

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

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

**CASE NO. 14554
ORDER NO. R-13350**

**APPLICATION OF MEWBOURNE OIL
COMPANY TO ABOLISH THE SEVEN
RIVERS-YESO POOL AND CEMETERY-
YESO POOL AND EXPAND THE NORTH
SEVEN RIVERS-GLORIETA-YESO POOL,
AND TO ESTABLISH SPECIAL RULES AND
REGULATIONS FOR THE NORTH SEVEN
RIVERS- GLORIETA-YESO POOL, EDDY
COUNTY, NEW MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a.m. on October 28, 2010, at Santa Fe, New Mexico, before Examiner David K. Brooks.

NOW, on this 18th day of January, 2011, the Division Director, having considered the testimony, the record and the recommendations of the Examiner,

FINDS THAT:

- (1) Due notice has been given, and the Division has jurisdiction of the subject matter of this case.
- (2) By this application, Mewbourne Oil Company ("Applicant") seeks an order consolidating the presently designated Cemetery-Yeso Pool (11795), Seven Rivers-Yeso Pool (55670) and North Seven Rivers-Glorieta-Yeso Pool (97565) into an expanded North Seven Rivers-Glorieta-Yeso Pool, and establishing special pool rules for the expanded North Seven Rivers-Glorieta-Yeso Pool providing for oil allowables in excess of the standard depth bracket allowable applicable to such pool pursuant to statewide Rule 20.12.

(3) The Seven Rivers-Yeso Pool was established by Order No. R-7076, issued on September 27, 1982. Its present horizontal boundaries include the following lands:

Township 19 South, Range 25 East

Section 26: NW/4
Section 27: E/2
Section 34: All

(4) The Cemetery-Yeso Pool was established by Order No. R-7372, issued on October 12, 1983. Its present horizontal boundaries include the following lands:

Township 20 South, Range 25 East

Section 11: SE/4

(5) The North Seven Rivers-Glorieta-Yeso Pool was established by Order No. R-12699, issued on January 18, 2007. Its present horizontal boundaries include the following lands:

Township 19 South, Range 25 East

Section 22: All
Section 27: NW/4

(6) Numerous wells have been completed in the Glorieta and Yeso formations, within and in the vicinity of these pools, by Applicant and other operators. Most of these wells have been vertical wells. However, recent development has trended toward one-half mile to one-mile horizontal wells traversing two to four spacing units within the formation.

(7) The recently drilled horizontal Yeso wells in this vicinity have proven significantly more productive than the older vertical wells. In several instances horizontal wells have demonstrated capability to produce at rates substantially exceeding the depth bracket allowables applicable to their project areas.

(8) Applicant appeared at the hearing through counsel and presented geologic and engineering testimony and exhibits as follows:

(a) The Yeso interval is a thick dolomite that is stratigraphically continuous throughout the area including the three pools that are the subject of this proceeding. The Glorieta overlies the Yeso throughout the area but is less productive.

(b) The Yeso dolomite is characterized by extremely low permeability, in the range of 0.01 millidarcies to 1 millidarcy; in most places below 0.1 millidarcies.

(c) Due to low permeability, vertical wells typically drain no more than 10 to 20 acres in this reservoir. Horizontal wells with closely spaced fracture stimulations can substantially increase the percentage of recovery from each spacing unit.

(d) Recently drilled horizontal wells have demonstrated capability to produce substantially in excess of the applicable depth bracket allowable (80 barrels of oil per day, per 40-acre unit). These wells have been produced at their deliverability rates pursuant to test allowables, but after the test allowable time expired, production has been restricted to conform to existing depth-bracket allowables.

(e) Comparison of production graphs of highly productive horizontal wells with production graphs of vertical wells on adjoining spacing units for the same time interval does not indicate any effect on the vertical wells, either from the unrestricted production of the horizontals during the test period, or from the subsequent reduction.

(f) One recently drilled horizontal was drilled through spacing units that included existing vertical wells that were largely depleted. This horizontal, however, produced at comparable rates to other horizontals, and no effect was observed either in the horizontal well or in the verticals in the same units.

(g) Based on these observations and low permeability of the reservoir, the highly productive horizontal wells can be expected to substantially increase the ultimate percentage of recovery from each unit but are unlikely to cause significant drainage from offsetting units.

(h) This is a solution gas reservoir. Solution gas reservoirs generally are not adversely affected by high production rates, especially if the permeability of the reservoir is low.

(i) Due to the presence of Hydrogen sulfide (H₂S) in these wells, restriction of production causes problems of corrosion and scaling.

(j) Applicant is requesting that the applicable allowable be increased to 240 barrels of oil per day, per 40-acre unit, and that the increased allowable be made retroactive to first production so that it will not be necessary to restrict production from existing wells to make up past overproduction.

(9) Echo Production, Inc. and COG Operating, LLC, operators of Yeso wells in the vicinity of the subject pools, submitted letters supporting this Application.

(10) Nearburg Producing Company (Nearburg), also an operator of wells in the vicinity, appeared at the hearing through counsel, and presented engineering testimony and exhibits in opposition to the Application, as follows:

(a) There are two production trends within the area encompassing the subject pools. In the northwestern part of this area production is mostly from the Glorieta and upper Yeso. In the southeastern part, production is from the middle Yeso, which is the zone in which recent horizontal wells have been drilled.

(b) No bottomhole pressures have been reported from recently drilled wells in this area.

(c) The gas/oil ratios (GORs) in some of the recently drilled wells have shown a tendency to increase at higher production rates, and decrease when production has been restricted, indicating the possibility of localized gas break outs.

(d) In the opinion of the Nearburg witness, not enough data is available at this time to determine if increased allowables for this reservoir will cause reservoir damage or cross-boundary drainage.

(e) Nearburg does not oppose consolidation of the three existing pools or expansion of the North Seven Rivers-Glorieta-Yeso Pool, but requests that all of Section 3, Township 20 South, Range 25 East be included in the expanded pool, because Nearburg is currently drilling a horizontal well in the E/2 E/2 of Section 3 that will cross the pool boundary proposed by Applicant.

The Division concludes that:

(11) All of the witnesses concur that the area encompassing the three pools that are the subject of this application is a stratigraphically continuous structure and that it is a solution-gas drive reservoir characterized by extremely low permeability.

(12) In a solution-gas drive reservoir, high production rates are unlikely to cause reservoir damage, particularly in a low-permeability environment.

(13) The graphs showing production rates versus GOR, offered in evidence by Nearburg, do not show a uniform pattern. Only in the case of the Limousine 15 CD Well No. 1 (Nearburg Ex. 2) is the correlation between production rates and GORs pronounced. The Grave Digger State Com. Well No. 1H (Nearburg Ex. 3) shows a more or less constant GOR despite reduced production. The GORs for the Moose Federal Com. Well No. 7H (Nearburg Ex. 4) and the Moose Federal Com. Well No. 6H (Nearburg Ex. 5) appear to have increased with increasing production but not to have been significantly affected by reduced production. The GOR graph for the Moose Federal Well No. 4H (Nearburg Ex. 6) does not correlate well with production history. In the case of the Moose Federal Well No. 5H (Nearburg Ex. 7), GOR has generally increased despite declining production.

(14) The overall variation of GORs in the wells shown is not great, with the highest reported GORs (except in the case of the Moose Federal Well No. 4-H), slightly above 1,000.

(15) These data do not indicate a probability that increased allowables would result in reservoir damage that would cause waste.

(16) There is evidence that restricting the production of wells to their existing depth-bracket allowables could shorten the useful life of the wells, thereby causing waste.

(17) The ability to produce these costly horizontal wells at their full potential during the early term may result in additional drilling and increased reservoir recovery, thereby preventing waste.

(18) Applicant's evidence indicates that offsetting vertical wells are not affected by production from highly productive horizontal wells, indicating that increased allowables will not adversely affect correlative rights.

(19) Accordingly, this Application should be granted, abolishing the Seven Rivers- Yeso and Cemetery-Yeso Pools, expanding the North Seven Rivers-Glorieta-Yeso Pool, and adopting temporary special rules, applicable for a period of one year, for the expanded North Seven Rivers-Glorieta-Yeso pool, increasing the depth-bracket allowable to 240 barrels per day, per 40-acre unit.

(20) In addition to the expansion of the North Seven Rivers-Yeso Pool requested by Applicant, that pool should include all of Section 3, Township 20 South, Range 25 East; because Nearburg is presently drilling a horizontal well across that. In addition, it should include the E/2 of Section 6 of said township and range so that the pool will remain contiguous.

(21) This matter should be set for further consideration at the first examiner hearing to be held by the Oil Conservation Division in 2012, at which time Applicant will have the opportunity to demonstrate why these temporary special pool rules should be made permanent.

IT IS THEREFORE ORDERED THAT:

(1) The Seven Rivers-Yeso Pool (55670) and the Cemetery-Yeso Pool (11795) are hereby abolished.

(2) The horizontal boundaries of the North Seven Rivers-Glorieta-Yeso Pool (97565) are hereby expanded to include the following lands:

Township 19 South, Range 24 East
Section 36: SE/4

Township 19 South, Range 25 East

Section 15: SW/4
Section 16: NE/4
Section 22: All
Section 23: S/2
Section 24: W/2
Section 26: W/2
Section 27: All
Section 31: SW/4
Section 34: All
Section 35: All

Township 20 South, Range 25 East

Section 2: W/2
Section 3: All
Section 4: S/2
Section 5: S/2
Section 6: E/2
Section 7: NE/4
Section 9: All
Section 10: All
Section 11: SE/4
Section 14: W/2
Section 15: All
Section 22: NW/4

(3) The following temporary special rules are adopted for the North Seven Rivers- Glorieta-Yeso Pool:

TEMPORARY SPECIAL RULES FOR THE NORTH SEVEN RIVERS- GLORIETA-YESO POOL:

Rule 1: Any well completed in the Glorieta or Yeso formation within the horizontal boundaries of the North Seven Rivers-Glorieta-Yeso Pool, or within one mile of the outer boundaries of said pool and not within, or closer to, another Glorieta or Yeso pool, shall be governed by these special rules.

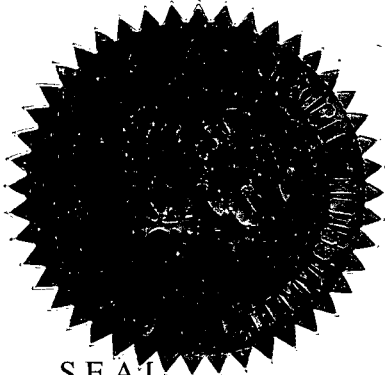
Rule 2: The applicable depth-bracket allowable for Glorieta and Yeso production from units or project areas dedicated to wells described in Rule 1 shall be 240 barrels of oil per day, per standard 40-acre unit. This rule shall be effective retroactively from the date of first production of the first well completed in the Glorieta or Yeso formation in each unit.

Rule 3: In all other respects such wells remain subject to statewide rules.

Rule 4: These temporary special rules shall expire one year from the date this Order is issued, unless Applicant appears before a division examiner and demonstrates that such rules should be made permanent.

(4) Jurisdiction of this case is retained for the entry of such further orders as the Division may deem necessary.

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



SEAL

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

A handwritten signature in black ink, appearing to read "Daniel Sanchez", followed by a long horizontal line extending to the right.

DANIEL SANCHEZ
Acting Director