

OIL AND GAS DOCKET NO. 05-0277710

APPLICATION OF EOG RESOURCES, INC. TO ADOPT PERMANENT FIELD RULES FOR THE AGUILA VADO (EAGLEFORD) FIELD, LEON COUNTY, TEXAS

HEARD BY: Andres J. Trevino, P.E. - Technical Examiner
Terry Johnson- Legal Examiner

HEARING DATE: August 27, 2012

APPEARANCES: **REPRESENTING:**

APPLICANT:

Flip Whitworth
Rick Johnston

EOG Resources, Inc.

EXAMINER'S REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

This is the unprotested application of EOG Resources, Inc. to amend the temporary field rules last adopted in Order No. 05-0264488, effective March 23, 2010 for the Aguila Vado (Eagleford) Field that currently provide for the following:

1. Designation of the field as the correlative interval from 6,390 feet to 7,180 feet as shown on the log of the Simms No. 1;
2. 467'-1,200' well spacing;
3. 160-acre oil units with a maximum diagonal of 4,500;
4. Allocation based on 100% acreage.

EOG Resources, Inc. proposes that Field Rule No. 2 be amended to decrease lease line spacing from 467 feet to 330 feet, 100' dual lease line spacing, eliminate between-well spacing for all wells in the field, add take point provisions, off lease penetration, a 33' horizontal box rule. EOG proposes that Field Rule 3 be amended to allow the assignment of additional acreage to a horizontal well based on a formula, no individual proration plats, and Field Rule No. 5 be added to add a stacked lateral rule.

The examiners recommend that field rules for the Aguila Vado (Eagleford) Field be amended as proposed by EOG Resources.

DISCUSSION OF THE EVIDENCE

The Aguila Vado (Eagleford) Field was discovered in December 2009 at approximately 6,971' subsurface depth. Special field rules were first adopted in 2010. There are two operators and six completed oil wells in the field but only two are on the current proration schedule. The field has produced 41 MBO and 2.9 MMCF of casinghead gas.

EOG Resources is amending the existing field rules in the Aguila Vado (Eagleford) Field to adopt horizontal rules to allow efficient and orderly development of the Aguila Vado (Eagleford) Field with horizontal wells. Currently the field rules only provide for vertical well development. The proposed horizontal rules are similar to horizontal rules found in other Eagleford fields in the State.

EOG Resources requests adoption of 330' lease line spacing, 0' between-well spacing and dual lease line spacing to be consistent with the spacing rules of other Eagleford fields being developed with horizontal wells. EOG Resources is requesting a spacing rule requiring a minimum of 100 feet to the lease line from the first and last take points of a horizontal drainhole, with 330 feet from lease lines on all points on the drainhole perpendicular to the lease line. The 100-foot lease line spacing for the first and last take points allows maximum recovery from vertical fractures created when fracture stimulating the Eagleford Shale. The 0' between-well spacing will allow the drilling of horizontal wells with maximum flexibility to maximize oil recovery.

EOG Resources requests several other standard provisions that are commonly adopted when horizontal well development is anticipated. The provisions include take point language to allow flexible drilling of the laterals and off-lease penetration to allow the additional recovery of reserves by allowing the lateral to be horizontal at a legal lease line location. Off-lease penetration will allow increased hydrocarbon recovery as the lateral will make greater contact with the formation as the well is turned from vertical to lateral adjacent to the lease. Off-lease penetration will allow the first take point to be closer to the lease line. An additional stage frac will be placed on each lateral if off lease penetration is allowed.

EOG Resources proposes that the 160-acre density rule be amended to provide for a multiplying factor for acreage assignment to horizontal wells. EOG Resources requests a formula with a factor of .064 to be multiplied by the length of the lateral and added to 160 acres. This formula will give operators in the field slightly larger acreage assignments than Rule 86 would give. The proposed factor will give operators 16 additional acres per 1,000 foot of lateral over what Rule 86 provides. By comparison, the DeWitt (Eagleford Shale) and Sugarkane (Eagleford) fields have factors of 0.2 and the Hawkville (Eagleford Shale) has a factor of 0.162. The factor requested by EOG is 60% to 68% less than those major Eagleford fields. The proposed factor will give operators slightly larger acreage holding in the new field with limited production data available to determine accurate drainage

calculations. Additionally, the increased acreage will also give operators an increased oil allowable.

The gross thickness of the Eagleford Shale in this field is 790 feet. The interval is thick enough to support “stacked” horizontal drilling. Amending the rule as proposed will allow stacked lateral drainholes to be simultaneously drilled from multiple surface locations. The stacked lateral rules also require that each point of a stacked lateral horizontal drainhole be no more than 300 feet in a horizontal direction from any point along any other horizontal drainhole of the same stacked lateral well. Other Eagleford fields have thinner Eagleford Shale intervals. The Briscoe Ranch field has an interval that is 375 feet thick, and the DeWitt, Hawkville, Sugarkane, and the Eagleville field intervals are between 212 feet to 286 feet thick.

EOG Resources proposes a 33 foot “box rule” for horizontal drainhole wells that would allow drainholes to deviate 33 feet from either side of their permitted track without the necessity of obtaining a Statewide Rule 37 exception. EOG Resources requests that the allocation formula for the field remain unchanged.

FINDINGS OF FACT

1. Notice of this hearing was given to all operators of wells in the Aguila Vado (Eagleford) Field at least ten days prior to the date of hearing.
2. The Aguila Vado (Eagleford) Field was discovered in December 2009 at approximately 6,971' subsurface depth.
3. There are two operators and six completed oil wells in the field but only two are on the current proration schedule. Cumulative production from the field is about 41 MBO and 2.9 MMCF of casinghead gas.
4. Special field rules were first adopted in 2010. Rules provide for 467'-1,200' well spacing, 160-acre density and 100% acreage allocation. There are currently no rules for horizontal drilling.
5. Field rules that provide for 330 feet lease line spacing, eliminate between well spacing for all wells in the field, take point language, off lease penetration and a “box rule” for horizontal wells will provide consistency with other fields under going horizontal drilling.
6. The proposed 33 foot “box rule” is necessary to allow operators reasonable minor deviations from the wellbore track that has been permitted.
7. Allowing off-lease penetration will allow an additional stage frac to be placed on each lateral causing the recovery of additional reserves that would otherwise be left in the ground.

8. Adoption of a formula to assign additional acreage above the 160-acre density for the field is appropriate.
 - a. There are no vertical wells in the field and production decline data from horizontal wells is limited.
 - b. The proposed factor will give operators 16 additional acres per 1,000 foot lateral over what Rule 86 provides.
 - c. The DeWitt (Eagleford Shale) and the Sugarkane (Eagleford) fields have factors of 0.2 and the Hawkville (Eagleford Shale) has a factor of 0.162.
 - d. Increasing acreage using a formula of $\text{acreage} = 160 \text{ acres} + (L \cdot .064)$ is less aggressive than other Eagleford fields and will give operators an increased oil allowable.
9. Given that the gross thickness of the Eagleford Shale in this field is almost 790 feet, multiple stacked laterals will be required to fully develop the reservoir. Other Eagleford fields have thinner Eagleford Shale intervals between 212 feet to 375 feet thick.
10. Allocation based on 100% acreage will remain unchanged and is a reasonable formula which will protect correlative rights of mineral owners in the field.

CONCLUSIONS OF LAW

1. Proper notice of this hearing was given to all persons legally entitled to notice.
2. All things have occurred or been accomplished to give the Railroad Commission jurisdiction in this matter.
3. Adopting permanent field rules as proposed by EOG Resources, Inc. is necessary to prevent waste and protect correlative rights.

EXAMINERS' RECOMMENDATION

Based on the above findings and conclusions, the examiner recommends that field

rules be permanently adopted for the Aguila Vado (Eagleford) Field to reduce lease line spacing to 330 feet, eliminate between-well spacing for all wells, add take points, allow off lease penetration, a 33 foot "box" rule and add stacked-lateral rules.

Respectfully submitted,

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Technical Examiner

Terry Johnson
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