



RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

OIL AND GAS DOCKET NO. 08-0287590

THE APPLICATION OF MID-STATES OPERATING COMPANY FOR AN EXCEPTION TO STATEWIDE RULE 13 FOR THE WIGLEY 37 LEASE, WELL NO. 11 SPRABERRY (TREND AREA) FIELD, MIDLAND COUNTY, TEXAS

HEARD BY: Karl Caldwell - Technical Examiner
Terry Johnson- Legal Examiner

HEARING DATE: April 11, 2014

APPEARANCES: **REPRESENTING:**

APPLICANT:

Jack Rathbone

Mid-States Operating Company

EXAMINERS' REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Mid-States Operating Company ("Mid-States") requests an exception to Statewide Rule 13 for the Wigley 37 Well No.11 in the Spraberry (Trend Area) Field, Midland County Texas. Mid-States seeks relief regarding requirements pursuant to Statewide Rule 13 (b)(4)(A). RRC District 08 staff informed Mid-States that due to the well's spud and completion dates, the version of Statewide Rule 13 that was in effect prior to January 1, 2014 is in effect for the subject well.

The application is unopposed and the examiners recommend approval of the exception to Statewide Rule 13 (b)(4)(A).

DISCUSSION OF THE EVIDENCE

The Wigley 37 Well No.11 was spud on November 10, 2012. The subject well is subject to the version of Statewide Rule 13 that was in effect at the time the well was spud and completed. The well was drilled, cased, and cemented as follows:

- 13 3/8 inch, 48 lb per ft J-55 surface casing set to a depth of 295 feet in a 17

½ inch hole and cemented with 345 sacks of HalCem-C cement, with returns to surface;

- 8 5/8 inch, 32 lb per foot, J-55 and HCK-55 intermediate casing set to a depth of 4,893 feet in an 11 inch hole and cemented in place with 1,130 sacks of cement, with the top of cement (TOC) at approximately 450 feet from surface;
- 5 ½ inch, 17 lb per foot N-80 production casing set at a depth of 11,310 feet in a 7 7/8 inch hole and cemented in place with 1,350 sacks of cement. 100 % excess was run. TOC was determined by a cement bond log (CBL) to be at 7,628 feet.

The uppermost set of perforations in the subject well are located in the Upper Spraberry formation in an interval from 7,780 feet to 8,006 feet. The CBL indicates that the TOC behind the production casing is at approximately 7,628 feet, which is 152 feet above the upper set of perforations in the well. The CBL also shows cement behind pipe from 7,380 feet to 7,450 feet. A sufficient volume of cement, with 100% excess, was pumped to circulate cement to surface, with the 5 ½ inch production casing set at a depth of 11,310 feet in a 7 7/8 inch hole, but losses were encountered while pumped the cement. The version of Statewide Rule 13 in effect for the subject well requires cement up to a point at least 600 feet above the top of the shallowest productive horizon, identified as the Upper Spraberry in the subject well, where the interval was perforated from 7,780 to 8,006 feet.

Mid-States testified that the subject well is cemented in a manner that effectively isolates the upper productive horizon in the well. The cement in place behind the production casing effectively seals off the productive zones from water encroachment from shallower zones up-hole, particularly the San Andres formation. The operator is concerned that any attempt to squeeze cement above the productive zone may jeopardize the well and the ultimate recovery of reserves.

The subject well was completed on January 3, 2013. The well was already producing when the operator was notified by the Commission that the top of cement did not meet the requirement of Statewide Rule 13. Current production, on average, is 35 BOPD and 160 bbl of water per day, with water production declining. Oil and water production rates for the subject well are typical with other wells completed in the field with production casing cemented in a manner that meet the requirements of Statewide Rule 13.

The Benners 37 No. 4 well was completed a month prior to the subject well being completed and is located in the same vicinity of the field. The Benners 37 No.4 well was perforated in the Upper Spraberry formation from 7,622 feet to 7,900 feet. The CBL for the Benners 37 No. 4 well shows the TOC at 6,006 feet, indicating more than 1,600 feet of cement above the Upper Spraberry perforations. Table 1 shows that both the Wigley 37 Well No.11 and the Benners 37 Well No. 4 were perforated at comparable depths in the Upper Spraberry formation, and treating rates, pressures, and ISIPs were similar for both

wells. This data indicates that the hydraulic fracturing treatments were placed in the same formation and there was effective zonal isolation with the varying amount of cement behind pipe in both wells.

Table 1. Upper Spraberry Completion Comparison

<u>Well Name</u>	<u>Perforations</u>	<u>Avg. Rate</u>	<u>Avg. Treating Press.</u>	<u>ISIP</u>
Wigley 37 No. 11	7,780 - 8,006 ft	36.7 bpm	744 psi	243 psi
Benners 37 No. 4	7,622 - 7,900 ft	40.2 bpm	994 psi	179 psi

Production from the subject well does not indicate that there is a water problem and that the productive zone is not sufficiently isolated. Mid-States concludes that the well is constructed in a manner that satisfies the requirements of Statewide Rule 13 and request an exception to Statewide Rule 13(b)(4)(A).

FINDINGS OF FACT

1. Proper notice of this hearing was given at least ten (10) days prior to the date of hearing and no protests to the application were received.
2. The Wigley 37 Well No. 11 was spud on November 10, 2012 and completed on January 3, 2013.
3. The Upper Spraberry formation was perforated from 7,780 feet to 8,006 feet in the Wigley 37 Well No. 11.
4. The top of cement in the subject well is 7,628 feet, approximately 152 feet above the uppermost perforations in the Upper Spraberry formation.
5. The cement bond log shows cement from 7,380 feet to 7,450 feet.
6. Water production from the subject well is similar to other producing wells in the field.
7. The Upper Spraberry formation was hydraulically fracture stimulated with a comparable average rate, treating pressure, and ISIP as a nearby well with the top of cement more than 1,600 feet above the Upper Spraberry interval.

CONCLUSIONS OF LAW

1. Proper notice was issued as required by all applicable statutes and regulatory codes.
2. All things have occurred and been accomplished to give the Commission jurisdiction in this matter.

3. Approval of an exception to Statewide Rule 13(b)(4)(A) will prevent waste.

EXAMINERS' RECOMMENDATION

Based on the above findings of fact and conclusions of law, the examiners recommend that the Commission approve an exception to Statewide Rule 13 for the Wigley 37 Well No. 11 Spraberry (Trend Area) Field Midland County, Texas as requested by Mid-States Operating Company.

Respectfully submitted,



Karl Caldwell
Technical Examiner



Terry Johnson
Legal Examiner