

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

2017 JUN -6 10:10 AM

**CASE NO. 15487**

**APPLICATION OF THE NEW MEXICO OIL CONSERVATION DIVISION  
THROUGH THE SUPERVISOR OF DISTRICT II FOR AN EMERGENCY ORDER  
SUSPENDING CERTAIN APPROVED APPLICATIONS FOR PERMITS TO DRILL,  
AND FOR ADOPTION OF A SPECIAL RULE FOR DRILLING IN CERTAIN AREAS  
FOR THE PROTECTION OF FRESH WATER, CHAVES AND EDDY COUNTIES,  
NEW MEXICO**

**OIL CONSERVATION DIVISION'S CLOSING STATEMENT ON REHEARING**

Pursuant to the direction of the Commission, the Oil Conservation Division ("OCD") files this written statement in lieu of presenting a summation at the May 18, 2017, Commission hearing on the joint motion for rehearing filed by other parties in this matter.

1. The Commission heard this rulemaking case on December 5 through 7, 2016, and entered its Order No. R-14164-D on February 8, 2017, adopting a new Rule designated 19.15.39.11 NMAC ("the Commission Rule").

2. Pecos Valley Artesian Conservancy District, EOG Y Resources, Inc., Lime Rock Resources II-A, L.P., COG Operating, Fasken Oil and Ranch, Ltd., OXY USA Inc., Mack Energy Corporation, Devon Energy Production Company, L.P. and the Independent Petroleum Association of New Mexico (hereinafter collectively called "Movants") filed a joint motion for rehearing ("the Joint Motion"), which the Director granted, and the Commission set the issues raised in the Joint Motion for hearing on May 18, 2017 ("the Rehearing").

3. The Joint Motion raises two issues: (a) that the Commission erred by including in the Designated Area to which the Commission Rule applies the area of the Roswell Artesian Basin

underlain by the artesian aquifer only; and (b) that 19.15.16.39.11(C)(2) NMAC as adopted by the Commission is ambiguous regarding the prescribed location for setting surface casing in some situations.

#### The Designated Area

4 The movants contend that the Designated Area should have been limited to the area underlain by both the valley fill and the artesian aquifers. In support, Movants presented testimony that the “goal” of this application was to prevent communication between the two aquifers. However, that testimony did not come from OCD, and OCD, as the applicant, is the only party that could directly address the application’s goal.

5. OCD’s pleadings demonstrate that it has had two goals throughout this case: prevention of communication between the aquifers and protection of the artesian aquifer.

6. OCD’s Fifth Amended Application specifically identifies these two goals in Paragraph [5]:

The intended effect of the proposed rule is to require two strings of surface protection casing in any well drilled through both the artesian aquifer and the shallow aquifer in the Roswell artesian basin, *and that surface protection casing be set below the artesian aquifer and cemented to surface in any well drilled into or through that aquifer*, subject to such exceptions as may be approved for specific wells. [emphasis added]

7. The Commission Rule for setting casing in wells that penetrate only the artesian aquifer is not merely duplicative of statewide Rule 19.15.16.10(B) NMAC. The statewide rule provides only that water zones shall be isolated, not how they shall be isolated. The Commission Rule prescribes that a particular, identified fresh water zone (the artesian aquifer) must be isolated in a particular manner (by setting surface casing 50 feet below its base). Thus, the statewide rule does not obviate the need for the Commission Rule to apply wherever the artesian aquifer is found.

Ambiguity of 19.15.39.11(C)(2) of the Commission Rule

8. All parties agree that Paragraph (C)(2) of the Commission Rule is ambiguous. The issue is how to fix it.

9. OCD objects to the Commission Rule's language because, if read literally, it would allow the operator to set surface casing above the first show of hydrocarbons, in lieu of casing off the artesian aquifer anywhere in the basin.

10. The Movants proposed to replace the first grammatical paragraph of Paragraph (C)(2) ("Movants' Proposed Language) as follows:

The operator shall set a surface casing string 50 feet below the base of the artesian aquifer and circulate cement to the surface. In areas of known hydrocarbon shows or production from the confining unit or the artesian aquifer, the operator shall set a surface casing string not more than 50 feet above the first show of hydrocarbons on a mud log and circulate cement to the surface.

11. The Movants' Proposed Language makes clear that any option to set a shallower casing above the first show of hydrocarbons in lieu of casing through the artesian aquifer would apply only in "areas of known hydrocarbon shows or production from the confining unit or the artesian aquifer." However, it is not clear whether the shallower casing the second sentence requires in such areas is in lieu of, or in addition to, the casing required below the artesian. If it means the former, OCD would have no objection.

12. Lime Rock Resources II-A, L.P. ("Lime Rock") proposes that the Commission adopt the Movants' Proposed Language in modified form that unambiguously requires only one casing string (above the artesian aquifer) in areas of shallow hydrocarbon shows.

13. OCD urges that if only one casing string is required, it should be set below the base of the artesian aquifer wherever that aquifer is present and protectible, even if there are known hydrocarbon zones in the shallower confining layer. The evidence at the first hearing indicated

that the danger of fluids from the well entering the shallow aquifer during drilling through the confining layer would be limited by the short drilling time, use of fresh water mud and adequate mud weight. The Commission found this evidence sufficient to obviate any need to require two surface casing strings generally. The same considerations would arguably limit the danger of hydrocarbon intrusion into the shallow aquifer while drilling. Both aquifers would be protected by the deeper surface casing after the casing is set at the base of the artesian. If, however, the only surface casing is set above the artesian, as Lime Rock proposes, the artesian aquifer would be exposed for the longer time period necessary to drill to the target formation, and possibly to brine mud or water from waterflood operations in that depth interval.

14. At the rehearing, Mr. Maxey, Lime Rock's witness, testified that in their wells in the eastern part of the basin they had encountered continuous hydrocarbon shows from the confining layer through the San Andres Formation, spanning across the depth interval that includes the artesian aquifer. However, both Mr. Perry and Mr. Goetze testified that the presence of continuous hydrocarbon shows did not rule out the possibility of protectible waters in the artesian aquifer.

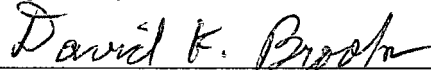
15. The uncontradicted evidence established that producing water wells exist in the area of concern, although Mr. Perry's and Mr. Maxey's testimony (both based on their examination of certain State Engineer records) suggested different conclusions as to whether these wells are producing from the artesian or the shallow aquifer. However, even if the Commission accepts the inferences suggested by Mr. Maxey's testimony, it would only show absence of existing water production from the artesian in a specific, limited area, and would not warrant the further inference of that the artesian in areas of shallow hydrocarbon shows are categorically not protectible. Absence of evidence is not evidence of absence.

16. For the foregoing reasons, OCD urges the Commission to require that surface casing be set 50 feet below the base of the artesian aquifer throughout the Designated Area except at locations where there is sufficient evidence to indicate that the artesian aquifer is not present or not protectible. Determination of the location of the base of the artesian aquifer, and whether its waters are protectible, should be left to the District Supervisor based on evaluation of evidence furnished by the operator.

17. Attached hereto as Exhibit A is proposed revised language that OCD recommends for Paragraphs (C)(2) and Subsection (D) of 19.15.39.11 NMAC.

18. In the revised draft, we propose to leave the determination of the base of the artesian aquifer to the operator's and district supervisor's discretion. We do not believe the Commission has sufficient evidence in the present record to define the appropriate depth more precisely, and presentation of additional evidence would require re-opening the record.

Respectfully Submitted,

A handwritten signature in cursive script, reading "David K. Brooks", is written over a horizontal line.

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Certificate of Service

I hereby certify that the above pleading was served on the following parties by electronic mail on March 10, 2017

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**Case No. 15487**

**EXHIBIT "A" to Oil Conservations Division's Closing Statement on Rehearing**

OCD's Proposed 19.15.39.11.C(2), June 6, 2017 draft

Revisions to draft considered at May 18, 2017, hearing are shown in red font.

(2) The operator shall set a surface casing string, at a minimum, 50 feet below the base of the artesian ~~(deepest)~~ aquifer, provided that:

(a) In areas ~~without the occurrence of where~~ the artesian aquifer ~~is not present at depth~~, or if the well will not be drilled through the artesian aquifer, the hole shall be drilled to the first show of hydrocarbons on a mudlog, and the surface casing set no more than 50 feet above the first show.

(b) ~~If the base of the artesian aquifer is not otherwise identified, the surface casing shall be set no more than 50 feet above the first show of hydrocarbons in the San Andres formation that occurs below the presumed depth of the artesian aquifer.~~ In areas where the artesian aquifer is present, and the well will be drilled through the artesian aquifer, the operator shall determine the depth for setting of the surface casing string with the concurrence of the district supervisor of the division's Artesia district office. The operator, in its proposed casing program, shall identify the criteria utilized to locate the base of the artesian aquifer and the information supporting those criteria.

(c) The operator shall circulate to surface the cement for the surface casing covering all aquifers ~~including designing for excess volumes and using, if necessary, cement diverter tools, squeeze operations, tremie cementing, or other standard methods to ensure proper cementing of this casing string.~~

(d) ~~(a)~~ If the cement is not circulated to the surface, the operator shall furnish a cement bond log to the division's Artesia district office, and shall not proceed with drilling until the division approves the cementing.

(e) ~~(b)~~ If the operator encounters significant loss of circulation during drilling within an aquifer, the operator shall immediately notify the division's Artesia district office.

(f) ~~(e)~~ If the operator observes significant inflow of fresh water into the mud pit, the operator shall immediately notify the division's Artesia district office.

OCD's Proposed 19.15.39.11.D, June 6, 2017 draft

**D.** District supervisor discretion. Notwithstanding Subsection C of 19.15.39.11 NMAC, the district supervisor of the division's Artesia district office may:



(1) require a modification of a casing program that provides for an additional water-protection casing string, if the district supervisor finds that the proposed casing program is not reasonably sufficient to prevent fluid movement into or out of the well bore from or to aquifers in the designated area; or

(2) approve a casing program that allows for the setting of the shoe for the water-protection casing string at a different depth than required in Paragraph (2) of Subsection C of 19.15.39.11 NMAC if the district supervisor finds, based on information and data provided by the operator, that the proposed casing program will adequately protect all fresh water formations the well can reasonably be expected to encounter; and

(3) in either case, ~~the district supervisor may attach such conditions of approval as, in his or her judgment,~~ in the district supervisor's judgment, are reasonably necessary to prevent such fluid movement.

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