

September 28, 2005

**RULE 37 CASE No. 0241348
DISTRICT 6**

**APPLICATION OF REICHMANN PETROLEUM CORPORATION FOR AN EXCEPTION TO STATEWIDE
RULE 37 FOR WELL NO. 2H ON THE TRINIDAD BRIDGES LEASE, BRIDGES FIELD, SHELBY
COUNTY, TEXAS.**

APPEARANCES:

FOR APPLICANT REICHMANN PETROLEUM CORPORATION:

David Gross
Larry Grace
Mark Franki
William Brown

FOR PROTESTANTS HUNT PETROLEUM CORPORATION:

George Neale

PROPOSAL FOR DECISION

PROCEDURAL HISTORY

APPLICATION FILED:	January 4, 2005
NOTICE OF HEARING:	April 29, 2003
HEARING DATE:	March 31, 2005
HEARD BY:	Mark Helmueller - Hearings Examiner Thomas Richter - Technical Examiner
TRANSCRIPT RECEIVED:	April 5, 2005
RECORD CLOSED:	July 28, 2005
PFD CIRCULATION DATE:	September 28, 2005

STATEMENT OF THE CASE

Reichmann Petroleum Corporation (“Reichmann”) seeks an exception to Statewide Rule 37 for its existing Well No. 2H on the Trinidad Bridges Lease in the Bridges Field (“subject well”). The Trinidad-Bridges Lease (“subject lease”) is a rectangular 100 acre tract. The well was originally drilled by Trinidad Exploration, Inc. (“Trinidad”) as a directional well with a 1500' horizontal drainhole. The Bridges Field is subject to spacing requirements of 467' minimum distance to the nearest lease line and 1200' minimum distance between wells.

After the well was completed, several directional and land surveys were filed with the Commission which ultimately revealed that the penetration point into the Bridges Field occurred 317' from the southern lease line. Accordingly, approximately 150' of the 1500' horizontal drainhole is located within 467' of the southern lease line. As a result, Reichmann filed an amended drilling permit and requested an exception to Statewide Rule 37 for the portion of the well located within 467' of the southern lease line. A copy of the plat filed with Applicant's amended W-1 Application for Permit to Drill, Deepen, Plug Back or Re-Enter is attached. The application is protested by Hunt Petroleum Corporation (“Hunt”), the offset operator to the south of the Trinidad-Bridges Lease. Hunt did not put on any evidence in support of its protest.

The Trinidad-Bridges 2-H was originally drilled as a horizontal drainhole well by Trinidad under Permit No. 523443 which was administratively granted on September 6, 2002. The permitted penetration point was 467' from the southern and western lease lines.

The well was completed by Trinidad on November 5, 2002 with a measured lateral from 3830' to 5445'. The well's initial potential tested at 184 BOPD and 190 BWPD. Trinidad's filings for completion of the well included a copy of a directional survey.

In May 2004, Compass Directional Guidance filed an additional survey performed by Vaughn Energy Services in April 2003. Based on review of the directional surveys, the Commission notified Reichmann that the terminus of the drainhole lateral was only 200' from the northern lease line. Due to the location of the drainhole terminus, Reichmann was advised that an amended W-1 was required and that notice of application under Statewide Rule 37 was necessary. In subsequent land surveys of the tract, it was discovered that the problem did not lie with the terminus at the north end of the tract, but the penetration point on the south end of the tract.

Reichmann was advised by correspondence from the Commission's Oil & Gas Division dated July 28, 2004 that the Certificate of Compliance for the subject well would be canceled in 30 days unless it filed an amended W-1 and drilling plat. Reichmann did not file any documents, resulting in the cancellation of the certificate of compliance on August 27, 2004. Despite the cancellation of the certificate of compliance, the well continued production from September 1, 2004 through January 31, 2005, reporting 2819 barrels of oil and 28,809 mcf of natural gas. The well is currently shut-in pending the determination in this matter.

APPLICANT'S POSITION AND EVIDENCE

Reichmann estimates that the section of the horizontal drainhole within 467' of the southern lease boundary is 150'. Reichmann asserts that this 150' section will recover an additional 1,029 barrels of oil that it is entitled to recover as its fair share of the reserves. Reichmann alternatively argues that an exception for the 150' section is necessary to prevent waste.

Reichmann further claims that through the combination of reservoir characteristics and the location of the drainhole, the Hunt tract to the south will be unaffected. The drainhole extends from the southwest corner of the lease to the northeast corner. The Fredericksburg Lime formation which is the productive interval in the Bridges Field is a natural vertically fractured formation with a strike orientation of west-east. North-south permeability in the formation is inhibited while the east-west permeability is enhanced. Horizontal wells are drilled perpendicular to the fracture orientation in order to encounter as many fractures as possible.

Reichmann presented a volumetric study to estimate both the original and estimated remaining recoverable reserves in place under the Trinidad-Bridges Lease. Reichmann estimates under original reservoir conditions, 957 barrels of recoverable oil per acre were in place yielding a total of 95,700 barrels underlying the 100 acre Trinidad-Bridges Lease.

Historically, four vertical wells and two horizontal wells have produced from the Bridges Field on the subject lease. The first well was the W.A. Bridges/Milam No. 1 Well, drilled in 1957 as a vertical well that reported cumulative production of 4,784 barrels of oil. The W. A. Bridges/Milam & Carnes No. 1 Well was drilled as a vertical well in 1958 and reported cumulative production of 20,160 barrels. In March 2001, the Trinidad-Bridges No. 1 was drilled as a vertical well that reported 3,149 barrels of oil before it was recompleted in April 2002 as a horizontal well, the Trinidad-Bridges No. 1-H. The Trinidad-Bridges No. 1-H reported 4,437 barrels of production before it was shut-in due to mechanical problems. Finally, as previously noted the subject horizontal well was completed in October 2002. To date the total reported production from the subject well is 17,500 barrels of oil. The cumulative production for the subject lease is 50,030 barrels.

Reichmann calculates that the total estimated recovery from the Trinidad-Bridges No 2-H Well will be 28,229 barrels, or an additional 10,729 barrels. Reichmann relied on a comparable horizontal well, the O. H. Polly No. 2-H to calculate the estimated ultimate recovery from the subject well. Using decline curve analysis, the O. H. Polly No. 2-H has an estimated ultimate recovery of 59,600 barrels. Applying this data to the Trinidad-Bridges No. 2-H, Reichmann yields an estimated total recovery of 28,229 barrels. Subtracting production to date of 17,500 barrels leaves a remainder of 10,729 barrels as the estimated remaining recovery from this well.

Reichmann contends that adding cumulative production of 50,030 barrels to the 10,729 in estimated cumulative future production, results in a total recovery of only 60,759 barrels, 34,941 barrels less than the estimated recoverable reserves underlying the lease under original conditions.

With respect to the waste argument, Reichmann claims that the Bridges Field was created by carbonate shoaling with solution enhanced fractures. For a well to be successful, it must encounter as many fractures as possible. The fracture orientation is east-west. Accordingly, horizontal wellbores drilled on a north-south orientation will encounter the greatest number of fractures as the wellbore will be perpendicular to the fracture system orientation.

Reichmann argues that this is an unusual reservoir condition which would make it impossible for any well at a regular location to recover the remaining 1029 barrels of oil that it estimates will be recovered by the 150' section located closer than 467' from the southern boundary of the Trinidad-Bridges Lease. In estimating the amount of reserves to be recovered by the 150' section located within 467' of the southern boundary of the Trinidad-Bridges Lease, it appears that Reichmann has calculated approximately 10% of the remaining reserves or 1,029 barrels, will be produced by the 150' of the 1500' well bore, i.e., 10% of the total lateral length of the well bore.

Reichmann also urges that there would be a significant risk of mechanical problems with the well if it is ordered to seal off the 150' section that is located within 467' of the southern boundary of the subject lease. Reichmann believes that installing a liner in the 150' section would be problematic in light of mechanical problems associated with installation of a liner in the Trinidad-Bridges Well No. 1H that ultimately led to that well's premature abandonment.

EXAMINERS' OPINION

Reichmann contends that a lease-line spacing exception is necessary for the 150' section of the Trinidad-Bridges No. 2-H Well that encroaches within 467' of the southern boundary of the Trinidad-Bridges Lease both to prevent confiscation and waste. It is the examiners' opinion that the evidence presented by Reichmann fails to meet the requirements for an exception under a confiscation theory, but does satisfy the requirements necessary to prevent waste.

A Lease Line Spacing Exception Is Not Necessary to Prevent Confiscation

To establish entitlement to an exception to Rule 37 to prevent confiscation, an applicant must show that, absent the applied-for well, it will be denied a reasonable opportunity to recover its fair share of hydrocarbons currently in place under the lease, or its equivalent in kind. The applicant must satisfy a two pronged test: 1) the applicant must show that it will not be afforded a reasonable opportunity to recover its fair share of hydrocarbons currently in place by drilling a well at a regular location; and 2) the applicant must show that the proposed irregular location is reasonable. Generally, the applicant must also provide a calculation of the current reserves underlying its lease.

It is the basic right of every landowner or lessee to a fair and reasonable chance to recover the oil and gas under their property as recognized by the Texas Supreme Court in *Gulf Land Co. v. Atlantic Refining Co.*, 131 S.W.2d 73, 80 (Tex. 1939). Denial of that fair chance is confiscation within the meaning of Rule 37. *Id.*

Reichmann's volumetric calculations show a significant amount of reserves underlie the Trinidad-Bridges Lease in the Bridges Field which will not be recovered by the subject well. However, because Reichmann did not establish that wells at regular locations on the subject lease would not provide it with a reasonable opportunity to recover its fair share of hydrocarbons, it cannot satisfy the first requirement for a lease line spacing exception to prevent confiscation.

The evidence in this case shows that the Bridges Field underlies all of the Trinidad-Bridges Lease, a presumption Reichmann used as a basis for its volumetric calculations. Because the Bridges Field is ubiquitous on the subject lease, Reichmann has the opportunity to drill numerous wells at regular locations on the Trinidad-Bridges Lease to recover its fair share of remaining reserves in that field. The mere fact that the only existing well on the lease will not recover the estimated remaining reserves does not establish that Reichmann will not get a fair and reasonable chance to recover its fair share without the requested exception. Accordingly, Reichmann has failed to show that an exception is necessary to prevent confiscation, and cannot justify granting an exception for the 150' section of the well within 467' of the southern boundary of its lease.

A Lease Line Spacing Exception Is Necessary to Prevent Waste

An applicant seeking an exception based on waste must establish three elements: 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.

To justify an exception to prevent waste, an applicant must show an unusual condition underlying the lease different from conditions in adjacent parts of the field. The Commission has previously determined that fracture orientation and lease geometry may constitute an unusual condition in three cases involving horizontal wellbores in the Austin Chalk formation. Rule 37 Case No. 0227643: *Application of Stroud Oil Properties, Inc., for an Exception to Statewide Rule 37 to Drill Well No. 1-H, Sebesta Lease, Giddings (Austin Chalk - 3) Field, Burleson County, Texas*, (Final Order entered October 2, 2001); Rule 37 Case No. 0221407, *Application of Tex-Lee Operating Co. for an Exception to Statewide Rule 37 to Drill Well No. 1RE, Mikeska Lease, Giddings (Austin Chalk, Gas) and Giddings (Austin Chalk - 3) Fields, Fayette County Texas*, (Final Order entered January 11, 2000); and, Rule 37 Case No. 0200641, *Application of Marathon Oil Company for an Exception to Statewide Rule 37 to Drill its No. 1 Well, Babb-Drawe Lease, Giddings (Austin Chalk -3) and Giddings (Austin Chalk - Gas) Fields, Fayette County, Texas* (Final Order entered May 11, 1993).

The *Stroud*, *Tex-Lee* and *Marathon* cases all wrestled with an oxymoron: that uniform reservoir characteristics prevalent throughout a field, can also be an unusual condition under some circumstances. All three cases found that this apparent contradiction could be resolved for a lease-line exception to prevent waste where the lease-line at issue paralleled the fracture orientation.

In both *Stroud* and *Marathon*, the fracture orientation in the Austin Chalk formation precluded the recovery of reserves in the corridor created by the minimum lease line spacing requirement and the actual lease boundary because the fracture orientation in the formation ran parallel to the lease boundary. In both cases evidence was presented that unless the horizontal wellbore was extended into that corridor, the underlying reserves would not be recovered because no well at a regular location on any offsetting lease could be completed to encounter the fractures on the subject leases. For the horizontal wells in *Marathon* and *Stroud*, exceptions were granted to prevent waste. Both cases found that the fracture orientation and the lease geometry together were an unusual condition peculiar to the area. In *Tex-Lee*, while the same reservoir conditions were established, the application for an exception to prevent waste was denied because the applicant sought to extend the wellbore to a point only 100 feet from a lease line that was **not** parallel to the local fracture trend. *Tex-Lee* therefore held that no unusual condition was present to support an exception to the lease line spacing requirement to prevent waste.

The geology of the Bridges Field is similar to the geology of the Austin Chalk as the reservoir rock is permeated with naturally occurring fractures along a specific trend. Additionally, as in the Austin Chalk, wells are drilled with lengthy laterals as the success of a well is dependent on the number of fractures encountered. The evidence that the southern boundary of the Trinidad-Bridges Lease runs parallel to the fracture orientation in the Bridges Field is not controverted. Accordingly, similar to the *Stroud* and *Marathon* cases, the combination of fracture orientation and the lease geometry of the Trinidad-Bridges Lease, establishes that an unusual condition is present.

Reichmann also satisfies the second requirement for an exception to prevent waste. It is uncontradicted that no other well would recover any hydrocarbons underlying the southernmost area of the Trinidad-Bridges Lease within 467' of the southern lease line due to the fracture orientation and lease geometry. These calculations show no other existing wells or any future wells at regular locations will recover hydrocarbons from the southernmost area of the Trinidad-Bridges Lease within 467' of the southern lease line.

Reichmann also meets the third requirement for an exception to prevent waste. The Texas Supreme Court defined waste in *Gulf Land Co. v. Atlantic Refining Co.*, 131 S.W.2d 73 (Tex. 1939):

The term 'waste,' as used in oil and gas Rule 37, undoubtedly means the ultimate loss of oil. If a substantial amount of oil will be saved by the drilling of a well that otherwise would ultimately be lost, the permit to drill such well may be justified under one of the exceptions provided in Rule 37 to prevent waste.

Various courts have held that specified volumes of oil are substantial and justify exceptions to prevent waste. *See Humble Oil & Refining Co. v. Turnbow*, 133 S.W.2d 191 (Tex. Civ. App. - Austin 1939, *reh'g denied*) [12,500 to 15,000 barrels per well deemed substantial]; *Buckley v. Atlantic Refining Co.*, 146 S.W. 2d 1082, 1085 (Tex. Civ. App. - Beaumont 1940, *writ dismissed judgment corrected*) [44,000 barrels deemed substantial]. However, no court has ever set a minimum

requirement showing how much oil or natural gas is deemed to be a substantial amount.

It is the examiners' opinion that Reichmann's uncontested calculation that 1,029 barrels, of additional oil would be recovered by the 150' section of the lateral drainhole within 467' of the southern boundary of the lease is a substantial volume, especially in light of the uncontradicted evidence that none of the additional reserves that will be produced the 150' section will be drained from Hunt's offsetting lease to the south. Additionally, there is a significant risk that the entire wellbore could be adversely impacted if the 150' section of the wellbore within a Rule 37 distance is required to be isolated from the remainder of the lateral drainhole.

CONCLUSION

Reichmann has established that it is entitled to an exception to Rule 37 for the 150' section of the well within 467' of the southern boundary of its lease to prevent waste. Accordingly, the application for an exception to Rule 37 should be granted.

Based on the record in this Docket, the examiners recommend adoption of the following Findings of Fact and Conclusions of Law.

FINDINGS OF FACT

1. Reichmann Petroleum Operating Company, Inc. ("Applicant" or "Reichmann") seeks an exception to Statewide Rule 37 to drill Well No. 2H on the Trinidad-Bridges Lease in the Bridges Field, Shelby County.
2. The Trinidad-Bridges Lease ("subject lease") is a rectangular 100 acre tract.
3. The Bridges Field is subject to spacing requirements of 467' minimum distance to the nearest lease line and 1200' minimum distance between wells.
4. The application is protested by Hunt Petroleum Corporation ("Hunt"), the offset operator to the south of the Trinidad-Bridges Lease.
5. The Trinidad-Bridges 2-H was originally drilled as a horizontal drainhole well by Trinidad under Permit No. 523443 which was administratively granted on September 6, 2002. The permitted penetration point was 467' from the southern and western lease lines. Directional surveys were filed with the Commission revealed that the penetration point into the Bridges Field occurred 317' from the southern lease line. Approximately 150' of the 1500' horizontal drainhole is located within 467' of the southern lease line.

6. Reichmann was advised by correspondence from the Commission's Oil & Gas Division dated July 28, 2004 that the Certificate of Compliance for the subject well would be canceled in 30 days unless it filed an amended W-1 and drilling plat. Reichmann did not file any documents, resulting in the cancellation of the certificate of compliance on August 27, 2004. Despite the cancellation of the certificate of compliance, the well continued production from September 1, 2004 through January 31, 2005, reporting 2819 barrels of oil and 28,809 mcf of natural gas.
7. An unusual condition is present underlying the Trinidad-Bridges Lease in the Bridges Field.
 - (a) The Bridges Field was created by carbonate shoaling with solution enhanced fractures. The fracture orientation is east-west.
 - (b) A lateral drainhole drilled on a north-south orientation will encounter the greatest number of fractures as the lateral drainhole will be perpendicular to the fracture system orientation.
 - (c) A 150' section of the lateral drainhole lies within 467' of the southern boundary of the subject lease.
 - (d) The southern boundary of the subject lease is parallel to the east-west fracture orientation in the Bridges Field.
8. No other existing well or any well that could be permitted at a regular location would recover the oil underlying the southernmost area of the Trinidad-Bridges Lease within 467' of the southern lease line.
 - (a) The Fredericksburg Lime formation which is the productive interval in the Bridges Field is a natural vertically fractured formation with a strike orientation of west-east.
 - (b) The southern boundary of the subject lease runs parallel to the east-west fracture orientation in the Bridges Field.
9. An exception is necessary to prevent waste of a substantial volume of reserves.
 - (a) Reichmann calculates that the estimated cumulative recovery from the Trinidad-Bridges No 2-H Well will be 28,229 barrels, or an additional 10,729 barrels.
 - (b) A 150' section of the lateral, representing 10% of the total 1500' lateral length, lies within 467' of the southern boundary of the subject lease.

- (c) Reichmann calculates that the 150' section of the lateral within 467' of the southern boundary of the subject lease, will provide 10% of the remaining additional recovery of oil, approximately 1,029 barrels.
- (d) The additional volume of oil produced from the 150' section will not be drained from Hunt's offsetting lease to the south as the fracture orientation in the Bridges Field runs parallel to the southern boundary of the Trinidad-Bridges Lease.
- (e) There is a significant risk that the entire wellbore could be adversely affected if the 150' section of the lateral drainhole within a Rule 37 distance is required to be isolated from the remainder of the lateral drainhole.
- (f) 1029 barrels of oil is a substantial volume under these circumstances.

CONCLUSIONS OF LAW

1. Proper notice of hearing was timely given to all persons legally entitled to notice.
2. All things have occurred to give the Commission jurisdiction to decide this matter.
3. An exception to Statewide Rule 37 for the 150' of the subject well within 467' of the southern boundary of the subject lease is necessary to prevent waste.

RECOMMENDATION

The examiners recommend that Reichmann's application be granted in accordance with the attached final order.

Respectfully submitted,

Mark J. Helmueller
Hearings Examiner

Thomas H. Richter
Technical Examiner