

November 2, 2004

**RULE 37 CASE NO. 0238621
DISTRICT 2**

**APPLICATION OF PREMIER MINERALS, INC. FOR AN EXCEPTION TO STATEWIDE RULE 37 TO DRILL
WELL NO. 1 ON THE SALINAS LEASE, COLOGNE (4800) AND WILDCAT FIELDS, VICTORIA COUNTY,
TEXAS.**

**APPEARANCES:
FOR APPLICANT:**

Lloyd Muennink
Dale Miller
James Sorrells
Barbara Radovich
Frank Gabrysch

APPLICANT:

Premier Minerals, Inc.
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FOR PROTESTANTS:

Stephen Fenoglio
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PROTESTANT:

Big Lake Corporation
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PROPOSAL FOR DECISION

PROCEDURAL HISTORY

**APPLICATION FILED:
NOTICE OF HEARING:
HEARING DATE:
HEARD BY:**

April 23, 2004
May 6, 2004
July 20, 2004
Scott Petry - Hearings Examiner
Margaret Allen - Technical Examiner
Mark Helmueller - Hearings Examiner
Margaret Allen - Technical Examiner

PFD PREPARED BY:

**TRANSCRIPT RECEIVED:
PFD CIRCULATION DATE:**

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STATEMENT OF THE CASE

Premier Minerals, Inc. (“Premier”) seeks an exception to Statewide Rule 37 to drill Well No. 1 on the Salinas Lease in the Cologne (4800) and Wildcat Fields. The Salinas Lease is a rectangular 40 acre tract. The proposed well will be located 114 feet from the northwestern lease line. The proposed well is regular to all other lease line boundaries. A copy of the plat filed with Applicant’s W-1 Application for Permit to Drill, Deepen, Plug Back or Re-Enter is attached. The applied-for fields are subject to spacing requirements of 467 feet minimum distance to the nearest lease line and 1200 feet minimum distance between wells.

The application is protested by Big Lake Corporation (“Big Lake”). Big Lake is the operator of the tracts to the northwest and northeast of the Salinas Lease.

PREMIER’S POSITION AND EVIDENCE

Premier claims that the applied-for well is necessary to prevent waste and confiscation of a significant volume of hydrocarbons. Premier characterizes its primary objective as a stream channel in the Frio formation. 3D seismic imaging confirms the presence of the stream channel and the reservoir structure. Premier’s technical evidence includes seismic amplitude maps, cross-sections, geologic studies regarding the depositional environment for fluvial channel systems on the gulf coast, and a structure and reservoir limits map.

Premier believes the stream channel underlies the northwest border of the Salinas Lease at approximately 4750 feet subsurface. The reservoir’s updip limit is a large fault. Well logs in the area show a potential water contact which Premier identifies as the downdip limit for the reservoir. Premier’s structure map indicates that a well at a regular location on the Salinas Lease would encounter the target Wildcat zone but would be as much as 15' downdip. Premier acknowledges that the target zone is present on Big Lake’s lease, but not at regular locations.

Premier contends that an exception to Statewide Rule 37 is necessary to prevent the waste of a substantial volume of hydrocarbons. Premier’s volumetric estimate shows 372,889 barrels of oil are present in the Wildcat zone underlying the Salinas Lease. Premier’s structure map shows that any regular location would be downdip from the exception location. Premier anticipates that a water drive will be a significant component of the reservoir’s drive mechanism which is consistent with other Frio reservoirs in the area. Premier therefore asserts that any downdip well at a regular location will water out prematurely, leaving 125,808 barrels of oil in the formation under the Salinas Lease which could only be recovered by a well at an updip exception location.

Premier also claims that an exception to Statewide Rule 37 is necessary to protect its correlative

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rights in the Wildcat zone. Premier has no other wells on the Salinas Lease, and believes that wells at regular locations would not allow it to recover its fair share of reserves underlying the Salinas Lease as shown by the volumetric calculations.

Premier admits that it is possible that the target Wildcat formation will contain gas instead of oil. Premier's gas volumetric calculations show that a well at the proposed exception location would recover 449,533 mmcf of gas which could not be recovered at a regular location.

Premier identifies the Cologne (4800) Field as the secondary target for the proposed well. Well logs in Premier's structural cross section show potentially productive sands between 4780' and 4850'. Premier's application therefore includes the Cologne (4800) Field in the event that the proposed well encounters productive sands below the primary Wildcat target. Premier's presentation did not include a structure map, volumetric calculations, or seismic amplitude studies showing that the Cologne (4800) Field would not be present at regular locations on the Salinas Lease.

BIG LAKE'S POSITION AND EVIDENCE

Big Lake contends that Premier does not require an exception location for the Wildcat zone and that a regular location will provide it with an opportunity to recover its fair share of the reserves underlying the Salinas Lease. Big Lake is also concerned that the proposed well will drain reserves underlying its lease in the Wildcat zone, which will require it to drill an offset well. Finally, Big Lake believes the proposed Wildcat exception is too broad, as Premier could complete wells in uphole formations at the exception location which would directly compete with existing Big Lake wells at regular locations.

Big Lake's competing structural map for the Wildcat formation shows that Premier could drill a well at a regular location on the Salinas Lease. Big Lake's structural map is based on a different geological deposition model. Big Lake contends that the target formation was deposited as an offshore marine sand as opposed to a stream channel system. Big Lake bases this contention on sidewall core studies in five of Big Lake's wells which show a fine grained carbonaceous sand in the target zone. Big Lake asserts that channel sands tend to be winnowed and very clean due to the constant flow of water. Big Lake opines that the core studies therefore contradict Premier's characterization of a stream channel system as the geologic model.

Big Lake's map also differs in showing the locations of wells and specific lease line boundaries. Big Lake admits that its map is not based on the current RRC maps, but instead is based on the Commission's archived cloth map. Big Lake believes that the archived map more accurately reflects lease line boundaries. Big Lake also argues that inaccuracies in Premier's structure cause Premier's volumetric calculations to be erroneous, although Big Lake did not offer a competing estimate of the recoverable reserves underlying Premier's Salinas Lease based on its base map.

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Big Lake also contends that Premier's use of a 20' net pay interval for the volumetric calculations is overly optimistic. Based on its wells in the same area, Big Lake believes the net pay interval is closer to 10', which would reduce by 50% the estimated reserves underlying the Salinas Lease. Big Lake also points out that the historical oil production from Frio reservoirs has been significantly lower than Premier's estimates, which Big Lake suggests is further evidence that the volumetric calculations are not accurate.

Big Lake asserts that there is a significant risk that a well as proposed by applicant located at the highest structural elevation in the target zone on the Salinas Lease will not encounter an oil column, but instead will encounter an associated gas cap. Big Lake believes that Commission Statewide Rule 49(b) would then preclude Premier from producing the associated gas from the reservoir as it would deplete reservoir energy, thereby interfering with any oil production.

Lastly, Big Lake suggests that several of its offset wells are completed in formations uphole of the proposed Wildcat zone and would be in direct competition with a well at the exception location unless Premier's Wildcat is limited to the target formation. Big Lake believes that a Wildcat permit over the complete depth of the well would require it to drill new wells at exception locations to protect its correlative rights.

EXAMINERS' OPINION

Premier believes that its application for an exception location is necessary both to protect correlative rights and to prevent waste in the Cologne (4800) and Wildcat Fields. It is the examiners' recommendation that Premier's application be denied in the Cologne (4800) Field based on the lack of any evidence to support the necessity for an exception in that field. The examiners' further recommend that Premier's application be granted for the Wildcat Field in the subsurface interval between 4700' and 4775'.

Cologne (4800)

The bulk of the evidence addressed the Wildcat Field. However, Premier's interpretation of well logs in its structural cross-section was submitted to support its application for an exception in the Cologne (4800) Field. Premier provided no structure map, volumetric calculations, or other evidence to support an exception in the Cologne (4800) Field. The application for the exception in the Cologne (4800) Field is best characterized as a "piggyback" claim as there is no independent evidence to support an exception.

The Commission has rejected "piggyback" exceptions for fields outside the primary target where the evidence does not provide an independent basis for the requested exception. See *Rule 37 Case No. 0226443: Application of Dallas Production, Inc. for an Exception to Statewide Rule 37 to Drill Well No. 5 on the Stone, E. E. Gas Unit #1 in the Willow Springs (Travis Peak Transition), Willow Springs (Travis Peak), Willow Springs (Rodessa), and Wildcat Fields, Gregg County, Texas.* (Final

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Order Entered May 22, 2001.) *Dallas* observed that in any Rule 37 exception application which involves several fields, the applicant is required to make a separate evidentiary showing to support that an exception should be granted in each field requested. In *Dallas*, applicant only submitted evidence for one of the applied-for fields. While the evidence was sufficient to grant the exception in that field, the application was denied for the other fields requested because no evidence was submitted.

In this case, the evidence provided by Premier did nothing more than show that other sands might be present in the proposed well. Premier did not establish any of the other compulsory elements to support approval of a Rule 37 exception to prevent confiscation or waste. Accordingly, it is the examiners' recommendation that the application for an exception to Statewide Rule 37 in the Cologne (4800) Field be denied.

A Lease Line Spacing Exception in the Wildcat Field is 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.*

The parties agree that the target Wildcat zone is present beneath the Salinas Lease. The parties also agree that a Rule 37 location will be updip of any regular location on the Salinas Lease. Premier presented a volumetric study estimating that current recoverable reserves underlying its lease in the Wildcat zone total at least 372,889 barrels of oil. Premier has estimated that a Rule 37 location will allow it to recover an additional 125,808 barrels of oil which underlie its lease. Premier estimates that a well at a regular location will only recover 247,081 barrels of oil. Big Lake disputes the volumetric estimate, claiming it is overly optimistic in using a 20' pay interval. However, Big Lake did not provide a competing estimate based on its own interpretation of the reservoir structure.

Volumetric calculations using either net pay estimate show a significant amount of reserves underlie Premier's Salinas Lease which would not be recovered by a well at a regular location. Accordingly, Premier has established the first requirement to show that an exception is necessary to prevent confiscation, as a well at a regular location on the Salinas Lease will not allow Premier the opportunity to recover its fair

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share of reserves.

With respect to the reasonableness of the location, the evidence indicates that the ultimate recovery of Premier's fair share of reserves underlying the Salinas Lease in the Wildcat Field will be dependent on structural elevation in a reservoir with a water drive component. The parties have submitted competing structural maps based on different geologic models, seismic data interpretation and Commission base maps. A determination of the reasonableness of the proposed location is at least in part dependent upon which map more accurately depicts the potential Wildcat zone.

It is the examiners' opinion that Premier's structural map is a more accurate representation of the structure in the Wildcat zone. Premier's map is consistent with the most recent Commission generated maps and the well logs for the area. Even more important, Premier's map is also consistent with its seismic amplitude study. In determining the reasonableness of the proposed location, Premier's structural map shows that a well at the exception location will be higher on structure than a well at a regular location. The seismic amplitude study further shows that the proposed well will encounter a peak amplitude phenomenon at approximately 4750' subsurface. This evidence shows the reasonableness of the proposed location. Accordingly, Premier has established that a well at the proposed location is necessary to prevent confiscation.

A Lease Line Spacing Exception in the Wildcat Field 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.

Premier established the presence of unusual subsurface conditions through its structure map, structural cross-section, and seismic amplitude study. This evidence demonstrated that the target reservoir is a small, highly localized stream channel bounded by a fault at the updip edge of the reservoir and limited by a water contact on the downdip edge. Premier further showed that the Wildcat zone is not present at regular locations on Big Lake's lease. Finally, Premier's structure map shows that while the Wildcat zone is present at regular locations on the Salinas Lease, any regular locations will be downdip from the proposed well. Accordingly, the examiners conclude that Premier established the presence of an unusual subsurface condition.

With respect to ruling out regular locations, Premier asserted that any regular downdip locations would encounter water prematurely in a combination drive reservoir. This makes it necessary to drill a well at the highest structural location in the Wildcat zone on the Salinas Lease to recover as much of the updip reserves as possible. Accordingly, Premier has ruled out the possibility that the updip reserves could be recovered by any well drilled at a regular location.

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Finally, Premier satisfied the third requirement for an exception to prevent waste. As previously discussed, a well located at the structurally higher exception location will recover up to an additional 125,808 barrels of oil that will not be recovered by any well at a regular location.

Premier satisfied all the elements necessary to support an exception to prevent waste. The proposed well will recover up to an additional 125,808 barrels of oil that no existing or future regular well would recover due to the unusual subsurface geology underlying the Salinas Lease in the Wildcat zone. Accordingly, the examiners also recommend granting the application in order to prevent waste.

A Depth Restriction on the Permit for the Wildcat Field is Necessary to Protect Correlative Rights

Finally, Big Lake argued that granting an exception permit in the Wildcat Field over the complete depth of the proposed well is overly broad, and will require it to seek exception wells in any fields which are present on both leases to protect its correlative rights. The examiners note that the correlative interval for the proposed Wildcat Field was specifically defined by seismic amplitude studies submitted by Premier. Further, the legal analysis and logic which were applied to deny the requested exception in the Cologne (4800) Field are equally applicable to other Wildcat zones for which no evidence was presented. The Commission has previously restricted Wildcat exception permits to specific depths in order to protect correlative rights. See *Rule 37 Case No. 0236943: Application of Rife Energy Operating, Inc. for an Exception to Statewide Rule 37 to Drill Well No. 1A on the Wilson Lease, Greenwood (Lower Marble Falls) and Wildcat Fields, Wise County, Texas* (Final Order Entered May 11, 2004). Accordingly, the examiners' recommend that the exception permit in the Wildcat Field be limited to the subsurface interval between 4700' and 4775'.

CONCLUSION

Premier is entitled to an exception to Rule 37 to prevent confiscation and waste of hydrocarbons underlying its Salinas Lease in the Wildcat Field. Accordingly, the application for an exception to Rule 37 in the Wildcat Field should be granted. The examiners further recommend that the Wildcat permit should be limited only to the subsurface interval between 4700' and 4775' in order to protect correlative rights. However, Premier did not establish an exception to Rule 37 is necessary to prevent confiscation or waste in the Cologne (4800) Field, and the examiners therefore recommend denial of that portion of the application.

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. Premier Minerals, Inc. ("Premier") seeks an exception to Statewide Rule 37 to drill Well No. 1 on the Salinas Lease in the Cologne (4800) and Wildcat Fields, Goliad County.

2. The Salinas Lease is a rectangular 40 acre tract. The proposed well will be located 114 feet from the northwestern lease line. The proposed well is regular to all other lease line boundaries.
3. The Cologne (4800) and Wildcat Fields are subject to spacing requirements of 467 feet minimum distance to the nearest lease line and 1200 feet minimum distance between wells.
4. The application is protested by Big Lake Corporation (“Big Lake”). Big Lake is the operator of the tracts to the northwest and northeast of the Salinas Lease.
5. Premier did not submit sufficient evidence to show that a well at an exception location on the Salinas Lease was necessary to recover its fair share of reserves or to prevent waste from the Cologne (4800) Field.
 - a. The well logs in Premier’s structural cross section show several potentially productive sands between 4780' and 4850' at the proposed exception location.
 - b. The evidence submitted did not include a structure map, volumetric calculations, or seismic amplitude studies showing that the Cologne (4800) Field would not be present at regular locations on the Salinas Lease.
6. A well at a regular location on the Salinas Lease would not provide Premier with the opportunity to recover its fair share of reserves in the Wildcat Field present at approximately 4750' subsurface.
 - a. Premier’s seismic amplitude study shows that a Wildcat Field at approximately 4750' subsurface is present beneath the Salinas Lease.
 - b. Both Premier’s structure map and Big Lake’s structure map show that a well at the proposed location will be updip of any regular location on the Salinas Lease in the Wildcat Field present at approximately 4750' subsurface.
 - c. Premier’s volumetric study estimates that current recoverable reserves underlying its lease in the Wildcat Field present at approximately 4750' subsurface total at least 372,889 barrels of oil.
 - d. The Wildcat Field present at approximately 4750' subsurface will be influenced by a water drive.
 - e. A well at the proposed location will allow Premier to recover an additional 125,808 barrels of oil which underlie its lease which it would not recover from a well at a regular location.

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7. There are unusual geologic conditions underlying the Salinas Lease in the Wildcat Field present at approximately 4750' subsurface.
 - a. Seismic amplitude studies, structural cross-sections and structure maps show that the Wildcat Field present at approximately 4750' subsurface is a small, highly localized stream channel bounded by a fault at the updip edge of the reservoir and limited by a water contact on the downdip edge.
 - b. The Wildcat Field at approximately 4750' subsurface is not present at regular locations on Big Lake's lease.
 - c. Premier's structure map shows that while the Wildcat Field at approximately 4750' subsurface is present at regular locations on the Salinas Lease, any regular locations will be downdip from the proposed well.
8. Wells at regular locations either on the Salinas Lease or on any offsetting lease would not recover a significant volume of oil underlying the Salinas Lease in the Wildcat Field.
 - a. The ultimate recovery of reserves underlying the Salinas Lease in the Wildcat Field present at approximately 4750' subsurface will be greater for updip wells due to the influence of a water drive.
 - b. At the proposed location the target Wildcat Field will be higher on structure than a well at a regular location.
 - c. Downdip regular locations will not recover any updip oil after the oil water contact has risen above than the top of the perforated interval in the Wildcat Field present at approximately 4750' subsurface.
9. The proposed well would recover up to an additional 125,808 barrels of oil which would not otherwise be recovered. Reserves of 125,808 barrels of oil constitute a substantial volume of hydrocarbons.
10. A well at the proposed exception location is reasonable.
 - a. The ultimate recovery of reserves underlying the Salinas Lease in the Wildcat Field present at approximately 4750' subsurface will be greater for updip wells due to the influence of a water drive.
 - b. Premier's structure map is more likely to be a more accurate representation of the structure than Big Lake' structure map.

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- i. Premier's map is consistent with the most recent Commission generated maps and the well logs for the area.
- ii. Premier's map is also consistent with its seismic amplitude study.
- c. Premier's structure map shows that a well at the exception location will be higher structurally than a well at a regular location.
- d. The seismic amplitude study further shows that the proposed well will encounter a peak amplitude phenomenon at 4750' subsurface.

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 a well at the applied-for location is necessary to prevent waste and confiscation in the Wildcat Field between the subsurface interval of 4700' to 4775'.
- 4. An exception to Statewide Rule 37 for a well at the applied-for location is not necessary to prevent waste or confiscation in the Cologne (4800) Field.

RECOMMENDATION

The examiners recommend that Premier's application be denied in the Cologne (4800) Field and granted in the Wildcat Field, subject to a depth limitation between 4700' and 4775' subsurface in accordance with the attached Final Order.

Respectfully submitted,

Mark J. Helmueller
Hearings Examiner

Margaret Allen
Technical Examiner