
APPLICATION OF LARGO OIL COMPANY TO CONSIDER AN EXCEPTION TO STATEWIDE RULE 37 TO PLUG BACK WELL NO. 1, SEARS LEASE, IN THE HENDERSON, S. (PETTIT 7445) FIELD, HENDERSON, S. (TRAVIS PEAK, UP.) FIELD, AND WILDCAT FIELD, IN RUSK COUNTY, TEXAS

APPEARANCES:

APPLICANT -

Dick Marshall, Attorney
William W. Holden, Vice President Operations
Dale Miller , Engineer

GMT Inc. (for Largo Oil)
GMT Inc. (for Largo Oil)
GMT Inc. (for Largo Oil)

PROTESTANT -

T. L. Dowden

Individually

PROCEDURAL HISTORY

Application Filed:	February 13, 2002
Notice of Hearing:	March 27, 2002
Hearing Held:	May 7, 2002
PFD Circulated	September 27, 2002
Heard by:	Scott Petry, Hearings Examiner Mark Helmueller, Hearings Examiner Donna Chandler, Technical Examiner

STATEMENT OF THE CASE

Largo Oil Company ("Largo" or "applicant") seeks an exception to Statewide Rule 37 to recomplete its Sears #1 well ("subject well") in Rusk County, Texas. The application covers the Henderson, S. (Pettit 7445) Field ("Pettit"), Henderson, S. (Travis Peak, Up.) Field ("Travis Peak"), and wildcat field ("wildcat") ("subject fields"). The applied-for fields are subject to field rules of 467 feet minimum spacing to the nearest lease line and 1200 feet minimum between well spacing.

The Sears (14673) Lease ("subject lease") comprises 40 acres out of a 100 acre base lease identified by the applicant and as outlined on the plat attached to the Form W-1 (Application for Permit to Drill, Deepen, Plug Back, or Re-enter) submitted by Largo on February 11, 2002. The subject well was originally completed in the Henderson, S. (Cotton Valley, Seg 1) Field ("Cotton Valley") in the early 1980's and was drilled at a location that was regular to the field rules and lease lines then in effect. The Cotton Valley was completed at a depth between 10,490' and 10,668, but the protestant possesses the rights of the offsetting lease to the west of the subject well from the surface to a depth of 7,820'. The proposed location in the subject fields is therefore 82' from the applicable lease line to a depth of 7,820'.

Largo, which was represented in this hearing by counsel and witnesses from GMT Energy ("GMT"),¹ claims that an exception is necessary to prevent waste and promote conservation of resources. In arguing that it was entitled to a Rule 37 exception, Largo relied on the economic waste/existing wellbore doctrine as the basis for its application.

Largo's application is protested by Mr. T. L. Dowden ("Dowden" or "protestant"). Dowden is the operator of the lease to the west of Largo's Sears Lease.

BACKGROUND

The subject well was initially completed in the Cotton Valley, and continues to produce from this zone. Production records and testimony indicate that Cotton Valley production from the subject well has declined to approximately 25 mcf per day.

The application covers the Pettit, Travis Peak, and wildcat fields. The Pettit field was discovered on March 14, 1967 and there are no other wells carried on the gas proration schedule for this field. The Travis Peak field was discovered on June 9, 1978 and there are six wells carried on the gas proration schedule for this field. There are three wells carried on the oil proration schedule for the Travis Peak

¹GMT Energy has an agreement with Largo whereby GMT will be the operator of the Sears #1 should the Rule 37 exception be granted.

and all three wells were severed at the time of the hearing.

DISCUSSION OF THE EVIDENCE

I. Applicant's Evidence

GMT presented evidence that the subject well was originally drilled and completed between 10,490' and 10,668' in the Cotton Valley Field in 1984. The cumulative production from the subject well from the Cotton Valley between December 1984 and February 2002 was 499,163 mcf of gas and 1,552 barrels of condensate. GMT's engineer further testified that the production from the Cotton Valley had dropped to approximately 25 mcf per day, but that, should the exception be approved, this amount may be commingled with new production.

In its case in chief, GMT presented structure maps for both the Pettit and Travis Peak formations. Specifically, the structure map for the Pettit formation identifies two productive intervals. The productive interval for the Sears No. 1 in this formation is identified as 2 feet of net pay from 7312' to 7314'. Based on its review of logs of nearby wells showing a lack of pay at this correlative interval, GMT believes that the interval is not in communication with other Pettit production in the area and labels this interval as the "Upper Pettit".

GMT's structure maps also identify a "Middle Pettit" interval. The net pay in this interval is found from 7430' to 7437' as seen in the well log for the J. C. Trahan Kangera Well No. 1. The applicant contends that the "Middle Pettit" is responsible for the only production from the Pettit formation in several wells located to the west of the Sears Lease. Applicant concedes, however, that it may not encounter virgin pressure in the Pettit and requests exception permits for both the Henderson, S. (Pettit 7445) Field and the wildcat field.

Commission production records submitted by applicant, however, show that the production from the "Middle Pettit" formation on its structure map is from the Henderson, S. (Pettit) Field for the J. C. Trahan Kangera Well No. 1, and *not* the Henderson, S. (Pettit 7445) Field in which the applicant seeks an exception permit. Field Rules for the Henderson S. (Pettit) Field require 933 feet minimum distance to lease lines, 1867 feet minimum between well spacing, and 640 acre units. Commission production records for the Henderson, S. (Pettit 7445) Field show that there are no wells currently producing from this field.

In the Travis Peak Field, GMT's witness testified that the Sears No. 1 has a productive interval

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of six feet of pay. He pointed out, however, that the quality and amount of pay in surrounding wells ranged from eight to twelve feet and was “random”. It was also noted that the Travis Peak field has low permeability and is classified as a tight formation.

The applicant’s evidence regarding the subject fields indicated that a well drilled at a regular location would encounter both reservoirs. The main thrust of the applicant’s argument, however, was that drilling a new well at such a regular location would not be economic for the estimated amount of reserves. In support of this, GMT presented testimony and exhibits to outline the predicted volumetrics for the Pettit and Travis Peak fields for the subject well. As mapped by applicant, the so-called “Upper Pettit” interval present in the Sears No. 1 covers an area of approximately 100 acres. Utilizing 12% porosity, 30% water saturation, two feet of pay, and 80% recovery, recoverable Pettit reserves available to the Sears No. 1 are 116 MMCF of gas and 1,163 barrels of condensate.

For the Travis Peak, recoverable reserves are estimated to be 73 MMCF of gas and 730 barrels of condensate. These calculations are based on 40 acre drainage, 10% porosity, 40% water saturation and 60% recovery. GMT’s petroleum engineer testified that the recovery factor for the Travis Peak was lower than the Pettit due to its being a tighter formation. Combined, the total estimated recoverable reserves for the subject well from both the Travis Peak and Pettit fields is 189 MMCF and 1,893 barrels of condensate.

If forced to drill a new well for the Pettit and Travis Peak Fields, Largo maintained that the project would never return its costs. Further testimony estimated that the expenditures for a new well to reach the subject fields would cost approximately \$687,564, whereas expenditures for the recompletion would cost approximately \$199,760. When compared with the estimated reserves, the cost of one mcf of gas recovered from a recompleted well is approximately \$1.34, whereas the cost of one mcf of gas recovered from a newly drilled well is approximately \$4.61. At \$4.61/mcf, GMT’s vice president of operations stated that his organization “would never drill” a new well.

II. Protestant’s Evidence

Protestant Dowden asserted that, if the Rule 37 application were granted, the production from the subject well in the Travis Peak and Pettit fields would drain his offsetting wells. The protestant, however, presented no affirmative evidence in support of this contention.

EXAMINERS' OPINION

An applicant seeking an exception to Rule 37 based on waste must establish: 1) that unusual conditions, different from conditions in adjacent parts of the field, exist under the tract for which the exception is sought; 2) that, as a result of these conditions, hydrocarbons will be recovered by the well for which a permit is sought that would not be recovered by any existing well or by additional wells drilled at regular locations; and, 3) that the volume of otherwise unrecoverable hydrocarbons is substantial.

As outlined below, the examiners find that applicant has met the requirements for an exception to Statewide Rule 37 for the Henderson, S. (Travis Peak) Field and the wildcat field. Applicant's evidence does **not**, however, establish that an exception to Statewide Rule 37 should be granted for the Henderson, S. (Pettit 7445) Field. The examiners also recommend that applicant's wildcat permit be limited to the interval from 7,300' to 7,330' based on applicant's evidence from the logs that the subject well's target interval in the Pettit formation for the wildcat permit is between 7312' to 7314'.

A. UNUSUAL CONDITION / ECONOMIC WASTE

Largo claims that the unusual condition in the field is the existence of the Sears Well #1 wellbore at the exception location. The applicant claims that the Commission should consider economic considerations as outlined in Exxon Corp. v. Railroad Commission, 571 S.W.2d 497 (Texas 1978), in determining whether the waste of hydrocarbons will occur. This theory is commonly referred to as economic waste.

Largo's witness testified without rebuttal that the estimated initial capital expenditure to drill a new well would be approximately \$687,564, whereas expenditures for the recompletion of the existing wellbore would be approximately \$199,760. It was the further testimony of Largo that it would not be economically feasible to drill a new well for the targeted reserves at a regular location and that economic analyses showed that a new well would never recover costs. Therefore, it is unlikely that the reserves in the subject fields would be recovered absent the granting of a Rule 37 exception based on waste.

An exception, however, is not automatic upon a showing that a redrill would be uneconomic. The applicant must demonstrate that "...the existing well was drilled and completed in the original formation legitimately and in good faith and not as a subterfuge to bolster a later exception under [Rule 37]." Exxon at 501. Given the uncontested evidence that the subject well has produced from

the Cotton Valley Field for almost 18 years and continues to produce approximately 25 mcf per day, the examiners conclude that the subject well was not drilled as a subterfuge to bolster a future Rule 37 exception.

B. RECOVERY BY OTHER WELLS

The second element of the three part waste test is establishing that another well or a well at a regular location would not recover the same hydrocarbons which an applicant claims would be recovered at the exception location. In the context of an existing well bore, the Commission may grant a Rule 37 exception if the existing well bore will recover reserves that cannot be produced by any other existing well and it is not economically feasible to drill at a regular location. Schlachter v. Railroad Commission of Texas, 825 S.W.2d 732 (Tex.Civ.App-Austin 1992, writ denied) (interpreting Exxon).

Schlachter also held that an application for a Rule 37 exception based on economic waste was properly denied where an existing well was capable of recovering any remaining reserves. In this docket, the uncontested evidence shows that the Travis Peak field surrounding the Sears #1 well has a low permeability and that a well will likely drain no more than 40 acres. Applicant's Pettit structure map further shows that the productive interval for the "Upper Pettit" is only seen in the log for the Sears # 1 well. Applicant's structure map is based on review of well logs showing zero pay in the surrounding wells in the "Upper Pettit" interval. As the average drainage of the Sears Well No. 1 is only 40 acres for the Travis Peak field and the Pettit producing interval is not in communication with the Pettit production in offsetting wells, it is virtually impossible for any of the existing wells in the subject fields to recover the reserves that are the target of the proposed recompletion in the Travis Peak Field and in the wildcat field.

Applicant also submitted through its structure map and testimony that the "Middle Pettit" production to the west of the Sears Well No. 1 is distinct from the "Upper Pettit" reserves available to the Sears No. 1. Applicant therefore requested a permit in the Henderson, S. (Pettit 7445) Field, in the event that it did not encounter virgin pressure upon recompletion in the "Upper Pettit" interval identified in the well log for the Sears No. 1 well.

Review of the production information submitted by applicant shows that it has *not provided sufficient evidence to support an exception to prevent waste for the Henderson, S. (Pettit 7445) Field*. The Gas Proration Schedule submitted by applicant shows that no wells are currently carried in the Henderson, S. (Pettit 7445) Field. Review of the proration schedule in conjunction with the maps submitted by applicant, shows that the nearest Pettit production to the Sears No. 1 well is from the

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J. C. Trahan Kanger Well No. 1. Further review shows that this production is from the Henderson, S. (Pettit) Field, and not the Henderson, S. (Pettit 7445) Field in which applicant seeks an exception permit. Notably, the Henderson, S. (Pettit) Field requires 640 acre units, as opposed to the 40 acre units required in the Henderson, S. (Pettit 7445) Field. Additionally, the minimum lease line spacing requirements for the Henderson, S. (Pettit) Field, are double the distance required in the Henderson, S. (Pettit 7445) Field. In short, applicant does not provide any evidence to support its contention that a recompletion in the "Upper Pettit" interval would be appropriate in the Henderson, S. (Pettit 7445) Field.² Accordingly, the examiners recommend denying applicant's request for an exception to Statewide Rule 37 to prevent waste in the Henderson, S. (Pettit 7445) Field.

C. SUBSTANTIAL VOLUME

In determining whether a Rule 37 exception is necessary to prevent waste one also has to show that a substantial volume of hydrocarbons is otherwise unrecoverable. Largo's application has fulfilled this requirement. The unrefuted evidence put forth by the applicant indicates that the total estimated recoverable reserves for the subject fields is 189 MMCF with 1,893 barrels of condensate.

The examiners believe that Largo's application to recomplete the subject well should be approved in order to prevent the waste of hydrocarbons. The existing well bore will recover reserves that will not be recovered by any existing well and it would not be economically feasible to drill a new well at a regular location to recover these reserves. Additionally, the well was not drilled as a subterfuge to bolster a future Rule 37 exception, but was completed in the original formation legitimately and in good faith.

The examiners would note, however, that the evidence produced with regard to the wildcat field and the close proximity of the existing well to the offsetting lease line warrant a restriction on the wildcat field designation. The applicant's basis for a wildcat designation was that it expected to encounter virgin pressure in the "Upper Pettit" completion. While a wildcat permit may be necessary should the Pettit completion in the Sears No. 1 prove to be a new and distinct field, the evidence only supports a wildcat permit for the interval from 7,312' to 7,314'. Therefore, the examiners recommend that the wildcat permit be limited to the interval from 7,300' to 7,330'.

Therefore, the examiners recommend adoption of the following proposed findings of fact and

²Applicant's evidence could potentially support an exception permit in the Henderson, S. (Pettit) Field. However, this field is not included on applicant's Commission Form W-1 and this hearing was not noticed to consider an exception permit in that field.

conclusions of law:

FINDINGS OF FACT

1. At least 10 days notice of this hearing was given to the designated operator, all lessees of record for tracts that have no designated operator, and all owners of record of unleased mineral interests for each affected adjacent tract. Counsel and witnesses from GMT Energy appeared on behalf of Largo Oil Company ("Largo" or "applicant") and presented evidence. Mr. T. L. Dowden ("Dowden" or "protestant") appeared in protest of the application.
2. Largo has applied on a Form W-1 for a permit to plug back and recomple Well No. 1 on its Sears (14673) Lease. Applicant proposes to plug back the well at a location which is 82' from the western lease line and 998' from the eastern lease line, in Rusk County, Texas. Applicant has applied to plug back its well to the Henderson, S. (Pettit 7445') Field, the Henderson, S. (Travis Peak, Up.) Field, and a wildcat field ("subject fields").
3. The subject fields are governed by statewide rules requiring spacing of 467 feet from lease lines and 1200 feet between wells. The field rules further specify a density pattern of 40 acres per well.
4. Applicant's Sears Lease is a tract containing 40 acres.
5. An exception to recomple the subject well at the applied-for location is necessary to prevent waste.
 - A. There are approximately 116 MMCF of recoverable gas and 1,163 barrels of condensate in the Henderson, S. (Pettit 7445') Field and approximately 73 MMCF of recoverable gas and 730 barrels of condensate in the Henderson, S. (Travis Peak, Up.) Field underlying the applicant's Sear's (14673) Lease.
 - B. Requiring the applicant to drill a new well at a regular location would result in an estimated drilling cost of \$687,564, or approximately \$4.61/mcf of gas recovered.
 - C. Recompleting the Sears Lease Well No. 1 would result in an estimated workover cost of \$199,760, or approximately \$1.34/mcf of gas recovered.
6. It would not be economically feasible to drill a regularly located well to recover the reserves from the Henderson, S. (Travis Peak, Up.) Field and wildcat field under this tract.
7. Applicant's existing wellbore constitutes an unusual condition on the subject lease.

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8. The existing wells surrounding the Sears #1 Well will not recover the hydrocarbons underlying the applicant's lease in the Henderson, S. (Travis Peak, Up.) Field and wildcat field.
9. The volume of hydrocarbons available in the subject fields underlying the Sears #1 Well is substantial.
10. The Sears #1 Well, drilled in 1984, was not drilled as a subterfuge to bolster a later Rule 37 application in the subject fields. The well has produced from the Cotton Valley Field for almost 18 years.
11. A wildcat permit is necessary in order to prevent waste as the interval from 7,312' to 7,314' may encounter virgin pressure.
12. The well log from the Sears #1 well only supports a wildcat permit for the interval from 7,312' to 7,314' and not for any other wildcat zones.
13. The wildcat permit should be limited to the interval from 7,300' to 7,330' as this permitted interval includes the 2 feet of pay identified in the well log from the Sears No. 1 well.
14. Applicant failed to establish that the Sears #1 well will recover reserves from the Henderson, S. (Pettit 7445) Field that cannot be recovered from any regularly located well.
 - A. Applicant did not present any evidence of reserves in the Henderson, S. (Pettit 7445) Field.
 - B. The gas proration schedule submitted by applicant shows that no wells are currently carried in the Henderson, S. (Pettit 7445) Field.
 - C. The maps submitted by applicant for the Pettit formation are based on production from the J. C. Trahan Kangera Well No. 1.
 - D. Commission records show that production from the J. C. Trahan Kangera Well No. 1, relied on by applicant in mapping reserves adjacent to the subject lease, is from the Henderson, S. (Pettit) Field and not the Henderson, S. (Pettit 7445) Field.

CONCLUSIONS OF LAW

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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. An exception to Statewide Rule 37 to plug back the subject well is necessary to prevent waste in the Henderson, S. (Travis Peak, Up.) Field under the doctrine of economic waste as adopted in Exxon Corp. v. Railroad Commission, 571 S.W.2d 497 (Texas 1978) and Schlachter v. Railroad Commission of Texas, 825 S.W.2d 732 (Tex.Civ.App-Austin 1992, writ denied).
4. An exception to Statewide Rule 37 to plug back the subject well is necessary to prevent waste in the wildcat field from the interval shown in the well log from the Sears #1 well between 7,287' to 7,339' under the doctrine of economic waste, as adopted in Exxon Corp. v. Railroad Commission, 571 S.W.2d 497 (Texas 1978) and Schlachter v. Railroad Commission of Texas, 825 S.W.2d 732 (Tex.Civ.App-Austin 1992, writ denied).
5. An exception to Statewide Rule 37 is not necessary to prevent waste in the Henderson, S. (Pettit 7445) Field.

RECOMMENDATION

The examiners recommend that the subject application be granted for the Henderson, S. (Travis Peak, Up.) Field and wildcat field. The wildcat field, however, should be limited to the interval shown in the well log from the Sears #1 well and should cover only the depths 7,300' to 7,330'. The examiners further recommend that the subject application be denied for the Henderson, S. (Pettit 7445) Field as an exception is not necessary to prevent waste.

Respectfully submitted,

Scott Petry
Hearings Examiner

Donna Chandler, P.E.
Technical Examiner

Mark Helmueller
Hearings Examiner