OIL AND GAS DOCKET NO. 08-0269212

THE APPLICATION OF NADEL AND GUSSMAN PERMIAN LLC. TO CONSOLIDATE VARIOUS FIELDS INTO THE CLYDE-REYNOLDS (WOLFCAMP CONS.) FIELD AND TO ADOPT FIELD RULES FOR THE CLYDE-REYNOLDS (WOLFCAMP CONS.) FIELD, GLASSCOCK COUNTY, TEXAS

Heard by: Andres J. Trevino, P.E., Technical Examiner

Hearing date: February 25, 2011

Appearances:	**Representing:**
Skipper Lay	Nadel and Gussman Permian LLC
Emerald Johnson	
Joel F. Martin, P.E.	
Scott Germann	

EXAMINER'S REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Nadel and Gussman Permian LLC requests that the Garden City (Strawn), Apple Creek (Wolfcamp), Clyde-Reynolds (Wolfcamp) and the Clyde-Reynolds (Wolfcamp 8100) Fields be consolidated into the Clyde-Reynolds (Wolfcamp Cons.) Field and that field rules for the Clyde-Reynolds (Wolfcamp Cons.) Field be adopted.

The proposed field rules for the Clyde-Reynolds (Wolfcamp Cons.) Field are as follows:

1. Designation of the field as the correlative interval from 5,626 feet to 9,694 feet as shown on the log of the Nadel and Gussman Permian LLC, Bearkat Lease, Well No. 1-17;

2. 467'-0' well spacing; take point provisions, 50' box rule and off-lease penetration point provisions;

3. 160 acre density with optional 40 acre density for both oil and gas wells, file Form P-15, no individual proration units on plats;

4. Allocation based on 95% acreage and 5% potential.

This application was unprotested and the examiner recommends approval of the field consolidation and amended field rules.

DISCUSSION OF THE EVIDENCE

The four fields which are proposed for consolidation into the Clyde-Reynolds (Wolfcamp Cons.) Field were discovered as early as 1964. The proposed field interval is from the top of the Wolfcamp formation to the base of the Woodford formation. The correlative interval is shown on the log of the Nadel and Gussman Permian LLC, Bearkat Lease, Well No. 1-17 from 5,626 feet to 9,694 feet. The interval includes the Wolfcamp, Canyon, Cisco, Penn Shale (Cline), Strawn, Atoka Shale and Woodford Shale. The Wolfcamp and Strawn have been the primary producing formations in the area.

There are a total of approximately 8 wells listed on the proration schedules for the various fields, most of which are in the Clyde-Reynolds (Wolfcamp) Field. The Clyde-Reynolds (Wolfcamp 8100) field has no wells.

The four fields proposed to be consolidated operate under Statewide rules, 467'/1,200' and 40 acre density. There is no designated interval for any of the fields proposed for consolidation. Operators are completing the Wolfcamp and Strawn, and placing the wells in various fields in the area for proration purposes. Consolidation of the fields will eliminate confusion as to field designation.

Cross sections across the field area demonstrated that rock quality varies considerably. Nadel and Gussman believes that the field is extensive and will complete most wells with conventional vertical wells, while other tighter areas of the field will require horizontal drainholes. Most zones, even the most productive, the Strawn, are only marginally economic and are not “stand alone” completions. The proposed consolidated interval will allow zones to be completed which would otherwise be passed up due to economics. Other fields in this general area have undergone similar zone consolidations. Mariner Energy amended field rules in the Garden City, NW (Strawn) Field to include a designated interval that includes the Strawn, Atoka Mississippian and Woodford formations. Laredo Energy consolidated various fields into the Garden City, S. (Wolfcamp) Field. The consolidated interval for the Garden City, S. (Wolfcamp) Field includes the Spraberry, Dean, Wolfcamp, Canyon, Strawn, Atoka and Bend.

For wells completed in the Strawn only, the average estimated ultimate recoverable reserves for each well in the area is estimated to be 41,000 BO. Nadel and Gussman believes ultimate recoveries would increase to 119,000 BO if the Wolfcamp, Penn and Woodford would be produced simultaneously. Nadel and Gussman estimates that an additional 78,000 BO can be recovered per well as a result of a lower economic limit if the fields are consolidated. Nadel and Gussman plans to drill about 25 wells on their leasehold for completion in the Wolfcamp, Penn, Strawn and Woodford recovering an additional 1.95 MMBO on their leasehold.

Nadel and Gussman studied the EUR of 22 wells completed in the proposed fields to be consolidated. For the 22 wells, estimated ultimate recoveries range from 1 MBO to 164 MBO. The average EUR for the 22 wells is 41 MBO. The expected recovery under a 160 acre unit is 120.8 MBO. The expected recovery under a 40 acre unit is 30.2 MBO. These calculations are based on average porosity of 2%, water saturation of 48% net pay thickness of 550 feet and estimated recovery factor of 4%. Numerous Strawn and Wolfcamp oil and gas fields found in District 8 have similar base units of 160 acres with optional units of 40 to 80 acres.

The requested 467'-0' well spacing is requested because the field area will be developed with both horizontal and vertical wells. This spacing will provide the flexibility necessary to place horizontal wells in close proximity to vertical wells which may be completed in different zones within the consolidated interval. Nadel and Gussman also requests authority for off-lease penetration points for horizontal wellbores to allow for maximum horizontal drainhole length. Nadel and Gussman will develop the field with horizontal wells in areas of the field where it is too tight to develop with vertical wells.

The proposed consolidated field will consist of numerous possible productive intervals. A two factor allocation formula based on 5% deliverability/potential and 95% acreage is requested for the consolidated field to meet statutory requirements.

FINDINGS OF FACT

1. Notice of this hearing was sent to all persons entitled to notice.

2. The Garden City (Strawn), Apple Creek (Wolfcamp), Clyde-Reynolds (Wolfcamp) and the Clyde-Reynolds (Wolfcamp 8100) Fields which are proposed for consolidation into the Clyde-Reynolds (Wolfcamp Cons.) Field were discovered as early as 1964.

3. The Garden City (Strawn), Apple Creek (Wolfcamp), Clyde-Reynolds (Wolfcamp) and the Clyde-Reynolds (Wolfcamp 8100) Fields all operate under Statewide rules.

4. There is no designated interval for any of the fields proposed for consolidation.

5. The proposed field interval is from the top of the Wolfcamp formation to the base of the Woodford formation. The proposed field interval includes the Wolfcamp, Canyon, Cisco, Penn Shale (Cline), Strawn, Atoka Shale and Woodford Shale. The proposed correlative interval is from 5,626 feet to 9,694 feet as shown on the log of the Nadel and Gussman Permian LLC, Bearkat Lease, Well No. 1-17.

6. Adoption of a density rule providing for 160 units with optional 40 acre units is appropriate for this field.

    a. Nadel and Gussman studied the EUR of 22 wells completed in the proposed fields to be consolidated.

    b. For the 22 wells, estimated ultimate recoveries range from 1 MBO to 164 MBO. The average EUR for the 22 wells is 41 MBO.

    c. The estimated reservoir properties for the combined reservoirs are an average porosity of 2%, water saturation of 48% net pay thickness of 550 feet and estimated recovery factor of 4%.

    d. The expected recovery under a 160 acre unit is 120.8 MBO. The expected recovery under a 40 acre unit is 30.2 MBO.

    e. Numerous Strawn and Wolfcamp oil and gas fields found in District 8 have base units of 160 acres with optional units of 40 to 80 acres.

7. Some areas of the field will be developed with conventional vertical wells, while other “tighter” areas of the field will require horizontal drainholes.

8. Most of the zones within the proposed consolidated interval are not “stand alone” completions economically.

9. As a result of consolidation, it is estimated that an additional 78,000 BO can be recovered per well.

10. The proposed horizontal provisions are similar to horizontal provisions 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, a 50 foot “box rule” for horizontal drainhole wells that would allow drainholes to deviate 50 feet from either side of their permitted track.

11. The requested 467’-0’ well spacing will provide flexibility in developing the consolidated field with both horizontal and vertical wells.

12. The Garden City (Strawn) Field is classified as an associated field. Classifying the proposed Clyde-Reynolds (Wolfcamp Cons.) Field as associated prorated is appropriate as the volatile oil produced by the oil wells may later be reclassified as gas wells as the pressure drops in the reservoir.

13. A two factor allocation formula based on 5% deliverability and 95% acreage

will protect correlative rights and meet statutory requirements.

CONCLUSIONS OF LAW

1. Proper notice of hearing was timely issued by the Railroad Commission to appropriate persons legally entitled to notice.

2. All things necessary to the Commission attaining jurisdiction over the subject matter and the parties in this hearing have been performed.

3. Consolidation of the subject fields is necessary to prevent waste by promoting orderly development of the various formations within the consolidated interval.

4. Adoption of the recommended field rules is necessary to prevent waste, protect correlative rights and promote development of the field.

EXAMINER'S RECOMMENDATION

Based on the above findings and conclusions, the examiner recommends that the subject fields be consolidated into the Clyde-Reynolds (Wolfcamp Cons.) Field and that the field rules for the field be adopted as requested.

Respectfully submitted,

Andres J. Trevino, P.E.
Technical Hearings Examiner