC well. There's also potential uses that the Division has looked at before for beneficial uses of produced water, and that's dependent upon the quality of the water. And if we have relatively high-quality water, we have allowed water to be used for road-maintenance

activities, in some cases wildlife watering and livestock watering.

And another big area that's been used more recently is the re-use for drilling activities. Instead of using fresh water for makeup water, a number at the moment are using produced waters for makeup water for drilling.

Q. If you don't have access to a long-term pit, what do you do with the produced water until you can get it to an injection well or until you can use it for some beneficial purpose?

A. Well, you can just store it at that point in tankage, before you can either pipe it to an injection well or haul it by truck for offsite disposal.

Q. If we could go to the next slide, please, I'd like to have you discuss a comparison of a system using pits versus a system using closed-loop or storage tanks and talk about the difference in those two systems.

A. Well, with pits you're going to have a lot of problem with detection of leaks. Even in some of our double-lined systems they are rather difficult to locate leaks at times, and also costly to repair, as well as tanks are -- you know, you've got a -- usually a sealed tank, you're looking at something that's a little less likely to leak, although you can have leaks from those types of systems as well, but it's less likely.

It's also, I think as I mentioned, difficult to detect leaks. With the tanks sitting on the surface you pretty much see it, especially if your tank is placed up on, say, a gravel ring to keep it off the ground and keep it out of contact with any moist soil at that point. And so you'll see even leaks from the bottoms pretty much coming out the bottom, or you'll see leaks in the sides, which you don't see from a pit because you have a -- essentially a covered surface that you can't inspect.

With the pits there's also more danger to -- potential for wildlife, especially birds, getting in pits, even with the netting requirements. I've seen some sites that are netted in accordance with our Rule, that wildlife have managed to get in. With tanks, obviously everything is enclosed. You don't have that potential danger.

The other thing you have with pits, usually in the closure, that comes in, that's allowed in our guidance, is on-site burial in certain circumstances of the contents of those pits. And that leaves a long-term liability with the operator, as well as potentially for the State. If the site becomes an abandoned site in the future, the State may be left as the one attempting to address any long-term liability from contamination of soils at a site, and you have less long-term liability with tanks.

Q. All right. On the issue of pits being more

likely to leak and having more difficulty in detecting leaks with pits, can you talk about what happens when a leak occurs? What kind of remediation needs to take place, and how much does it cost?

A. We've got a lot of numbers that come from unlined sites that we've done, and if you're looking at relatively simple -- just contamination of soils, you may be looking at, you know, $3000 to $5000, trying to deal with remediation of those soils. And if it's a little more complex you could be looking at, you know, tens of thousands up to $100,000 for major soil contamination.

If the site resulted in any groundwater contamination -- some of our simple sites on groundwater contamination have been in the range of $10,000 to $20,000. Major sites of groundwater contamination, you're looking at extreme costs up in the range of hundred thousands of dollars up into the millions of dollars.

Q. Where are you getting those figures?

A. That's just numbers that I've kind of collected over the years in the course of the contamination cases I've worked on, just -- It's not inclusive of all sites, but it's just ballpark ranges of estimated costs of cleanup.

Q. On the issue of danger to wildlife, do our Rules require drilling pits to be netted?

A. They do not. Even Rule 50, our new Rule 50, does not require netting of drilling pits, as long as any oil that may have been produced in the pit is removed from the pit.

Q. And what are the fencing requirements under Rule 50?

A. The fencing requirements that we have were set in Rule 50 for protection of livestock. There was some debate about that at the hearing, about to what level that fencing should go. And the rule was promulgated with protection for livestock.

Q. So would it include protection for wildlife?

A. No, it does not.

Q. What kind of livestock are they protecting? What size animal are we talking about?

A. Essentially it's being done for cattle, cattle, horses that might be grazing in the area.

Q. On the risks associated with burial on site, what kind of problems have you seen arise from burial on site?

A. One of the biggest problems we've encountered is -- in past practices of burial has been the pit being closed and buried relatively close to the surface where the pit contents may have just been mixed in with soil from that area, essentially stirred up.

There might be a top coating of some soil across

that, but the problem has been that the shallow depth of burial that's happened in a lot of those circumstances has resulted in salts wicking back up to the surface and essentially having a surface disturbance area where nothing will grow in the future, just due to the high salt content of the soils.

Q. Do you feel that Rule 50 has taken care of that problem?

A. Rule 50 didn't really address that. We've tried to address that in our guidance document, but there has been quite a bit of controversy about that, because it's not specifically set out in Rule 50. Rule 50 has some general requirements for closure, but it does not specify the actual methods for how that -- to occur.

Q. Do our current Rules for pits require future surface owners to be notified that drilling waste has been buried on their property?

A. No, they do not, and that was a big issue with a lot of the landowners. It's been expressed to us through Rule 50, and even over the last few months since the implementation of the Rule, we've had a number of public meetings, and that's been a big issue with landowners, that they see this as a landfilling of solid waste on their property without their permission, because you're essentially leaving behind -- leave behind the mud and

essentially the cuttings, they're going to be relatively benign because you're looking at just fragmented rock, but then you are leaving behind a large synthetic liner that you're then burying in place, and there has been a number of case where you've had problems, especially with pits that are buried near the surface, where that liner ends up resurfacing and getting fragmented across there and then having problems with cattle eating that. We've had reports of cattle that have choked on -- and died from eating plastic from some of the pit liners as well.

Q. If a pit is buried on site and it -- even encapsulated properly, if a future surface owner doesn't know it's there, can there be problems when that land is later developed?

A. Yes, there's nothing that would prevent that area from being disturbed in the future.

Q. Or even warn anyone that there was something there to watch out for?

A. There is not a mechanism to place any type of notifications or actually even notify the landowner of the existence of that at that point.

Q. We received a number of comments telling us that if we prohibit the use of pits, we're going to see a higher degree of traffic in the area, trucks and vehicles on dirt roads, and that this will create a great deal of dust.

Could you comment on that as an environmental hazard, compared to the environmental hazards you've described regarding pits?

A. I guess the main issue we come with that is kind of from a land-use aspect. Usually the dust is seen as kind of a -- is a nuisance issue and causes -- and tends to smother some of the plants along the roadway. That's, at least, what's been expressed to me by a number of the ranchers. They have concern that their grasses don't grow adequately along the road from a lot of the dust. I guess that's -- That would be true if water was being trucked from a site.

However, if water was to be going for injection, which would be allowed under the Rules that we are proposing, that that water would then be piped and there wouldn't necessarily be that truck traffic. So it's a little difficult to say what that impact would be because it's the kind of decision -- the economic decision by the operator whether they're going to go with, you know, trucking fluids versus installing a Class II well for deep well disposal of produced water.

Q. Does the dust raised by increased traffic in the area represent a permanent environmental threat?

A. No, that's more of an effect while the activity is going on, creates essentially a nuisance and potentially

inhibiting some of the plant growth along that area. But it's more of a -- I would call that more of a short-term activity, so...

MS. MacQUESTEN: I don't have any more questions for Mr. Olson regarding pits. I do wish to have him testify regarding several provisions on the injection wells. But I'd like to stop at this point and ask the Commissioners if they have any questions regarding pits.

COMMISSIONER BAILEY: Yes, I do. Shall we take a break before --

CHAIRMAN FESMIRE: That sounds like a good idea. Why don't we take a 10-minute recess. We will reconvene at 20 minutes to 11:00. That isn't very long to get cooled off, but it beats sitting here for another 20 minutes or so.

(Thereupon, a recess was taken at 10:30 a.m.)

(The following proceedings had at 10:40 a.m.)

CHAIRMAN FESMIRE: Let's sit down and get started again, and at this time I'm going to issue an invitation that I apparently don't have to issue. If the gentlemen would like to take their coats off, I won't be offended.

MR. CARR: Ties?

CHAIRMAN FESMIRE: Maybe this afternoon.

Andy, you're going to maintain the formality of the State Engineer's Office all day, huh?

that just aren't known yet.

MS. BADA: I have no further direct questions. Does the Commission have questions?

EXAMINATION

BY COMMISSIONER BAILEY:

Q. What impact have the hundred or so previously drilled oil and gas wells had on the grasslands and on the endangered species you talked about?

A. No impact on the endangered species to this point. I have not personally looked at those hundred wellpads but I'm sure they have roads associated with them, which disturb large linear areas that could influence ecological processes out there, such as roads stop fires. Natural fire is very important in maintaining natural grasslands, and roads stop fires.

So there could have been -- you know, it's all incremental. I'm sure each pad disturbed a certain acreage, each road disturbed a certain acreage. But when we're talking about an area that only has 32 percent -- or 38 percent of its natural grasslands left, there are incremental impacts that will push that number even higher.

Q. Have you seen how many of the wellpads have been revegetated naturally?

A. You know, I've only looked at a couple of wellpads in that area, and one was brand new, so I couldn't

BY COMMISSIONER BAILEY:

Q. You talked about these large impacts that are going on right now, the drought that affects the wildlife, the overgrazing that's already destroyed so much of their range, urbanization was a factor that you talked about. Compared to these large, major factors, what impact have the hundred or so oil and gas wells that have already been drilled -- Can you give me a relative importance there, to try to get some perspective?

A. Yeah, I think -- You know, the point I was trying to make there was that the level of disturbance currently in the area that we're talking about is lesser than that of similar grassland environments in the surrounding area due to those factors you just mentioned. That's not to say there has been no impact from those existing hundred or so oil and gas wells.

And I think I need to give the same answer that Bob Sivinski gave yesterday, which is that the impact of these things is going to be a cumulative impact which is incremental with each development project, and also to keep in mind that in terms of wildlife habitat, the roads involved with the infrastructure are likely to have equal or greater impact than the actual wellpads themselves.

Q. And that also applies to only five percent of the area being developed? That's a very low percentage.

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION COMMISSION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION COMMISSION FOR THE PURPOSE OF CONSIDERING:

APPLICATION OF THE NEW MEXICO OIL CONSERVATION DIVISION, THROUGH THE ENVIRONMENTAL BUREAU CHIEF, FOR ADOPTION OF AN AMENDMENT TO 19.15.1 NMAC ADDING NEW MATERIAL TO BE CODIFIED AT 19.15.1.21 NMAC.

CASE NO. 13269
ORDER NO. R-12172

ORDER OF THE OIL CONSERVATION COMMISSION

BY THE COMMISSION:

THIS MATTER came before the Oil Conservation Commission (hereinafter referred to as "the Commission") on June 17 and 18, 2004, at Santa Fe, New Mexico, on application of the New Mexico Oil Conservation Division (hereinafter referred to as "the Division") through the Chief of the Environmental Bureau, and the Commission, having carefully considered the evidence, the pleadings, comments and other materials submitted in support and in opposition of the proposal, now, on this 15th day of July, 2004,

FINDS:

1. Proper notices have been given of this proceeding and of the public hearing hereof, and the Commission has jurisdiction of the subject matter.

The Division's Proposal

2. This is a rulemaking proceeding in which the Division has proposed adoption of special rules for protection of fresh water and the environment in selected areas of Otero and Sierra Counties.

3. The Division staff has submitted a proposed new Rule 21, which would prohibit the construction of most oil and gas industry related pits, and adopt additional restrictions upon produced water injection wells, in the selected areas. The proposed new Rule 21 would be codified as 19.15.1.21 NMAC.

4. The Commission held a public hearing on the Division's proposal on June 17 and 18, 2004. In addition, the Commission accepted written comments concerning the proposed rulemaking prior to and during the hearing. The Commission deliberated on the application in open session during its meetings on June 18, 2004, and July 15, 2004.

Background

5. The Commission has been concerned about disposal or storage of hydrocarbons, produced water and other materials in open pits and the potential of such pits to contaminate fresh water resources of the State for a long time. Beginning in 1958 with the adoption of Order No. R-1224-A, the Commission has undertaken selective regulation of pits in particular areas of the State and in particular circumstances.

6. On December 11, 2003, by Order No. R-12011-B, the Commission adopted Rule 50 [19.15.2.50 NMAC] to comprehensively regulate pits and below-grade tanks used in the oil and gas industry. Although Rule 50 was adopted to promulgate rules that the Commission determined to be generally appropriate throughout the State, the Commission expressly recognized, by its adoption of the provision in Rule 50C(2), providing that the Division may require additional protective measures for pits located in groundwater sensitive areas, that absolute uniformity of pit regulation was neither possible nor desirable.

7. Since the adoption of Rule 50, the Division has continued to study the regulation of pits and the requirements that may be or become necessary for protection of the fresh waters of the State and the environment

8. On January 31, 2004, the Governor of New Mexico issued Executive Order 2004-005, entitled, "State Agencies Act to Conserve and Protect Resources of Otero Mesa." The Executive Order directed the Division to "propose rules to prohibit pits associated with any oil and gas drilling at Otero Mesa," and "to propose regulations to implement produced water re-injection standards and controls to assure full protection of the groundwater resources of Otero Mesa." The Executive Order further directed the Division "to work with any applicable state boards and commissions to implement this directive in accordance with law."

9. Pursuant to this directive, the professional and legal staff of the Division developed proposed Rule 21. The selected areas which the proposed rule will cover include the area known as "Otero Mesa," together with surrounding areas.

10. At the hearing, the Division submitted an amended proposal revising its recommendations regarding produced water transportation lines in response to written comments the Division had received.

11. Although the Division, in order to secure adoption of final rules as expeditiously as possible, did not seek extensive public input in the process of formulating this proposal, the Commission, in this proceeding, has carefully considered the 550 pages of testimony adduced at the hearing, together with voluminous written comments, and has fully evaluated the justifications for the proposed rule advanced by the Division and members of the public, as well as objections and qualifications raised in the testimony and comments.

12. A majority of the Commission has concluded that the proposed rule should be adopted with certain clarifications and modifications fully discussed below.

Technical Evidence

13. The Division presented the testimony of William C. Olson, Senior Hydrologist with the Environmental Bureau of the Division and a member of the Water Quality Control Commission; Robert C. Sivinski, botanist with the Forestry Division of the Energy, Minerals and Natural Resources Department; Roger C. Anderson, chemical and environmental engineer and Chief of the Environmental Bureau of the Division; Andrew B. Core, hydrologist with the Office of the State Engineer, Rachel Jankowitz, wildlife management biologist with the Department of Game and Fish; Chris Williams, District Supervisor of the Hobbs District office of the Division; and William V. Jones, petroleum engineer, hearing examiner and Underground Injection Control (UIC) Program Manager with the Division.

14. The Division's witness, Mr. Olson, testified that water produced in connection with drilling for and production of oil and gas typically contains dissolved salts that have the potential to contaminate fresh water with which they may come in contact, and may also contain hydrocarbon substances that are hazardous to human health.

15. Mr. Olson further testified concerning alternatives to the use of pits for storage of drilling fluids and disposal of produced water and wastes, the environmental safety of injection wells in the selected areas, proposed construction requirements for produced water transportation lines and proposed pad and secondary containment requirements for tank batteries.

16. The Division's witness, Mr. Sivinski, testified that the Chihuahuan Desert ecoregion, which is one of the most species-diverse regions in the world and home to several endangered plant species unique to the area, includes almost all of the selected areas.

17. Mr. Sivinski further testified that the selected areas contain the largest more or less compact areas of Chihuahuan desert grasslands in New Mexico and that preservation of compact areas of grassland is essential to provide a habitat of adequate extent to maintain populations of animal species that depend on the grassland environment.

18. Mr. Sivinski further testified concerning the difficulties of restoring disturbed areas of this ecoregion.

19. The Division's witness, Mr. Anderson, testified concerning the proposed casing and cementing requirements for injection wells in the selected areas.

20. The Division's witness, Mr. Core, testified to the boundaries and characteristics of the water basins declared by the State Engineer in Otero and Sierra Counties.

21. The Division's witness, Ms. Jankowitz, testified concerning animal species that are dependent upon the Chihuahuan desert environment and the dangers that open pits containing contaminants pose for wild animals.

22. The Division's witness, Mr. Williams, testified concerning closed-loop drilling systems.

23. The Division's witness, Mr. Jones, testified concerning the Underground Injection Control (UIC) program under which the Division regulates injection wells and the need for additional requirements for injection wells in the selected areas.

24. Mack Energy Corporation, Marbob Energy Corporation and Yates Petroleum Corporation, oil and gas operators in New Mexico, appeared through counsel and presented the testimony of Brian Collins, registered professional engineer and petroleum engineer with Marbob Energy Corporation.

25. The Otero Mesa Coalition, a group of citizen groups concerned with environmental conservation of the Otero Mesa area, appeared through counsel and presented the testimony of Steven T. Finch, Jr., hydrogeologist with John Shoemaker and Associates.

26. Dr. Donald A. Neeper, a scientist retired from the Los Alamos National Laboratory, appeared and testified on behalf of the New Mexico Citizens for Clean Air and Water.

Comments

27. In addition to the above testimony, the following persons made comments on the record at the hearing:

Carl L. Johnson;
Irvin Boyd;
B.J. Brock, representing the New Mexico Cattle Growers Association;
Dan Randolph, representing the San Juan Citizens' Alliance;
Patricia London;
John McDonald;
Steven Capra, Executive Director of the New Mexico Wilderness Alliance;
David Parsons;
Jim Steitz, representing the Southwest Environmental Center;
Ken Whiton, President of the New Mexico Chapter, Republicans for Environmental Protection;
Janice Simmons; and
Jennifer Goldman, representing the Oil and Gas Accountability Project.

28. The following persons submitted written comments, prior to or during the hearing, that were made a part of the record:

Charlene Anderson and Ed Moslimann;
BP America Production Company;
Burlington Resources Oil and Gas Company LP;
Julia Ruth Claus;
Dugan Production Corp.;
Fasken Oil and Ranch, Ltd.;
Cyndy Gimble;
Hinkle, Hensley, Shanor & Martin, L.L.P.;
Independent Petroleum Association of New Mexico (IPANM);
Suzy T. Kane;
Manzano, LLC;
Marathon Oil Company;
Marbob Energy Corporation;
Merrion Oil & Gas;
Linda Moscarella;
New Mexico Cattle Growers' Association;
Dr. Donald A. Neeper, PhD;
New Mexico Environmental Law Center;
New Mexico Oil & Gas Association (NMOGA);
Oil & Gas Accountability Project (OGAP);
OXY USA, Inc., Occidental Permian Limited Partnership and OXY USA WTP Limited Partnership;
Janet Y. and John W. Rees;
Synergy Operating, LLC;
Ross and Kristin Ulibarri;
The Williams Companies; and
Yates Petroleum Corporation.

29. Collective written comments were submitted by Chihuahuan Desert Conservation Alliance, Earthjustice, National Wildlife Federation, Natural Resources Defense Council, New Mexico Wilderness Alliance, New Mexico Wildlife Federation, Sierra Club, Rio Grande Chapter, Southwest Consolidated Sportsmen, Southwest Environmental Center and The Wilderness Society. These comments were also made part of the record.

Powers of the Commission

30. The Commission and the Division have power, pursuant to NMSA 1978, Section 70-2-12.B(15)

> "to regulate the disposition of water produced or used in connection with the drilling for or producing of oil or gas or both and to direct surface or subsurface disposal of the water in a manner that will afford reasonable protection against contamination of fresh water supplies designated by the state engineer."

31. The Commission and the Division have power, pursuant to NMSA 1978, Section 70-2-12.B(21) and (22) to regulate the disposition of nondomestic wastes resulting from oil and gas operations to protect public health and the environment.

Discussion of the Proposed Rule

Title

32. The proposed rule is entitled "Special Provisions for the Chihuahuan Desert Area."

33. Several persons who submitted comments objected to appropriateness of the title insofar as it described the subject areas as the "Chihuahuan desert area."

34. The Commission concludes that:

(a) According to the testimony of the Division's witness, Mr. Sivinski, there exist significant Chihuahuan desert areas in other counties of New Mexico and outside New Mexico, and some of the areas in Otero and Sierra Counties for which the rule is proposed have been so far changed that they no longer contain flora and fauna typical of the Chihauhan desert.

(b) The expression "Chihuahuan desert area" is not therefore accurately descriptive of the area to which the rule will apply.

(c) Accordingly, the rule adopted should be entitled "Special Provisions for Selected Areas of Sierra and Otero Counties," and the rule as adopted should substitute "selected areas" for "Chihuahuan Desert area," each place in the proposed rule that the latter language appears.

Subsection A - Selected Areas

35. Subsection A of the proposed rule defines the geographical areas in which the Division proposes that the new rule should apply.

36. The areas within which the Division proposes to apply the new rule are depicted as the cross-hatched area on OCD Exhibit 4, which was admitted in evidence in the hearing.

37. The areas of Sierra and Otero counties which the Division proposes to exclude from the new rule are depicted as the colored, non-cross-hatched area on OCD Exhibit 4, which was admitted in evidence in the hearing.

38. Counsel for the Commission has advised that the description set forth in Subsection A of Rule 21 in Exhibit A to this Order (Exhibit A) correctly describes the areas within which the new rule was proposed to apply, as depicted on OCD Exhibit 4.

39. The Commission concludes that Subsection A of Rule 21 as set forth on Exhibit A should be adopted in lieu of Subsection A of the proposed rule.

Subsection B - Pits

40. Subsection B of the proposed rule would prohibit the issuance of permits for pits under Rules 50 or 711 in the selected areas.

41. Present Rules 50 and 711 require a permit for the construction or use of any pit, except, as applicable to the selected areas, for pits constructed in an emergency (which generally are to be used for no more than 48 hours) and pits authorized under Water Quality Control Commission rules.

42. Thus, adoption of the proposed rule would effectively prohibit the construction and use of pits in the selected areas .

43. The Division's witness, William C. Olson, testified in detail concerning the pit lining requirements of OCD Rule 50.

44. Mr. Olson testified that:

(a) While the majority of pit-caused contamination cases have resulted from unlined pits, pits lined in accordance with the Rule 50 requirements are not leak-proof. Indeed, Mr. Olson identified specific instances of leaks that had caused actual or potential ground water contamination, and that proceeded from pits lined in accordance with the requirements now incorporated in Rule 50.

(b) Rule 50 does not require netting of all pits to protect birds, nor does it require fencing of pits sufficient to exclude wildlife.

(c) Leaks from pits are more likely to cause ground water contamination in areas where ground water is encountered at shallow depths, or where the underlying strata are fractured.

(d) Contamination proceeding from pits overlying rocky, fractured strata is particularly difficult to locate and remediate.

(e) Oil and gas operations can be conducted without the use of pits, by using "closed-loop systems" consisting of open-top tanks to contain drilling fluids at the well-site, and by disposing of produced water through re-injection or treatment and application to other uses.

(f) Closed-loop systems provide better environmental protection than lined pits because steel tanks are less likely to leak than plastic pit liners, leaks from a tank are easier to detect quickly, permitting repair before pollution results, tanks are not as easily accessible by wildlife as pits are, and tanks do not involve the potential long-term environmental hazards associated with burial of pit wastes on site enclosed only in a plastic liner that may get punctured or subsequently float to the surface.

45. The Division's witness, Mr. Sivinski, testified to the difficulty of restoring areas disturbed by pit construction and use in the selected areas.

46. Mr. Sivinski testified that:

(a) where pits that contain sodium compounds, such as sodium chloride, have been closed, the buried contents of these pits tend to migrate upward and sterilize overlying soils preventing restoration of vegetation;

(b) pit excavations in the grasslands in the selected areas would create conditions conducive to re-vegetation with scrub and noxious weeds that would tend to defeat efforts to restore native plant species; and

(c) in any event restoration of disturbed grassland areas would be difficult due to unavailability of the necessary seeds.

47. The Division's witness, Mr. Core, testified that:

(a) fresh water is found in virtually all parts of the selected areas and at a great variety of depths, ranging from 50 to 100 feet in some places down to as much as 1,500 feet in places;

(b) ground water is being used, additional wells are being drilled, and additional applications for water rights are being filed in all of the basins identified in the selected areas;

(c) there are additional and more extensive future uses of water from this area, especially from the Salt Basin, which includes the Otero Mesa area; and

(d) ground water in the selected areas is particularly sensitive to degradation by the introduction of contaminants, especially in the Salt Basin where fractures permit such contaminants to migrate rapidly.

48. The Division's witness, Ms. Jankowitz, testified that pits attract wildlife and cause injury or death to the wildlife due to ingestion of pit contaminants or becoming trapped in the pits.

49. The Division's witness, Mr. Williams, testified, based on his experience with closed-loop mud systems on off-shore drilling sites that:

(a) closed-loop systems are equipped with gas separators and the tanks are vented or open at the top to provide ventilation and prevent build up of explosive gasses;

(b) closed-loop systems can be operated safely; and

(c) closed-loop systems can provide an adequate mud supply for well control if the system is designed with adequate tank capacity.

50. Steven T. Finch, Jr., hydrogeologist, testified concerning the Salt Basin, which comprises a significant part of the selected areas, that:

(a) the fresh water in the Salt Basin is substantial in quantity and high in quality;

(b) the aquifer is a highly fractured limestone through which water moves rapidly; so that contaminants introduced into the fresh water will migrate and may pollute a large area;

(c) fresh water is encountered in many parts of this basin at depths of less than 100 feet;

(d) the area is also characterized by shallow, or no, topsoil; and

(e) there are no viable protective measures that can prevent pits from being a potential source of ground water contamination in this environment.

51. Dr. Neeper testified that pit contents buried on site upon closure of a pit would have a high probability to "wick up" through overlying soil and contaminate surface soils.

52. Industry witness, Mr. Brian Collins, testified concerning certain problems encountered in the use of closed-loop systems, but his testimony confirmed that such systems have been used successfully in New Mexico where the necessity to minimize surface disturbance was paramount.

53. Industry commentors indicated that closed-loop systems involve safety hazards, may provide insufficient drilling fluids for well control, and are incompatible with air drilling.

54. A majority of the Commission concludes that:

(a) Pits are used in the oil and gas industry primarily for the storage, management and disposition of nondomestic wastes resulting from oil and gas operations, including, but not limited to, produced water.

(b) The Commission and the Division have authority to regulate pits used in oil and gas operations where necessary to protect fresh water resources of the State, the public health and the environment, including protection of the State's biological resources.

(c) The selected areas are areas of unique flora and fauna, home to an unusual diversity of species, some of which are endangered or threatened, indicating a special need for protection of wildlife in these areas.

(d) Pits present particular dangers to wildlife who may ingest pit contents or residue or become trapped in pits, dangers not adequately addressed in present Rule 50.

(e) Excavations to create pits in the grasslands, which occupy a significant part of the selected areas, are likely to disturb the soil in ways that will render restoration of the pre-existing grassland habitat impracticable.

(f) There exist protectible fresh water resources generally distributed throughout the selected areas that are, in many places, encountered at very shallow depths and particularly sensitive to contamination by pollutants that may escape from leaking pits.

(g) Pits are not necessary to oil and gas operations in the selected areas because there exists a practicable alternative, *i.e.* the use of closed-loop systems.

(h) Closed-loop systems have numerous environmental advantages over pits, including a lesser propensity to leak, greater ease of removal for off-site disposition of wastes, and less danger to wildlife.

(i) Closed-loop systems can provide a source of adequate fluids for well control if a sufficient number and size of tanks are used.

(j) Closed-loop systems have been employed in New Mexico and elsewhere without safety problems.

(k) No evidence was offered that air drilling, allegedly not possible without using pits, is essential to effective oil and gas development in the selected areas.

(l) Accordingly, Subsection B of the proposed rule should be adopted without change, other than the substitution of "selected areas" in place of "Chihuahuan desert area."

Subsection C - Injection Wells

55. Subsection C of the proposed rule would provide special and more stringent rules for permitting and operation of produced water injection wells in the selected areas, including both new wells to be drilled for such purpose, and existing wells to be converted to injection.

56. The Division's witness, William C. Olson, testified that injection wells are the principal means of disposal of produced water in New Mexico, and the principal alternative to the use of evaporation pits, and that while application of produced water to other uses is a developing alternative, it is not a presently available alternative for disposal of substantial quantities of such water in southern New Mexico.

57. Mr. Olson further testified that, while there have been occasional instances of contamination of fresh water resulting from injection wells, in his opinion, injection wells can be safely operated in the selected areas so as not to present a danger to fresh water resources.

58. The Division's witness, Mr. Anderson, testified that requirements for permitting injection wells involved demonstration of the existence of a protective zone that would prevent upward migration of injected fluids from the injection zone into fresh water zones absent the existence of a conduit.

59. The Division's witness, Mr. Jones, testified to the scrutiny required to screen the zone of endangerment around a permitted injection well for the existence of any well or fracture that could serve as a conduit for migration of injected fluids into fresh water aquifers.

60. Several citizen commentors objected to allowing any injection wells in the selected areas due to perceived dangers to fresh water resources.

61. The Commission concludes that:

(a) There is a lack of practicable alternatives for disposition of produced water from oil and gas operations in the selected areas other than permitting injection wells.

(b) isposition of produced water into injection wells is, generally, an environmentally safe and effective means of managing such waters.

(c) Existing permitting rules require an applicant for an injection permit to demonstrate that the injected fluids will be adequately isolated in the injection zone.

(d) Hazards to underground fresh water from produced water injection wells can be effectively minimized by existing requirements and the additional safeguards in the proposed rule.

(e) Produced water injection wells should be permitted in the selected areas subject to rigorous safeguards similar to those recommended, as discussed below.

62. Paragraph C(1) of the proposed rule would provide that permits for use of wells in the selected areas for injection of produced water could be issued only after hearing.

63. Present Rule 701 [19.15.9.701 NMAC] provides that the Division may approve applications for use of existing or new wells for injection of produced water administratively, without hearing, if no objection is received within fifteen (15) days after notice of the application to the surface owner and to all offset operators within one-half mile of the proposed injection wells and publication of such notice in a newspaper of general circulation in the county where the well is located.

64. The Division witness, Mr. Jones, testified that, based on his experience as a hearing examiner, it is his opinion that in a wildcat area such as the selected areas, where the nature and location of fresh water resources are not well known, a hearing would be necessary to provide an examiner the information he or she would need to determine if an application provided adequate security for protection of fresh water.

65. The Commission concludes that:

(a) In view of uncertainty regarding the location of fresh water aquifers in substantial parts of the selected areas as well as uncertainty regarding the nature and location of fractures in the strata that could form conduits to conduct injected fluids into fresh water aquifers, the Division needs the most complete information possible before granting an injection permit in the selected areas.

(b) In view of the sensitivity of the ground water resources in the selected areas, the Division needs the maximum possible public input regarding any such permit.

(c) Utilizing the hearing process for each application will maximize the technical information available to the hearing examiner and public input.

(d) Accordingly, paragraph C(1) of the proposed rule should be adopted with change.

66. Paragraph C(2) of the proposed rule would require an expanded "area of review" for proposed produced water injection wells in the selected areas.

67. The area of review is the area around a proposed injection well which must be screened for conduits (wells or fractures) through which the injected fluids could migrate upward and invade fresh water aquifers.

68. The Division's witness, Mr. Jones, testified that:

(a) New Mexico has typically required an area of review with a radius of one-half mile in injection permits;

(b) the United States Environmental Protection Agency (EPA) has developed a formula for determining the radius of zone of endangerment (the area within which a conduit such as a well or fracture would likely lift injected fluids into a freshwater formation, based on injection pressure, vertical distance from the injection formation, characteristics of the injection formation to ground water, and other factors);

(c) in an area such as the selected areas where ground water may be encountered at unusual depths, such that the vertical distance from the injection formation to ground water may be unusually small, the formula is likely to be a better predictor of the distance at which a conduit might raise injected fluid into a fresh water formation than would the usual one-half mile rule;

(d) the EPA formula is based on certain assumptions that are not always correct, and accordingly, to provide adequate ground water protection in an imperfectly known geologic area, the radius of the area of review should ordinarily be greater than (such as one and one-third times) the computed radius of the zone of endangerment;

(e) the EPA formula, however, in some instances indicates an unnecessarily large zone of endangerment, and, accordingly, use of the formula-indicated area of review should be limited by a maximum radius for the area of review;

(f) one and one-third miles is a reasonable maximum radius for the area of review even in an area of relatively unknown geology; and

(g) there are other reasonable ways to determine zone of endangerment, in addition to the EPA formula.

69. The Division's witness, Mr. Core, testified that, in substantial portions of the selected areas, the maximum depth at which fresh water may be encountered is unknown, and that in the Salt Basin, which includes a significant part of the selected areas, the geology of the water-bearing formations is not well understood.

70. Mr. Finch, hydrogeologist, testified that, in the Salt Basin, there is considerable uncertainty regarding the depth to which the fractures in the fresh water aquifers may penetrate and the nature of the strata underlying them.

71. The Commission concludes that:

(a) The selected areas include areas of relatively poorly known geology, particularly as to the depths at which fresh water may be encountered and the nature of the strata in any injection zone and in the zones lying between fresh water aquifers and an injection zone.

(b) To provide maximum protection for fresh water in such an area, an area of review no smaller than one and one-third times the zone of endangerment suggested by the EPA formula should be used in reviewing an application to inject unless the EPA formula indicates a zone of endangerment so large as to suggest an anomalous result.

(c) If the formula produces a radius for the zone of endangerment larger than one mile, the expert testimony indicates that this would be an anomalous result, and the radius of the area of review can safely be limited to one and one-third mile.

(d) In view of expert testimony that the EPA formula does not always produce an accurate indication of the zone of endangerment, other methods the efficacy of which can be demonstrated should alternatively be allowed.

(e) Accordingly Paragraph C(2) of Rule 21 as set forth on Exhibit A, incorporating the one and one-third mile maximum area of review and allowing alternative methods of demonstrating the actual zone of endangerment, should be adopted in lieu of Paragraph C(2) of the proposed rule.

72. Paragraph C(3) of the proposed rule would require an operator to log or test a well it proposes to use for produced water injection to determine the location of fresh water aquifers, and to file the results of such log or test with the Division.

73. The Division witness, Mr. Jones, testified to the methods by which an operator could log or test an injection well to ascertain the location of fresh water aquifers.

74. Mr. Jones further testified that adequate testing to determine the location of fresh water might require perforating the casing to test the water, and that perforation might damage the integrity of the casing, necessitating insertion and cementing of a smaller diameter casing within the original casing to insure integrity.

75. The Commission concludes that:

(a) In view of the limited knowledge now available about the depths at which fresh water may be encountered in the selected areas, the Division should have adequate evidence of the location of fresh water aquifers in an injection well bore before it authorizes injection.

(b) Ascertaining the location of fresh water by logging and testing in the proposed injection well is costly and may require perforation of the casing which will undermine casing integrity and require expensive setting of additional casing.

(c) The location of fresh water zones can be determined by reference to existing wells where there are such wells, or by drilling test wells in the vicinity.

(d) Accordingly, Paragraph C(3) of Rule 21 as set forth on Exhibit A, which allows for alternative means of demonstrating the location of fresh water, should be adopted in lieu of Paragraph C(3) of the proposed rule.

76. Paragraphs C(4) and C(5) of the proposed rule would impose specific casing and cementing requirements for new produced water injection wells and for existing wells to be converted to produced water injection in the selected areas.

77. The Division's witness, Mr. Anderson, explained the proposed casing and cementing requirements.

78. Mr. Anderson testified that:

(a) rigorous cementing requirements are needed for injection wells in the selected areas because of "lost circulation" zones that could prevent effective cementing in some cases;

(b) the requirement of proposed paragraph C(4) for two cemented casing strings behind any fresh water aquifer represents a conservative approach to protection of underground sources of drinking water, and even unusually deep aquifers can be protected from contamination by injection wells constructed in this manner;

(c) the requirements of proposed paragraphs C(4) and C(5) are the same as those presently in force for Class I injection wells, that is, wells used for injection of industrial, non-hazardous industrial waste;

(d) cement bond logs required by proposed paragraph C(5) would be helpful in determining whether the cement will be sufficient to prevent upward migration of fluids behind the casing where it might invade fresh water zones; and

(e) circulation of cement to surface in the smallest diameter casing, as proposed, is necessary where an existing well is converted to injection, because of possible uncertainty about the condition of cement behind original casings.

79. The Commission concludes that:

(a) In view of the sensitivity of the fresh water resources in the selected areas, the Division should adopt conservative casing and cementing requirements that will provide the best possible assurance that injected fluids will not invade fresh water aquifers.

(b) The proposed requirements of two casing strings behind identified fresh water aquifers and cementing these strings to surface are practicable requirements, already in force for Class I injection wells, and will conservatively protect fresh water resources.

(c) The proposed requirement for cementing the smallest diameter casing string to surface in existing wells converted to injection is justified by the possibly uncertain condition of older casings and cementings.

(d) The use of the word "raised" in the phrase, "shall have cement raised to at least 100 feet above the casing shoe" in Subparagraph C(4)(b) of the proposed rule is confusing and should be deleted.

(e) In all other respects Paragraph C(4) of the proposed rule should be adopted as proposed.

(f) Cement bond logs, while not a perfect tool, provide useful information that can assist division examiners in determining whether a proposed injection well has sufficient integrity to permit for injection.

(g) Since cementing requirements for injection wells are already otherwise governed by Rule 702 [15.9.19.702 NMAC], there is not a need for a new rule requiring demonstration of adequacy of cementing in existing wells as proposed.

(h) Accordingly, Paragraph C(5) of Rule 21 as set forth on Exhibit A, which incorporates provisions of Rule 702 by reference, should be adopted in lieu of Paragraph C(5) of the proposed rule.

80. Paragraph C(6) of the rule as originally proposed would have required produced water transportation lines to be constructed of double-walled pipe or located along roads.

81. In response to industry comments pointing to availability and safety problems connected with double-walled pipe, the Division modified its proposal to require such lines to be constructed of internally plastic-lined steel pipe, and to eliminate the reference to location along roads. The proposal also would require such lines to be tested to one-and-one-half times working pressure.

82. The Division's witness, Mr. Olson, testified that salts in produced water can corrode steel pipe, causing leaks. Double walled pipe would not adequately address this problem since the salt water could successively corrode each wall. However, the danger of corrosion could be significantly reduced by using pipe with internal plastic lining.

83. Mr. Olson also testified, however, that solid plastic pipe could provide an adequate substitute for internally lined steel pipe if it met the same pressure-test requirements.

84. The Commission concludes that:

(a) In order to prevent leaks of contaminated water that would endanger the sensitive fresh water resources in the selected areas, produced water transportation lines should be constructed of corrosion-resistant materials.

(b) Other materials may serve that purpose as well as, or better than, plastic-lined steel pipe.

(c) The phrase "working pressure" in the proposed rule requiring that such lines be tested to one and one-half times working pressure is vague.

(d) Accordingly, Paragraph C(6) of Rule 21 as set forth on Exhibit A, which allows for corrosion-resistant material acceptable to the Division and requires testing to one and one-half times "maximum operating pressure," should be adopted in lieu of Paragraph C(6) of the proposed rule.

85. Paragraph C(7) of the proposed rule would require tanks in the selected areas to be placed on impermeable pads and to have structures for secondary containment of spills or leaks.

86. The Division's witness, William C. Olson, testified that:

(a) leaks from produced water tanks have been a cause of documented instances of soil contamination;

(b) placement of tanks on impermeable pads would facilitate prompt detection of such leaks by causing leaking fluids to squeeze out below the sides of the tank rather than descending directly into underlying soil, and

(c) prompt detection of tank leaks would facilitate remediation before significant environmental harm could occur.

87. The Division's witness, Mr. Olson, testified that the word "impermeable" as used by the Division in permits, has an established meaning, namely a barrier having a hydraulic conductivity of less than 1 X 10 to the -7th power centimeters per second.

88. Mr. Olson further testified that the Division would consider that to have "adequate capacity" as provided in the proposed rule, the secondary containment area around a tank battery should have a capacity at least equal to one and one-third times the capacity of the largest tank, or of all interconnected tanks if the tanks are interconnected.

89. The Commission concludes that:

(a) Requirements for pads under, and berms around, storage tanks will reduce leaks of contaminants from such tanks and, by enabling earlier detection of leaks, reduce environmental damage from leaks that may occur;

(b) In view of the sensitivity of the fresh water and soil resources of the selected areas, these leak prevention requirements are warranted to protect these unique resources.

(c) In order to provide certainty for purposes of compliance and enforcement, the rule should define the capacity of "adequate" secondary containment around tanks in accordance with the testimony of the Division's witnesses regarding the intent of the proposal.

(d) Accordingly, Paragraph C(7) of Rule 21 as set forth on Exhibit A, which specifies the minimum required capacity of secondary containment around tanks, should be adopted in lieu of Paragraph C(7) of the proposed rule.

90. Paragraph C(8) of the proposed rule would require daily recording of injection volumes and pressures for all produced water injection wells in the selected areas.

91. Present Rule 704.B [19.15.9.704.B NMAC] requires monthly recording of injection volumes and pressures.

92. The Division's witness, Mr. Jones, testified that:

(a) injection pressure and volume limitations are imposed in Division injection permits to prevent fracturing of the strata which could result in migration of injected fluids outside the intended injection formation, including into fresh water aquifers;

(b) daily recording would facilitate enforcement by allowing the Division to ascertain the nature and duration of any violation of injection volume and pressure limitations;

(c) daily or continuous recording of injection volumes and pressures is not difficult with currently available technology and is already required for Class I (industrial waste) injection wells.

93. The Commission concludes that:

(a) In an area of little known and sensitive ground water resources, injection pressure and volume limitations should be rigorously enforced to prevent fracturing which could endanger fresh water aquifers;

(b) Daily or continuous recording will facilitate effective enforcement;

(c) Daily recording can be accomplished in a number of reasonable and practicable ways including, but not limited to, use of continuous recording equipment; and

(d) Accordingly, Paragraph C(8) of Rule 21 as set forth on Exhibit A, which requires daily recording but allows alternative methods, should be adopted in lieu of Paragraph C(8) of the proposed rule.

94. Paragraph C(9) of the proposed rule would require annual mechanical integrity testing for all produced water injection wells in the selected areas.

95. Present Rule 704 requires mechanical integrity testing of all injection wells at least once every five (5) years, and provides that the Division may order more frequent testing in particular cases.

96. The Division's witness, Mr. Jones, testified that:

(a) testing of casing integrity of injection wells is necessary to insure that injected fluids do not migrate up the annulus of the injection well due to casing leaks or microannuli in the cement;

(b) annual testing is superior to testing every five years because problems can be more quickly tested and corrected before harm to fresh water results; and

(c) annual mechanical integrity testing is currently required for Class I injection wells.

97. The Commission concludes that:

(a) Annual testing of injection wells is a reasonable and practicable procedure that provides greater security for fresh water aquifers than does testing every five years, because any problems can be more expeditiously corrected.

(b) In view of the sensitivity of the fresh water resources in the selected areas, the highest reasonable level of protection should be required.

(c) The requirement for notification to the Division twenty-four hours before a test does not, as a practical matter, give the Division adequate opportunity to supervise these tests.

(d) Accordingly, Paragraph C(9) of Rule 21 as set forth on Exhibit A, incorporating more flexible provisions for notification to the Division of tests, should be adopted in lieu of Paragraph C(9) of the proposed rule.

Final Conclusions

98. A majority of the Commission concludes that a new rule, to be codified as 19.15.1.21 NMAC, or otherwise if necessary to meet requirements of the Commission of Public Records, should be adopted in the form attached hereto as Exhibit A.

IT IS THEREFORE ORDERED:

1. A new rule of the Oil Conservation Division, to be codified at 19.15.1.21 NMAC (or elsewhere if necessary to meet requirements of the Commission of Public Records), copy attached as Exhibit A, is hereby adopted, effective as of the date of its publication in the New Mexico Register.

2. Staff of the Oil Conservation Division is instructed to secure prompt publication of the referenced rule in the New Mexico Register.

3. Jurisdiction of this matter is retained for entry of such further orders as may be necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

MARK E. FESMIRE, P.E., CHAIR

JAMI BAILEY, CPG, MEMBER

FRANK A. CHAVEZ, MEMBER

S E A L

19.15.1.21 SPECIAL PROVISIONS FOR SELECTED AREAS OF SIERRA AND OTERO COUNTIES.

A. The selected areas comprise:

(1) all of Sierra county except the area west of Range 8West NMPM and north of Township 18 South, NMPM; and

(2) all of Otero county except the area included in the following townships and ranges:

Township 11 South, Range 9 1/2 East and Range 10 East NMPM;
Township 12 South, Range 10 East and Ranges 13 East through 16 East, NMPM;
Township 13 South, Ranges 11 East through 16 East, NMPM;
Township 14 South, Ranges 11 East through 16 East, NMPM;
Township 15 South, Ranges 11 East through 16 East, NMPM;
Township 16 South, Ranges 11 East through 15 East, NMPM;
Township 17 South, Range 11 East (surveyed) and Ranges 12 East through 15 East, NMPM;
Township 18 South, Ranges 11 East through 15 East, NMPM;
Township 20 1/2 South, Range 20 East, NMPM;
Township 21 South, Range 19 East and Range 20 East, NMPM; and
Township 22 South, Range 20 East, NMPM; and also excepting also the unsurveyed area bounded as follows:
Beginning at the most northerly northeast corner of Otero county, said point lying in the west line of Range 13 East (surveyed);
Thence west along the north boundary line of Otero county to the point of intersection of such line with the east line of Range 10 East NMPM (surveyed);
Thence south along the east line of Range 10 East NMPM (surveyed) to the southeast corner of Township 11 South, Range 10 East NMPM (surveyed);
Thence west along the south line of Township 11 South, Range 10 East NMPM (surveyed) to the more southerly northeast corner of Township 12 South, Range 10 East NMPM (surveyed);
Thence south along the east line of Range 10 East NMPM (surveyed) to the inward corner of Township 13 South, Range 10 East NMPM (surveyed) (said inward corner formed by the east line running south from the more northerly northeast corner and the north line running west from the more southerly northeast corner of said township and range);
Thence east along the north line of Township 13 South NMPM (surveyed) to the southwest corner of Township 12 South, Range 13 East, NMPM (surveyed);
Thence north along the west line of Range 13 East, NMPM (surveyed) to the point of beginning.

B. The division shall not issue permits under 19.15.2.50 NMAC or 19.15.9.711 NMAC for pits located in the selected areas.

C. Produced water injection wells located in the selected areas are subject to the following requirements in addition to those set out in 19.15.9.701 NMAC through 19.15.9.710 NMAC:

(1) Permits shall be issued under 19.15.9.701 NMAC only after notice and hearing.

(2) The radius of the area of review shall be the greater of:

(a) one-half mile; or

(b) one and one-third times the radius of the zone of endangering influence, as calculated under Environmental Protection Agency regulation 40 CFR Part 146.6(a) or by any other method acceptable to the division; but in no case shall the radius of the area of review exceed one and one-third miles.

(3) Operators shall demonstrate the vertical extent of any fresh water aquifer(s) prior to using a new or existing well for injection.

(4) All fresh water aquifers shall be isolated throughout their vertical extent with at least two cemented casing strings. In addition,

(a) existing wells converted to injection shall have continuous, adequate cement from casing shoe to surface on the smallest diameter casing, and

(b) wells drilled for the purpose of injection shall have cement circulated continuously to surface on all casing strings, except the smallest diameter casing shall have cement to at least 100 feet above the casing shoe of the next larger diameter casing.

(5) Operators shall run cement bond logs acceptable to the division after each casing string is cemented, and file the logs with the appropriate district office of the division. For existing wells the casing and cementing program shall comply with 19.15.9.702 NMAC.

(6) Produced water transportation lines shall be constructed of corrosion-resistant materials acceptable to the division, and shall be pressure tested to one and one-half times the maximum operating pressure prior to operation, and annually thereafter.

(7) All tanks shall be placed on impermeable pads and surrounded by lined berms or other impermeable secondary containment device having a capacity at least equal to one and one-third times the capacity of the largest tank, or, if the tanks are interconnected, of all interconnected tanks.

(8) Operators shall record injection pressures and volumes daily ~~as~~ in a manner acceptable to the division, and make the record available to the division upon request.

(9) Operators shall perform a mechanical integrity tests as described in Paragraph 2 of Subsection A of 19.15.9.704 NMAC annually, shall advise the appropriate district office of the division of the date and time each such test is to be commenced in order that the test may be witnessed, and shall file the pressure chart with the appropriate district office of the division.

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION COMMISSION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION COMMISSION FOR THE PURPOSE OF CONSIDERING:

APPLICATION OF THE NEW MEXICO OIL CONSERVATION DIVISION, THROUGH THE ENVIRONMENTAL BUREAU CHIEF, FOR ADOPTION OF A NEW RULE REGULATING PITS AND BELOW-GRADE TANKS; AMENDMENT OF 19.15.1.7 NMAC AND 19.15.5.313 NMAC; RECISSION OF 19.15.1.18 NMAC, 19.15.3.105 NMAC AND 19.15.2.1 THROUGH 19.15.2.15 NMAC; AND RECISSION OF ORDERS R-3221, R-3221-A, R-3221-B, R-3221-B-1, R-3221-C, R-3221-D, R-7940, R-7940-A AND R-7940-C.

CASE NO. 12969

ORDER NO. R-12011-B

ORDER OF THE OIL CONSERVATION COMMISSION

BY THE COMMISSION:

THIS MATTER came before the Oil Conservation Commission (hereinafter referred to as "the Commission") on November 13 and 14, 2003 at Santa Fe, New Mexico, on application of the New Mexico Oil Conservation Division (hereinafter referred to as "the Division") through the Chief of the Environmental Bureau, and the Commission, having carefully considered the evidence, the pleadings, comments and other materials submitted in support and in opposition of the proposal, now, on this 11th day of December, 2003,

FINDS:

1. Proper notices have been given of this proceeding and of the public hearing hereof, and the Commission has jurisdiction of the subject matter.

The Division's Proposals

2. In this rule making proceeding, the Division has applied for repeal of existing rules concerning pits and below-grade tanks, except pits and tanks that are a part of waste management facilities permitted pursuant to Rule 711 (19.15.9.711 NMAC) or facilities permitted under Water Quality Control Commission (WQCC) regulations, and the adoption of a new comprehensive rule regulating pits and below-grade tanks.

3. The Division proposes repeal of the following rules and orders:

Rule 18	19.15.1.18 NMAC

Rule 105	19.15.3.105 NMAC
Order R-7940	not codified
Order R-7940-A	not codified
Order R-7940-C	19.15.2.1 through 19.15.2.11 NMAC
Order R-3221	19.15.2.12 NMAC
Order R-3221-A	19.15.2.13 NMAC
Order R-3221-B	19.15.2.14 NMAC
Order R-3221-B-1	19.15.2.15 NMAC
Order R-3221-C	not codified
Order R-3221-D	not codified

Orders R-7940-B and R-7940-B(1) were withdrawn by Order R-7940-C.

4. In addition, the Division proposes to amend Rule 313 [19.15.5.313 NMAC] to eliminate provisions therein relating to pits.

5. The Division proposes amendment of Rule 7 [19.15.1.7 NMAC] to incorporate additional definitions of general applicability, and the adoption of a new rule to be codified as 19.15.2.53 NMAC. The proposed new rule, proposed amendments to Rules 7 and 313 and the proposal to repeal the above-identified rules and orders, collectively, constitute "the Division's proposals."

6. To assist in formulating the Division's proposals, the Environmental Bureau of the Division ("the Bureau") created a workgroup including representatives of the New Mexico Oil and Gas Association ("NMOGA"), the Independent Petroleum Association of New Mexico ("IPANM"), other governmental agencies (including the United States Bureau of Land Management, and Native American tribes), other interested groups (including the Sierra Club, the Fee and Public Land-Users Association and the New Mexico Cattle Growers Association) and representatives of the Bureau. The workgroup was charged with reviewing existing rules and orders and developing recommendations. The Division's proposals incorporate the consensus of the workgroup on those issues on which the group was able to achieve consensus, and the Bureau's recommendations on identified issues on which no consensus was achieved. The efforts of the workgroup have been of invaluable assistance to the Division and the Commission.

7. The Commission held a public hearing on the Division's proposals on November 13 and 14, 2003. In addition, the Commission accepted written comments concerning the proposed rulemaking both prior to and following the hearing. The Commission deliberated on the application in open session during its meeting on December 11, 2003.

Background

8. The Commission has been concerned about disposal or storage of hydrocarbons, produced water and other materials in open pits and the potential of such pits

to contaminate fresh water resources of the State for a long time. Beginning in 1958 with the adoption of Order R-1224-A, the Commission has undertaken selective regulation of pits in particular areas of the State and in particular circumstances.

9. The Division's existing orders and rules regulating pits are complex and confusing.

10. Pits in the producing areas of southeastern New Mexico, consisting of Lea, Eddy, Chaves and Roosevelt Counties ("the southeast"), are governed by Order R-3221, as amended by Orders R-3221-A, R-3221-B, R-3221-B-1, R-3221-C and R-3221-D. Order R-3221, as amended by Order R-3221-C, sets forth the basic substantive rules, generally prohibiting unlined pits and requiring permits for lined pits. Order R-3221-B delineates an exempt area to which these rules do not apply, and Order R-3221-D establishes procedures applicable to requests for exceptions. Specific orders issued pursuant to Order R-3221-D have granted exceptions to the provisions of Orders R-3221 through R-3221-C in particular circumstances.

11. Pits in the producing areas of northwestern New Mexico (McKinley, Rio Arriba, Sandoval and San Juan Counties) are governed by special rules adopted by Order R-7940-C.

12. The proposed new rule submitted by the Division ("the proposed rule"), admitted into evidence as Exhibit 4 at the hearing, and the accompanying definitions admitted as Exhibit 3, would apply statewide and would supersede all of the existing rules and orders relating to pits. Basically the Division's proposals would subject all pits to permitting and closure requirements, and expand to statewide applicability most of the restrictive provisions applicable in the major producing areas under existing orders. Details of the proposed changes are analyzed below in connection with a review of the testimony at the hearing.

Technical Evidence

13. The Division presented the testimony of Roger Anderson, a chemical engineer and Chief of the Division's Environmental Bureau. Mr. Anderson testified concerning the organization, composition and activities of the work group and the process by which the Division's proposals were formed.

14. Mr. Anderson further explained the Division's proposals and the reasons why the Division recommended adoption of particular provisions. He pointed out those portions of the Division's proposals that represented a consensus of the work group and those that did not represent a consensus. With respect to those provisions where consensus was not achieved, Mr. Anderson testified concerning the Division's reasons for recommending particular alternatives and rejecting others.

15. The Division also presented the testimony of William C. Olson, a geologist and hydrologist employed as Senior Hydrologist by the Division. Mr. Olson testified concerning certain instances of pit contamination investigated by the Division.

16. Dr. Donald A. Neeper, a citizen of the State of New Mexico, possessor of a PhD degree in thermal physics and work experience in chemical contamination and environmental clean-ups testified on his own behalf. Dr. Neeper testified that soluble pollutants deposited in pits, and particularly those buried upon pit closure, will tend to percolate upwards toward the surface where they can pollute the vadose zone and inhibit plant growth, and that this can happen even if the pit is lined. Dr. Neeper recommended certain alternatives to the Division's proposals that are discussed below in reference to particular provisions.

17. Ms. Tweeti Blancett and Mr. Chris Velasquez, ranch operators in San Juan County, New Mexico, testified on behalf of the Oil and Gas Accountability Project and the San Juan Citizens' Alliance. Their testimony chiefly concerned specific instances of surface pollution and damage to livestock attributed to oil and gas operations. They recommended alternative and more restrictive provisions that are discussed below.

18. The New Mexico Oil and Gas Association and the Independent Petroleum Association of New Mexico, jointly (NMOGA/IPANM), presented the testimony of Mr. Bruce Gantner, Division Manager, Environmental Health and Safety for Burlington Resources, Mr. Robert L. Manthei, Operations Supervisor for Southeast New Mexico for BP American Production Company and Mr. Randall T. Hicks, a geologist and hydrologist with specialization in contaminant migration issues.

19. Mr. Gantner and Mr. Manthei testified in support of alternatives to some of the Division's proposals recommended by IPANM/NMOGA. Their testimony is described below in connection with the discussion of specific provisions of the proposed rule.

20. Mr. Hicks testified regarding studies and simulation models in which he participated in order to determine the effects of discharges of chlorides in an environment resembling that of southeast New Mexico. Mr. Hicks testified that his studies indicate that water containing chlorides, unless constituting a highly concentrated discharge in a small area, would not likely cause groundwater to exceed standards, or even reach groundwater. He accordingly concluded that, except in unusual circumstances, such as where groundwater is extremely close to the surface, pits such as drilling or workover pits containing relatively small fluid volumes do not pose a threat to groundwater.

21. Mr. Hicks further testified, however, that chlorides from pits closed on site could migrate upward and cause soil sterilization, confirming the testimony of Dr. Neeper. Accordingly, Mr. Hicks recommended that all pits, including temporary pits, should be properly closed. He did not, however, recommend specific provisions concerning closure.

Comments

22. NMOGA/IPANM, Controlled Recovery, Inc., the Fee and Public Land Association, Greg Duggar, Donald A. Neeper, PhD, the Oil and Gas Accountability Project, the New Mexico Department of Game and Fish, the New Mexico Cattle Growers Association, the Rio Grande Chapter of the Sierra Club the Surface Division of the New Mexico State Land Office and Carl L. Johnson submitted written comments at or before the hearing.

23. In addition to the above identified witnesses, the following persons made comments at the hearing: Janet Rees, San Juan County resident; B.J. Brock, representing the New Mexico Cattle Growers Association, Cody Morrow, representing the Surface Division of the New Mexico State Land Office; Jennifer Goldman, representing the Oil and Gas Accountability Project; Greg Duggar, Otero County resident; Mike Starrett, representing OXY Permian; Clifford K. Larsen, representing the Rio Grande Chapter of the Sierra Club; Irvin Boyd, representing the Fee and Public Land Users Association; and David Sandoval, attorney representing various landowners.

24. NMOGA/IPANM, the Division, David Sandoval, Dr. Neeper, the Department of Game and Fish, and Carl L. Johnson submitted post-hearing comments within the time allowed by the Commission.

Discussion of the Proposed Rule

Subsection A - Permit Requirement

24. Subsection A of the proposed rule requires a permit for any pit not expressly exempted or permitted pursuant to another rule.

25. Permits are now required for lined disposal or storage pits in the southeast by paragraph (5) of Order R-3221-C, by Rule 4 adopted by Order R-7940-C in the northwest, and by statewide Rule 18 in all other areas. Paragraph (4) Order R-3221-C, however, provides an exception to the permit requirement for "surface pits . . . utilized for the disposal of a maximum of one barrel of produced water per day for each developed 40-acre tract." Permits are required for storage of wastes in below-grade tanks by Rule 4 adopted by Order R-7940-C in the northwest, and by statewide Rule 18 in all other areas. Permits are not required for unlined pits in those areas where unlined pits are allowed. Unlined pits in the northwest outside the vulnerable areas are required to be registered; however registration is not a prerequisite to construction or use of such pits. Although there is no express exclusion from the permitting requirements of Rule 4 of Order R-7940-B or of statewide Rule 18 for drilling and workover pits, the division has interpreted those provisions as not applying to such pits.

26. Subsection A of the proposed rule would extend the permitting requirement to unlined pits, eliminate the exemption for relatively small disposal pits currently provided by Order R-3221-C, and, in conjunction with the definition of "pit" in the Division's proposals, would make clear that the permitting requirement applies to drilling or workover pits.

27. Mr. Anderson testified that this provision represented the consensus of the workgroup. He further testified that the Interstate Oil and Gas Compact Commission (IOGCC), and State Review of Oil and Natural Gas Environmental Regulation, Inc. (STRONGER) through their state review program, had found New Mexico's regulatory regime deficient under IOGCC guidelines due to the absence of "a permitting or review process in place for all pits." Mr. Anderson also testified generally concerning the potential dangers to groundwater and the environment associated with pits.

28. No party opposed the general permitting requirement of Subsection A. Witnesses and representatives of public interest groups and landowners' and ranchers' associations who appeared or submitted comments generally recommended that the Commission prohibit all pits associated with wells and require wells to be operated with closed systems.

29. The Commission concludes that:

a. use of pits for either temporary or permanent storage of oil field wastes, including drilling fluids, entails significant hazards to freshwater resources and the environment, but such hazards are manageable;

b. a general permitting requirement applicable all pits is necessary to enable the Division to manage the hazards associated with pits and to conform New Mexico to national regulatory standards;

c. the concerns articulated by landowners concerning surface contamination from pits, while significant, are more germane to the manner of closure of pits than to the existence of pits;

d. none of the parties urging prohibition of pits offered persuasive evidence specifically indicating that lined pits presented surface contamination dangers so long as liner integrity was maintained and proper closure procedures were followed; and

e. accordingly, subsection A of the proposed rule should be adopted.

Subsection B: Permitting Procedures

30. Subsection B of the proposed rule sets forth the procedures, including timeframes, for filing for and approval of, permits for existing and future pits. These provisions are new.

31. Mr. Anderson testified that Subsection B represented the consensus of the workgroup, except with respect to drilling and workover pits, and with respect to the specific timeframes for continued use of existing pits. He further testified that the times provided in the proposed rule for notification of intent to close or to continue to use existing pits and for filing permit applications for existing pits contemplated an earlier adoption of the rule than is now possible, and accordingly should be deferred to reflect the actual date of enactment, but that the June 30, 2005 date for discontinuance of use of existing pits for which permits were not filed should not be deferred.

32. NMOGA/IPANM recommended that drilling and workover pits be permitted by rule, dispensing with the need for a specific application. In support of that recommendation, Mr. Gantner testified that such pits are relatively small and open for relatively short periods, and that OCD records reflect an extremely small number of environmental problems with such pits. Mr. Gantner also pointed out that the permitting requirement would add new paperwork since advance sundry notices are not now required for some small workover operations that involve workover pits.

33. NMOGA/IPANM also recommended a six-months deferral of the time for notification of intent to continue to use existing pits.

34. NMOGA/IPANM recommended that existing pits be grandfathered so long as they have integrity. Their witnesses did not explain, however, what class or classes of pits might be grandfathered under their recommended language, whether those pits would meet standards for permitting or whether concerns regarding such pits could be addressed through the exception process provided in the proposed rule.

35. The Commission concludes that:

a. The permitting procedure provided in subsection B of the proposed rule is generally reasonable;

b. Specific permitting of pits, including drilling and workover pits, will enable the Division to have reliable information regarding the nature and location of pits, and to consider site-specific factors in applying its guidelines;

c. Existing pits that comply with standards should be permitted; whereas those that do not should be brought up to standards unless a basis for a specific exception is established; accordingly existing pits for which permits are not approved should not be allowed to continue to operate, as recommended by the NMOGA/IPANM;

d. the timeframe provided in subsection B of the proposed rule for notification of intent to continue to use existing pits should be deferred to April 15,

2004, and the time for filing permit applications for existing pits should be deferred to September 30, 2004; and

e. subsection B of the proposed rule should be adopted without substantive change other than as to specific times, in the form shown in Exhibit C hereto.

Subsection C: Design, Construction and Operational Standards

36. Subsection C of the proposed rule sets forth design, construction and operational standards for pits and below-grade tanks.

37. Paragraph 1 of subsection C establishes general performance standards. Mr. Anderson testified that this provision represented work group consensus, and no party voiced any opposition.

38. Subparagraph C.2(a) relates to location of pits. It would prohibit pits, except drilling and workover pits, in any watercourse, sinkhole, lakebed, playa lake or wetland, and authorizes the Division to impose additional requirements for pits in groundwater sensitive areas. The Division also submitted, as a part of its proposed amendments to Rule 7, a proposed definition of "groundwater sensitive areas."

39. Subparagraph C.2(a) is new. Existing orders prohibit unlined pits in certain areas but do not contain specific provisions regarding location of lined pits.

40. Mr. Anderson testified that subparagraph C.2(a) did not represent work group consensus.

41. The Department of Game & Fish of the State of New Mexico and Mr. Larsen, representing the Rio Grande Chapter of the Sierra Club, objected to the exception allowing drilling or workover pits in areas where this paragraph would prohibit other pits.

42. Mr. Larsen also recommended that the proposed language should be altered to provide that the Division "shall" rather than "may" impose additional requirements in groundwater sensitive areas.

43. Mr. Morrow, representing the Surface Division of the New Mexico State Land Office, recommended that pits be excluded from additional areas such as areas in the vicinity of existing water wells and 100-year floodplain areas. Mr. Sandoval also recommended prohibiting pits in areas around public or private water wells.

44. Mr. Anderson testified that the work group did not reach a consensus on the definition of "groundwater sensitive area," but no party raised specific objections to the proposed definition.

45. The Commission concludes that:

a. pits located in actually or intermittently saturated areas present extra hazards to surface water and groundwater, as exemplified by the testimony of Mr. Hicks concerning a pit that was located in the bed of the San Juan River;

b. the exception process in the proposed rule provides an avenue of relief where unusual reasons might exist for locating a pit in an otherwise prohibited area;

c. no adequate basis was shown for generally excepting drilling and workover pits from the prohibition of pits in aquatic environments;

d. while the Division should have authority to impose additional permit conditions and stipulations for pits located in groundwater sensitive areas, in the absence of the Commission adopting standards for such additional requirements, it would not be meaningful to make imposition of additional conditions mandatory;

e. wellhead protection areas, as defined in the definitions set forth in Exhibit B hereto, should be treated similarly to groundwater sensitive areas as areas where additional protective conditions should be considered;

f. accordingly, subparagraph C.2.(a) of the proposed rule should be adopted, deleting the exception for drilling and workover pits and adding authorization for additional protective conditions in wellhead protections areas, in the form shown in Exhibit C hereto; and

g. the accompanying definition of groundwater sensitive areas should also be adopted.

46. Subparagraphs C.2(b) and C.2(c) of the proposed rule set forth requirements for liners and leak detection. Generally these provisions require a single liner for drilling and workover pits and a double liner with a leak detection device between the liners for all other pits, except flare pits for which no liner is required.

47. Mr. Anderson testified that these provisions represented work group consensus, and, except for the requirement that drilling and workover pits be lined, are in accordance with existing Division guidelines. Mr. Sandoval recommended more specific liner performance standards.

48. Subparagraph C.2(d) of the proposed rule preserves the provision of existing Rule 105 requiring that drilling and workover pits be of sufficient size to provide an adequate supply of drilling fluid, and adds a new requirement that hydrocarbon-based drilling fluids be confined in tanks.

49. Mr. Anderson testified that these provisions represented work group consensus, and no party voiced any opposition thereto.

50. The Commission concludes that:

a. specific liner standards are more appropriate for inclusion in the guidelines; and

b. subparagraphs C.2(b), (c) and (d) of the proposed rule should be adopted.

51. Subparagraph C.2(e) of the proposed rule establishes two performance standards applicable to disposal and storage pits, requiring that liquids containing more than two-tenths percent hydrocarbons not be discharged into such pits, and that if spray evaporation systems are used, spray-borne solids not be allowed to escape from the perimeter of the lined pit. These provisions are new.

52. Mr. Anderson testified that the work group reached consensus on the spray-borne solids requirement but not on the two-tenths percent hydrocarbon limitation. He further testified that the latter requirement was introduced in the interest of specificity, but he did not indicate any scientific or policy-based reason for this particular standard.

53. NMOGA/IPANM recommended an alternative provision requiring that disposal and storage pits be "kept reasonably free of oil."

54. In support of this recommendation, Mr. Kantner and Mr. Manthei testified that field personnel could not determine if a stream contained more than two-tenths percent hydrocarbons, and thus could not comply with the standard of the proposed rule, but could make a meaningful judgment based on visible inspection as to whether a pit was reasonably free of oil.

55. Mr. Larsen recommended retention of the two-tenths percent hydrocarbon limitation because of its objectivity, and several witnesses expressed concern about enforceability of vague language such as "reasonably."

56. Mr. Anderson testified that the phrase "spray-borne solids" in the spray evaporation system requirement was intended to include solids dissolved in the sprayed fluid.

57. Ms. Blancett and Mr. Vasquez recommended that spray evaporation systems be prohibited. In support of this recommendation, they testified concerning instances of such systems that had over-sprayed and destroyed vegetation, and Ms. Blancett express doubt that spray-borne solids could be confined to pits.

58. The Commission concludes that:

a. the Division's proposed two-tenths percent standard lacks adequate scientific or policy justification, and would be difficult to enforce;

b. NMOGA/IPANM's recommended language is subject to varying interpretation;

c. a more reasonable and enforceable approach is to require that disposal and storage pits be kept free of "any measurable or visible layer of oil anywhere on the pit";

d. for clarification, the standard regarding spray evaporation systems should be changed to require that "spray-borne *suspended or dissolved* solids" remain within the pit perimeter; and

e. subparagraph C.2(e) of Exhibit C to this order, incorporating the above changes, should be adopted in lieu of the provision recommended by the Division.

59. Subparagraph C.2(f) of the proposed rule deals with fencing and netting of pits and open tanks for the protection of livestock, birds and other wildlife.

60. Present Rule 313 requires pits used for disposal of tank bottoms to be fenced, and Order R-3221-C, applicable to the southeast, requires that lined storage and disposal pits be fenced. These provisions also specifically require that fences be kept in repair. There is not now a fencing requirement for other pits.

61. Present Rules 18 and 313 require tanks exceeding 16 feet in diameter and all pits to be netted or screened to protect birds unless specifically exempted. Rule 105, applicable specifically to drilling and workover pits, requires netting or screening only after the operation has ceased and then only if oil is not removed from the surface of the pit.

62. Mr. Anderson testified that consensus was not achieved on the fencing and netting proposals. He further testified that netting was not necessary for drilling and workover pits during active operations because human presence would be a deterrent to birds, but that netting might be necessary after cessation of operations.

63. In response to cross-examination concerning the requirement for fencing to protect wildlife, Mr. Anderson testified that the proposed rule was not intended to require fencing specifically designed to exclude wildlife except where a particular wildlife concern was identified.

64. Ms. Blancett and Mr. Velasquez testified to instances of damage to livestock where pits either were not fenced, or where fences were inadequately maintained.

65. NMOGA/IPANM recommended retaining the present exemption from netting for drilling and workover pits. Mr. Manthei testified in support of this recommendation that during his many years of field experience, he had never seen a dead bird in or near a drilling or workover pit.

66. Ms. Rees, Mr. Larsen and the Department of Game & Fish recommended that there be no exceptions to the netting requirements, and Ms. Rees and the Department of Game and Fish recommended that tanks less than 16 feet in diameter also be required to be netted.

67. The commission concludes that:

a. exclusion of wildlife would require specially designed fencing that should not be required except where a wildlife problem has been identified;

b. accordingly, the general fencing requirement should be limited to protection of livestock;

c. the fencing proposal, as so modified, should be adopted with the addition of a specific provision, as in present Rule 313 and Order Re-3221-C, that fences be kept in repair;

d. netting is not necessary for drilling or workover pits during operations because human presence and activity will generally render drilling and workover pits non-hazardous to birds during such operations, and such pits will not present a material hazard to birds after operations if they are kept reasonably free from oil; and

e. accordingly, subparagraph C.2(f) of Exhibit C should be adopted in lieu of the provision recommended by the Division.

68. Subparagraph C.2(g) of the proposed rule would prohibit unlined pits except in designated geographical areas.

69. This provision restates the requirements of existing orders with the following changes:

a. unlined pits will no longer be allowed in parts of the state outside the eight major producing counties;

b. the exception allowing unlined disposal pits that receive less than one barrel of produced water per day per 40-acre tract served in the southeast, provided in Order 3221-C, will be repealed; and

c. pursuant to the Division's proposed definition of "wellhead protection area," the wellhead protection areas where unlined pits are prohibited in the northwest would be extended to include a 1,000-foot radius around all water wells; whereas Order 7940-C now provides for a wellhead protection area defined by a 200-foot radius around domestic wells and a 1,000-foot radius around other wells.

70. Mr. Anderson testified that Subparagraph C.2(g) represented work group consensus.

71. Clause (ii) of subparagraph C.2(g) provides a procedure for an operator to apply to the Division for a permit for an unlined pit in a particular case. This provision does not include a notice requirement. However, Mr. Anderson testified that the notice requirement in proposed subsection G was intended to apply.

72. Some commentors, including several landowners, Mr. Morrow, representing the Surface Division of the New Mexico State Land Office, and the Department of Game and Fish, recommended that unlined pits be prohibited in all areas. However, no technical evidence was presented to demonstrate a need for such a prohibition in those areas where unlined pits are specifically permitted.

73. The Division did not present any specific evidence to support extension of "wellhead protection areas" from 200 to 1000 feet around private water wells.

74. The Commission concludes that:

a. areas where unlined pits may continue to be allowed without endangering groundwater have been defined in previous orders based on extensive evidence received by the commission in the proceeding that produced those orders;

b. the evidence presented in this proceeding was insufficient to justify re-visiting those determinations, except that the prohibition of unlined pits in wellhead protection areas, currently applicable only in the northwest, should be made statewide;

c. the exception procedure for unlined pits in clause (ii) of this subparagraph duplicates the exception procedure provided in paragraph G.1 of the proposed rule, and is therefore redundant and unnecessary;

d. subparagraph C.2(g) should be adopted generally as proposed, deleting the exception procedure as redundant, and with effective date changes and clarifying wording changes as set forth in Exhibit C hereto; and

e. the definition of "wellhead protection area" set forth in Exhibit B hereto, which is substantively the same as that in Order 7940-C, should be adopted in lieu of that proposed by the Division.

75. Proposed paragraph C.3 requires secondary containment and leak detection for all new below-grade tanks, and retrofitting of existing below-grade tanks at the time of major repairs. Mr. Anderson testified that this paragraph represented work group consensus, and no party objected thereto (except to its applicability to large sumps that would not qualify as "sumps" under the Division's proposed definition).

76. The Commission concludes that paragraph C.3 of Exhibit C hereof should be adopted, incorporating the substance of the Division's proposed paragraph C.3 with clarified wording.

77. Proposed paragraph C.4 requires annual integrity testing of sumps. Sumps are basically tanks used to catch drips or leaks. Sumps are intended to remain predominantly empty. They are excluded from the permitting and secondary containment requirements otherwise applicable to pits and below-grade tanks. The Division submitted an accompanying definition of "sump," which limited the applicability of the term to a reservoir that has a capacity less than 110 gallons.

78. NMOGA/IPANM proposed (a) defining a sump as a "vessel" rather than a "reservoir," (b) eliminating the 110-gallon maximum, and exempting sumps of less than 30-gallons capacity from the annual integrity testing requirement.

79. In support of these proposals, Mr. Manthei testified concerning the use of sumps in the oil field. He testified that sumps are made of man-made materials, not earthen impoundments, and, accordingly, the term "vessel" is a more accurate description than "reservoir." He further testified that since sumps are intended to be used only in the event of a spill or leak, and will otherwise remain empty, there is no reason to require secondary containment for sumps as is proposed for below-grade tanks, regardless of the size of the sump. Mr. Kantner testified that, in his opinion, there is no legitimate reason for integrity testing of very small sumps.

80. Mr. Larsen recommended preserving the size limitation on sumps, suggesting that large sumps should be subject to permitting and leak detection requirements applicable to below-grade tanks even if berms are not required.

81. The Commission concludes that:

a. the word "vessel" should be substituted for "reservoir" in the definition of "sump" to exclude emergency pits from the definition;

b. the 110-gallon maximum for sumps not required to be permitted as below-grade tanks is somewhat arbitrary and excludes many structures of similar function; however, some maximum size should be retained because of the greater environmental hazards posed by larger vessels that could contain larger quantities of contaminants;

c. a 500-gallon limitation would bring most drain and leak-catching sumps within the definition while still requiring permitting of larger structures;

d. the exception process provided in subsection G of the rule will enable the Division to dispense with the requirement for secondary containment and leak

detection for larger installations that serve a function analogous to sumps where the lack of need for additional protective measures can be shown;

e. annual integrity testing should be required for all sumps, with visual testing authorized only for those that can be removed from their emplacements for testing; and

f. the definition of "sump" set forth in Exhibit B hereto, and paragraph C.4 set forth in Exhibit C hereto should be adopted in lieu of the Division's recommendations.

Subsection D: Emergencies

82. Subsection D of the proposed rule, except for paragraph D.5, deals with pits constructed in an emergency. The new rule authorizes construction and use of such pits without a permit provided they are emptied within 24 hours. Paragraph D.5 requires that "emergency pits" constructed in advance to contain a potential release be permitted.

83. Mr. Anderson testified that the proposed provisions regarding pits constructed in an emergency situation represented a work group consensus, except that some members wanted to allow construction of such pits in less exigent circumstances upon verbal approval of the Division.

84. NMOGA/IPANM proposed adding language allowing construction of emergency pits upon verbal approval of the Division, but their witnesses did not identify any circumstance that would justify construction of such a pit upon verbal approval that would not also constitute an emergency.

85. Mr. Anderson testified that paragraph D.5 requiring permitting of pits constructed in anticipation of a future emergency did not represent a work group consensus, but was a necessary provision for enforcement in view of the frequent use of such pits as unpermitted disposal pits.

86. NMOGA/IPANM recommended that proposed paragraph D.5 be changed to exclude impoundments constructed pursuant to the Environmental Protection Agency's Spill Prevention, Control and Countermeasure (SPCC) requirements, and the Division, in post-hearing comments, joined in this recommendation provided that the pit is described in a plan submitted to the Environmental Protection Agency (EPA) and that notice of the location of the pit be filed with the Division.

87. The Commission concludes that:

a. the Division's proposed conditions for excepting SPCC pits are desirable to prevent the exception being used to evade the permitting requirement for emergency pits;

b. however, since SPCC plans are not ordinarily filed with EPA except in the event of certain incidents, a requirement that the SPCC plan have been filed with EPA is too restrictive; and

(b) proposed subsection D should be adopted in the form set forth in Exhibit C, which exempts spill containment pits described in SPCC plans that are required by EPA provided the Division is given notice thereof.

Subsection E: Drilling Fluids and Cuttings

88. Subsection E of the proposed rule provides for disposal of drill cuttings and drilling fluids in any pit in a manner approved by the Division, and requires that the proposed method of disposal be stated in the permit application.

89. Present Rule 105 requires on-site burial of drill cuttings and drilling fluids unless the Division expressly approves off-site disposal.

90. Mr. Anderson testified that the work group did not achieve consensus on subsection E because some members advocated prohibiting on-site disposal in all cases. At the hearing landowner witnesses and commentors proposed prohibiting on-site burial and expressed concern that buried contaminants would rise to the surface and contaminate soils. Both independent witness, Dr. Neeper, and NMOGA/IPANM witness, Randall Hicks, testified that soil contamination was a possibility if there were salts in the buried material.

91. The Commission concludes that:

a. proposed subsection E addresses concerns about potential surface pollution from burial of drilling fluids and drill cuttings by (1) establishing a performance standard for disposal of these materials that encompasses protection of public health and the environment and is not limited, as is present Rule 105, to protection of surface and subsurface water, and (2) requiring division approval for the operator's proposed method of disposal for each specific location, in lieu of requiring on-site burial in other than exceptional cases, as the present rule does;

b. proposed subsection E, apparently inadvertently, is limited to disposal of those substances "contained in any pit or below-grade tank"; whereas present Rule 105 is not so limited; and

c. proposed subsection E should be adopted deleting the inadvertently added language and with clarified wording in the form set forth in Exhibit C hereto.

Subsection F: Pit Closure

92. Subsection F of the proposed rule prescribes procedures for pit closure, basically requiring that pits be filled and leveled, and a closure report filed with the division, within six months after cessation of use.

93. Order 3221-C, applicable in the southeast, requires closure and leveling of lined pits permitted pursuant to that order "as soon as practicable after termination of use." Rule 202 requires that when a well is plugged and abandoned, all pits be filled and the location leveled within one year. Otherwise, subsection F of the proposed rule is new.

94. Mr. Anderson testified that the work group did not achieve consensus on subsection F.

95. NMOGA/IPANM submitted an alternative proposal regarding closure, which would require closure reports only for unlined pits or lined pits where there is evidence of soil contamination.

96. In support of this proposal, Mr. Kantner testified that, in his experience, when a pit liner is removed it is very apparent if there has been soil contamination. However, he conceded in response to cross-examination that liner removal could be difficult.

97. NMOGA/IPANM further recommended that the surface restoration provisions of proposed paragraph F.2 be changed to read "to prevent extended ponding of rainwater," instead of "to prevent ponding of rainwater." In support of this proposal, Mr. Kantner testified that, after substantial rains formation of some small ponds would be practically inevitable.

98. In response to a question about the vagueness of the requirement that a detailed closure plan be filed "in appropriate cases," Mr. Anderson testified that it was the Division's intention that a closure plan be required if the permit so required.

99. The Division, in post-hearing comments, specifically opposed the recommendation that closure reports and soil samples be required only where there is evidence of contamination, and offered a counter suggestion that the requirement apply unless the operator demonstrated that there was not soil contamination.

100. Landowner and ranching association witnesses and commentors expressed significant concerns about the manner in which pits were closed, particularly with regard to liner disposal. Most of these witnesses and commentors recommended prohibition of on-site burial of pit liners and pit contents at the time of closure.

101. Mr. Sandoval recommended that the closure provisions make specific reference to WQCC water quality standards.

102. The Commission concludes that:

a. because of the variety of situations that pit closures may present the Division should have the flexibility to determine specific closure requirements on a case-by-case basis through the promulgation and application of interpretive guidelines;

b. since the Division indicated that "appropriate cases" for requiring a detailed closure plan would be identified in the permit, the rule should be modified to state this intention;

c. express reference to WQCC standards is not necessary in subsection F since the rule as a whole clearly reflects adoption of WQCC water quality standards as the standard for protection of fresh water; and

d. accordingly, subsection F should be adopted, changing "in appropriate cases" to "as a condition of a permit" and with clarified wording, as set forth in Exhibit C hereto.

Subsection G: Exemptions; Additional Conditions

103. Subsection G of the proposed rule authorizes the Division to impose additional conditions on pit permits and to grant exceptions to requirements of the rule in particular cases. It also prescribes procedures for granting of exceptions. This subsection is new.

104. Mr. Anderson testified that the work group consensus supported subsections G.1 and G.2 authorizing additional conditions and exceptions, but that consensus was not achieved on the procedural provisions of subsection G.3, particularly the requirement that the applicant for an exception must notify the surface owner and such other persons as the Division may direct.

105. At the hearing and in written comments, NMOGA/IPANM opposed the provision authorizing the Division to require notice of exception applications to persons other than the surface owner. Mr. Sandoval recommended a broader specific notice requirement, including surface owners, mineral owners and cities within a two-mile radius.

106. Jennifer Goldman of the Oil and Gas Accountability Project, objected that the proposed rule did not clearly place the burden of proof on an operator seeking an exception to show that a requested exception met the standard.

107. The Commission concludes that:

a. subsection G.2 should be re-worded to make clear that an operator requesting an exception would have the burden to demonstrate in the administrative or hearing record that the requested exception would meet the prescribed standard;

b. in particular circumstances where an exception is likely to have off-premises effects, such as an exception for a pit in a municipality or on a small tract, notification of persons other than the surface owner at the pit location might be appropriate, and the Division should have the flexibility to require notice to additional persons or public agencies that might be affected;

c. however, because compliance with notice requirements may be burdensome and costly, notice to persons other than the landowner at the specific site should only be required in those cases where such persons are likely to be affected;

d. the Division's authority to revoke a previously granted exception should be governed by a standard stated in the rule, which should be that the standard which authorized the exception (*i.e.*, protection of fresh water, public heath and the environment), was no longer met, and

e. subsection G should be adopted as proposed with the revisions necessary to specify the burden of proof for exception applications and the standard for exception revocation and with clarifying changes, as shown in Exhibit C hereto.

108. As a general comment on the proposed rule, Mr. Sandoval recommended that provisions be added requiring notice to the surface owner of various actions other than a request for exception, including permit applications and closure.

109. The Commission concludes, however, that such notice is not necessary since these are routine actions where the operator is required to comply with standards set forth in the rule.

Final Conclusions

110. The Commission has concluded that the rules and orders identified in finding paragraph 3 above should be repealed as recommended, and that Rules 313 and 7 [19.15.5.313 NMAC and 19.15.1.7 NMAC] should be amended to read as shown in Exhibits A and B hereto, respectively.

111. The Commission has further concluded that a new rule, to be codified as 19.15.2.53 NMAC, or otherwise if necessary to meet requirements of the Commission of Public Records, should be adopted in the form attached hereto as Exhibit C.

IT IS THEREFORE ORDERED:

1. A new rule of the Oil Conservation Division, to be codified at 19.15.2.53 NMAC (or elsewhere if necessary to meet requirements of the Commission of Public Records), copy attached as Exhibit C, is hereby adopted, effective as of the date of its publication in the New Mexico Register.

2. Rules 313 and 7 [19.15.5.313 NMAC and 19.15.1.7 NMAC] should be amended to read as shown in Exhibits A and B hereto, effective upon the effective date of the new rule.

3. Rules 18 [19.15.1.18 NMAC] and 105 [19.18.3.105] of the Oil Conservation Division are hereby repealed, effective upon the effective date of the new rule.

4. Orders R-3221, R-3221-A, R-3221-B, R-3221-B-1, R-3221-C, R-3221-D, R-7940, R-7940-A and R-7940-C, are hereby rescinded, and the portions of those orders codified as 19.15.2.1 through 19.15.2.15 NMAC are hereby repealed, effective upon the effective date of the new rule.

5. Staff of the Oil Conservation Division is instructed to secure prompt publication of the referenced rules, amendments and repeals in the New Mexico Register.

6. Jurisdiction of this matter is retained for entry of such further orders as may be necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

LORI WROTENBERY, CHAIR

JAMI BAILEY, MEMBER

ROBERT LEE, MEMBER

S E A L

EXHIBIT A to Order No. R-12011-B

19.15.5.313 EMULSION, BASIC SEDIMENTS, AND TANK BOTTOMS:

Wells producing oil shall be operated in such a manner as will reduce as much as practicable the formation of emulsion and basic sediments. These substances and tank bottoms shall not be allowed to pollute fresh waters or cause surface damage. ~~If tank bottoms are removed to surface pits, the pits shall be fenced and the fence shall be kept in good repair. To protect migratory birds, all tanks exceeding 16 feet in diameter, and exposed pits and ponds shall be screened, netted or covered. Upon written application by the operator, an exception to screening, netting or covering of a facility may be granted by the district supervisor upon a showing that an alternative method will protect migratory birds or that the facility is not hazardous to migratory birds.~~

[1-1-50...2-1-96; 19.15.5.313 NMAC - Rn, 19 NMAC 15.E.313, 5-15-00]

19.15.1.7 DEFINITIONS

A. Definitions Beginning with the Letter "A":

(1) Abate or Abatement shall mean the investigation, containment, removal or other mitigation of water pollution.

(2) Abatement Plan shall mean a description of any operational, monitoring, contingency and closure requirements and conditions for the prevention, investigation and abatement of water pollution.

(3) Adjoining Spacing Units are those existing or prospective spacing units in the same pool(s) that are touching at a point or line the spacing unit that is the subject of the application.

(4) Adjusted Allowable shall mean the allowable production a well or proration unit receives after all adjustments are made.

(5) Allocated Pool is one in which the total oil or natural gas production is restricted and allocated to various wells therein in accordance with proration schedules.

(6) Allowable Production shall mean that number of barrels of oil or standard cubic feet of natural gas authorized by the Division to be produced from an allocated pool.

(7) Alluvium shall mean detrital material that has been transported by water or other erosional forces and deposited at points along the flood plain of a watercourse. It typically is composed of sands, silts, and gravels, exhibits high porosity and permeability and generally carries fresh water.

~~(7)~~(8) Aquifer shall mean a geological formation, group of formations, or a part of a formation *that is capable of yielding a significant amount of water to a well or spring.*

B. Definitions Beginning with the Letter "B":

(1) Back Allowable shall mean the authorization for production of any shortage or underproduction resulting from pipeline proration.

(2) Background shall mean, for purposes of ground-water abatement plans only, the amount of ground-water contaminants naturally occurring from undisturbed geologic sources or water contaminants occurring from a source other than the responsible person's facility. This definition shall not prevent the Director from requiring abatement of commingled plumes of pollution, shall not prevent responsible persons from seeking contribution or other legal or equitable relief from other persons, and shall not preclude the Director from exercising enforcement authority under any applicable statute, regulation or common law.

(3) Barrel shall mean 42 United States Gallons measured at 60 degrees Fahrenheit and atmospheric pressure at the sea level.

(4) Barrel Of Oil shall mean 42 United States Gallons of oil, after deductions for the full amount of basic sediment, water and other impurities present, ascertained by centrifugal or other recognized and customary test.

(5) Below-grade Tank shall mean a vessel, excluding sumps and pressurized pipeline drip traps, where any portion of the sidewalls of the tank is below the surface of the ground and not visible.

(6) Berm shall mean an embankment or ridge constructed for the purpose of preventing the movement of liquids, sludge, solids, or other materials.

~~(5)~~(7) Bottom Hole Or Subsurface Pressure shall mean the gauge pressure in pounds per square inch under conditions existing at or near the producing horizon.

~~(6)~~(8) Bradenhead Gas Well shall mean any well producing gas through wellhead connections from a gas reservoir which has been successfully cased off from an underlying oil or gas reservoir.

C. Definitions Beginning with the Letter "C":

(1) Carbon Dioxide Gas shall mean noncombustible gas composed chiefly of carbon dioxide occurring naturally in underground rocks.

(2) Casinghead Gas shall mean any gas or vapor or both gas and vapor indigenous to and produced from a pool classified as an oil pool by the Division. This also includes gas-cap gas produced from such an oil pool.

(3) Commission shall mean the Oil Conservation Commission.

(4) Common Purchaser For Natural Gas shall mean any person now or hereafter engaged in purchasing from one or more producers gas produced from gas wells within each common source of supply from which it purchases.

(5) Common Purchaser For Oil shall mean every person now engaged or hereafter engaging in the business of purchasing oil to be transported through pipelines.

(6) Common Source Of Supply. See Pool.

(7) Condensate shall mean the liquid recovered at the surface that results from condensation due

to reduced pressure or temperature of petroleum hydrocarbons existing in a gaseous phase in the reservoir.

(8) Contiguous shall mean acreage joined by more than one common point, that is, the common boundary must be at least one side of a governmental quarter-quarter section.

(9) Conventional Completion shall mean a well completion in which the production string of casing has an outside diameter in excess of 2.875 inches.

(10) Correlative Rights shall mean the opportunity afforded, as far as it is practicable to do so, to the owner of each property in a pool to produce without waste his just and equitable share of the oil or gas, or both, in the pool, being an amount, so far as can be practically determined, and so far as can be practicably obtained without waste, substantially in the proportion that the quantity of recoverable oil or gas, or both, under such property bears to the total recoverable oil or gas, or both, in the pool, and for such purpose to use his just and equitable share of the reservoir energy.

(11) Cubic Feet Of Gas Or Standard Cubic Foot Of Gas, for the purpose of these rules, shall mean that volume of gas contained in one cubic foot of space and computed at a base pressure of 10 ounces per square inch above the average barometric pressure of 14.4 pounds per square inch (15.025 psia), at a standard base temperature of 60 degrees Fahrenheit.

D. *Definitions Beginning with the Letter "D":*

(1) Deep Pool shall mean a common source of supply which is situated 5000 feet or more below the surface.

(2) Depth Bracket Allowable shall mean the basic oil allowable assigned to a pool and based on its depth, unit size, or special pool rules, which, when multiplied by the market demand percentage factor in effect, will determine the top unit allowable for the pool.

(3) Director shall mean the Director of the Oil Conservation Division of the New Mexico Energy, Minerals and Natural Resources Department.

(4) Division shall mean the Oil Conservation Division of the New Mexico Energy, Minerals and Natural Resources Department.

E. *Definitions Beginning with the Letter "E":*

(1) Exempted Aquifer shall mean an aquifer that does not currently serve as a source of drinking water, and which cannot now and will not in the foreseeable future serve as a source of drinking water because: is hydrocarbon producing;

(a) it is hydrocarbon producing;

(b) it is situated at a depth or location which makes the recovery of water for drinking water purposes economically or technologically impractical; or,

(c) it is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption.

(2) Existing Spacing Unit is a spacing unit containing a producing well.

F. Definitions Beginning with the Letter "F":

(1) Facility shall mean any structure, installation, operation, storage tank, transmission line, access road, motor vehicle, rolling stock, or activity of any kind, whether stationary or mobile.

(2) Field means the general area which is underlaid or appears to be underlaid by at least one pool; and field also includes the underground reservoir or reservoirs containing such crude petroleum oil or natural gas, or both. The words field and pool mean the same thing when only one underground reservoir is involved; however, field unlike pool may relate to two or more pools.

(3) Fresh Water (to be protected) includes the water in lakes and playas, the surface waters of all streams regardless of the quality of the water within any given reach, and all underground waters containing 10,000 milligrams per liter (mg/l) or less of total dissolved solids (TDS) except for which, after notice and hearing, it is found there is no present or reasonably foreseeable beneficial use which would be impaired by contamination of such waters. The water in lakes and playas shall be protected from contamination even though it may contain more than 10,000 mg/l of TDS unless it can be shown that hydrologically connected fresh ground water will not be adversely affected.

G. Definitions Beginning with the Letter "G":

(1) Gas Lift shall mean any method of lifting liquid to the surface by injecting gas into a well from which oil production is obtained.

(2) Gas-Oil Ratio shall mean the ratio of the casinghead gas produced in standard cubic feet to the number of barrels of oil concurrently produced during any stated period.

(3) Gas-Oil Ratio Adjustment shall mean the reduction in allowable of a high gas oil ratio unit to conform with the production permitted by the limiting gas-oil ratio for the particular pool during a particular proration period.

(4) Gas Transportation Facility shall mean a pipeline in operation serving gas wells for the transportation of natural gas, or some other device or equipment in like operation whereby natural gas produced

from gas wells connected therewith can be transported or used for consumption.

(5) Gas Well shall mean a well producing gas or natural gas from a gas pool, or a well with a gas-oil ratio in excess of 100,000 cubic feet of gas per barrel of oil producing from an oil pool.

(6) Ground Water shall mean interstitial water which occurs in saturated earth material and which is capable of entering a well in sufficient amounts to be utilized as a water supply.

(7) Groundwater Sensitive Area shall mean an area specifically so designated by the division after evaluation of technical evidence where groundwater exists that would likely exceed Water Quality Control Commission standards if contaminants were introduced into the environment.

H. Definitions Beginning with the Letter "H":

(1) Hazard To Public Health exists when water which is used or is reasonably expected to be used in the future as a human drinking water supply exceeds at the time and place of such use, one or more of the numerical standards of 20 NMAC 6.2.3103.A, or the naturally occurring concentrations, whichever is higher, or if any toxic pollutant as defined at 20 NMAC 6.2.1101 affecting human health is present in the water. In determining whether a release would cause a hazard to public health to exist, the Director shall investigate and consider the purification and dilution reasonably expected to occur from the time and place of release to the time and place of withdrawal for use as human drinking water.

(2) High Gas-Oil Ratio Proration Unit shall mean a unit with at least one producing oil well with a gas-oil ratio in excess of the limiting gas-oil ratio for the pool in which the unit is located.

I. Definitions Beginning with the Letter "I":

(1) Illegal Gas shall mean natural gas produced from a gas well in excess of the allowable determined by the Division.

(2) Illegal Oil shall mean crude petroleum oil produced in excess of the allowable as fixed by the Division.

(3) Illegal Product shall mean any product of illegal gas or illegal oil.

(4) Inactive Well shall be a well which is not being utilized for beneficial purposes such as production, injection or monitoring and which is not being drilled, completed, repaired or worked over.

(5) Injection Or Input Well shall mean any well used for the injection of air, gas, water, or other fluids into any underground stratum.

J. Reserved.

K. Reserved.

L. Definitions Beginning with the Letter "L":

(1) Limiting Gas-Oil Ratio shall mean the gas-oil ratio assigned by the Division to a particular oil pool to limit the volumes of casinghead gas which may be produced from the various oil producing units within that particular pool.

(2) Load Oil is any oil or liquid hydrocarbon which has been used in remedial operation in any oil or gas well.

(3) Log Or Well Log shall mean a systematic detailed and correct record of formations encountered in the drilling of a well.

M. Definitions Beginning with the Letter "M":

(1) Marginal Unit shall mean a proration unit which is incapable of producing top unit allowable for the pool in which it is located.

(2) Market Demand Percentage Factor shall mean that percentage factor of 100 percent or less as determined by the Division at an oil allowable hearing, which, when multiplied by the depth bracket allowable applicable to each pool, will determine the top unit allowable for that pool.

(3) Mineral Estate is the most complete ownership of oil and gas recognized in law and includes all the mineral interests and all the royalty interests.

(4) Mineral Interest Owners are owners of an interest in the executive rights, which are the rights to explore and develop, including oil and gas lessees (i.e., "working interest owners") and mineral interest owners who have not signed an oil and gas lease.

(5) Minimum Allowable shall mean the minimum amount of production from an oil or gas well which may be advisable from time to time to the end that production will repay reasonable lifting cost and thus prevent premature abandonment and resulting waste.

(6) Multiple Completion (Combination) shall mean a multiple completion in which two or more common sources of supply are produced through a combination of two or more conventional diameter casing strings cemented in a common well-bore, or a combination of small diameter and conventional diameter casing strings cemented in a common well-bore, the conventional diameter strings of which might or might not be a Multiple Completion (Conventional).

(7) Multiple Completion (Conventional) shall mean a completion in which two or more common sources of supply are produced through one or more strings of tubing installed within a single casing string,

with the production from each common source of supply completely segregated by means of packers.

(8) Multiple Completion (Tubingless) shall mean completion in which two or more common sources of supply are produced through an equal number of casing strings cemented in a common well-bore, each such string of casing having an outside diameter of 2.875 inches or less, with the production from each common source of supply completely segregated by use of cement.

N. Definitions Beginning with the Letter "N":

(1) Natural Gas Or Gas shall mean any combustible vapor composed chiefly of hydrocarbons occurring naturally in a pool classified by the Division as a gas pool.

(2) Non-Aqueous Phase Liquid shall mean an interstitial body of liquid oil, petroleum product, petrochemical, or organic solvent, including an emulsion containing such material.

(3) Non-Marginal Unit shall mean a proration unit which is capable of producing top unit allowable for the pool in which it is located, and to which has been assigned a top unit allowable.

O. Definitions Beginning with the Letter "O":

~~(4)~~(1) Official Gas-Oil Ratio Test shall mean the periodic gas-oil ratio test made by order of the Division by such method and means and in such manner as prescribed by the Division.

~~(5)~~(2) Oil, Crude Oil, Or Crude Petroleum Oil shall mean any petroleum hydrocarbon produced from a well in the liquid phase and which existed in a liquid phase in the reservoir.

~~(6)~~(3) Oil Field Wastes shall mean those wastes produced in conjunction with the exploration, production, refining, processing and transportation of crude oil and/or natural gas and commonly collected at field storage, processing, disposal, or service facilities, and waste collected at gas processing plants, refineries and other processing or transportation facilities.

~~(7)~~(4) Oil Well shall mean any well capable of producing oil and which is not a gas well as defined herein.

~~(8)~~(5) Operator shall mean any person ~~or persons~~ who, duly authorized, is in charge of the development of a lease or the operation of a producing property, or who is in charge of the operation or management of a facility.

~~(9)~~(6) Overage Or Overproduction shall mean the amount of oil or the amount of natural gas produced during a proration period in excess of the amount authorized on the proration schedule.

~~(10)~~(7) Owner means the person who has the right to drill into and to produce from any pool, and to appropriate the production either for himself or for himself and another.

P. Definitions Beginning with the Letter "P":

(1) Penalized Unit shall mean a proration unit to which, because of an excessive gas-oil ratio, an allowable has been assigned which is less than top unit allowable for the pool in which it is located and also less than the ability of the well(s) on the unit to produce.

(2) Person shall mean an individual or any other entity including partnerships, corporation, associations, responsible business or association agents or officers, the state or a political subdivision of the state or any agency, department or instrumentality of the United States and any of its officers, agents or employees.

(3) Pit shall mean any surface or sub-surface impoundment, man-made or natural depression, or diked area on the surface. Excluded from this definition are berms constructed around tanks or other facilities solely for the purpose of safety and secondary containment.

(4) Playa Lake shall mean a level or nearly level area that occupies the lowest part of a completely closed basin and that is covered with water at irregular intervals, forming a temporary lake.

~~(3)~~(5) Pool means any underground reservoir containing a common accumulation of crude petroleum oil or natural gas or both. Each zone of a general structure, which zone is completely separated from any other zone in the structure, is covered by the word "pool" as used herein. "Pool" is synonymous with "common source of supply" and with "common reservoir."

~~(4)~~(6) Potential shall mean the properly determined capacity of a well to produce oil, or gas, or both, under conditions prescribed by the Division.

~~(5)~~(7) Pressure Maintenance shall mean the injection of gas or other fluid into a reservoir, either to maintain the existing pressure in such reservoir or to retard the natural decline in the reservoir pressure.

~~(6)~~(8) Produced Water shall mean those waters produced in conjunction with the production of crude oil and/or natural gas and commonly collected at field storage, processing, or disposal facilities including but not limited to: lease tanks, commingled tank batteries, burn pits, LACT units, and community or lease salt water disposal systems and which may be collected at gas processing plants, pipeline drips and other processing or transportation facilities.

~~(7)~~(9) Producer shall mean the owner of a well or wells capable of producing oil or natural gas or both in paying quantities.

~~(8)~~(10) Product means any commodity or thing made or manufactured from crude petroleum oil

or natural gas, and all derivatives of crude petroleum oil or natural gas, including refined crude oil, crude tops, topped crude, processed crude petroleum, residue from crude petroleum, cracking stock, uncracked fuel oil, treated crude oil, fuel oil, residuum, gas oil, naphtha, distillate, gasoline, kerosene, benzene, wash oil, lubricating oil, and blends or mixtures of crude petroleum oil or natural gas or any derivative thereof.

~~(9)~~(11) Proration Day shall consist of 24 consecutive hours which shall begin at 7 a.m. and end at 7 a.m. on the following day. The language in this paragraph is different than that which was filed 02-28-97 (effective

~~(10)~~(12) Proration Month shall mean the calendar month which shall begin at 7 a.m. on the first day of such month and end at 7 a.m. on the first day of the next succeeding month.

~~(11)~~(13) Proration Period shall mean for oil the proration month and for gas the twelve-month period which shall begin at 7 a.m. on January 1 of each year and end at 7 a.m. on January 1 of the succeeding year or other period designated by general or special order of the Division.

~~(12)~~(14) Proration Schedule shall mean the order of the Division authorizing the production, purchase, and transportation of oil, casinghead gas, and natural gas from the various units of oil or of natural gas in allocated pools.

~~(13)~~(15) Proration Unit is the area in a pool that can be effectively and efficiently drained by one well as determined by the Division or Commission (See NMSA 1978 Section 70-2-17.B) as well as the area assigned to an individual well for the purposes of allocating allowable production pursuant to a prorationing order for the pool. A proration unit will be the same size and shape as a spacing unit. All proration units are spacing units but not all spacing units are proration units.

~~(14)~~(16) Prospective Spacing Unit is a hypothetical spacing unit that does not yet have a producing well.

Q. Reserved.

R. Definitions Beginning with the Letter "R":

(1) Recomplete shall mean the subsequent completion of a well in a different pool from the pool in which it was originally completed.

(2) Regulated Naturally Occurring Radioactive Material (Regulated NORM) shall mean naturally occurring radioactive material (NORM) contained in any oil-field soils, equipment, sludges or any other materials related to oil-field operations or processes exceeding the radiation levels specified in 20 NMAC 3.1., Section 1403.

(3) Release shall mean all breaks, leaks, spills, releases, fires or blowouts involving crude oil, produced water, condensate, drilling fluids, completion fluids or other chemical or contaminant or mixture thereof, including oil field wastes and natural gases to the environment.

(4) Remediation Plan shall mean a written description of a program to address unauthorized releases. The plan may include appropriate information, including assessment data, health risk demonstrations, and corrective action(s). The plan may also include an alternative proposing no action beyond the submittal of a spill report.

(5) Responsible Person shall mean the owner or operator who must complete Division approved corrective action for pollution from releases.

(6) Royalty Interest Owners are owners of an interest in the non-executive rights including lessors, royalty interest owners and overriding royalty interest owners. Royalty interests are non-cost bearing.

S. Definitions Beginning with the Letter "S":

(1) Secondary Recovery shall mean a method of recovering quantities of oil or gas from a reservoir which quantities would not be recoverable by ordinary primary depletion methods.

(2) Shallow Pool shall mean a pool which has a depth range from 0 to 5000 feet.

(3) Shortage Or Underproduction shall mean the amount of oil or the amount of natural gas during a proration period by which a given proration unit failed to produce an amount equal to that authorized in the proration schedule.

(4) Shut-In shall be the status of a production well or an injection well which is temporarily closed down, whether by closing a valve or disconnection or other physical means.

(5) Shut-In Pressure shall mean the gauge pressure noted at the wellhead when the well is completely shut in, not to be confused with bottom hole pressure.

(6) Significant Modification Of An Abatement Plan shall mean a change in the abatement technology used excluding design and operational parameters, or relocation of 25% or more of the compliance sampling stations, for any single medium, as designated pursuant to Subsection E, Paragraph (4), Subparagraph (b), Subsubparagraph (iv) of Section 19.15.5.19 NMAC.

(7) Spacing Unit is the area allocated to a well under a well spacing order or rule. Under the Oil & Gas Act, NMSA 1978, Section 70-2-12.B(10), the Commission has the power to fix spacing units without first creating proration units. See *Rutter & Wilbanks Corp. v. Oil Conservation Comm'n*, 87 NM 286 (1975).

This is the area designated on Division form C-102.

(8) Subsurface Water shall mean ground water and water in the vadose zone that may become ground water or surface water in the reasonably foreseeable future or may be utilized by vegetation.

(9) Sump shall mean any impermeable single wall vessel with a capacity less than 500 gallons, where any portion of the sidewalls of the reservoir is below the surface of the ground and not visible which vessel remains predominantly empty, serves as a drain or receptacle for spilled or leaked liquids on an intermittent basis, and is not used to store, treat, dispose of, or evaporate products or wastes.

T. Definitions Beginning with the Letter "T":

(1) Tank Bottoms shall mean that accumulation of hydrocarbon material and other substances which settles naturally below crude oil in tanks and receptacles that are used in handling and storing of crude oil, and which accumulation contains in excess of two (2%) percent of basic sediment and water; provided, however, that with respect to lease production and for lease storage tanks, a tank bottom shall be limited to that volume of the tank in which it is contained that lies below the bottom of the pipeline outlet thereto.

(2) Temporary Abandonment shall be the status of a well which is inactive and has been approved for temporary abandonment in accordance with the provisions of these rules.

(3) Top Unit Allowable For Gas shall mean the maximum number of cubic feet of natural gas, for the proration period, allocated to a gas producing unit in an allocated gas pool.

(4) Top Unit Allowable For Oil shall mean the maximum number of barrels for oil daily for each calendar month allocated on a proration unit basis in a pool to non-marginal units. The top unit allowable for a pool shall be determined by multiplying the applicable depth bracket allowable by the market demand percentage factor in effect.

(5) Treating Plant shall mean any plant constructed for the purpose of wholly or partially or being used wholly or partially for reclaiming, treating, processing, or in any manner making tank bottoms or any other waste oil marketable.

(6) Tubingless Completion shall mean a well completion in which the production string of casing has an outside diameter of 2.875 inches or less.

U. Definitions Beginning with the Letter "U":

(1) Underground Source Of Drinking Water shall mean an aquifer which supplies water for human consumption or which contains ground water having a total dissolved solids concentration of 10,000 mg/l or less and which is not an exempted aquifer.

(2) Unit Of Proration For Gas shall consist of such multiples of 40 acres as may be prescribed by special pool rules issued by the Division.

(3) Unit Of Proration For Oil shall consist of one 40-acre tract or such multiples of 40-acre tracts as may be prescribed by special pool rules issued by the Division.

(4) Unorthodox Well Location shall mean a location which does not conform to the spacing requirements established by the rules and regulations of the Division.

V. Definitions Beginning with the Letter "V":

(1) Vadose Zone shall mean unsaturated earth material below the land surface and above ground water, or in between bodies of ground water.

W. Definitions Beginning with the Letter "W":

(1) Waste, in addition to its ordinary meaning, shall include:

(a) Underground Waste as those words are generally understood in the oil and gas business, and in any event to embrace the inefficient, excessive, or improper use or dissipation of the reservoir energy, including gas energy and water drive, of any pool, and the locating, spacing, drilling, equipping, operating, or producing, of any well or wells in a manner to reduce or tend to reduce the total quantity of crude petroleum oil or natural gas ultimately recovered from any pool, and the use of inefficient underground storage of natural gas.

(b) Surface Waste as those words are generally understood in the oil and gas business, and in any event to embrace the unnecessary or excessive surface loss or destruction without beneficial use, however caused, of natural gas of any type or in any form, or crude petroleum oil, or any product thereof, but including the loss or destruction, without beneficial use, resulting from evaporation, seepage, leakage, or fire, especially such loss or destruction incident to or resulting from the manner of spacing, equipping, operating or producing a well or wells, or incident to or resulting from the use of inefficient storage or from the production of crude petroleum oil or natural gas, in excess of the reasonable market demand.

(c) The production of crude petroleum oil in this state in excess of the reasonable market demand for such crude petroleum oil. Such excess production causes or results in waste which is prohibited by the Oil and Gas Act. The words "reasonable market demand" as used herein with respect to crude petroleum oil, shall be construed to mean the demand for such crude petroleum oil, for reasonable current requirements for current consumption and use within or outside of the state, together with the demand of such amounts as are

reasonably necessary for building up or maintaining reasonable storage reserves of crude petroleum oil or the products thereof, or both such crude petroleum oil and products.

(d) The non-ratable purchase or taking of crude petroleum oil in this state. Such non-ratable taking and purchasing causes or results in waste, as defined in paragraphs (a), (b), and (c) of this definition and causes waste by violating Section 70-2-16 of the Oil and Gas Act.

(e) The production in this state of natural gas from any gas well or wells, or from any gas pool, in excess of the reasonable market demand from such source for natural gas of the type produced or in excess of the capacity of gas transportation facilities for such type of natural gas. The words "reasonable market demand," as used herein with respect to natural gas, shall be construed to mean the demand for natural gas for reasonable current requirements, for current consumption and for use within or outside the state, together with the demand for such amounts as are necessary for building up or maintaining reasonable storage reserves of natural gas or products thereof, or both such natural gas and products.

~~(1)~~(2) Water shall mean all water including water situated wholly or partly within or bordering upon the state, whether surface or subsurface, public or private, except private waters that do not combine with other surface or subsurface water.

~~(2)~~(3) Water Contaminant shall mean any substance that could alter if released or spilled the physical, chemical, biological or radiological qualities of water. "Water contaminant" does not mean source, special nuclear or by-product material as defined by the Atomic Energy Act of 1954.

~~(3)~~(4) Watercourse shall mean any lake bed, or gully, draw, stream bed, wash, arroyo, or natural or human-made channel through which water flows or has flowed.

~~(4)~~(5) Water Pollution shall mean introducing or permitting the introduction into water, either directly or indirectly, of one or more water contaminants in such quantity and of such duration as may with reasonable probability injure human health, animal or plant life or property, or to unreasonably interfere with the public welfare or the use of property.

~~(5)~~(6) Well Blowout shall mean a loss of control over and subsequent eruption of any drilling or workover well or the rupture of the casing, casinghead, or wellhead or any oil or gas well or injection or disposal well, whether active or inactive, accompanied by the sudden emission of fluids, gaseous or liquids, from the well.

(7) Wellhead Protection Area shall mean the area within 200 horizontal feet of any private, domestic fresh water well or spring used by less than five households for domestic or stock watering purposes or within1000 horizontal feet of any other fresh water well or spring. Wellhead protection areas shall not include areas around water wells drilled after an existing oil or natural gas waste storage, treatment, or disposal site was established.

(8) Wetlands shall mean those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions in New Mexico. Constructed wetlands used for wastewater treatment purposes are not included in this definition.

~~(6)~~(9) Working Interest Owners are the owners of the operating interest under an oil and gas lease who have the exclusive right to exploit the oil & gas minerals. Working interests are cost bearing.
[1-5-50...2-1-96; A, 7-15-96; Rn, 19 NMAC 15.A.7.1 through 7.84, 3-15-97; A, 7-15-99; 19.15.1.7 NMAC - Rn, 19 NMAC 15.A.7, 5-15-01]

EXHIBIT C to Order No. R-12011-B

19.15.2 ___ Pits and Below-Grade Tanks.

A. Permit Required. Discharge into, or construction of, any pit or below-grade tank is prohibited absent possession of a permit issued by the division, unless otherwise herein provided or unless the division grants an exemption pursuant to Subsection G of 19.15.2.53 NMAC. Facilities permitted by the division pursuant to Section 711 of 19.15.9 NMAC or Water Quality Control Commission regulations are exempt from Section 53 of 19.15.2 NMAC.

B. Application.

1. Where Filed; Application Form.

(a) Downstream Facilities. An operator shall apply to the division's environmental bureau for a permit to construct or use a pit or below-grade tank at a downstream facility such as a refinery, gas plant, compressor station, brine facility, service company, or surface waste management facility that is not permitted pursuant to Section 711 of 19.15.9 NMAC or Water Quality Control Commission regulations. The operator shall use a Form C-144, Application to Discharge Into A Pit or Below-Grade Tank. The operator may submit the form separately or as an attachment to an application for a discharge permit, best management practices permit, surface waste management facility permit, or other permit.

(b) Drilling or Production. An operator shall apply to the appropriate district office for a permit for use of a pit or below-grade tank in drilling, production, or operations not otherwise identified in Subparagraph (a) of 19.15.2.53.B.1 NMAC. The operator shall apply for the permit on the Application for Permit to Drill (form C-101) or on the Sundry Notices and Reports on Wells (form C-103), or electronically as otherwise provided in this Chapter. Approval of such form constitutes a permit for all pits and below-grade tanks annotated on the form. A separate form C-144 is not required.

2. General Permit; Individual Permit. An operator may apply for a permit to use an individual pit or below-grade tank, or may apply for a general permit applicable to a class of like facilities.

3. When Filed.

(a) New Pits or New Below-Grade Tanks. After April 15, 2004, operators shall obtain a permit before constructing a pit or below-grade tank.

(b) Existing Pits or Below-Grade Tanks. For each pit or below-grade tank in existence on April 15, 2004 that has not received an exemption after hearing as allowed by OCC Order R-3221 through R-3221D inclusive, the operator shall submit a notice not later than April 15, 2004 indicating either that use of the pit or below-grade tank will continue or that such pit or below grade tank will be closed. If use of a pit or below-grade tank is to be discontinued, discharge into the pit or use of the below-grade tank shall cease not later than June 30, 2005. If use of a pit or below-grade tank will continue, the operator shall file a permit application not later than September 30, 2004. If an operator files a timely, administratively complete application for continued use, use of the pit or below-grade tank may continue until the division acts upon the permit application.

C. Design, Construction, and Operational Standards.

1. In General. Pits, sumps and below-grade tanks shall be designed, constructed and operated so as to contain liquids and solids to prevent contamination of fresh water and protect public health and the environment.

2. Special Requirements for Pits.

(a) Location. No pit shall be located in any watercourse, lakebed, sinkhole, or playa lake. Pits adjacent to any such watercourse or depression shall be located safely above the ordinary high-water mark of such watercourse or depression. No pit shall be located in any wetland. The division may require additional protective measures for pits located in groundwater sensitive areas or wellhead protection areas.

(b) Liners.

(i) Drilling Pits, Workover Pits. Each drilling pit or workover pit shall contain, at a minimum, a single liner appropriate for conditions at the site. The liner shall be designed, constructed, and maintained so as to prevent the contamination of fresh water, and protect public health and the environment. Pits used to vent or flare gas during drilling or workover operations that are designed to allow liquids to drain to a separate pit do not require a liner.

(ii) Disposal or Storage Pits. Each disposal pit (including, but not limited to, any separator pit, tank drain pit, evaporation pit, blowdown pit used in production activities, pipeline drip pit, or production pit) and each storage pit (including any brine pit, salt water pit, fluid storage pit for an LPG system, or production pit) shall contain, at a minimum, a primary and a secondary liner appropriate to the conditions at the site. Liners shall be designed, constructed, and maintained so as to prevent the contamination of fresh water, and protect public health and the environment.

(iii) Alternative Liner Media. The division may approve liners that are not constructed in accordance with division guidelines only if the operator demonstrates to the division's satisfaction that the alternative liner protects fresh water, public health, and the environment as effectively as those prescribed in division guidelines.

(c) Leak Detection. A leak detection system shall be installed between the primary and secondary liner in each disposal or storage pit. The leak detection system shall be designed, installed, and operated so as to prevent the contamination of fresh water, and protect public health and the environment. The operator shall notify the division at least twenty-four hours prior to installation of the primary liner so a division representative may inspect the leak detection system before it is covered.

(d) Drilling and Workover Pits. Each drilling or workover pit shall be of an adequate size to assure that a supply of fluid is available and sufficient to confine oil, natural gas, or water within its native strata. Hydrocarbon-based drilling fluids shall be contained in tanks made of steel or other division-approved material.

(e) Disposal or Storage Pits. No measurable or visible layer of oil may be allowed to accumulate or remain anywhere on the surface of any pit. Spray evaporation systems shall be operated such that all spray-borne suspended or dissolved solids remain within the perimeter of the pond's lined portion.

(f) Fencing and Netting. All pits shall be fenced or enclosed to prevent access by livestock, and fences shall be maintained in good repair. Active drilling or workover pits may have a portion of the pit unfenced to facilitate operations. In issuing a permit, the division may impose additional fencing requirements for protection of wildlife in particular areas. All tanks exceeding 16

feet in diameter, exposed pits, and ponds shall be screened, netted, covered, or otherwise rendered non-hazardous to migratory birds. Drilling and workover pits are exempt from the netting requirement. Immediately after cessation of these operations such pits shall have any visible or measurable layer of oil removed from the surface. Upon written application, the division may grant an exception to screening, netting, or covering requirements upon a showing that an alternative method will adequately protect migratory birds or that the tank or pit is not hazardous to migratory birds.

(g) Unlined Pits.

(i) General Prohibition. After June 30, 2005 use of, or discharge into, any unlined pit that has not been previously permitted pursuant to Section 711 of 19.15.9 NMAC or Water Quality Control Commission regulations is prohibited, except as otherwise provided in Section 53 of 19.15.2 NMAC. After April 15, 2004, construction of unlined pits is prohibited unless otherwise provided in Section 53 of 19.15.2 NMAC.

(ii) Unlined Pits Exempted By Previous Order. An operator of an unlined pit existing on April 15, 2004 for which a previous exemption was received after hearing as allowed pursuant to Commission Orders No. R-3221 through R-3221D inclusive, shall not be required to reapply for an exemption pursuant to Subparagraph (g) of 19.15.2.53(C)2 NMAC provided the operator notifies the division, no later than April 15, 2004, of the existence of each unlined pit it believes is exempted by order, the location of the pit, and the nature and amount of any discharge into the pit. Such order shall constitute a permit for the purpose of Subparagraph (g) of 19.15.2.53(C)2 NMAC.. The division may terminate any such permit in accordance with paragraph (2) of 19.15.2.53(G) NMAC. Any pit constructed after April 15,2004 shall comply with the permitting, lining and other requirements of Section 53 of 19.15.2 NMAC, notwithstanding any previous order to the contrary.

(iii) Unlined pits shall be allowed in the following areas provided that the operator has submitted, and the division has approved, an application for permit as provided in Subsection 53 of 19.15.2 NMAC, and provided that the pit site is not located in fresh water-bearing alluvium or in a wellhead protection area:

TOWNSHIP 19 SOUTH, RANGE 30 EAST, NMPM Sections 8 through 36;
TOWNSHIP 20 SOUTH, RANGE 30 EAST, NMPM Sections 1 through 36;
TOWNSHIP 20 SOUTH, RANGE 31 EAST, NMPM Sections 1 through 36;
TOWNSHIP 20 SOUTH, RANGE 32 EAST, NMPM Sections 4 through 9,
Sections 16 through 21; and Sections 28 through 33;
TOWNSHIP 21 SOUTH, RANGE 29 EAST, NMPM Sections 1 through 36;
TOWNSHIP 21 SOUTH, RANGE 30 EAST, NMPM Sections 1 through 36;
TOWNSHIP 21 SOUTH, RANGE 31 EAST, NMPM Sections 1 through 36;
TOWNSHIP 22 SOUTH, RANGE 29 EAST, NMPM Sections 1 through 36;
TOWNSHIP 22 SOUTH, RANGE 30 EAST, NMPM Sections 1 through 36;
TOWNSHIP 23 SOUTH, RANGE 29 EAST, NMPM Sections 1 through 3,
Sections 10 through 15, Sections 22 through 27, and Sections 34 through 36;
TOWNSHIP 23 SOUTH, RANGE 30 EAST, NMPM Sections 1 through 19;

that area within San Juan, Rio Arriba, Sandoval, and McKinley Counties that is outside the valleys of the San Juan, Animas, Rio Grande, and La Plata Rivers, which are bounded by the topographic lines on either side of the rivers that are 100 vertical feet above the river channels, measured perpendicularly to the river channels, andis outside those areas that lie within 50 vertical feet, measured perpendicularly to the drainage channel, of all perennial and ephemeral creeks, canyons, washes, arroyos, and draws, and is outside the areas between the above-named rivers and the Highland Park Ditch, Hillside Thomas Ditch, Cunningham Ditch, Farmers Ditch, Halford

Independent Ditch, Citizens Ditch, or Hammond Ditch, provided that no protectable ground water is present or if present, will not be adversely affected; or

any area where the discharge into the pit meets New Mexico Water Quality Control Commission ground water standards.

3. Special Requirements for Below-grade Tanks. All below-grade tanks constructed after April 15, 2004 shall be constructed with secondary containment and leak detection. The operator of any below-grade tank constructed prior to April 15, 2004 shall test its integrity annually and shall promptly repair or replace any below-grade tank that does not demonstrate integrity. Any such below-grade tank shall be equipped with leak detection at the time of any major repair.

4. Sumps. Operators shall test the integrity of all sumps annually, and shall promptly repair or replace any sump that does not demonstrate integrity. Sumps that can be removed from their emplacements may be tested by visual inspection. Other sumps shall be tested by appropriate mechanical means.

D. *Emergency Actions.*

1. Permit Not Required. In an emergency an operator may construct a pit without a permit to contain fluids, solids, or wastes if an immediate danger to fresh water, public health, or the environment exists.

2. Construction Standards. A pit constructed in an emergency shall be constructed, to the extent possible given the emergency, in a manner that is consistent with the requirements of Section 53 of 19.15.2 NMAC and that prevents the contamination of fresh water, and protects public health and the environment.

3. Notice. The operator shall notify the appropriate district office as soon as possible (if possible before construction begins) of the need for construction of such a pit.

4. Use and Duration. The pit may be used only for the duration of the emergency. If the emergency lasts more than forty-eight (48) hours, the operator must seek approval from the division for continued use of the pit. All fluids, solids or wastes must be removed within 24 hours after cessation of use unless the division extends that time period.

5. "Emergency Pits." Subsection (D) of 19.15.2.53 NMAC shall not be construed to allow construction or use of so-called "emergency pits," which are pits constructed as a precautionary matter to contain a spill in the event of a release. Construction or use of any such pit shall require a permit issued pursuant to Subsection 53 of 19.15.2 NMAC unless the pit is described in a Spill Prevention, Control and Countermeasure (SPCC) plan required by the United States Environmental Protection Agency, all fluids are removed from the pit within 24 hours, and the operator has filed a notice of the location of the pit with the division.

E. Drilling Fluids and Drill Cuttings. Drilling fluids and drill cuttings shall either be recycled or be disposed of as approved by the division and in a manner to prevent the contamination of fresh water and protect public health and the environment. The operator shall describe the proposed disposal method in the Application for Permit to Drill (form C-101) or the Sundry Notices and Reports on Wells (form C-103).

F. Closure and Restoration.

1. Closure. Except as otherwise specified in Subsection 53 of 19.15.2 NMAC, a pit or below-grade tank shall be properly closed within six months after cessation of use. As a condition of

a permit, the division may require the operator to file a detailed closure plan before closure may commence. The division for good cause shown may grant a six-month extension of time to accomplish closure. Upon completion of closure a Closure Report (form C- 144), or Sundry Notices and Reports on Wells (form C-103) shall be submitted to the division. Where the pit's contents will likely migrate and cause ground water or surface water to exceed Water Quality Control Commission standards, the pit's contents and the liner shall be removed and disposed of in a manner approved by the division.

2. Surface Restoration. Within one year of the completion of closure of a pit, the operator shall contour the surface where the pit was located to prevent erosion and ponding of rainwater.

G. Exemptions; Additional Conditions.

1. The division may attach additional conditions to any permit upon a finding that such conditions are necessary to prevent the contamination of fresh water, or to protect public health or the environment.

2. The division may grant an exemption from any requirement if the operator demonstrates that the granting of such exemption will not endanger fresh water, public health or the environment. The division may revoke any such exemption after notice to the operator of the pit and opportunity for a hearing if the Division determines that such action is necessary to prevent the contamination of fresh water, or to protect public health or the environment.

3. Exemptions may be granted administratively without hearing provided that the operator gives notice to the surface owner of record where the pit is to be located and to such other persons as the division may direct and (a) written waivers are obtained from all persons to whom notice is required, or (b) no objection is received by the division within 30 days of the time notice is given. If any objection is received and the director determines that the objection has technical merit or that there is significant public interest the director shall set the application for hearing. The director, however, may set any application for hearing.