

DATE IN	SUSPENSE	ENGINEER	LOGGED IN	TYPE	APP NO.
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ABOVE THIS LINE FOR DIVISION USE ONLY

# NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

1220 South St. Francis Drive, Santa Fe, NM 87505

30-015-21656



RECEIVED

JUL - 6 2006

QUANTIFICATION

## ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

### Application Acronyms:

[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]  
 [DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]  
 [PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]  
 [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]  
 [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]  
 [EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

### [1] TYPE OF APPLICATION - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Simultaneous Dedication

☒ NSL ☐ NSP ☐ SD

Check One Only for [B] or [C]

[B] Commingling - Storage - Measurement

☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery

☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR

[D] Other: Specify \_\_\_\_\_

### [2] NOTIFICATION REQUIRED TO: - Check Those Which Apply, or Does Not Apply

[A] ☐ Working, Royalty or Overriding Royalty Interest Owners

[B] ☐ Offset Operators, Leaseholders or Surface Owner

[C] ☐ Application is One Which Requires Published Legal Notice

[D] ☐ Notification and/or Concurrent Approval by BLM or SLO  
 U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] ☐ Waivers are Attached

### [3] SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Ocean Munds-Dry

Print or Type Name

Ocean Munds-Dry Attorney

Signature

Attorney

Title

6-28-06

Date

omunds.dry@hollandhart.com  
 e-mail Address

June 28, 2006

**HAND DELIVERY**

Mr. Mark Fesmire, Director  
Oil Conservation Division  
New Mexico Department of Energy,  
Minerals and Natural Resources  
1220 South Saint Francis Drive  
Santa Fe, New Mexico 87505



Re: Application of Chesapeake Operating, Inc., for administrative approval of an unorthodox well location for its Gardner 34 Federal Well No. 1, to be re-entered to the Strawn and Morrow formations at a surface location 1644 feet from the West line and 2328 feet from the South line and a bottomhole location 1980 feet from the South line and 2180 feet from the East line of Section 34, Township 23 South, Range 25 East, N.M.P.M., Lea County, New Mexico.

Dear Mr. Fesmire:

Chesapeake Operating, Inc. ("Chesapeake") hereby seeks administrative approval pursuant to the provisions of Division Rule 104 F (2)-(4) and Division Rule 111(C)(2), of an unorthodox well location for its Gardner 34 Federal Well No. 1 to be re-entered and drilled from a surface location 1644 feet from the West line and 2328 feet from the South line and a bottomhole location of 1980 feet from the South line and 2180 feet from the East line of Section 34 (Unit K), Township 23 South, Range 25 East, N.M.P.M., Lea County, New Mexico.

This proposed location in the Strawn and Morrow formations is unorthodox because it is governed by the Division's Statewide Rules which provides for wells on 320-acre spacing units to be located no closer than 660 feet to the outer boundary of the quarter section on which the well is located and no closer than 10 feet to any quarter-quarter section line or subdivision inner boundary. The proposed surface location is only 312 feet from the quarter section line and the bottom hole location is only 460 feet from the quarter section line. A standard 320-acre spacing unit and proration unit comprised of the S/2 of Section 34 will be dedicated to the well.

**Holland & Hart LLP**

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110 North Guadalupe Suite 1 Santa Fe, NM 87501 Mailing Address P.O. Box 2208 Santa Fe, NM 87504-2208

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The non-standard location is required by topographical and geological conditions. The Bureau of Land Management (BLM) is requiring Chesapeake to drill the proposed well from the surface location used by the Hanagan Horseshoe Bend Well No. 1 (API No. 30-015-21656) due to the rugged terrain and archaeological considerations. After extensive negotiations, this is the only location which the BLM will agree to let Chesapeake drill in Section 34 where the target formations can still be reached.

Chesapeake will use the surface and intermediate casing still in this old well bore and kick off just underneath the casing at 2,300 feet. Chesapeake proposes to drill directionally southeast to the bottom hole location to test the Strawn formation. As shown on **Exhibit A**, the seismic indicates there may be a Strawn reef in play. The deviated portion of the well will be from 2,350 feet to approximately 9,750 feet near the top of the Strawn formation. At 9,750 feet, Chesapeake intends to drill vertically from the top of the Strawn to the Morrow formation.

Strawn Reefs have proven to be excellent producers within a few miles of the proposed well location. The best wells are located where these reefs have grown vertically several hundred feet thicker than the thicknesses of the surrounding Strawn lagoonal rocks. Wells which miss these reefs by just a few feet are often dry holes. Hitting the reef where it has grown the tallest is the best place to find excellent Strawn production. It is imperative to test the reef at the thickest point as sometimes within the reef complex, the lower portion of the reef is water-bearing. The proposed well is targeting the top of a reef interpreted from 3-D seismic. The reef trends northeast to southwest and is best developed at the proposed location. **Exhibit B** is a map showing the Strawn Reef target through the spacing unit and the well location.

Further, allowing Chesapeake to continue drilling a vertical well bore beneath the Strawn to the Morrow formation is the only scenario in which a Morrow test will happen in this spacing unit in the near future. This is due to the high risk and high cost of a vertical Morrow test in this area and due to the extremely high mechanical risk associated with deviating the proposed well to a legal location in the Morrow formation. There is not a commercial Morrow well in the nine section block surrounding this spacing unit. The Hanagan well bore was a vertical test of the Morrow. This well made a sub-commercial Morrow well, which produced only 9 MMCFG and 126 BW from June 1978 to April 1980. Despite the poor performance of this well, Chesapeake believes the high risk is worth it because it only requires another 1000 feet of drilling to test the Morrow formation. The seismic does indicate a slight structural advantage at this location. Subsurface mapping does not find any other location in the southeast quarter of Section 34 to be more favorable for the Morrow sands than at the proposed bottom hole location. **Exhibit C** is a depth converted 3-D Seismic Base Morrow Structure map showing the proposed bottom hole location compared to a standard location. Chesapeake believes the main advantage of allowing a non-standard Morrow



test at this location is that it mechanically assures that Chesapeake can drill and produce the Morrow at all. Due to bends in the well bore out from under intermediate casing at 2300 feet and again going from a deviated well to a vertical well a few hundred feet above the Strawn at 98750 feet, this well bore will already have an S-shape when it comes out of the Strawn at approximately 10,750 feet. To deviate the well again (in order to place the bottom hole at a standard location by the top of the Morrow at 11,155 feet) would put another extreme deviation in this well bore. The well bore would need to deviate 200 feet to the east over a vertical thickness of rock of only 405 feet. This would be a nearly impossible mechanical feat of drilling, let alone completing, a well with this type of deviation. The well bore would likely be lost.

The ownership is common in the N/2 of Section 34 and the N/2 of Section 3 towards which the proposed well encroaches. Therefore, there are no affected parties to notify of this application as defined in Division Rule 1210.

Also enclosed is a proposed administrative order prepared by Chesapeake on behalf of the Division.

Your attention to this application is appreciated.

Sincerely,

*Ocean Munds-Dry*

Ocean Munds-Dry  
ATTORNEY FOR CHESAPEAKE  
OPERATING, INC.

Enclosures

cc: Lynda Townsend



Chesapeake Operating, Inc.

Attention: Lynda Townsend

*Administrative Order NSL-\_\_\_\_\_*

Dear Mr. Townsend:

Reference is made to your application dated June 28, 2006 for an unorthodox well location for Chesapeake Operating, Inc.'s Gardner 34 Federal Well No. 1 to be re-entered and drilled to the Strawn and Morrow formations. Said well will be located at a surface location 1644 feet from the West line and 2328 feet from the South line and a bottom hole location 1980 feet from the South line and 2180 feet from the East line of Section 34, Township 23 South, Range 25 East, NMPM, Lea County, New Mexico.

A 320-acre spacing and proration unit in the Strawn and Morrow formations comprising the S/2 of said Section 34 is to be dedicated to said well.

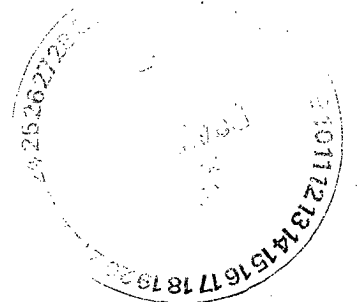
This application has been duly filed under the provisions of Rule 104.F of the General Rules of the Oil Conservation Division revised by Division Order No. R-11231, issued by the New Mexico Oil Conservation Commission in Case No. 12119 on August 12, 1999.

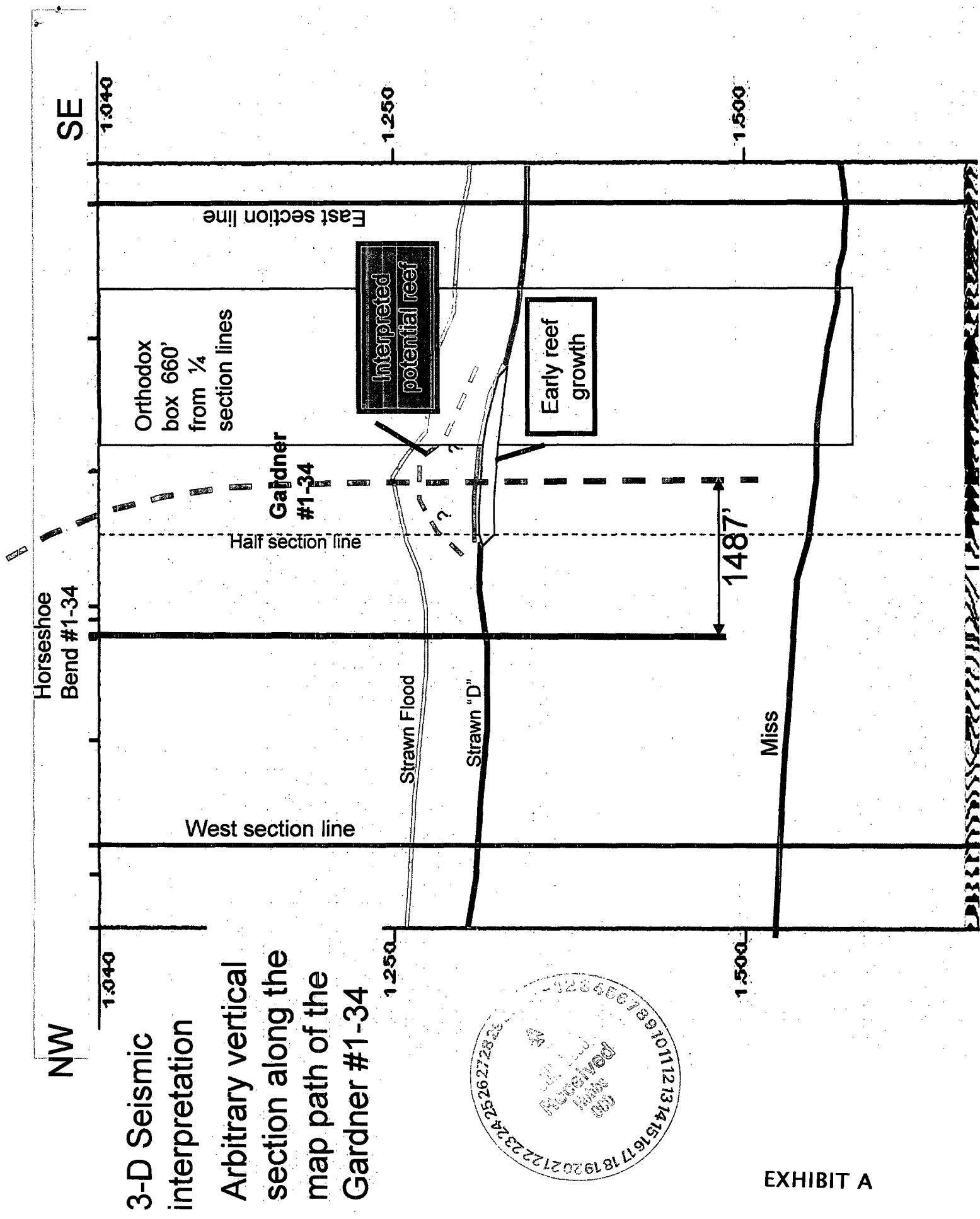
By authority granted me under the provisions of Rule 104.F(2), the above-described unorthodox well location within this 320-acre unit in the Strawn formation is hereby approved.

Sincerely,

Mark E. Fesmire, P.E.  
Director

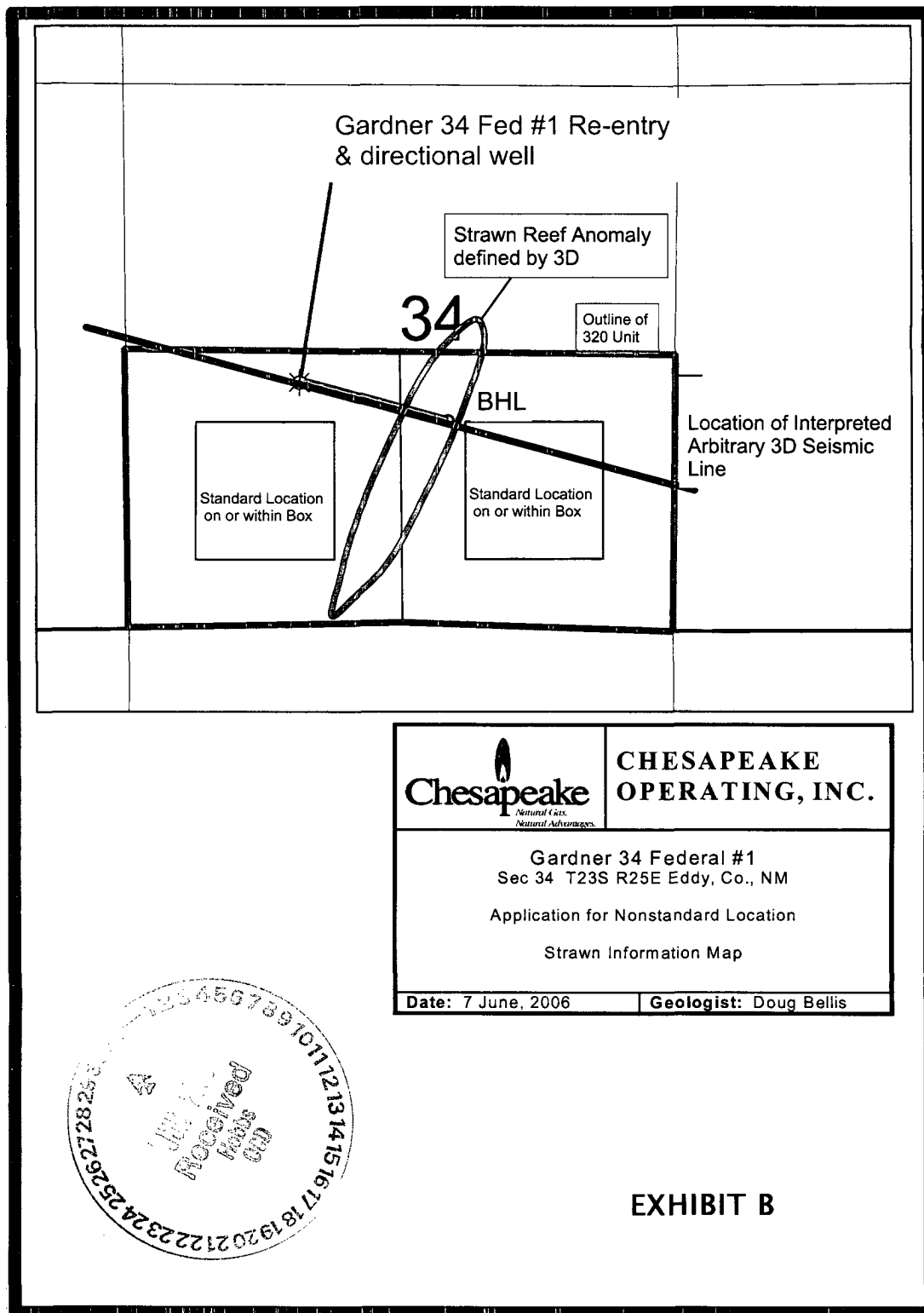
cc: Oil Conservation Division - Hobbs/Artesia





3-D Seismic interpretation  
 Arbitrary vertical section along the map path of the Gardner #1-34

EXHIBIT A



**CHESAPEAKE  
OPERATING, INC.**

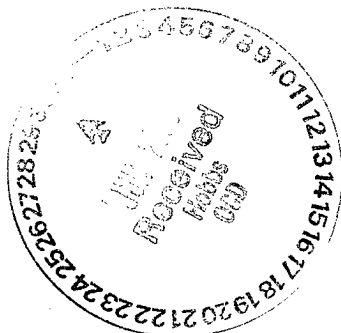
Gardner 34 Federal #1  
Sec 34 T23S R25E Eddy, Co., NM

Application for Nonstandard Location

Strawn Information Map

**Date:** 7 June, 2006

**Geologist:** Doug Bellis



**EXHIBIT B**

