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RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

OIL AND GAS DOCKET NO. 8A-0303169

**THE APPLICATION OF ESTANCIA OIL & GAS LLC TO CONSIDER
UNITIZATION, SECONDARY RECOVERY, AND ENTITY FOR DENSITY
AUTHORITY FOR THE AMENDED BLACKARD UNIT, BLACKARD
(SPRABERRY) FIELD, BORDEN COUNTY, TEXAS**

HEARD BY: Karl Caldwell – Technical Examiner
Clayton Hoover – Administrative Law Judge

HEARING DATE: March 8, 2017
RECORD CLOSED: March 17, 2017
CONFERENCE DATE: April 25, 2017

APPEARANCES:

REPRESENTING:

APPLICANT:

ESTANCIA OIL & GAS LLC

Flip Whitworth
Mary Byars
Sam Honeck
Barbara Sledge

EXAMINERS' REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Estancia Oil & Gas, LLC ("Estancia") requests Commission authority for unitization of the Amended Blackard Unit ("Unit") and approval of secondary recovery operations in the Unit. Estancia also requests that the Unit be approved as an entity-for-density purposes in the Blackard (Spraberry) Field. The application is unopposed and the Technical Examiner and Administrative Law Judge (collectively, "Examiners"), recommend approval of the application.

DISCUSSION OF THE EVIDENCE

The proposed Unit is located in Borden County, Texas, approximately 12 miles northwest of Gail, Texas. Estancia is the only operator of wells on the Unit acreage and will be the Unit Operator. The proposed unitized interval is between the depths from 6,950 feet to 7,175 feet from the surface or the stratigraphic equivalent defined in the MSW Brown-Porterfield No. 2 Well, API No. 42-033-32198. The Unit contains a total of 640 acres and consists of four tracts ("Tract 1", "Tract 2", "Tract 3", and "Tract 4"). The wells in the Unit produce from and are assigned to the Blackard (Spraberry) Field ("Field") in Borden County and are subject to the following special field rules: 467' lease-line spacing, 933' between well spacing, 80-acre oil units with 40-acre tolerance, and a 3,250' maximum diagonal. All producing wells in the Field are located within the Unit and are operated by Estancia.

The unitized interval is located within the Spraberry Sand Formation. The average net pay is 23 feet, average porosity is 16.4%, average permeability is 14 md, and average water saturation is 35%. The primary drive mechanism is solution gas, the oil gravity is 39.1 °API, and the reservoir temperature is 115° F. The productive limits of the Field are wholly within the boundaries of the Unit.

There are currently six producing wells, three dry holes, and one shut-in well within the proposed Unit. As of December 2016, the cumulative production from the wells within the Unit and, accordingly, the Field, was 769,995 barrels of oil (BO, or bbl oil) and 571,366 Mcf of gas. Based on decline curve analysis, the projected ultimate primary recovery for the Unit is 936,915 BO and 726,904 Mcf of gas.

There are currently 34 Commission-approved Spraberry waterflood units in Districts 8A and 8. The proposed Unit is located in District 8A. Five of those 34 units are operated by Estancia. In its waterflood studies, Estancia utilized one of the successful waterflood projects in the area as an analog for the proposed Unit. The analog used was the Borden (Spraberry) Unit, located approximately one mile northwest of the proposed Unit and operated by Estancia. The secondary/primary recovery factor for the Borden (Spraberry) Unit is 1.12. Estancia expects a secondary/primary recovery factor of 0.75 for the proposed Unit, which is risk adjusted and a conservative estimate.

Based on volumetric modeling, and studying the Borden (Spraberry) Unit, Estancia estimates that 718,801 bbl of secondary oil and 545,178 Mcf of secondary gas will be recovered from its proposed secondary recovery waterflood program in the Unit. Without the proposed secondary recovery operations, this 718,801 bbl of recoverable oil and 545,178 Mcf of recoverable gas would not be produced and would be left in the ground.

As part of its waterflood program, Estancia will convert two of its producing wells and one of its shut-in wells to injection wells, and will drill two new infill wells. Injection fluid will be supplied from a water well that will be drilled within the Unit. None of the injection fluid will be potable.

The proposed secondary recovery project is economically feasible. The estimated value of secondary oil is \$28,752,040. After accounting for royalty (\$7,188,010), estimated severance taxes (\$991,945), waterflood capital investment (\$2,450,000),¹ and additional operating costs (\$3,000,000), Estancia conservatively estimates a net profit of \$15,122,085 from this secondary recovery project.

The owners of interest in oil and gas under each tract of land in the area reasonably defined by development were given an opportunity to enter into the Unit on the same yardstick basis as the owners of interests in the oil and gas under the other tracts in the Unit. There are no mineral interests owned by the State of Texas within the Unit. At the time of the hearing, the Amended Unit Agreement² had been signed or ratified by 97.494% of the working interest ownership and 99.966% of the royalty interest ownership in the Unit. Estancia expects the unit-wide sign up to reach 100% for both the working interest and royalty interest ownership.

In the event there is not 100% sign up, the unsigned interests will be protected by the proposed Unit operations. Estancia will conduct monthly well production tests and allocate production accordingly. Further, Estancia will report production on a lease basis to the Railroad Commission for wells on tracts with owners who have not signed the Amended Unit Agreement.

The Unit's participation formula is based on tract participation and is divided into two phases. During Phase I, the participation of each tract will be equal to the fraction, the numerator of which is the daily average number of barrels of oil produced from the Unitized Formation³ from that tract as reported to the Railroad Commission from November 1, 2015 through April 30, 2016, and the denominator of which is the total of the average daily number of barrels produced from the Unitized Formation from all Tracts from November 1, 2015 through April 30, 2016. Phase I will be in effect until the first day of the month following the month when the cumulative oil production from all Tracts reaches 936,915 barrels of oil, which is the projected ultimate primary recovery for the Unit. Phase II will become effective on the first day of the month following termination of Phase I and will continue for the remainder of the term of the Amended Unit Agreement. During Phase II, participation of each tract will be equal to the sum

¹ Projected capital expenditures include conversion to water injection wells, well workovers, injection and production facilities, drilling and completion of the water well, drilling and completion of infill wells, and contingency costs.

² Estancia seeks approval of an Amended Unit Agreement. Occidental Petroleum, one of the working interest owners in the proposed Unit, objected to the participation formula in the original Unit Agreement, so that formula was changed, as reflected in the Amended Unit Agreement.

³ The Amended Unit Agreement defines "Unitized Formation" as follows: "[T]he subsurface portion of the Unit Area commonly known as the Spraberry Formation that is between the depths from 6,950 feet to 7,175 feet from the surface or the stratigraphic equivalent defined in the MSW Brown-Porterfield #2 (API # 42-033-32198)."

of 75% times a fraction, the numerator of which is the number of barrels of original oil in place of the Unitized Formation underlying each Tract as set out on Exhibit A to the Amended Unit Agreement, and the denominator of which is the total number of barrels of original oil in place within the Unitized Formation underlying all Tracts; plus 25% times the fraction, the numerator of which is the number of barrels of ultimate primary oil recovery within the Unitized Formation underlying each Tract as set out in Exhibit A, and the denominator of which is the total number of barrels of ultimate primary oil recovery within the Unitized Formation underlying all of the Tracts.

Estancia provided the Railroad Commission with a list of the names of each and every mineral interest owner within the Unit, along with the names of all operators and unleased owners of lands touching the boundary of the Unit. The Commission then mailed notices of hearing to all such mineral interest owners, operators, and unleased owners. Further, notice of hearing in this matter was published in *The Borden Star*, a newspaper of general circulation in Borden County, where the proposed Unit is located, once a week for four consecutive weeks (January 25, February 1, February 8, and February 15, 2017). The first such publication occurred more than 28 days prior to the hearing date.

Estancia also requests that the Unit be designated as an entity-for-density purposes. The proposed waterflood development plan may have infill wells closer to existing or future producing wells than the Blackard (Spraberry) Field's between well spacing rule. Designation of the proposed Unit as an entity-for-density will allow Estancia to drill new wells as needed at optimum locations on the Unit without having to obtain between well spacing exceptions and will facilitate efficient development. This designation will also eliminate the need to file proration unit plats for individual wells.

FINDINGS OF FACT

1. Notice of this hearing was sent to all owners of interest in the oil and gas, including working interest owners, operators, and royalty interest owners under each tract of land within the proposed Unit, as well as to operators and unleased mineral owners of tracts contiguous to the boundaries of the Unit.
2. The notice of hearing was published in *The Borden Star*, a newspaper of general circulation in Borden County, Texas, once each week for four consecutive weeks (January 25, February 1, February 8, and February 15, 2017).
3. The proposed Unit contains 640 acres, comprised of four separate tracts.
4. The proposed unitized interval is between the depths from 6,950 feet to 7,175 feet from the surface or the stratigraphic equivalent defined in the MSW Brown-Porterfield #2 Well, API # 42-033-32198 and is recognized by the Commission as the Blackard (Spraberry) Field ("Field").
5. All producing wells in the Field are located within the proposed Unit.

6. As of December 2016, the cumulative production from the wells within the Unit and Field was 769,995 BO and 571,366 Mcf of gas. Based on decline curve analysis, the projected ultimate primary recovery of the Unit is 936,915 bbl of oil and 726,904 Mcf of gas.
7. Secondary recovery operations will result in the recovery of an estimated 718,801 bbl oil and 545,178 Mcf of gas, which would otherwise be unrecovered and wasted. This volume of secondary recovery is based upon volumetrics, reservoir modeling and the study of a nearby, successful analog waterflood in the Spraberry Formation.
8. The cost to implement the project does not exceed the value of additional reserves to be recovered.
9. The Amended Unit Agreement provides for a two-phase participation formula that changes from Phase I to Phase II when the projected primary oil has been produced.
10. The secondary recovery project will not be successful unless the Unit area and Field are unitized. The proposed injection program will move hydrocarbons across lease lines, and unitization is necessary in order to protect the correlative rights of the various interest owners.
11. The secondary recovery program will use produced water supplied from a water well that will be drilled within the Unit. None of the injection fluid will be potable.
12. The Amended Unit Agreement was voluntarily executed by all parties affixing their signatures thereto and no person has been compelled or required to enter into the amended agreement. The Amended Unit Agreement binds only those persons who have executed it, their heirs, successors, assigns, and legal representatives.
13. The owners of interests in the oil and gas under each tract of land within the area reasonably defined by development have been given an opportunity to enter into the Unit on the same yardstick basis as owners of interests in the oil and gas under the other tracts in the Unit.
14. At the time of the hearing, the Amended Unit Agreement had been signed or ratified by 97.494% of the working interest ownership and 99.966% of the royalty interest ownership in the Unit.
15. The rights of all owners of interests in the Unit and the Blackard (Spraberry) Field will be protected under the operation of the Unit, regardless of whether an owner has agreed to the Amended Unit Agreement.
 - a. The Unit Operator will conduct monthly well production tests and allocate production accordingly.

- b. Production will be reported on a lease basis to the Commission for wells on tracts with unsigned interests.
16. The Amended Unit Agreement is necessary to accomplish the purposes of establishing a unit to effect secondary recovery operations and to operate cooperative facilities necessary thereto. Other available or existing methods or facilities for secondary recovery operations are inadequate for the purpose of secondary recovery.
17. The Amended Unit Agreement does not provide, either directly or indirectly, for the cooperative refining or marketing of crude petroleum, distillate, condensate, or gas, or any byproducts thereof.
18. The Amended Unit Agreement is subject to all valid orders, rules, and regulations of the Railroad Commission.
19. The Amended Unit Agreement contains no provision regarding field rules, nor does it limit the amount of production of oil or gas from the unitized area. The Amended Unit Agreement does not release the Unit Operator from its obligation to reasonably develop lands or leases as a whole.
20. The Amended Unit Agreement is a voluntary agreement entered into for the purpose of conducting secondary recovery operations.
21. The Amended Unit Agreement provides for the extension of leases covering any part of lands committed to the Unit so long as there is production or operations, including drilling operations, conducted with respect to the Unitized Formation or any part of the Unit area, or production from any part of the Unitized Formation, except for the purpose of determining payments to royalty owners, or other unit operations.
22. There are no state-owned mineral interests within the Unit.
23. The Amended Unit Agreement is in the interest of public welfare as being reasonably necessary to prevent waste and to promote conservation.
24. The reservoir described in the Amended Unit Agreement is identified as a single reservoir for Commission purposes and is a suitable reservoir for the proposed secondary recovery operation.
25. The Amended Unit Agreement contains only the acreage reasonably necessary to accomplish the proposed secondary recovery project.
26. Designation of the unit as an entity-for-density purposes will allow for the drilling of new wells without obtaining between-well spacing exceptions, provided the density is not exceeded.

CONCLUSIONS OF LAW

1. Proper notice was given to all persons legally entitled to notice.
2. All things have occurred or have been accomplished that are necessary to give the Railroad Commission jurisdiction in this matter.
3. Estancia's proposed secondary recovery project satisfies the requirements set out in Tex. Nat. Res. Code Ann. §101.001-101.052.
4. Approval of the proposed Amended Unit Agreement, secondary recovery operations, and entity-for-density is in the public interest and is necessary to prevent waste and to promote the conservation of oil or gas or both.

EXAMINERS' RECOMMENDATION

Based on the above findings of fact and conclusions of law, the examiners recommend approval of the proposed-Amended Blackard Unit and secondary recovery authority, as set out in the attached order. It is further recommended that the Amended Blackard Unit be approved as an entity-for-density purposes.

Respectfully submitted,



Karl D. Caldwell
Technical Examiner



Clayton Hoover
Administrative Law Judge