OIL AND GAS DOCKET NO. 03-0258105

THE APPLICATION OF APACHE CORPORATION TO CONSIDER ADOPTION OF TEMPORARY FIELD RULES FOR THE GIDDINGS (EAGLEFORD) FIELD, LEE, BRAZOS AND BURLESON COUNTIES, TEXAS

Heard by: Richard D. Atkins, P.E. - Technical Examiner

Date of Hearing: August 13, 2008

Appearances:	**Representing:**
Bill Spencer Cary McGregor	Apache Corporation
Tereasa Montemayor	CMR Energy
James M. Clark	WCS Oil & Gas Corp.
Terry Johnson	Hunt Oil Company

EXAMINER'S REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Apache Corporation requests that temporary field rules be adopted for the Giddings (Eagleford) Field. The proposed rules are summarized as follows:

1. Designation of the field as the correlative interval from 8,675 feet to 8,920 feet as shown on the log of the W. H. Giesenschlag "C" Lease, Well No. 1 (API No. 42-051-31485);

2. 467'-1,200' vertical well spacing and horizontal spacing based on take points;

3. 160 acre oil units with optional 80 acre units;

4. Allocation based on 100 percent acreage.

The proposed correlative interval did not include the entire Eagleford Shale section. The examiner recommended that the entire Eagleford Shale section from the base of the Austin Chalk formation at 8,624 feet to the top of the Buda formation at 9,002 feet be set

as the designated interval. Apache had no objection to this recommendation.

There were no protests to this application and it was supported by three offset operators in the field. The examiner recommends approval of the temporary field rules, as requested by Apache subject to review in 18 months.

DISCUSSION OF EVIDENCE

The Giddings (Eagleford) Field was discovered in July 1981. The field operates under Statewide Rules and the top allowable for vertical wells is 142 BOPD with an allowable gas oil ratio of 2,000 cubic feet per barrel. Apache is currently the only operator in the field and there are twelve producing wells carried on the oil proration schedule. In addition, Apache has drilled one horizontal well which is not on the schedule. Cumulative production from the field through July 2008 is 34.6 MBO and 26.3 MMCFG.

Apache completed its first well in the field, the W. H. Giesenschlag "C" Lease, Well No. 1, in February 2008 with perforations in the Eagleford Shale between 8,840 feet and 8,920 feet. On initial test, the well flowed at a maximum rate of 133 BOPD, 120 MCFGPD and 35 BWPD. During July 2008, the well produced at an average rate of 22 BOPD, 28 MCFGPD and 3 BWPD. Cumulative production from the well through July 2008 is 4.8 MBO and 6.5 MMCFG.

Apache requests that the correlative interval between 8,624 feet to 9,002 feet as shown on the log of the W. H. Giesenschlag "C" Lease, Well No. 1 (API No. 42-051-31485), be considered as a single reservoir for proration purposes and be designated as the Giddings (Eagleford) Field. This interval includes the entire Eagleford Shale section which is situated between the base of the Austin Chalk and the top of the Buda geologic formations.

Until early in 2008, when Apache begin recompleting wells into the Eagleford Shale, most of the production in this area had been from the Georgetown and Austin Chalk formations. Apache requests 467'-1,200' well spacing and 160 acre oil units with optional 80 acre units. This is the same spacing and density as most of the fields in this area and, by adopting the same rules, Apache stated that this will enable recompletions into the Eagleford Shale without requiring Rule 37 exceptions.

Apache would like to continue to develop the field with horizontal wellbores. Apache requests that a field rule be adopted which includes language relevant to measurement of distances to lease lines for horizontal drainhole wells. The proposed rule specifies that, for purposes of lease line and between-well spacing, the nearest "take point" in a horizontal well be used. This take-point could be a perforation, if a horizontal well is cased and cemented, an external casing packer in a cased well, or any open-hole section in an uncased well. Similar rules have been adopted in other tight reservoirs, including the Barnett Shale and other Cotton Valley Sand fields.

The proposed rule would allow operators to drill horizontal wells with penetration points, as defined by Rule 86, at distances closer than 467 feet to a lease line, as long as no take-point is closer than 467 feet to any lease line. Horizontal drainhole length on a lease is then maximized, resulting in additional recovery of reserves. For purposes of assignment of additional acreage pursuant to Rule 86, it is proposed that the distance between the first and last take-point in a horizontal well be used.

The Giddings (Eagleford) Field produces from the Eagleford Shale formation at an average depth of approximately 8,600 feet. The Eagleford Shale formation is a sandy shale that has an average matrix porosity of 7.5 percent and an average water saturation of 40%. A solution gas drive is the primary drive mechanism for the reservoir.

Apache performed a volumetric recoverable oil reserve calculation for wells on a 160 acre proration unit using an estimated recovery factor of 10 percent. Since the producing formation is comprised mainly of shale, the net feet of reservoir rock is difficult to quantify. So, Apache calculated recoverable oil reserves for a 160 acre oil unit using 10, 50 and 100 feet of net pay. The oil recoveries were 36.4, 181.8 and 363.6 MBO, respectively. Although Apache's wells do not yet have stabilized decline rates to perform a decline curve analysis of oil reserves, the volumetric recoveries seemed reasonable.

Apache requests that an allocation formula based on 100% acreage be adopted for the field.

FINDINGS OF FACT

1. Notice of this hearing was given to all persons entitled to notice at least ten days prior to the date of hearing.

2. The Giddings (Eagleford) Field was discovered in July 1981. The field currently operates under Statewide Rules and the top allowable is 142 BOPD with an allowable gas oil ratio of 2,000 cubic feet per barrel. Cumulative production from the field through July 2008 is 34.6 MBO and 26.3 MMCFG.

3. Apache completed its first well in the field, the W. H. Giesenschlag "C" Lease, Well No. 1, in February 2008 with perforations in the Eagleford Shale between 8,840 feet and 8,920 feet. On initial test, the well flowed at a maximum rate of 133 BOPD, 120 MCFGPD and 35 BWPD.

4. Apache is currently the only operator in the field and there are twelve producing wells carried on the oil proration schedule. In addition, Apache has drilled one horizontal well which is not on the schedule.

5. Apache requests that the correlative interval between 8,624 feet to 9,002 feet as shown on the log of the W. H. Giesenschlag "C" Lease, Well No. 1 (API No. 42-051-31485), be considered as a single reservoir for proration purposes and be designated as the Giddings (Eagleford) Field. This interval includes the entire Eagleford Shale section which is situated between the base of the Austin Chalk and the top of the Buda geologic formations.

6. Apache requests 467'-1,200' well spacing and 160 acre oil units with optional 80 acre units. This is the same spacing and density as most of the fields in this area and, by adopting the same rules, Apache stated that this will enable recompletions into the Eagleford Shale without requiring Rule 37 exceptions.

7. A spacing rule which utilizes "take-points" in a horizontal well for determination of distances to lease lines will prevent waste and will not harm correlative rights.

    a. The Eagleford Shale is a tight formation and is not commercially productive unless fracture-stimulated.

    b. A take-point in a horizontal well in this field may be a perforation, if a horizontal well is cased and cemented, an external casing packer in a cased well, or any open-hole section in an uncased portion of the wellbore.

    c. Adoption of the proposed rule would allow operators to drill horizontal wells with penetration points, as defined by Rule 86, at distances closer than 467 feet to a lease line, as long as no take-point is closer than 467 feet to any lease line.

    d. Adoption of the proposed rule will allow the horizontal drainhole length on a lease to be maximized.

8. For purposes of assignment of additional acreage pursuant to Rule 86, the distance between the first and last take-point in a horizontal well should be used.

9. The Giddings (Eagleford) Field produces from the Eagleford Shale formation at an average depth of approximately 8,600 feet. The Eagleford Shale formation is a sandy shale that has an average matrix porosity of 7.5 percent

and an average water saturation of 40 percent.

10. Since the producing formation is comprised mainly of shale, the net feet of reservoir rock is difficult to quantify. So, Apache calculated recoverable oil reserves for a 160 acre oil unit using 10, 50 and 100 feet of net pay. The oil recoveries were 36.4, 181.8 and 363.6 MBO, respectively.

11. Allocation based on 100 percent acreage is a reasonable formula which will protect correlative rights and meet statutory requirements.

CONCLUSIONS OF LAW

1. Proper notice of this hearing was issued.

2. All things have been accomplished or have occurred to give the Commission jurisdiction in this matter.

3. Adoption of temporary field rules will prevent waste, protect correlative rights and promote orderly development of the field.

RECOMMENDATION

Based on the above findings of fact and conclusions of law, the examiner recommends adoption of Temporary Field Rules for the Giddings (Eagleford) Field, Lee, Brazos and Burleson Counties, Texas.

Respectfully submitted,

Richard D. Atkins, P.E.
Technical Examiner