

**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:**

**APPLICATION OF COG OPERATING, LLC FOR THE CREATION OF A NEW
POOL, SPECIAL POOL RULES AND CONTRACTION OF THE GRAYBURG
JACKSON YESO POOL WITHIN THE DODD FEDERAL UNIT, EDDY
COUNTY, NEW MEXICO**

**CASE NO. 14669
ORDER NO. R-12256-A**

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a.m. on June 23, 2011 and again on September 29, 2011, at Santa Fe, New Mexico before Examiner William V. Jones.

NOW, on this 25th day of January, 2012, 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) COG Operating, LLC ("Concho") seeks:
 - a. To create a Glorieta-Yeso formation oil pool limited to the horizontal and [lower] vertical limits of the Dodd Federal Unit ("Dodd Unit") extending from the top of the Glorieta formation to the top of the Tubb formation;
 - b. Concurrent vertical contraction of the Grayburg Jackson-Yeso Pool within the Dodd Unit, redefining the lower extent of that pool to be at the top of the Glorieta formation; and
 - c. Special Rules for the newly created Glorieta-Yeso pool allowing a depth bracket allowable of 300 barrels of oil per day and no limiting gas-oil ratio.

(3) The nomenclature (pool contraction and creation) portion of this Case No. 14670 (as well as Case No. 14669) was presented by Concho at the June 23rd hearing and both cases were then continued to await resolution of related Division Case No. 14613 and De Novo Case No. 14577. The results of De Novo Case No. 14577 are detailed in the findings of companion Case No. 14670.

(4) On September 8, 2011, the Division issued Order No. R-13382-E in Case No. 14613 granting the applicant's request to combine numerous Yeso formation pools into a new pool called the Mar Loco-Glorieta-Yeso Pool (which does not include acreage under the Burch-Keely or Dodd Units) and in addition created Special Pool Rules for this new Yeso formation pool granting an increased depth bracket allowable and limiting gas oil ratio. Case No. 14613 has since been taken De Novo to the Oil Conservation Commission where it is pending.

(5) On September 29, Concho presented further evidence to support requested increase in the oil and gas allowable for production from the Upper Yeso formation. At the conclusion of that hearing, the Division took Case Nos. 14669 and 14670 under advisement. A separate order is being issued to resolve the issue of the requested increase in allowable.

(6) Concho is the designated operator of the Dodd Unit which consists of the following acreage:

TOWNSHIP 17 SOUTH, RANGE 29 EAST, NMPM

Section 10:	E/2, E/2 W/2
Section 11:	All
Section 14:	All
Section 15:	E/2
Section 22:	SE/4, SE/4 SW/4, E/2 NE/4, SW/4 NE/4

(7) The Division by Order No. R-3013, dated December 3, 1965, authorized waterflood operations into the Grayburg formation within portions of this [Dodd Unit] area.

(8) Order No. R-12228 issued in Case No. 13350 on November 1, 2004 approved the statutory unitization of the Dodd Federal Unit for purposes of conducting secondary recovery operations in the Grayburg Jackson and East Empire-Yeso Pools.

(9) As per testimony and the Dodd Unit Agreement presented in Case No. 13350, the unitized interval within the Unit Area comprises that interval from the top of the Seven Rivers formation to the base of the Yeso/Paddock formation or 5000 feet beneath the surface, whichever is less, as reflected on the Spectral Density Dual Spaced Neutron Log for the Mary Dodd "B" Deep Federal Well No. 2 (API No. 30-015-31041) located 1980 feet from the North line (incorrectly stated in the Unit Agreement as "from

the South line”) and 1295 feet from the East line, Unit H of Section 14, Township 17 South, Range 29 East, NMPM.

(10) The aforementioned Spectral Density Dual Spaced Neutron Log was presented in Case No. 13350 with formation tops picked and noted on the log. The Glorieta formation top is noted at 4013 feet and the Yeso/Paddock formation top is noted at 4097 feet. The top of the Blinbry formation (base of the Paddock) or the top of the Tubb formation were NOT noted on that log or specified in the Dodd Unit Agreement or defined in testimony of Case No. 13350.

(11) Order No. R-12256 issued in Case No. 13386 (nomenclature) on January 3, 2005 granted the following proposed pool changes:

- a. horizontally contracted the East Empire-Yeso Pool, removing it from any lands within the Dodd Unit;
- b. expanded the Grayburg Jackson Pool to cover additional lands within the Dodd Unit;
- c. vertically extended the Grayburg Jackson Pool within the Dodd Unit to include the Glorieta and Yeso/Paddock formations; and
- d. renamed the Grayburg Jackson Pool within the Dodd Unit to the Grayburg Jackson-Yeso Pool (although the Division never assigned a separate Pool Number).

(12) Order No. R-12255 issued in companion Case No. 13385 on January 3, 2005, allows waterflood operations within the Dodd Unit Area, creating the Dodd Federal Unit Waterflood Project. The Seven Rivers, Queen, Grayburg, San Andres, and Yeso/Paddock formations were all approved for waterflooding.

(13) The Grayburg Jackson Pool (Pool Code 28509) was created by Division Order No. 850, dated January 1, 1950, and has since been vertically expanded to include the Seven Rivers and Lower San Andres formations and laterally expanded to include portions of seven townships. The current extent of said pool is specifically identified in Concho's application in this case.

(14) The Grayburg Jackson Pool in most areas extends vertically from the top of the Seven Rivers formation to the base of the San Andres formation (top of the Glorieta formation). However, within the Dodd Unit, the Burch-Keely Unit, and the Grayburg Jackson West Coop Unit, the depth of the Grayburg Jackson Pool has been extended into the Yeso formation. The portion of the Grayburg Jackson Pool within the Grayburg-Jackson West Cooperative Unit has pool code 97558, while the original, larger Grayburg Jackson Pool uses pool code 28509.

(15) In support of the request to create a separate Yeso formation pool within the Dodd Unit, Concho presented the following testimony:

a. The Glorieta formation is an easy marker to pick off electric logs, it is not too thick in this area, is low permeability, non-productive and provides a natural vertical barrier between production from the San Andres formation and production from the Upper Yeso formation.

b. The 5000 foot lower limit of the proposed Yeso pool is an ownership barrier and not related to production or reservoir issues.

c. The Yeso formation is almost completely a dolomite while the San Andres formation has lenses of both dolomite and limestone.

d. The oil production from the Paddock formation is higher in gravity than the oil production from the San Andres formation.

e. The Division Rules limit well density to four wells per 40 acres, making it logical and necessary to separate the reservoirs into separately named and regulated pools.

f. The Upper Yeso formation has been defined by development within portions of the Dodd Unit.

(16) Following Division Rules, Concho provided notice to all Division designated operators in the Grayburg Jackson Pool and to all operators of wells completed within any formation (included in that pool) within one mile of the pool boundary.

(17) Cimarex Energy Co. entered an appearance in this case. No other party appeared or otherwise opposed this application.

(18) Concho in its application requested a new pool extending to the top of the Tubb formation which would be the base of the Yeso formation. However, in the presentation at the hearings, Concho asked for the new Glorieta-Yeso pool to be limited to the vertical extent of the Dodd Unit.

(19) Since in the definition of the Unitized Interval of the Dodd Unit, the base of the Yeso/Paddock formation is NOT defined, the 5000 feet (from ground level) depth limitation should be used for practical purposes as the bottom of the Dodd Unit.

(20) It was not clear from the evidence presented which member of the Yeso formation (Paddock, Blinebry, Tubb, or Drinkard) exists at 5000 feet beneath the area of the Dodd Unit although it was implied that 5000 feet would be into either the "Yeso/Paddock" or the Blinebry members.

(21) The Paddock and Blinebry members are considered by Division geologists to constitute the "Upper Yeso" formation.

(22) The Grayburg Jackson-Yeso Pool as defined in Order No. R-12256 should be abolished and all well completions within the Dodd Unit area extending vertically from the top of the Seven Rivers formation down to the top of the Glorieta formation should be included in the existing Grayburg Jackson Pool (Pool Code 28509).

(23) A new pool called the Dodd- Glorieta-Upper Yeso Pool should be created, limited to the horizontal extent of the Dodd Unit, for oil production from any formation located from the top of the Glorieta formation down to 5000 feet below ground level.

IT IS THEREFORE ORDERED THAT:

(1) The Grayburg Jackson-Yeso Pool as defined in Order No. R-12256 is hereby abolished and all well completions within the Dodd Unit area, as it is defined above in Finding Paragraph (6), extending vertically in any formation from the top of the Seven Rivers formation down to the top of the Glorieta formation shall be included in the existing Grayburg Jackson Pool (Pool Code 28509).

(2) A new oil pool is hereby created and called the Dodd- Glorieta-Upper Yeso Pool for oil production from any formation located from the top of the Glorieta formation down to 5000 feet below ground level. This new pool shall be limited to the areal extent of the Dodd Unit as specifically described in Finding Paragraph (6) of this Order, and shall not be extended beyond these horizontal limits.

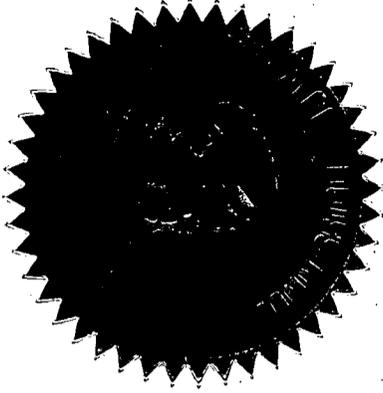
(3) The effective date of these pool changes shall be February 1, 2012.

(4) All operators of wells within the Dodd Unit shall submit the appropriate forms C-102 with the corrected pool name to the Artesia district office of the Division prior to April 1, 2012.

(5) The operator of any well completed within the vertical extent of the Dodd Unit both below and above the top of the Glorieta formation shall submit application for downhole commingling prior to April 1, 2012.

(6) 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

JAMI BAILEY
Director