

DATE IN 2/11/00	SUSPENSE 3/2/00	ENGINEER MS	LOGGED BY KV	TYPE NSL
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ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

ADMINISTRATIVE APPLICATION COVERSHEET

THIS COVERSHEET IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS

Application Acronyms:

[NSP-Non-Standard Proration Unit] [NSL-Non-Standard Location]
 [DD-Directional Drilling] [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 - Directional Drilling

☒ NSL ☐ NSP ☐ DD ☐ SD

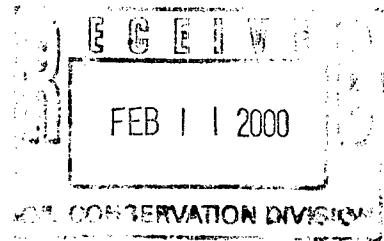
Check One Only for [B] and [C]

[B] Commingling - Storage - Measurement

☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

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

☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR



[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] INFORMATION / DATA SUBMITTED IS COMPLETE - Statement of Understanding

I hereby certify that I, or personnel under my supervision, have read and complied with all applicable Rules and Regulations of the Oil Conservation Division. Further, I assert that the attached application for administrative approval is accurate and complete to the best of my knowledge and where applicable, verify that all interest (WI, RI, ORRI) is common. I understand that any omission of data, information or notification is cause to have the application package returned with no action taken.

Note: Statement must be completed by an individual with supervisory capacity.

Kay Maddox
Print or Type Name

Kay Maddox
Signature

Regulatory Agent
Title

2/7/200
Date



Mid-Continent Region
Exploration/Production

Conoco Inc.
10 Desta Drive, Suite 100W
Midland, TX 79705-4500
(915) 686-5400

February 7, 2000

Mr. Michael Stogner
New Mexico Oil Conservation Division
2040 Pacheco
Santa Fe, NM 87504

RE: Application for Unorthodox Location
Wildcat Abo

State B-19 #2
Section 19, T-18-S, R-37-E, H
2275' FNL & 1215' FEL
API # N/A
Lea County, NM

Dear Mr. Stogner,

Conoco, Inc. has proposed and staked three new Wildcat Abo wells in this section. The State B-19 #3 & 4 are standard locations. The State B-19 #2 has been staked only 105' off of the west quarter/quarter section line rather than the required 330' making this an unorthodox location. This Abo play is based on newly shot and processed 3-D seismic data.

Conoco is requesting approval for a non-standard (exception) location for the Conoco, State B-19 No. 2 well, with the proposed non-standard location in the SW SE NE, 1215' from the East Line and 2275' from the North Line, Section 19, Township 18 South, Range 37 East, Lea County, New Mexico. The well is proposed as an oil well with the Permian Abo Reef as the targeted reservoir, anticipated at a depth of 7358' (measured depth) for the top of the Abo. In the nearest well, the Continental, State B-19 No. 1 well, located in the C SW SE, 1980' FEL, 660' FSL, Sec. 19, T18S, R37E, porosity occurred at a depth of 7564' MD, or 66' below the top of the Abo at 7498' MD. If in the proposed location, porosity occurs 66' below the Abo top, the top of Abo Reef porosity in the proposed location would be expected at 7424' (measured depth) or -3669 (true vertical depth subsea). Based on the three recent wells which Chevron has drilled on a Conoco farm-out in Section 36, Township 18 South, Range 36 East with the same objective, the Abo oil-water contact is anticipated at -3750' subsea. These estimates suggest 81 feet of oil above the oil-water contact could be present in the proposed location.

A non-standard location in the State B-19 No. 2 well is requested for three reasons:

- 1) to position the well as high structurally above the oil water contact as possible;
- 2) to position the well in the center of the reef where porosity should be optimal, avoiding both the anhydritic porosity-plugging anticipated landward (east) of the reef and shale-outs of the reef and sands which are sea-ward of the reef, and
- 3) to avoid deviation to the east and off the reef during drilling, which is expected due to strong westerly dip in shallow, overlying beds.

Three exhibits are provided to support this request. The first is three-dimensional seismic line 765, which runs East-West through both the proposed non-standard and the alternative standard location, shows the top of the Permian Abo Reef, the extent of Conoco's section 19-T18S-R37E lease in yellow, and the westerly dipping overlying beds. The second exhibit is an index map showing the location of Conoco's Section 19 lease, the three-dimensional seismic survey outlined in light blue, east-west lines 280 to 920 labeled on the west and east and traces 545 to 990 labeled on the north and south, seismic line 765 in yellow, and the proposed non-standard and alternative standard locations for the State B-19 No. 2 well. The third exhibit is Figure 6-1, p. 165 from Sylvan J. Pirson's book Geologic Well Log Analysis (Second Edition, 1977, Gulf Publishing Company, Houston, Texas) which illustrates the relationship of the reef to the surrounding sediments where the reef itself is absent or its porosity is plugged with anhydrite.

The seismic line 765 illustrates that the top of the Abo Formation is lower both to the east and west of the non-standard location. Success of this well is highly dependent on positioning the location as high structurally above the oil water contact as possible. In the nearest well, the Continental, State B-19 No. 1 well, the top of the Abo is 7498' measured depth or -3738' subsea. This is 12 feet above the expected oil-water contact at -3750' subsea. However the porosity in the well is 66' below the top at 7564' measured depth or -3804 subsea, which is 54' below the expected oil-water contact. In this well the zone from 7564' to 7574' was perforated, and it tested 160 barrels of water per day. The standard location is somewhat lower than the non-standard location as illustrated by line 765, and thus less optimal.

The second reason for requesting the non-standard location is to target optimal Abo porosity development. On line 765 the crest of the Abo Reef is believed to be between Trace 775 and Trace 785. The proposed non-standard location is at Trace 780 which is at the center of the reef crest and thus gives the most leeway for interpretational error in either direction. Figure 6-1 of Sylvan (1977) illustrates the reason to center the location. On the landward side of the reef, lagoonal anhydrites plug carbonate porosity ("reef is approached by observing the disappearance of anhydrite", Fig. 6-1). The seaward side of the reef drops off structurally quite abruptly and the reef is replaced stratigraphically with fore-reef shales and sands ("reef is approached by observing the disappearance of sands and shales in the genetic reefing sequence", Fig. 6-1). In some wells in the Abo trend the upper reef is entirely shaled-out. The standard location is close to the eastern edge of the reef crest, giving little room for interpretational error, and increasing the likelihood that anhydrite will plug the porosity.

The third reason for requesting the non-standard location is to avoid deviation to the east and off the reef during drilling. This would be considerably more likely to occur in the standard location than in the non-standard location, again primarily because the non-standard location is in the center of the reef, allowing more room for bottom-hole deviation to remain within the reef crest. The nearest well, the Continental, B-19 No. 1 well reached a total depth of 7800' measured depth with the top of the Abo at a measured depth of 7498'. This well encountered deviations of 4° at 7800', 3 1/2° at 7210', 3 1/2° at 7026', 2 3/4° at 6869', 2 3/4° at 6480', 1 3/4° at 6273', and deviations up to 1° in the shallower section. Discussions with Enerquest indicate that in their nearby, recently drilled well, the Enerquest Resources, Goodwin '30' No. 1 well, in Section 30, Township 18 South, Range 37 East, deviations up to 6° were encountered as shallow as 2000' requiring directional control to keep the well on target. Seismic line 765 illustrates gentle westerly dip in the proposed Conoco location above about 730 milliseconds, followed by steep westerly dip from 730 to 850 milliseconds, followed by fairly flat dips to 950 milliseconds, followed by steep westerly dip to the top of the Abo at about 1060

milliseconds. Since the bit will normally deviate up-dip while drilling steeply dipping beds, Conoco would anticipate that this well will deviate to the east or southeast. An average deviation of 3° over the 7950' total depth of the B-19 No. 2 well could result in easterly deviation of 416'. If this is applied to the non-standard location the result is not as negative structurally or as likely to encounter anhydritic porosity-plugging as would be the case for the standard location.

For the three reasons discussed above, Conoco feels that the non-standard location provides a much greater chance of a successful well, which is more likely to have a thicker oil column, and less likely to encounter water than would be the case for the standard location, and it is for these reasons that we request approval to drill the non-standard location.

State lease # 1535 is owned 100% by Conoco, Inc with the state beneficiary being the State Deaf & Visually Handicapped. This unorthodox location is non-standard encroaching to the interior of Conoco's lease therefore there is no notification required to an offset operator or leasee. If there are any additional questions regarding this application please contact me at (915) 686-5798.

Sincerely,

A handwritten signature in black ink, appearing to read "Kay Maddox". The signature is fluid and cursive, with the first name "Kay" written in a larger, more prominent script than the last name "Maddox".

Kay Maddox
Regulatory Agent - Conoco, Inc.

CC: OCD - Hobbs

District I
PO Box 1980, Hobbs, NM 88241-1980

District II
PO Drawer DD, Artesia, NM 88211-0719

District III
1000 Rio Brazos Rd. Aztec, NM 87410

District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Revised February 21, 1994
instructions on back

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number N/A		2 Pool Code N/A		3 Pool Name Wildcat Abo	
4 Property Code N/A		5 Property Name State B-19			6 Well Number #2
7 OGRID No. 005073		8 Operator Name Conoco Inc., 10 Desta Drive, Ste. 100W, Midland, TX 79705-4500			9 Elevation 3742'

10 Surface Location

UL or lot no. H	Section 19	Township 18S	Range 37E	Lot Idn	Feet from the 2275	North/South line North	Feet from the 1215	East/West line East	County Lea
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11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
12 Dedicated Acres 40	13 Joint or Infill	14 Consolidation Code		15 Order No.					

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

16				17 OPERATOR CERTIFICATION	
				I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief	
				Signature 	
				Printed Name Kay Maddox Title Regulatory Agent Date February 3, 2000	
			18 SURVEYOR CERTIFICATION		
			I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.		
			Date of Survey Signature and Seal of Professional Surveyor:		
			Certificate Number		

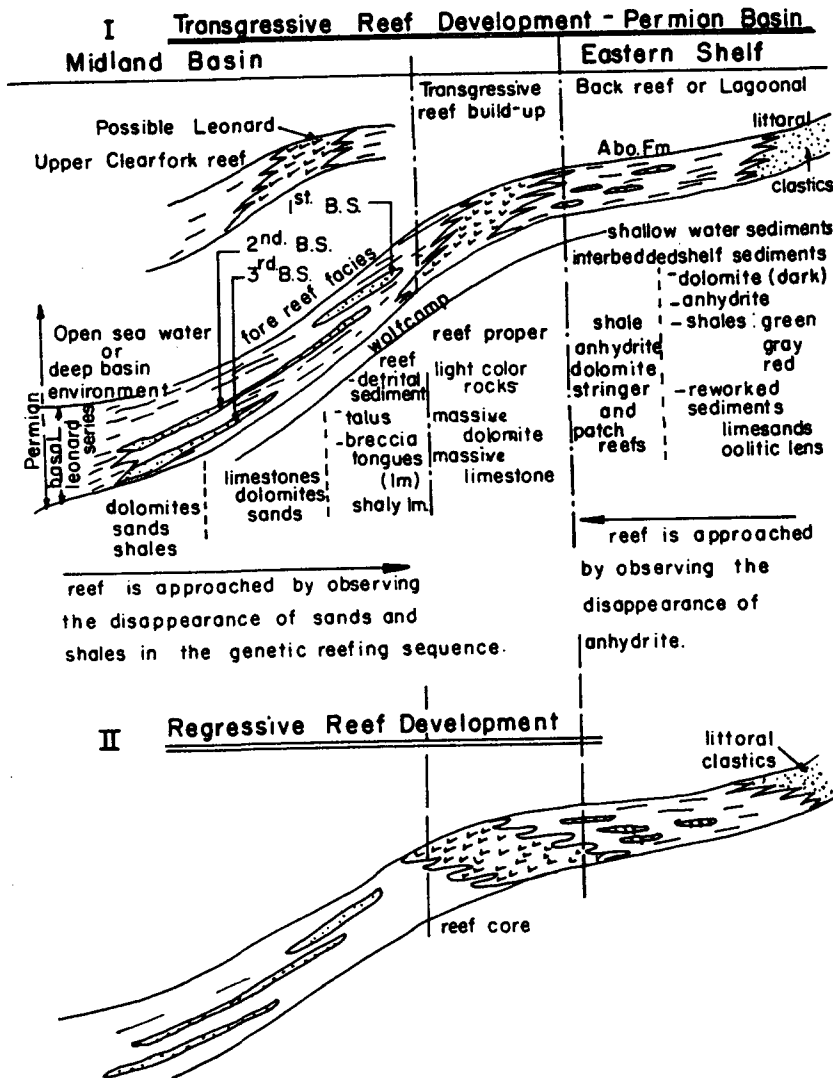
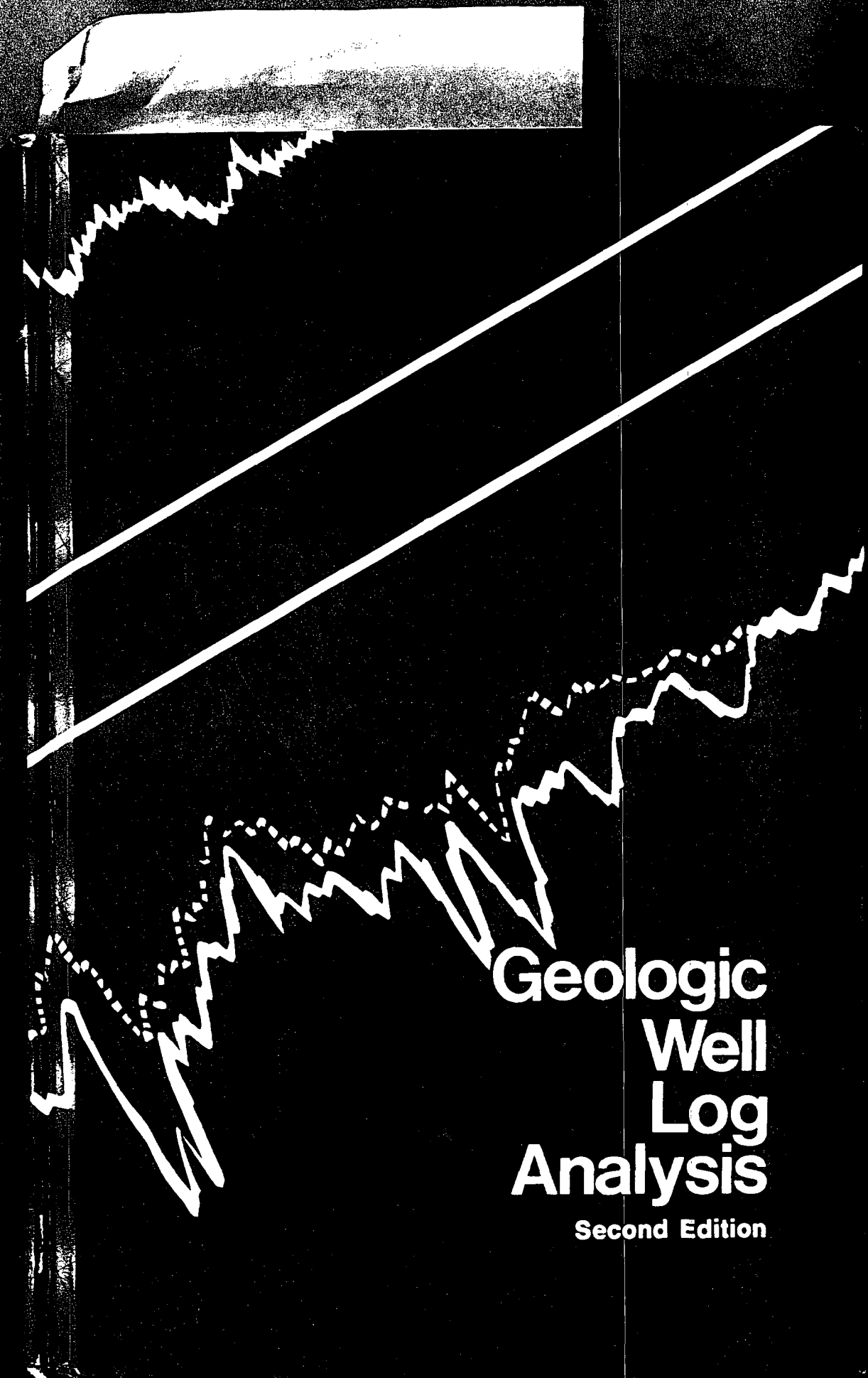

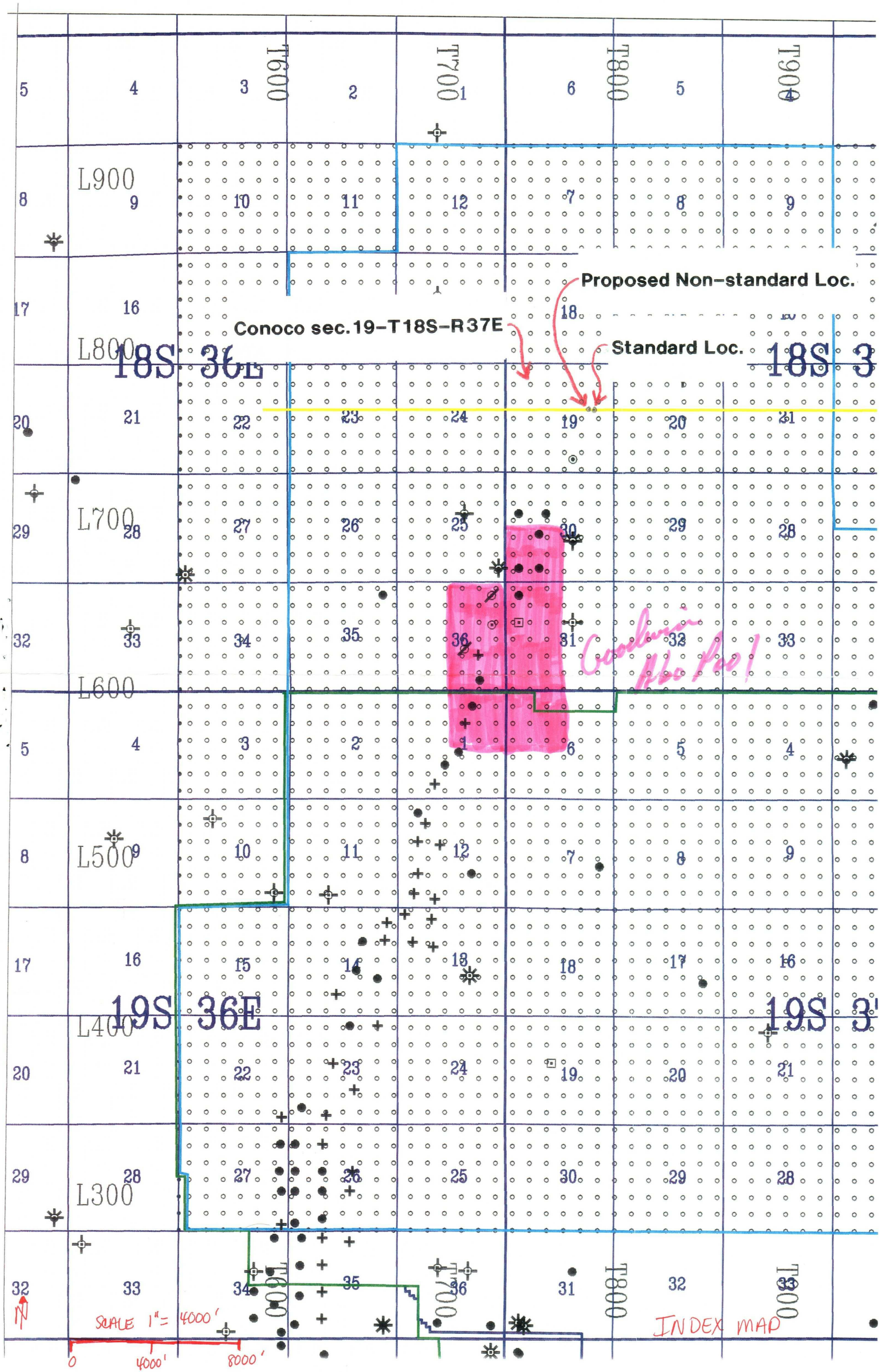


Figure 6-1. General sedimentary and lithologic conditions associated with a transgressive or a regressive reef development.



**Geologic
Well
Log
Analysis**
Second Edition

NOTES		<div> EXPLORATION PRODUCTION AMERICAS</div>												
POOL - WILDCAT ABO STATE "B-19" #2 Non-standard Location Proration Unit - 40 Ac.	DATE: 2/3/00	CONOCO STATE "B-19" #2 Sec. 19, T18S, R37E Lea County, New Mexico Non-Standard Location												
	DRAWN BY: glg													
	CHECKED BY:													
	APPROVED BY:	<table><tr><td>STATE</td><td>API COUNTY</td><td>WELL</td><td rowspan="2"></td><td>DRAWING</td></tr><tr><td>30</td><td>- 025</td><td>-</td><td>STB-19-2</td></tr></table>				STATE	API COUNTY	WELL		DRAWING	30	- 025	-	STB-19-2
	STATE					API COUNTY	WELL			DRAWING				
	30	- 025	-	STB-19-2										
SCALE: 1" = 1320'														
STATE PLANE COORDINATES REFERRED TO NAD27 - N.M. EAST STATE PLANE COORDINATES ZONE - 3001	CONOCO INC. OFFICE 10 DESTA DRIVE WEST MIDLAND, TEXAS 79705													



Proposed Non-standard Loc.

Standard Loc.

Conoco sec. 19-T18S-R37E

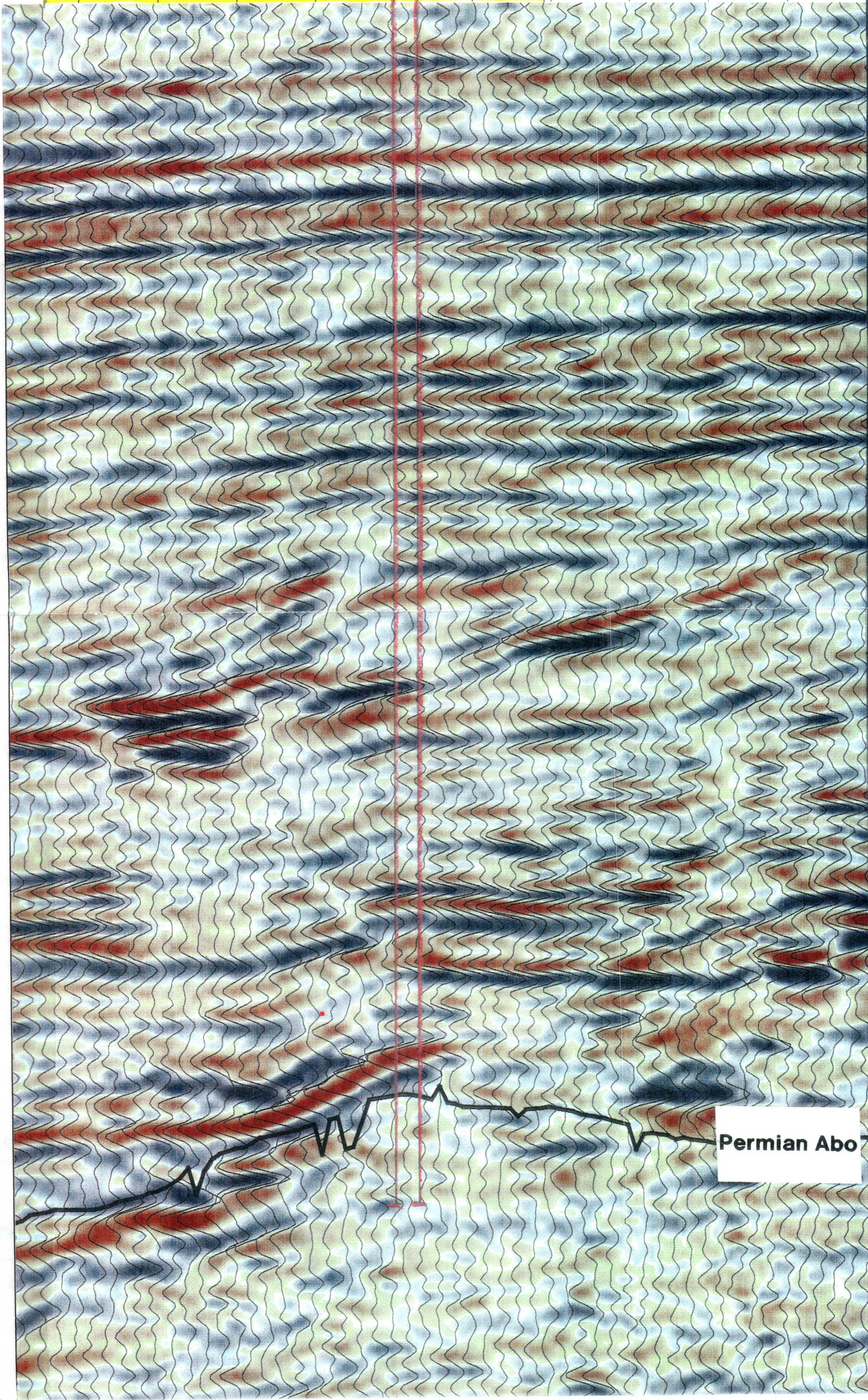
T750

T800

500

1000

Permian Abo



10 Desta Drive, Suite 100W
Midland, Texas 79705
Phone: (915) 686-5400



FAX

To: <i>Mr. J. Stogard</i>	From: <i>701114</i>
Phone No:	Phone No:
Fax No:	Fax No:
Date:	Pages: _____ + COVER
Re:	CC:

☐ **Urgent** ☐ **For Review** ☐ **Please Comment**

☐ **Please Reply** ☐ **Please Recycle**

Comments:

DISTRICT I

1825 N. French Dr., Hobbs, NM 88240

DISTRICT II

811 South First, Artesia, NM 88210

DISTRICT III

1000 Elie Brance Rd., Aztec, NM 87410

DISTRICT IV

2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico

Energy, Minerals and Natural Resources Department

Form C-102

Revised March 17, 1999

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Fee Lease - 3 Copies

OIL CONSERVATION DIVISION

2040 South Pacheco

Santa Fe, New Mexico 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name WILDCAT ABO
Property Code	Property Name STATE "B-19"	Well Number 2
OGED No.	Operator Name CONOCO INC.	Elevation 3742'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	19	18 S	37 E		2275	NORTH	1215	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres 40	Joint or Infill	Consolidation Code	Order No.						

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

	OPERATOR CERTIFICATION I hereby certify the the information containing herein is true and complete to the best of my knowledge and belief.
	Signature
	Printed Name
	Title
Date	SURVEYOR CERTIFICATION I hereby verify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision and that the same is true and correct to the best of my belief.
LAT - N 32°44'02.8" LONG - W 103°17'08.6"	January 28, 2000 Date Survey Signature & Seal of Professional Surveyor
	Certificate No. 7977 BASIN SURVEYS

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2 39.75 SDSV BH1535 0000 CONOCO INC 12/22/99	F 40.00 SDSV BH1535 0000 CONOCO INC 12/22/99	G 40.00 SDSV BH1535 0000 CONOCO INC 12/22/99	H 40.00 SDSV BH1535 0000 CONOCO INC 12/22/99

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PAGE NO: 2

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February 3, 2000

Dear Mr. Stogner,

Before I even work this up I would appreciate it if you would look at it very briefly. This well is one of three wells that Conoco is proposing to drill as wildcat Abo oil wells. They are staking their locations based on 3-D seismic. Two of the three locations were able to be staked standard- this one was not. Conoco owns all of Section 19 with the exception of the S $\frac{1}{2}$ of the SW $\frac{1}{4}$. Currently there has only been one well drilled in the entire section and it was a Drinkard well P&A'd in 1987. The state lease number is B-1535 $\frac{1}{2}$.

Do you see an obvious problem with this NSL? Please let me know (915) 686-5798.

Thanks -
Kay Maddox

County Lea Pool Goodwin-Abo

TOWNSHIP 18 South Range 36 East NMPM

6	5	4	3	2	1		
7	8	9	10	11	12		
18	17	16	15	14	13		
19	20	21	22	23	24		
30	29	28	27	26	25		
31	32	33	34	35	36		

Ext. ^{SE} 4 Sec. 36 (R-11183, 5-19-49) Ext. ^{NE} 4 Sec. 36 (R-11304, 1-12-00)

COUNTY Lea

POOL

Goodwin - AboTOWNSHIP 18 SouthRANGE 37 East

NMFM

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Description: $\frac{SW}{4}$ Sec. 30 (R-2363, 12-1-62)Ext: $\frac{NW}{4}$ Sec. 31 (R-2578, 11-1-63) Ext: $\frac{SW}{4}$ Sec. 31 (R-11183, 5-19-99)

County Lea Pool Goodwin-Abo

TOWNSHIP 19 South Range 36 East NMPM

6	5	4	3	2	1		
7	8	9	10	11	12		
18	17	16	15	14	13		
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31	32	33	34	35	36		

Ext: ^{NE}/₄ Sec. 1 (R-11183, 5-19-99)

County Lea

Pool Goodwin-Abo

TOWNSHIP

19 South

Range

37 East

NMPM

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
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2 39.75 SDSV BH1535 0000 CONOCO INC 12/22/42	F 40.00 SDSV BH1535 0000 CONOCO INC 12/22/42	G 40.00 SDSV BH1535 0000 CONOCO INC 12/22/42	H 40.00 SDSV BH1535 0000 CONOCO INC 12/22/42

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