

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

CASE NO 13609  
ORDER NO. R-3127-B

IN THE MATTER OF THE APPLICATION OF MACK  
ENERGY CORPORATION FOR AN AMENDMENT TO  
ORDER NO. R-3127-A EXTENDING THE VERTICAL  
LIMITS OF THE GRAYBURG-JACKSON WEST  
COOPERATIVE UNIT AND FOR THE EXPANSION  
OF INJECTION OPERATIONS, EDDY COUNTY,  
NEW MEXICO.

**ORDER OF THE DIVISION**

**BY THE DIVISION:**

This case came on for hearing at 8:15 a.m. on April 13, 2006, at Santa Fe, New Mexico, before Examiner, David K. Brooks.

NOW, on this 13<sup>th</sup> day of June, 2006, the Division Director, having considered the testimony, the record and the recommendations of the Examiner.

**FINDS THAT:**

(1) Due public notice has been given, and the Division has jurisdiction of this case and its subject matter.

(2) Cases 13608 and 13609 were consolidated for hearing. However, separate orders will be entered in the two cases.

(3) In this Case No. 13609 Mack Energy Corporation (Mack) seeks an order approving an amendment to the Grayburg-Jackson West Cooperative Unit to extend the vertical limits of the Unitized Formation to include all formations from the top of the Seven Rivers formation to the base of the Glorieta-Yeso (Paddock) formation. Applicant also seeks approval in principal to expand injection operations for purposes of secondary recovery to include the expanded vertical limits of the Unitized Formation.

(4) Mack is acting as operator in fact of the Grayburg-Jackson West Cooperative Unit on behalf of its affiliate, COG Operating, LLC, which is the record operator of the unit.

NMOCD CASE NO. 13848  
JANUARY 4, 2007  
COG OPERATING LLC  
EXHIBIT NO. 6

---

(5) The Grayburg-Jackson West Cooperative Unit is a voluntary unit including State and fee lands. This Unit was created by agreement of the parties dated June 22, 1966, approved by the Land Commissioner on September 28, 1966, and approved by the Division in Order No. R-3127, entered in Case No. 3468 on October 4, 1966. The Unit Area was expanded by amendment approved by the Division in Order No. R-3127-A, entered in Case No. 3728 on March 4, 1968.

(6) The Unitized Formation, as defined in the Unit Agreement, is the Grayburg-San Andres formation

(7) By Second Amendment to the Grayburg-Jackson West Cooperative Unit Agreement, executed by the parties on December 15, 2005 (Second Amendment), Mack proposes to extend the vertical limits of the Unitized Formation to include all formations from the top of the Seven Rivers formation to the base of the Glorieta-Yeso (Paddock) formation. Mack presented testimony to the effect that all working and royalty interest owners within the Unit, except for the State Land Office, joined in or ratified the Second Amendment. The Land Commissioner gave preliminary approval to the Second Amendment by letter dated May 24, 2006.

(8) Other than the expansion of the vertical limits of the Unitized Formation, the Second Amendment proposes no change in the Unit Agreement.

(9) The Seven Rivers, Queen and Grayburg-San Andres formations within the Grayburg-Jackson West Cooperative Unit Area are contained within the Grayburg-Jackson Pool. The Yeso/Paddock formation within a portion of the Unit Area is contained within the East Empire-Yeso Pool. In companion Case No. 13608, Mack seeks an order contracting the horizontal boundaries of the East Empire-Yeso Pool to delete the portions thereof within the Unit Area, and expanding the vertical limits of the Grayburg-Jackson Pool within the Unit Area to include the Yeso/Paddock interval.

(10) Mack presented testimony to the effect that:

(a) The Grayburg Jackson Pool is productive throughout the Unit Area.

(b) The Yeso/Paddock interval has not been tested or developed within the Unit Area. However, Mack expects that interval will be productive.

(c) Mack plans to drill approximately 145 additional wells within the Unit Area in the next several years. Where it believes that the Yeso/Paddock interval is likely to be productive, it will drill or deepen its Grayburg/ San Andres wells to test this formation. The feasibility of conducting secondary recovery operations within the Yeso/Paddock interval will be evaluated, tested and implemented on an ongoing basis as development occurs.

---

(d) The Grayburg/San Andres and the Yeso/Paddock formation within the Unit Area would be most efficiently managed as a single common source of supply.

(11) Approval of the Second Amendment will allow economic primary and secondary recovery of oil and gas reserves from the Yeso/Paddock interval that may otherwise not be recovered, thereby preventing waste, and will not impair correlative rights.

(12) That portion of the application in this case that seeks approval for secondary recovery operations (injection wells) in the Yeso/Paddock interval is, however, premature. There has been no development of that interval in the Unit Area, and Mack presented testimony that it does not contemplate secondary recovery operations in that interval until after further development. Accordingly, the Division cannot now make the required findings to support an order authorizing such operations.

(13) Division Rules 711.F and 711.G permit the expansion of secondary recovery project areas and permitting of additional injection wells by administrative order. Accordingly, Mack's application for authority to conduct secondary recovery operations within the expanded Unit Formation should be denied without prejudice to future applications for such expansion either by hearing order or administrative order.

**IT IS THEREFORE ORDERED THAT:**

(1) The application of Mack Energy Corporation for approval of the Second Amendment to the Unit Agreement for the Grayburg-Jackson West Cooperative Unit to extend the vertical limits of the Unitized Formation to include all formations from the top of the Seven Rivers formation to the base of the Glorieta-Yeso (Paddock) formation is granted.

(2) The Unitized Formation of the Grayburg-Jackson West Cooperative Unit is hereby extended to include all formations from the top of the Seven Rivers to the base of the Glorieta-Yeso (Paddock) formation, being those depths from 1,116 feet to 4,636 feet below the Kelly Bushing as shown on the Schlumberger Platform Express Three Detector Litho-Density Compensated Neutron/HNGS Log of the Diamondbacks State No. 1 Well, located 2040 feet from the North line and 2140 feet from the East line of Section 28, Township 17 South, Range 29 East, NMPM, Eddy County, New Mexico.

(3) That portion of the application of Mack Energy Corporation seeking authority to conduct secondary recovery operations within the expanded Unit Formation should be denied without prejudice as to future applications for such expansion either by hearing order or administrative order.

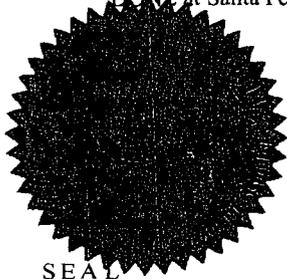
(4) All provisions of Orders No. R-3127 and R-3127-A, and of any other hearing or administrative orders of the Division authorizing secondary recovery operations within the Grayburg-Jackson West Cooperative Unit shall remain in full force

---

and effect in accordance with their terms; provided that extension of the injection interval of any injection well to include any part of the expanded Unit Formation as provided in this order shall require administrative approval as provided in Ordering paragraph (3).

(5) 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.



STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

MARK E. FESMIRE, P.E.  
Director