



RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

OIL & GAS DOCKET NO. 01-0288130

**THE APPLICATION OF HIGHER STANDARD OIL COMPANY, INC., TO AMEND
FIELD RULES FOR THE FENTRESS (1750) FIELD, CALDWELL COUNTY, TEXAS**

HEARD BY: Paul Dubois – Technical Examiner
Laura Miles-Valdez – Hearings Examiner

DATE OF HEARING: May 1, 2014

APPEARANCES

REPRESENTING

APPLICANT:

George Neale
Greg Cloud

Higher Standard Oil Company, Inc.

EXAMINER'S REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

This is the application of Higher Standard Oil Company, Inc. (Higher Standard), to amend field rules for the Fentress (1750) Field in Caldwell County, Texas. Higher Standard seeks to amend the field rules as follows:

1. Designated correlative interval from 1,556 feet to 1,752 feet as seen on the log of the Rollert Company, Inc. - F.C. Rheinlander Lease, Well No. 2 (API No. 055-32915);
2. 330-foot lease line and 660-foot between well spacing;
3. 160-acre base oil proration units with 20-acre optional units and a maximum proration unit diagonal of 6,000 feet for 160-acre units; and
4. 100 percent acreage allocation.

The application is not protested. The examiners recommend the application be approved and the field rules amended as requested by Higher Standard.

DISCUSSION OF EVIDENCE

The Fentress (1750) Field was discovered on November 30, 1980, at a depth of about 1,788 feet. Wells in the field exploit oil accumulations in a linear fractured fault zone in the Austin Chalk that extends from the community of Fentress to the city of Lockhart in Caldwell County. The field has a distinct and narrow southwest-to-northeast orientation. About 70 wells have been drilled and completed in the field, and most of these have since been plugged and abandoned. Currently there are about seven (7) producing wells in the Fentress (1,750) Field. The smaller Rheinlander (Austin Chalk) field has also produced from the same structural feature and within the area developed by the Fentress (1750) Field, although there are currently no producing wells assigned to the Rheinlander field.

Temporary field rules for the Fentress (1750) Field were adopted on August 10, 1981 (Docket No. 1-76,615), and amended and made permanent in their current form on May 9, 1983 (Docket No. 1-79,494). The current rules include the following provisions:

1. 330-foot lease line and 933-foot between well spacing;
2. 40-acre standard and 20-acre optional proration units, with 3,000-foot unit diagonals applicable to both;
3. Allocation based on 100 percent acreage; and
4. Casing completion requirements.

The Fentress (1750) Field discovery well was the W. K. Dubois No.1 (API No. 055-31516). The well was apparently perforated first in the Buda Formation from about 1,746 feet to about 1,788 feet. However, the well's plugging report, dated December 14, 1982, indicated perforations in the well from 1,655 feet to 1,729 feet. Based on the well log, then, the well was apparently recompleted up-hole the Austin Chalk and possibly the Eagle Ford Shale Formations. The Applicant reports that most of the field's production has been from the Austin Chalk, but the productive fractured fault system extends into the underlying Eagle Ford and Buda Formations in certain areas. The Dubose No. 1 well produced 17,116 bbl oil from November 1980 through March 1982, after an initial potential test of 138 bbl oil per day. This is typical of wells in this field, that they demonstrate high initial production followed by very rapid decline. Wells completed in the early 1980s produced individual cumulative oil volumes of from about 20,000 to 50,000 bbl oil. Wells completed later in the fields life, from about 1984 on, generally produced significantly less, and often accumulated less than 10,000 to 20,000 bbl before being plugged.

The cumulative production for the field is 1,341 MM bbl oil and 12.9 MMCF gas. In the last twelve months the field has produced 3,210 bbl oil. In February 2014, five producing wells in the field (four operated by Higher Standard and one operated by Bob-Kat Oil Co.) produced 477 bbl oil and no gas. Of this amount, 365 bbl oil was produced from the one well on Higher Standard's Tally Lease, the No. 3 well. At the time of the

hearing, Higher Standard reports that the Tally No. 3 well is producing 40 bbl oil per day. The April 1, 2014 proration schedule identifies 8 operators in the Fentress (1750) Field. Higher Standard is the only operator who is indicated on the schedule as not being in possession of a severed lease in the field.

In 2006 on the application of Chaparral Natural Resources, Inc., the Commission approved amended field rules increasing the standard unit size to 160 acres (Docket No. 01-0247484). The theory behind this request was that the field had been over drilled, resulting in rapid and premature decline. Although the rules were amended, following a Motion for Rehearing granted by the Commission, Chaparral withdrew its application, and the field reverted to the rules as amended in 1983. It is Higher Standard's contention that Chaparral was correct and that the field has been over drilled, and 160 acres represents an appropriate unit size to prevent waste.

Higher Standard is re-entering existing wells to revitalize the field. It has no plans to drill additional wells at this time. It does believe that flexibility is an important factor in its work to revitalize the field, and this flexibility is reflected in its request for spacing and density provisions. Higher standard is proposing flexible field density provisions for 160-acre base units and 20-acre optional units. Retaining the 20-acre options contained in the current rules will not infringe on other operators with existing (although generally unproducing) wells in the field. Higher Standard anticipates redeveloping the field on larger, rather than smaller, units. Because the field orientation is long and narrow, Higher Standard also proposes a long unit maximum diagonal of 6,000 feet. It is anticipated that proration units in the field will be long and narrow to capitalize on the fault orientation and natural fracture system.

Higher Standard requests to designate a correlative for the field as the interval from 1,556 feet to 1,752 feet as seen on the log of the Rollert Company, Inc. - F.C. Rheinlander Lease, Well No. 2 (API No. 055-32915). This well was the discovery well for the Rheinlander (Austin Chalk) Field. The requested correlative interval represents the formations from the top of the Austin Chalk Formation (as interpreted currently by Higher Standard) at 1,556 feet to the base of the Buda Formation at 1,752 feet.

The Rheinlander No. 1 well was drilled in 1982 and initially flowed 210 bbl oil per day. It was plugged in March 1986 after producing 53,000 bbl oil. Chaparral re-entered the well in 2006 and began producing oil at a rate of 32 bbl per day and 30 bbl water from the same perforations, which soon increased to 75 bbl per day and no water. The Rheinlander B. No. 6 demonstrated similar regeneration after recompletion, as did several other examples provided at the hearing. Higher Standard intends to continue this pattern of selective recompletion on a more sustainable density.

Higher Standard has injected amine soap and other surfactants into the zone and observed immediate pressure increases in neighboring wells and corresponding increases in oil production. Higher Standard believes that wells in the field are in open hydraulic communication with each other and that tertiary water flooding is viable.

The examiners also note that the existing Field Rule No. 4 contains casing

provisions that are outdated and have been superceded by the provisions of Statewide Rule 13. The examiners recommend that the existing Field Rule No. 4 be rescinded.

FINDINGS OF FACT

1. Notice of this hearing was given to operators of all wells in the Fentress (1750) Field on April 4, 2014.
2. The Fentress (1750) Field was discovered on November 30, 1980, at a depth of about 1,788 feet.
 - a. Wells in the field exploit oil accumulations in a linear fractured fault zone in the Austin Chalk and Buda Formations.
 - b. The field has a distinct and narrow southwest-to-northeast orientation.
 - c. About 70 wells have been drilled and completed in the field, and most of these have since been plugged and abandoned.
 - d. Currently there are about seven (7) producing wells in the Fentress (1,750) Field.
 - e. The smaller Rheinlander (Austin Chalk) field has also produced from the same structural feature and within the area developed by the Fentress (1750) Field, although there are currently no producing wells assigned to the Rheinlander field.
3. The current field rules were adopted on May 9, 1983 (Docket No. 1-79,494) include the following provisions:
 - a. 330-foot lease line and 933-foot between well spacing
 - b. 40-acre standard and 20-acre optional proration units, with 3,000-foot unit diagonals applicable to both;
 - c. Allocation based on 100 percent acreage; and
 - d. Casing completion requirements.
4. Wells in this field have typically demonstrated high initial production followed by very rapid decline.
 - a. Wells completed in the early 1980s produced individual cumulative oil volumes of from about 20,000 to 50,000 bbl oil.

- b. Wells completed later in the fields life, from about 1984 on, generally produced significantly less, and often accumulated less than 10,000 to 20,000 bbl before being plugged.
5. The current 40-acre base and 20-acre optional well units have enabled operators to over-drill and over develop wells in the field.
6. Wells in the field have demonstrated regeneration after being plugged for some time, indicating secondary porosity capable of actively recharging the wells.
7. The examiners also note that the existing Field Rule No. 4 contains casing provisions that are outdated and have been superceded by the provisions of Statewide Rule 13.
8. The proposed field rules will prevent waste, protect correlative rights, and promote the orderly redevelopment of the field.

CONCLUSIONS OF LAW

1. Proper notice was given as required by statute.
2. All things have been done or occurred to give the Railroad Commission jurisdiction to resolve this matter.
3. The amended rules requested for the Fentress (1750) Field will prevent waste, protect correlative rights within the field, and promote conservation.

EXAMINER'S RECOMMENDATION

Based on the above findings and conclusions, the examiner recommends the application of Higher Standard Oil Company, Inc. to amend the field rules for the Fentress (1750) Field be approved.

Respectfully submitted,



Paul Dubois
Technical Examiner



Laura Miles-Valdez
Hearings Examiner