



RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

OIL AND GAS DOCKET NO. 03-0279815

THE APPLICATION OF CYPRESS E & P CORPORATION TO ADOPT FIELD RULES
FOR THE CYPRESS LANDING (EAGLE FORD) FIELD, FAYETTE COUNTY, TEXAS

HEARD BY: Richard D. Atkins, P.E. - Technical Examiner
Michael Crnich - Legal Examiner

DATE OF HEARING: January 31, 2013

APPEARANCES: REPRESENTING:

APPLICANT:

George Neale
Rick Johnston
Robert Beardsley
Mark Edwards
David Cape

Cypress E & P Corporation

EXAMINERS' REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

The Cypress Landing (Eagle Ford) Field currently operates under Statewide Field Rules. Cypress E & P Corporation ("Cypress") requests that Field Rules be adopted, as shown below:

1. Designated correlative interval from 12,096 feet to 12,294 feet as shown on the log of the Cypress E & P Corporation - Bigham Unit, Well No. 1H Pilot Hole (API No. 42-149-33239);
2. 330'-0' well spacing with special provisions for "take points", 100' leaseline spacing for the first and last take points, a 33' "box rule" and "off-lease" penetration point in horizontal drainhole wells;
3. 40 acre oil units;
4. Allocation based on 100% acres with a top oil allowable based on the 1965 Yardstick Allowable.

Cypress also requests that proration unit plats not be required for individual wells, but that Form P-15 be filed to designate the number of acres to be assigned to each well with no maximum diagonal limitation.

At the hearing, the examiners noted that the Cypress Landing (Eagle Ford) Field is an extension of the Eagleville (Eagle Ford-2) Field into Fayette County located in RRC District 3.¹ For consistency, the examiners proposed that the same Field Rules be adopted that currently exist in the Eagleville (Eagle Ford-2) Field. The proposed Field Rules would be modified to include 80 acre oil units with optional 40 acre density, a top oil allowable of 2,000 BOPD and a six month exception to Statewide Rules 13 and 51, which require producing an oil well through tubing and the timely filing of potential tests. However, since the field does not currently contain H₂S, the operators will not be required to comply with the provisions contained in Statewide Rule 36. Cypress did not consider this recommendation to be adverse.

The application is unopposed and the examiners recommend that Field Rules be adopted for the Cypress Landing (Eagle Ford) Field, as proposed by Cypress with the examiners modifications.

DISCUSSION OF THE EVIDENCE

The Cypress Landing (Eagle Ford) Field was created in October 2012 by the completion of the Cypress E & P Corporation - Bigam Unit, Well No. 1H. The average depth of the field is 12,300 feet and there is currently one producing oil well carried on the proration schedule. The field operates under Statewide Rules and Cypress is the only operator in the field. No production has yet been recorded from the field.

There is currently no defined correlative interval for the field. Cypress requests that the field be defined as the correlative interval from 12,096 feet to 12,294 feet as shown on the log of the Cypress E & P Corporation - Bigam Unit, Well No. 1H Pilot Hole (API No. 42-149-33239), W. Gorman Survey, A-48, Fayette County, Texas. Cypress submitted a cross section that showed that the Cypress Landing (Eagle Ford) Field and the Eagleville (Eagle Ford-1) and Eagleville (Eagle Ford-2) Fields produce from the Eagle Ford formation which extends across three RRC Districts. The proposed correlative interval is identical to the correlative interval in the Eagleville (Eagle Ford-1) and Eagleville (Eagle Ford-2) Fields. The interval includes the entire Eagle Ford formation and is located stratigraphically between the ash bed in the Lower Austin Chalk formation and the top of the Buda Lime formation.

¹ The examiners took official notice of the Eagleville (Eagle Ford-1) Docket Nos. 01-0266450 and 01-0274323 and the Eagleville (Eagle Ford-2) Docket Nos. 02-0266475 and 02-0274324.

Cypress is developing the Cypress Landing (Eagle Ford) Field by drilling infill horizontal drainhole wells and requests Field Rules that will promote the efficient and effective development of the remaining hydrocarbons. Cypress requests 330'-0' well spacing with special provisions for "take points", 100' leaseline spacing for the first and last take points, a 33' "box rule" and "off-lease" penetration point in horizontal drainhole wells. Cypress argues that the proposed 0' between well spacing is necessary to allow the drilling of horizontal drainhole wells, which may have to be placed very near vertical wells in some cases. Similar rules have been adopted in other tight reservoirs, including the Eagle Ford, Wolfcamp, Bone Springs, Cotton Valley and Barnett Shale formations.

Cypress requests that a Field Rule be adopted which includes language relevant to the measurement of distances to lease lines for horizontal drainhole wells. Cypress's proposed rule specifies that, for purposes of lease line spacing, the nearest "take point" in a horizontal well be used. This take-point could be a perforation in a horizontal well that is cased and cemented, an external casing packer in a cased well, or any open-hole section in an uncased well. For purposes of the assignment of additional acreage pursuant to Statewide Rule 86, it is proposed that the distance between the first and last take-point in a horizontal drainhole well be used.

By allowing a 100' leaseline spacing for the first and last take points, an additional 230 feet of the reservoir is exposed to the horizontal lateral and drained. These reserves would go unrecovered if the 100' leaseline spacing for the first and last take points is not approved. Cypress also proposes a 33' "box rule" for horizontal drainhole wells that would allow drainholes to deviate 33 feet from either side of their permitted track without the necessity of obtaining a Statewide Rule 37 exception. As drilled wells for which all points are located within the "box" would be considered in compliance with their drilling permits.

In some cases, it is beneficial to penetrate the reservoir off lease, while still having "take points" no closer to lease lines than allowed under the field rules. Cypress requests that Field Rules for the subject field provide for an "off-lease" penetration point. Statewide Rule 86 requires that the penetration point of a horizontal drainhole be on the lease. In this field, a well generally requires approximately 600 feet of horizontal displacement to make the 90 degree turn from vertical to horizontal. If the penetration point is required to be on the lease, then the first point of production would be about 600 feet from the lease line. The proposed rule will allow approximately 300 feet of additional producing drainhole, which will result in the recovery of additional reserves. The Commission has adopted similar rules allowing offsite penetration points in other fields, after the operator has given notice to the mineral owners of the off-lease tract on which the penetration point is to be located and received no protest.

The proposed exceptions to Statewide Rule 13(b)(5)(a) and Statewide Rule 51(a) will allow operators of flowing oil wells in the field the flexibility to run tubing and file completion paperwork, without penalties, once the pressure and production rates have declined. Operators fear shutting a well in may permanently damage the well's completion,

as frac fluid will remain in the reservoir and may negatively impact the long term production characteristics of the well. A six month exception is needed, as typically, new oil wells have high initial rates of production, followed by a steep decline. Commission staff in the Field Operations Section have no issues with approving the proposed rules.

The Eagle Ford formation is unique in that it contains an oil zone on top of a gas zone. Since the permeability is less than a microdarcy, Cypress believes that there is no migration of fluids in the reservoir and wells only produce fluids that are contacted by the fracture treatment. As a result, the recovery factor is the same for both oil and gas wells. Since many wells in the Eagle Ford trend have high initial potentials of over 2,000 BOPD and there is no migration of reservoir fluids, a 2,000 BOPD top MER oil allowable and the elimination of the daily casinghead gas limitation for oil wells is appropriate for the field.

Cypress also requests that proration unit plats not be required for individual wells, but that Form P-15 be filed to designate the number of acres to be assigned to each well with no maximum diagonal limitation. Cypress proposes that allocation be based on 100% acres.

FINDINGS OF FACT

1. Notice of this application and hearing was provided to all persons entitled to notice at least ten (10) days prior to the date of the hearing.
2. The Cypress Landing (Eagle Ford) Field was created in October 2012 by the completion of the Cypress E & P Corporation - Bigham Unit, Well No. 1H.
 - a. The average depth of the field is 12,300 feet and there is currently one producing oil well carried on the proration schedule.
 - b. The field operates under Statewide Rules and Cypress is the only operator in the field.
3. The Cypress Landing (Eagle Ford) Field should be defined as the correlative interval from 12,096 feet to 12,294 feet as shown on the log of the Cypress E & P Corporation - Bigham Unit, Well No. 1H Pilot Hole (API No. 42-149-33239), W. Gorman Survey, A-48, Fayette County, Texas. This interval includes the entire Eagle Ford formation and is located stratigraphically between the ash bed in the Lower Austin Chalk formation and the top of the Buda Lime formation.
4. 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. A take-point in a horizontal well in this field may be a perforation in a horizontal well that is cased and cemented, an external casing packer in a cased well, or any open-hole section in an uncased portion of the wellbore.
 - b. Adoption of the proposed rule will allow the horizontal drainhole length on a lease to be maximized.
 - c. For purposes of assignment of additional acreage pursuant to Statewide Rule 86, the distance between the first and last take-point in a horizontal well should be used.
5. A Field Rule providing for 330'-0' well spacing with a special provision for 100' leaseline spacing for the first and last take points is appropriate for the Cypress Landing (Eagle Ford) Field.
 - a. The proposed 0' between well spacing is necessary to allow the drilling of horizontal wells, which may have to be placed very near vertical wells in some cases.
 - b. By allowing a 100' leaseline spacing for the first and last take points, an additional 230 feet of the reservoir is exposed to the horizontal lateral and drained. These reserves would go unrecovered if the 100' leaseline spacing for the first and last take points is not approved.
6. The proposed 33' "box rule" is necessary to allow operators reasonable minor deviations from the wellbore track that has been permitted.
7. Allowing an "off-lease" penetration point will result in maximum producing drainhole length, thereby increasing ultimate recovery from horizontal drainhole wells. To protect correlative rights, prior notice and opportunity to object should be given to the mineral owners of "off-lease" surface locations.
8. Similar rules have been adopted in other tight reservoirs, including the Eagle Ford, Wolfcamp, Bone Springs, Cotton Valley and Barnett Shale formations.
9. Since many wells in the Eagle Ford formation trend have high initial potentials, a 2,000 BOPD top MER allowable and no daily casinghead gas limitation for oil wells is appropriate for the field.
 - a. The Eagle Ford formation is unique in that it contains an oil zone on top of a gas zone.
 - b. Since the permeability is less than a microdarcy, there is no migration of fluids in the reservoir.

- c. Wells only produce fluids that are contacted by the fracture treatment.
 - d. The recovery factor is the same for both oil and gas wells.
10. Exceptions to Statewide Rule 13(b)(5)(a) and Statewide Rule 51(a) will allow operators of flowing oil wells in these two fields the flexibility to run tubing and file completion paperwork, without penalties, once the pressure and production rates have declined.
- a. Frac treatment requires high volumes of fluid and proppant that cannot be done down tubing.
 - b. Additional time is needed to schedule workover rigs and crews during the current high demand environment.
 - c. A six month exception is appropriate for the two fields, as typically, new oil wells have high initial rates of production, followed by a steep decline.
11. The filing of Form P-15 to designate the number of acres to be assigned to each well for proration purposes with no proration plats will eliminate unnecessary paperwork.

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 Field Rules for the Cypress Landing (Eagle Ford) Field is necessary to prevent waste, protect correlative rights and promote development of the field.

RECOMMENDATION

Based on the above findings of fact and conclusions of law, the examiners recommend that the Commission adopt Field Rules for the Cypress Landing (Eagle Ford) Field, as requested by Cypress E & P Corporation with the examiners modifications.

Respectfully submitted,



Richard D. Atkins, P.E.
Technical Examiner



Michael Crnich
Legal Examiner