



RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

OIL AND GAS DOCKET NO. 7C-0317407

APPLICATION OF COG OPERATING, LLC (166150) FOR AMENDMENT OF FIELD RULES, CLASSIFICATION AS AN UNCONVENTIONAL FRACTURE TREATED FIELD, AND CONTINUED SUSPENSION OF ALLOCATION FORMULA FOR THE PEGASUS (CONSOLIDATED) FIELD, MIDLAND AND UPTON COUNTIES, TEXAS

HEARD BY: John L. Moore – Technical Examiner
Kristi M. Reeve – Administrative Law Judge

HEARING DATE: March 13, 2019
RECORD CLOSED: June 27, 2019
CONFERENCE DATE: August 6, 2019

APPEARANCES:

Ana Maria Marsland, Attorney
Greg Cloud, Consulting Engineer
Pedie Monta, Senior Landman

REPRESENTING:

COG Operating, LLC

EXAMINERS' REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

COG Operating, LLC ("COG") seeks to amend field rules for the Pegasus (Consolidated) Field (70279100) ("Field"), Midland and Upton Counties, Texas. COG also requests that the allocation formula in the Field remain suspended. In addition, COG seeks classification of the Field as an Unconventional Fracture Treated ("UFT") field. COG proposed no changes to the existing temporary field rules 1 and 2 and certain modifications to the field rules 3, 4 and 5. Specifically, the proposed field rules in their entirety are:

Rule 1: The entire correlative interval between 6,815 and 11,375 feet as shown on the log of the COG Operating, LLC, (previously operated by Mobil producing TX & N.M., Inc.), Pegasus Field Unit 3, Well No. 156 (API No. 42-329-10082), Section 19, Block 40, T&P RR, Co. Survey, A-302, Upton County, Texas, shall be designated as a single reservoir for proration purposes and be designated as the Pegasus (Consolidated) Field.

Rule 2: No well for oil or gas shall hereafter be drilled nearer than THREE HUNDRED THIRTY (330) feet to any property line, lease line, or subdivision line. There is no minimum between well spacing limitation. The aforementioned distances in the above rule are minimum distances to allow an operator flexibility in locating a well; and the above spacing rule and the other rules to follow are for purposes of permitting only one well to each drilling and proration unit. Provided however, that the Commission will grant exceptions to permit drilling within shorter distances and drilling more wells than herein prescribed, whenever the Commission shall have determined that such exceptions are necessary either to prevent waste or to prevent the confiscation of property. When exception to these rules is desired, application therefore shall be filed and will be acted upon in accordance with the provisions of Commission Statewide Rules 37 and 38, which applicable provisions of said rules are incorporated herein by reference.

In applying this rule, the general order of the Commission with relation to the subdivision of property shall be observed.

Provided, however, that for purposes of spacing for horizontal drainhole wells, the following shall apply:

1. A take point in a horizontal drainhole well is any point along a horizontal drainhole where oil and/or gas can be produced from the reservoir/field interval. The first take point may be at a location different than the terminus point.
2. No horizontal drainhole well for oil or gas shall hereafter be drilled such that the first and last take points are nearer than ONE HUNDRED (100) feet to any property line, lease line or subdivision line.
3. For each horizontal drainhole well, the distance perpendicular to such horizontal drainhole from any take point to any point on any property line, lease line or subdivision line shall be a minimum of THREE HUNDRED THIRTY (330) feet.

For purposes of assigning additional acreage to a horizontal drainhole well pursuant to Statewide Rule 86, the distance from the first take point to the last take point in the horizontal drainhole shall be used in such determination, in lieu of the distance from the penetration point to terminus.

In addition to the penetration point and the terminus of the wellbore required to be identified on the drilling permit application (Form W-1H) and plat, the first and last take points must also be identified on the drilling permit application (Remarks Section) and plat. Operators shall file an as-drilled plat showing the path, penetration point, terminus and the first and last take points of all drainholes in horizontal wells, regardless of allocation formula.

If the applicant has represented in the drilling application that there will be one or more no perf zones or "NPZs" portions of the wellbore within the field interval without take points), then the as-drilled plat filed after completion of the well shall be certified by a person with knowledge of the facts pertinent to the application that the plat is accurately drawn to scale and correctly reflects all pertinent and required data. In addition to the standard required data, the certified plat shall include the as-drilled track of the wellbore, the location of each take point on the wellbore, the boundaries of any wholly or partially unleased tracts within a Rule 37 distance of the wellbore, and notations of the shortest distance from each wholly or partially unleased tract with a Rule 37 distance of the wellbore to the nearest take point on the wellbore.

A properly permitted horizontal drainhole will be considered to be in compliance with the spacing rules set forth herein if the as-drilled location falls within a rectangle established as follows:

1. Two sides of the rectangle are parallel to the permitted drainhole and 50 feet on either side of the drainhole;
2. The other two sides of the rectangle are perpendicular to the sides described in (1) above, with one of those sides passing through the first take point and the other side passing through the last take point.

Any take point of a horizontal drainhole outside of the described rectangle must conform to the permitted distance to the nearest property line, lease line or subdivision line.

For any well permitted in this field, the penetration point need not be located on the same lease, pooled unit or unitized tract on which the well is permitted and may be located on an Offset Tract. When the penetration point is located on such Offset Tract, the applicant for such drilling permit must give 21-day notice by certified mail, return receipt requested to the mineral owners of the Offsite Tract. For purposes of this rule, the mineral owners of the Offset Tract are (1) the designated operator; (2) all lessees of record for the Offset Tract where there is no designated operator; and (3) all owners of unleased mineral interests where there is no designated operator or lease. In providing such notice, applicant must provide the mineral owners of the Offset Tract with a plat clearly depicting the projected path of the entire wellbore. In the event the applicant is unable, after due diligence, to locate the whereabouts of any person to whom notice is required by this rule, the applicant must publish notice of this application pursuant to the Commission's Rules of Practice and Procedure. If any mineral owner of the Offset Tract objects to the location of the penetration point, the applicant may request a hearing to demonstrate the necessity of the penetration point of the well to prevent waste or protect correlative rights. Notice of Offset Tract penetration is not required if (a) written waivers of objection are received from all mineral owners of the Offset Tract; or (b) the applicant is the only mineral owner of the Offset Tract. To mitigate the potential for well collisions, applicant shall promptly provide copies of any directional surveys to the parties entitled to notice under this section, upon request.

Rule 3a: The acreage assigned to the individual oil well for the purpose of allocating allowable oil production thereto shall be known as a proration unit. The standard drilling and proration units are established hereby to be EIGHTY (80) acres. No proration unit shall consist of more than EIGHTY (80) acres except as hereinafter provided. All proration units shall consist of continuous and contiguous acreage which can reasonably be considered to be productive of oil. Except as provided in these rules, no double assignment of acreage will be accepted.

If after drilling of the last well on any lease and the assignment of acreage to each well thereon in accordance with the regulations of the Commission, there remains an additional unassigned acreage of the less than EIGHTY (80) acres, then and in such event the remaining unassigned acreage up to and including a total of FORTY (40) acres may be assigned as tolerance acreage to the last well drilled on such lease or may be distributed among any group of wells located thereon, so long as the proration units

resulting from the inclusion of such additional acreage meet the limitations prescribed by the Commission. An operator, at his option shall be permitted to form optional oil units of TWENTY (20) acres, with a proportional acreage allowable credit for a well on fractional proration units.

Rule 3b: The acreage assigned to an individual gas well for the purpose of allocating allowable gas production thereto shall be known as a proration unit. The standard drilling and proration units are established hereby to be EIGHTY (80) acres. No proration unit shall consist of more than EIGHTY (80) acres; provided that, tolerance acreage of ten (10) percent shall be allowed for each standard proration unit so that an amount not to exceed a maximum of EIGHTY-EIGHT (88) acres may be assigned. Each proration unit containing less than EIGHTY (80) acres shall be a fractional proration unit. All proration units shall consist of continuous and contiguous acreage which can be reasonably considered to be productive of gas. Except as provided in these rules, no double assignment of acreage will be accepted. An operator, at his option, shall be permitted to form optional gas units of TWENTY (20) acres, with a proportional acreage allowable credit for a well on fractional proration units.

For the determination of acreage credit in this field, operators shall file for each oil or gas well in this field a Form P-15 Statement of Productivity of Acreage Assigned to Proration Units. On that form or an attachment thereto, the operator shall list the number of acres that are being assigned to each well on the lease or unit for proration purposes. For oil or gas wells, operators shall be required to file, along with the Form P-15, a plat of the lease, unit or property; provided that such plat shall not be required to show individual proration units. There is no maximum diagonal limitation in this field.

Rule 3c: For purposes of additional acreage assignment to horizontal wells under Statewide Rule 86 (d)(1), the amount specified by applicable rules for a proration unit for a vertical well shall be the EIGHTY (80) acres provided in Rules 3a and 3b.

Rule 3d: The density rules for oil and gas wells in the field shall apply separately to horizontal wells and vertical wells such that proration units on a tract for horizontal and vertical wells are independent and may overlap. Operators shall file a P-16 Data Sheet or successor form along with the Form W-1 and completion report for horizontal wells and all vertical wells on a tract where both horizontal and vertical wells are assigned on the same acreage in this field.

Rule 4: The gas field shall be classified as associated-prorated. The daily allowable production of gas from individual wells completed in the subject field shall be determined by allocating the allowable production, after deductions have been made for wells which are incapable of producing their gas allowables, among the individual wells in the following manner:

1. SEVENTY-FIVE percent (75%) of the total field allowable shall be allocated among the individual wells in the proportion that the acreage assigned such well for allowable purposes bears to the summation of the acreage with respect to all proratable wells producing from this field.

2. TWENTY-FIVE percent (25%) of the field's total allowable shall be allocated equally among all the individual prorable wells producing from the field.

Rule 5: For oil and gas wells, Stacked Lateral Wells within the correlative interval for the field that are drilled from different wellbores may be considered a single well for regulatory purposes, as provided below:

1. A horizontal drainhole well qualifies as a Stacked Lateral Well under the following conditions:
 - a. There are two or more horizontal drainhole wells on the same lease or pooled unit within the correlative interval for the field;
 - b. Horizontal drainholes are drilled from different surface locations;
 - c. All take points of a Stacked Lateral Well's horizontal drainholes shall be within a rectangle area the width of which is SIX HUNDRED SIXTY (660) feet, and the length of which is the distance from the two furthest take points.
 - d. There shall be no maximum or minimum distance between horizontal drainholes of a Stacked Lateral Well in a vertical direction.
2. A Stacked Lateral Well, including all surface locations and horizontal drainholes comprising such Stacked Lateral Well, shall be considered a single well for density and allowable purposes.
 - a. The requirements of Statewide Rule 86(d)(4) shall not apply to Stacked Lateral Wells.
 - b. For the purpose of assigning additional acreage to the Stacked Lateral Well pursuant to Rule 86, the horizontal drainhole displacement shall be calculated based on the distance from the first take point to the last take point in the horizontal drainhole for the Record Well, regardless of the horizontal drainhole displacement of other horizontal drainholes of the Stacked Lateral Well.
3. Each surface location of a Stacked Lateral Well must be permitted separately and assigned an API number. In permitting a Stacked Lateral Well, the operator shall identify each surface location of such well with the designation "SL" in the well's lease name and also describe the well as a Stacked Lateral Well in the "Remarks" of the Form W-1 drilling permit application. The operator shall also identify on the plat any other existing, or applied for, horizontal drainholes comprising the Stacked Lateral Well being permitted.
4. To be a regular location, each horizontal drainhole of a Stacked Lateral Well must comply with (i) the field's minimum spacing distance as to any lease, pooled unit or property line, and (ii) the field's minimum between well spacing distance as to any other Stacked Lateral Well, on the same lease or pooled unit in the field. Operators may seek exceptions to Rule 37 and 38 for Stack Lateral Wells in accordance with the Commission's rules, or any applicable rule for this field.
5. Operators shall file separate completion forms for each surface location of the Stacked Lateral Well. Operators shall also file a certified as-drilled location plat for each surface location of a Stacked lateral Well showing each horizontal drainhole from that surface location, confirming the well's qualification as a Stacked Lateral

Well and showing the maximum distances in a horizontal direction between each horizontal drainhole of the Stacked Lateral Well.

6. In addition to the completion forms for each surface location of a Stacked Lateral Well, the operator must file a separate Form G-1 or Form W-2 for record purposes only for the Commission to build a fictitious "Record Well" for the Stacked Lateral Well. This Record Well will be identified with the words "SL Record" included in the lease name. This Record Well will be assigned an API number and Gas Well ID or Oil lease number and listed on the proration schedule with an allowable, if applicable.
7. In addition to the Record Well, each surface location of a Stacked Lateral Well will be listed on the proration schedule, but no allowable shall be assigned for an individual surface location. Each surface location of a Stacked Lateral Well shall be required to have a separate G-10 or W-10 test and the sum of all horizontal drainhole test rates shall be reported as the test rate for the Record Well.
8. Operators shall report all production from horizontal drainholes included as a Stacked Lateral Well on Form PR to the Record Well. Production reported for a Record Well is the total production from the horizontal drainholes comprising the Stacked Lateral Well. Operators may measure full well stream with the measurement adjusted for the allocation of condensate based on the gas to liquid ratio established by the most recent G-10 well test rate for that surface location. The gas and condensate production will be identified by an individual API number and recorded and reported on the "Supplementary Attachment to Form PR".
9. If the field's 100% AOF status should be removed, the Commission shall assign a single gas allowable to each Record Well classified as a gas well. The Commission's Proration Department shall also assign a single oil allowable to each Record Well classified as an oil well. The assigned allowable may be produced from any one or all of the horizontal drainholes comprising the Stacked Lateral Well.
10. Operators shall file an individual Form W-3A Notice of Intention to Plug and Abandon and Form W-3 Well Plugging Report for each horizontal drainhole comprising the Stack Lateral Well, as required by Commission rules.
11. An operator may not file Form P-4 to transfer an individual surface location of a Stacked Lateral Well to another operator. Form P-4 filed to change the operator will only be accepted for the Record Well if accompanied by a separate Form P-4 for each surface location of the Stacked Lateral Well.

Notice was provided to the other operators in the Field, and the application is unprotested. The Technical Examiner and Administrative Law Judge ("Examiners") recommend the requested amended field rules, the request to maintain suspension of the allocation formulation, and the classification of the Field as an Unconventional Fracture Treated field be adopted as proposed by COG.

DISCUSSION OF THE EVIDENCE

COG seeks to modify portions of the special field rules that have been made obsolete by the amendments to Statewide Rule 86, or need to be amended to conform to the Commission's more current regulation of the same productive zones in offset fields.

The Pegasus (Consolidated) Field was established by Final Order adopted on April 20, 2010, in Docket No. 7C-0264718, with the consolidation of the Pegasus (Spraberry) Field, the Pegasus (Wolfcamp) Field, the Pegasus (Canyon) Field and the Pegasus (Pennsylvanian) Field. The current temporary field rules were adopted in Docket No. 7C-02844261, on September 25, 2013. Statewide Rule 86 was last amended by the Commission on February 1, 2016, to address the technological advances and industry operational practices of horizontal drilling which increase the ultimate recovery of hydrocarbons. COG is actively developing the consolidated interval of the Field by drilling horizontal infill wells in the target zones that cross section lines, and they continue to produce the existing vertical wells.

The designated interval for the consolidated field is the entire correlative interval between 6,815 and 11,375 feet as shown on the log of the Mobil Producing TX & NM, Inc., Pegasus Field Unit 3, Well No. 156 (API No. 42-329-10082). This interval includes all zones between the top of the Clearfork formation and the base of the Woodford Shale formation, which is also the top of the Devonian formation. Primary targets for continuing horizontal infill development include the Spraberry and Wolfcamp formations.

All of the productive zones in the consolidated field interval are continuous across the field area and can be found basin wide. The correlative interval and productive zones have the same geologic and geophysical characteristics as productive zones in the similar field interval adopted for the Parks (Consolidated) Field and the Spraberry (Trend Area) Field, which surrounds the subject field. The field rules proposed by COG track the field rules in effect for the Spraberry (Trend Area) Field.

The Field has been developed with a large number of vertical and horizontal wells, and also includes three large and long existing waterflood units. The March 2019 proration schedule indicates there are 282 oil wells and one gas well. COG operates the majority of the wells in the Field. Through February 2019, cumulative oil production from COG's Windham 'A' Unit and Unit '3' in the Field is reported to be approximately 18 million barrels of oil. Cumulative gas production from these units is reported to be approximately 53,000 million cubic feet. New drilling has significantly increased the estimated ultimate recovery from the Field.

Current field rules provide for a 330 foot minimum well spacing to the lease line with no minimum distance between wells, and eighty (80) acre proration units with forty (40) acre tolerance and optional twenty (20) acre density. These rules are consistent with the rules adopted for the Parks (Consolidated) Field and the Spraberry (Trend Area) Field.

These spacing and density field rules have provided flexibility in locating wells for development within the geologic section and geographic area identified as the Field.

In addition to making the existing spacing and density rules permanent, COG seeks a 660 foot rectangular area to be applied to a Stacked Lateral Well and to exempt the Field from the application of Statewide Rule 86(d)(4), to ensure flexibility for Stacked Lateral Well locations in this densely drilled field. Specifically, COG requests the addition of language in its proposed Field Rule 3(c) to incorporate the provisions of Rule 86(d)(1) using the base eighty (80) acre unit for the assignment of additional acreage to horizontal wells and to adopt a new Field Rule 3(d) that allows for the application of the density rule separately for vertical and horizontal wells on a tract. COG proposes to delete the specific field rule provision setting oil allowables, so that oil well allowables would be regulated under Statewide Rule 86(d)(5).

Under the current field rules, especially on the historic waterflood units, acreage availability has become a significant concern relating to increasing the ultimate recovery of hydrocarbons. For example, on the Pegasus Field Unit 3, there are seventy-seven (77) vertical wells and seventy-five (75) horizontal wells with a total acreage assignment of 11,720 acres out of 11,861 acres available. The provisions proposed by COG track the field rules adopted for the Spraberry (Trend Area) Field to address the same concern. COG's proposed field rule amendments are intended to prevent waste by encouraging the infill drilling of horizontal wells, while still protecting correlative rights in existing wells. COG contends that the application of the more robust allowable provision now a part of Statewide Rule 86(d)(5) to wells in the Field will also prevent waste. COG also requests that the gas well allocation formula remain suspended, as there is a one hundred percent (100%) market for all the gas well gas produced from the Field.

At the hearing, COG asked that the Examiners consider a recommendation that the Field be designated as an Unconventional Fracture Treated ("UFT") field. COG's witness, Mr. Greg Cloud, testified that he had reviewed the Field data prior to the hearing and concluded that the Field qualified as a UFT field. The hearing record establishes that more than twenty-five (25) wells in the Field were drilled horizontally and required hydraulic fracture treatment for productive completions. Mr. Cloud testified that he had reviewed core data that showed *in situ* permeability of at least one distinct producible interval within the Field had 0.1 millidarcy ("md.") or less permeability prior to hydraulic fracturing. COG was instructed to file documentation supporting Mr. Cloud's testimony as a late filed exhibit. COG filed this confirming core data on April 1, 2019. The core data submitted by COG showed *in situ* permeability of at least one distinct producible interval within the Field had 0.1 md. or less permeability prior to hydraulic fracturing.

FINDINGS OF FACT

1. Notice of this hearing was given to all parties entitled to notice at least ten days prior to the date of the hearing. No protests were received.

2. The Pegasus (Consolidated) Field was established by Final Order adopted on April 20, 2010, in Docket No. 7C-0264718, with the consolidation of the Pegasus (Spraberry) Field, the Pegasus (Wolfcamp) Field, the Pegasus (Canyon) Field and the Pegasus (Pennsylvanian) Field. The current temporary field rules were adopted in Docket No. 7C-02844261, on September 25, 2013.
3. The designated interval for the Pegasus (Consolidated) Field is the entire correlative interval between 6,815 and 11,375 feet as shown on the log of the Mobil Producing TX & NM, Inc., Pegasus Field Unit 3, Well No. 156 (API No. 42-329-10082).
 - a. The correlative interval and productive zones of the Pegasus (Consolidated) Field have the same geologic and geophysical characteristics as productive zones in the similar field interval adopted for the Parks (Consolidated) Field and the Spraberry (Trend Area) Field, which surrounds the subject field.
 - b. The field rules proposed by COG track the field rules in effect for the Spraberry (Trend Area) Field.
4. The Pegasus (Consolidated) Field has been developed with 282 oil wells, one (1) gas well and three (3) waterflood units.
5. COG will be actively developing the Pegasus (Consolidated) Field by drilling horizontal infill wells.
 - a. Acreage availability for proration purposes has become very limited.
 - b. The proposed field rules will provide continued flexibility to locate new horizontal wells that will recover hydrocarbons not being recovered by existing vertical or horizontal wells, while protecting the correlative rights in existing wells.
6. The Pegasus (Consolidated) Field qualifies under Statewide Rule 86(i) to be designated as an Unconventional Fracture Treated ("UFT") field.
 - a. The *in situ* permeability of one distinct producible interval within the Field's designated interval is 0.1 millidarcies or less prior to hydraulic fracture treatment, as determined by core data.
 - b. There are at least twenty-five (25) wells drilled horizontally in the Field and completed using hydraulic fracture treatment.
7. At the hearing, the applicant agreed on the record that the Final Order in this case is to be effective when the Master Order is signed.

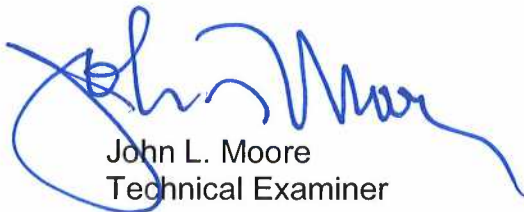
CONCLUSIONS OF LAW

1. Resolution of the subject application is a matter committed to the jurisdiction of the Railroad Commission of Texas. Tex. Nat. Res. Code § 81.051.
2. All notice requirements have been satisfied. 16 Tex. Admin. Code § 1.42.
3. The proposed permanent field rules and classification as an Unconventional Fracture Treated field will reduce waste and promote orderly development of the Pegasus (Consolidated) Field.
4. Pursuant to §2001.144(a)(4)(A), of the Texas Government Code, and the agreement of the applicant, this Final Order is effective when a Master Order relating to this Final Order is signed on August 6, 2019.

EXAMINERS' RECOMMENDATION

Based on the above findings of fact and conclusions of law, the Examiners recommend the requested permanent field rules, the request to maintain suspension of the allocation formulation, and the classification of the Field as an Unconventional Fracture Treated field be adopted as proposed by COG.

Respectfully submitted,



John L. Moore
Technical Examiner



Kristi M. Reeve
Administrative Law Judge