

District I - (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II - (575) 748-1283
811 S. First St., Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV - (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM 87505

HOBBS OGD

OCT 17 2012

RECEIVED

Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION

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

Revised August 1, 2011

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)		WELL API NO. 30-025- 40416
1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐		5. Indicate Type of Lease STATE ☐ FEE ☐
2. Name of Operator ConocoPhillips Company		6. State Oil & Gas Lease No.
3. Address of Operator P.O. Box 51810 Midland, Tx 79710		7. Lease Name or Unit Agreement Name Red Hills West 16 State
4. Well Location Unit Letter <u>B</u> : <u>180</u> feet from the <u>N</u> line and <u>1960</u> feet from the <u>E</u> line Section <u>16</u> Township <u>26S</u> Range <u>32E</u> NMPM <u>Lea</u> County		8. Well Number <u>7H</u>
11. Elevation (Show whether DR, RKB, RT, GR, etc.)		9. OGRID Number <u>217817</u>
10. Pool name or Wildcat Red Hills		

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐
 TEMPORARILY ABANDON ☐ CHANGE PLANS ☐
 PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐
 DOWNHOLE COMMINGLE ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐
 COMMENCE DRILLING OPNS. ☐ P AND A ☐
 CASING/CEMENT JOB ☐

OTHER: Revised Drill Plan ☐ OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

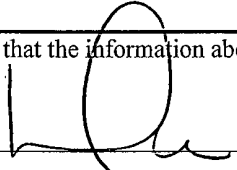
ConocoPhillips Company respectfully request to amend the drill plan for the above well. Please see attached drill plan information.

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE



TITLE

Sr. Regulatory Advisor

DATE

10/16/12

Type or print name

Donna Williams

E-mail address:

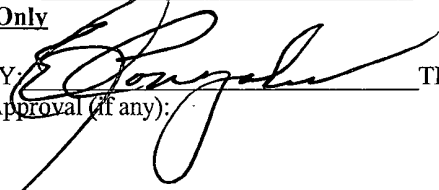
Donna.J.Williams@

PHONE:

432-688-6943

For State Use Only

APPROVED BY:



TITLE

Dist. Mgr.

DATE

10-22-2012

Conditions of Approval (if any):

OCT 22 2012

DRILLING PLAN

PROSPECT/FIELD	Bonespring/Red Hills	COUNTY/STATE				Lea County, NM
OWNERS	ConocoPhillips	LEASE				
WELL NO	Red Hills West 16 State 7H	FNL	FSL	FEL	FWL	
LOCATION		Surface Location	180	1960		
		Bottom Hole Location	330	1700		
EST. T.D.	Leg #1 13,362' MD	GROUND ELEV.				3,214' (est)
						RKB 3,230' (est)

PROGNOSIS: Based on 3,230' KB(est)				LOGS:	Type	Interval
MARKER		S.S. DEPTH	TVD		Open Hole	
Quaternary			Surface		GR-MWD	KOP-TD
Rustler		2,469	761			
Delaware Top		-1,183	4,413	DEVIATION:		
Ford Shale		-1,293	4,523			
Bone Spring		-5,135	8,365	Surf	3" max, svy every 200' with MWD	
Bone Spring 1st Carbonate Top		-5,255	8,485	Int #1/2	7" max, svy every 30' with MWD (Nudge)	
Bone Spring 1st Carbonate Base		-5,620	8,850	Interm #2 Curve	90°, svy every 30'	
	KOP		8,729	Prod Lateral	90°, svy every 30'	
Avalon A Shale Top		-5,598	8,828	DST'S:		
Avalon A Shale Base		-5,817	9,047		None	
Avalon B Zone Top		-5,825	9,055			
Avalon B Zone Base		-5,995	9,225			
Avalon C Shale Top		-5,995	9,225			
Avalon C Shale Horizontal Target		-6,145	9,375			
Avalon C Shale Base		-6,225	9,455			

				CORES:	No core	
				SAMPLES:		
				Mudlogging	Start	End
				Two-Man	810'	TD
					Vertical and Horizontal sections	
				BOP:		
				Precision 827 BOPE (With Rotating Head)	COP Category 3 Well Control Requirements 13-5/8"-5Mpsi Annular 13-3/8"-5Mpsi Blind Ram 13-3/8"-5Mpsi Cross / Choke & Kill Lines 13-3/8"-5M psi Pipe Ram 13-3/8"-5Mpsi Spacer Spool	

Dip Rate	(See inclination prediction)	0.65 psi/ft	Surface Formation	
Max. Anticipated BHP.				
MUD:	Interval	Type	Max. MW	Vis
Surface	0'-810'	Aquagel - Spud Mud	9.3	32-36
Intermediate 1	810'-4550'	Bmne	10.5	28-30
Intermediate 2	4550'-9790'	Bmne	9.5	28-30
Production	9790'-13362'	Cut Bmne	9.5	30-40

CASING:	Size	Wt ppf	Hole	Depth	Cement	WOC	Remarks
Surface	13-3/8"	54.5	17-1/2"	810'	To Surface	18hrs	
Intermediate 1	9-5/8"	36	12-1/4"	4,550'	To Surface	18hrs	
Intermediate 2	7"	29	8 3/4"	9,790'	500' into the 9-5/8"	18hrs	
Production Lat #1	4 1/2"	11.6	6 1/8"	13,362'	Packers and Sleeves	N/A	Liner

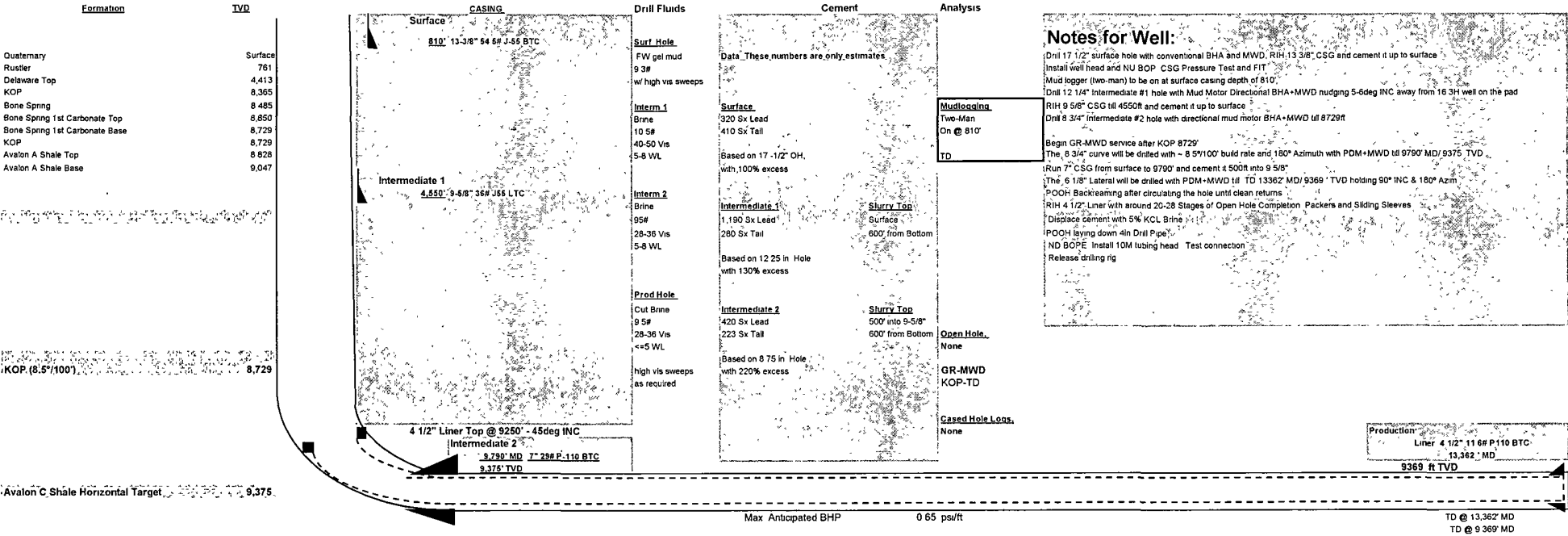
DIRECTIONAL PLAN				AZ	
	MD	TVD			
Surface	N/A	N/A		0	
Vertical KOP	8,729'	8,729'		0.0	Directional Company DDC
End Build/ 7" Casing (90° curve)	9,790'	9,376'		155.6	Vertical Build Rate 8.5 ' /100'
Tangent	N/A	N/A		180.0	Tan Leg Turn Rate 0.0 ' /100'
Turn	N/A	N/A		180.0	
TD	13,362'	9,369'		180.0	

Comments	
Prep By	Katia Filina
Date	10/15/12
Doc.	IREV 1

Red Hills West 16 State 7H			
Surface Location:		Bottom Hole Location	
.180FNL	1960FEL	330FSL	.1700FEL

Directional:					
	MD	TVD	FNL/FSL	FEL/FWL	S-T-R
Vertical KOP	8729	8729	0	0	0
End Build/7" Casing (90° curve)	9 790'	9 376'	0	0	155.6
Tangent	N/A	N/A	0	0	180.0
Turn	N/A	N/A	0	0	180.0
TD	13 362'	9 369'	0	0	180.0

Formation	TVD
Quaternary	Surface
Rustler	761
Delaware Top	4,413
KOP	8,365
Bone Spring	8 485
Bone Spring 1st Carbonate Top	8,850
Bone Spring 1st Carbonate Base	8,729
KOP	8,729
Avalon A Shale Top	8 828
Avalon A Shale Base	9,047



Avalon C Shale Horizontal Target 9,375

David Sillis
Geologist

Date
10/15/2012

Katia Faina
Drilling Engineer

Date
10/15/2012

Bonespring/Red Hills
ConocoPhillips
Red Hills West 16 State 7H

Surface Casing:

Surface Casing Depth (Ft)	810
Surface Casing O.D. (In.)	13.375
Surface Casing ID (In)	12.715
Hole O.D. (In)	17.5
Excess (%)	100%
Volume Tail (Sx)	320
Yield Tail (Cu. Ft./Sx)	1.33
Yield Lead (Cu. Ft./Sx)	1.75
Shoe Joint (Ft)	40
Shoe Volume (Cu. Ft)	35.3
Tail feet of cement	300
Calculated Total Volume (Cu. Ft.)	1,161
Calc. Tail Volume (Cu. Ft.)	417
Calc. Lead Volume (Cu. Ft.)	708
Calc. Lead Volume (Sx)	410

Intermediate1 Casing (Lead):

Intermediate Casing O.D. (In.)	9.625
Intermediate Casing ID (In)	8.921
Hole O.D. (In)	12.25
Excess (%)	130%
cap 12-1/4 - 9-5/8"	0.0558
Calculated fill:	4,050'
Yield Lead (Cu. Ft./Sx)	2.47
Calculated Total Lead (Cu. Ft.)	2,918
Calc. Lead Volume (Sx)	1,190

Intermediate2 Casing (Lead):

Intermediate Casing O.D. (In.)	7.000
Intermediate Casing ID (In)	6.184
Hole O.D. (In)	8.75
Excess (%)	100%
cap 7" - 8-3/4" bls/ft	0.0268
cap 7 - 9-5/8" bls/ft	0.02823
Calculated fill: (500' into 9-5/8")	4,490'
Yield Lead (Cu. Ft./Sx)	2.0
Calculated Total Lead (Cu. Ft.)	828
Calc. Lead Volume (Sx)	420

4050
8,540'

Intermediate1 Casing (Tail):

Intermediate Casing O.D. (In.)	9.625
Production Casing ID (In)	8.921
Hole O.D. (In)	12.25
Excess (%)	220%
cap 12-1/4 - 9-5/8"	0.0558
Calculated fill:	500'
Yield Tail (Cu. Ft./Sx)	1.33
Shoe Joint (Ft)	40
Shoe Volume (Cu. Ft)	17.4
Calc. Tail Volume (Cu. Ft.)	362
Required Tail Volume (Sx)	280

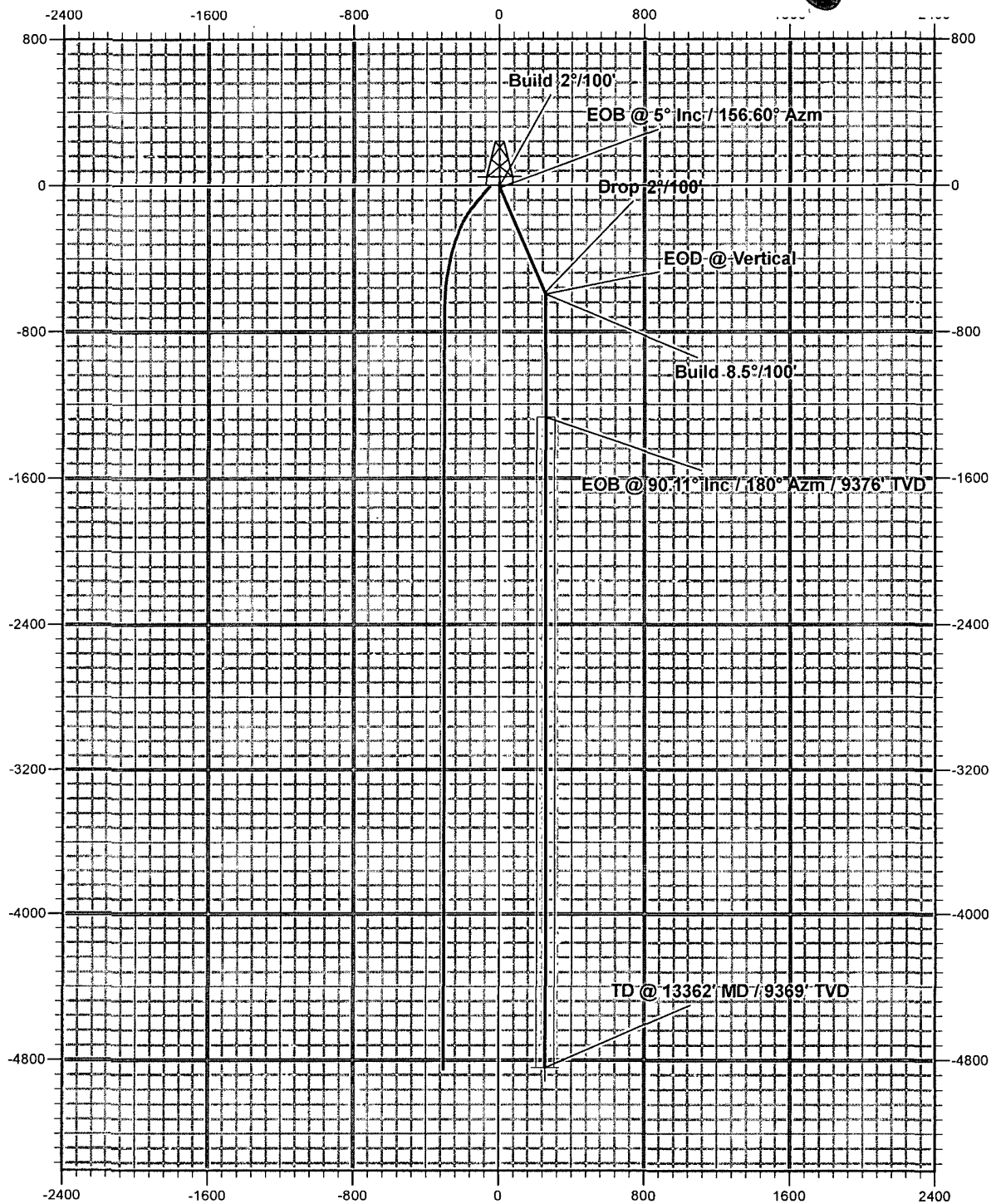
Intermediate2 Casing (Tail):

Intermediate Casing O.D. (In.)	7.000
Intermediate Casing ID (In)	6.184
Hole O.D. (In)	8.75
Excess (%)	135%
cap 7" - 8-3/4" bls/ft	0.0268
cap 7 - 9-5/8" bls/ft	0.02823
Calculated fill:	1,250'
Yield Lead (Cu. Ft./Sx)	1.2
Calculated Total Tail (Cu. Ft.)	267
Required Tail Volume (Sx)	223

ConocoPhillips

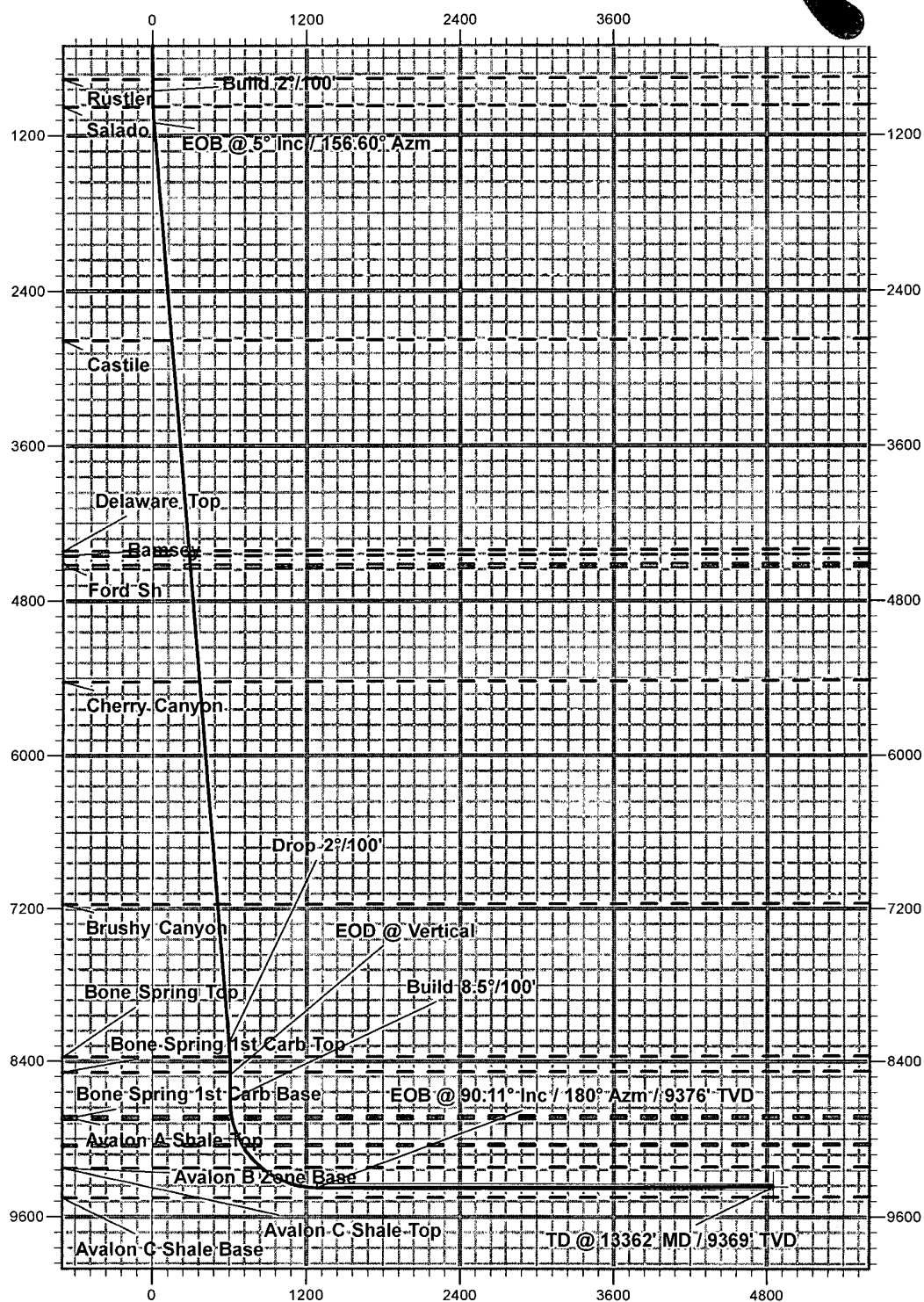
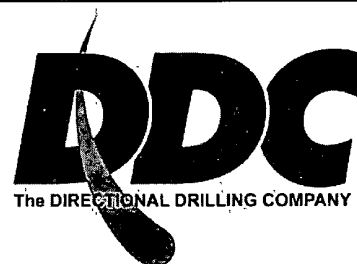
Lea County, New Mexico
Red Hills West 16 State #7H
Design #1

DDC
The DIRECTIONAL DRILLING COMPANY



ConocoPhillips

Lea County, New Mexico
Red Hills West 16 State #7H
Design #1



Vertical Section at 176.96° (1200 usft/in)



Conoco Phillips

Lea County, New Mexico
Sec 16, T26S, R32E NMPM
Red Hills West 16 State #7H

HOBBS OCD

Wellbore #1

OCT 17 2012

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Plan: Design #1

DDC Well Planning Report

09 October, 2012



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Red Hills West 16 State #7H
Company:	Conoco Phillips	TVD Reference:	WELL @ 3215.0usft (Original Well Elev)
Project:	Lea County, New Mexico	MD Reference:	WELL @ 3215.0usft (Original Well Elev)
Site:	Sec.16 T26S R32E NMPM	North Reference:	Grid
Well:	Red Hills West 16 State #7H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	Lea County, New Mexico		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Sec.16 T26S R32E NMPM		
Site Position:		Northing:	382,382.50 usft
From:	Map	Easting:	700,544.80 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 2' 58.675 N
		Longitude:	103° 41' 9.818 W
		Grid Convergence:	0.34 °

Well	Red Hills West 16 State #7H		
Well Position	+N/-S	7.6 usft	Northing: 382,390.07 usft
	+E/-W	2,755.9 usft	Easting: 703,300.74 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	Latitude: 32° 2' 58.585 N
			Longitude: 103° 40' 37.798 W
			Ground Level: 3,215.0 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	10/9/2012	(°)
			7.46
			Dip Angle
			(°)
			59.97
			Field Strength
			(nT)
			48,369

Design	Design #1		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			176.96

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
850.0	0.00	0.00	850.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,100.0	5.00	156.60	1,099.7	-10.0	4.3	2.00	2.00	0.00	156.60	
8,279.9	5.00	156.60	8,252.3	-584.3	252.9	0.00	0.00	0.00	0.00	
8,529.9	0.00	0.00	8,501.9	-594.3	257.2	2.00	-2.00	0.00	180.00	
8,729.9	0.00	0.00	8,701.9	-594.3	257.2	0.00	0.00	0.00	0.00	
9,790.0	90.11	180.00	9,376.0	-1,269.7	257.2	8.50	8.50	16.98	180.00	
13,361.8	90.11	180.00	9,369.0	-4,841.5	257.2	0.00	0.00	0.00	0.00	PBHL Red Hills We

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Red Hills West 16 State #7H
Company:	Conoco Phillips	TVD Reference:	WELL @ 3215' 0usft (Original Well Elev)
Project:	Lea County, New Mexico	MD Reference:	WELL @ 3215' 0usft (Original Well Elev)
Site:	Sec 16, T26S, R32E, NMPM	North Reference:	Grid
Well:	Red Hills West 16 State #7H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
Rustler									
762.0	0.00	0.00	762.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
Build 2°/100'									
850.0	0.00	0.00	850.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	1.00	156.60	900.0	-0.4	0.2	0.4	2.00	2.00	0.00
Salado									
977.0	2.54	156.60	977.0	-2.6	1.1	2.6	2.00	2.00	0.00
1,000.0	3.00	156.60	999.9	-3.6	1.6	3.7	2.00	2.00	0.00
EOB @ 5° Inc / 156.60° Azm									
1,100.0	5.00	156.60	1,099.7	-10.0	4.3	10.2	2.00	2.00	0.00
1,200.0	5.00	156.60	1,199.3	-18.0	7.8	18.4	0.00	0.00	0.00
1,300.0	5.00	156.60	1,298.9	-26.0	11.3	26.6	0.00	0.00	0.00
1,400.0	5.00	156.60	1,398.5	-34.0	14.7	34.7	0.00	0.00	0.00
1,500.0	5.00	156.60	1,498.2	-42.0	18.2	42.9	0.00	0.00	0.00
1,600.0	5.00	156.60	1,597.8	-50.0	21.6	51.1	0.00	0.00	0.00
1,700.0	5.00	156.60	1,697.4	-58.0	25.1	59.2	0.00	0.00	0.00
1,800.0	5.00	156.60	1,797.0	-66.0	28.6	67.4	0.00	0.00	0.00
1,900.0	5.00	156.60	1,896.6	-74.0	32.0	75.6	0.00	0.00	0.00
2,000.0	5.00	156.60	1,996.3	-82.0	35.5	83.8	0.00	0.00	0.00
2,100.0	5.00	156.60	2,095.9	-90.0	38.9	91.9	0.00	0.00	0.00
2,200.0	5.00	156.60	2,195.5	-98.0	42.4	100.1	0.00	0.00	0.00
2,300.0	5.00	156.60	2,295.1	-106.0	45.9	108.3	0.00	0.00	0.00
2,400.0	5.00	156.60	2,394.7	-114.0	49.3	116.4	0.00	0.00	0.00
2,500.0	5.00	156.60	2,494.4	-122.0	52.8	124.6	0.00	0.00	0.00
2,600.0	5.00	156.60	2,594.0	-130.0	56.3	132.8	0.00	0.00	0.00
2,700.0	5.00	156.60	2,693.6	-138.0	59.7	141.0	0.00	0.00	0.00
Castile									
2,787.5	5.00	156.60	2,780.7	-145.0	62.7	148.1	0.00	0.00	0.00
2,800.0	5.00	156.60	2,793.2	-146.0	63.2	149.1	0.00	0.00	0.00
2,900.0	5.00	156.60	2,892.8	-154.0	66.6	157.3	0.00	0.00	0.00
3,000.0	5.00	156.60	2,992.5	-162.0	70.1	165.5	0.00	0.00	0.00
3,100.0	5.00	156.60	3,092.1	-170.0	73.6	173.6	0.00	0.00	0.00
3,200.0	5.00	156.60	3,191.7	-178.0	77.0	181.8	0.00	0.00	0.00
3,300.0	5.00	156.60	3,291.3	-186.0	80.5	190.0	0.00	0.00	0.00
3,400.0	5.00	156.60	3,390.9	-194.0	83.9	198.2	0.00	0.00	0.00
3,500.0	5.00	156.60	3,490.6	-202.0	87.4	206.3	0.00	0.00	0.00
3,600.0	5.00	156.60	3,590.2	-210.0	90.9	214.5	0.00	0.00	0.00
3,700.0	5.00	156.60	3,689.8	-218.0	94.3	222.7	0.00	0.00	0.00
3,800.0	5.00	156.60	3,789.4	-226.0	97.8	230.8	0.00	0.00	0.00
3,900.0	5.00	156.60	3,889.0	-234.0	101.2	239.0	0.00	0.00	0.00
4,000.0	5.00	156.60	3,988.6	-242.0	104.7	247.2	0.00	0.00	0.00
4,100.0	5.00	156.60	4,088.3	-250.0	108.2	255.4	0.00	0.00	0.00
4,200.0	5.00	156.60	4,187.9	-258.0	111.6	263.5	0.00	0.00	0.00
4,300.0	5.00	156.60	4,287.5	-266.0	115.1	271.7	0.00	0.00	0.00
4,400.0	5.00	156.60	4,387.1	-274.0	118.6	279.9	0.00	0.00	0.00

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Well:	Red Hills West 16 State #7H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
Delaware Top									
4,426.4	5.00	156.60	4,413.5	-276.1	119.5	282.0	0.00	0.00	0.00
Ramsey									
4,464.6	5.00	156.60	4,451.5	-279.1	120.8	285.1	0.00	0.00	0.00
4,500.0	5.00	156.60	4,486.7	-282.0	122.0	288.0	0.00	0.00	0.00
Ford Sh									
4,536.8	5.00	156.60	4,523.4	-284.9	123.3	291.0	0.00	0.00	0.00
Olds									
4,563.9	5.00	156.60	4,550.4	-287.1	124.2	293.3	0.00	0.00	0.00
4,600.0	5.00	156.60	4,586.4	-290.0	125.5	296.2	0.00	0.00	0.00
4,700.0	5.00	156.60	4,686.0	-298.0	128.9	304.4	0.00	0.00	0.00
4,800.0	5.00	156.60	4,785.6	-306.0	132.4	312.6	0.00	0.00	0.00
4,900.0	5.00	156.60	4,885.2	-314.0	135.9	320.7	0.00	0.00	0.00
5,000.0	5.00	156.60	4,984.8	-322.0	139.3	328.9	0.00	0.00	0.00
5,100.0	5.00	156.60	5,084.5	-330.0	142.8	337.1	0.00	0.00	0.00
5,200.0	5.00	156.60	5,184.1	-338.0	146.2	345.2	0.00	0.00	0.00
5,300.0	5.00	156.60	5,283.7	-346.0	149.7	353.4	0.00	0.00	0.00
5,400.0	5.00	156.60	5,383.3	-354.0	153.2	361.6	0.00	0.00	0.00
Cherry Canyon									
5,443.1	5.00	156.60	5,426.3	-357.4	154.7	365.1	0.00	0.00	0.00
5,500.0	5.00	156.60	5,482.9	-362.0	156.6	369.7	0.00	0.00	0.00
5,600.0	5.00	156.60	5,582.6	-369.9	160.1	377.9	0.00	0.00	0.00
5,700.0	5.00	156.60	5,682.2	-377.9	163.6	386.1	0.00	0.00	0.00
5,800.0	5.00	156.60	5,781.8	-385.9	167.0	394.3	0.00	0.00	0.00
5,900.0	5.00	156.60	5,881.4	-393.9	170.5	402.4	0.00	0.00	0.00
6,000.0	5.00	156.60	5,981.0	-401.9	173.9	410.6	0.00	0.00	0.00
6,100.0	5.00	156.60	6,080.7	-409.9	177.4	418.8	0.00	0.00	0.00
6,200.0	5.00	156.60	6,180.3	-417.9	180.9	426.9	0.00	0.00	0.00
6,300.0	5.00	156.60	6,279.9	-425.9	184.3	435.1	0.00	0.00	0.00
6,400.0	5.00	156.60	6,379.5	-433.9	187.8	443.3	0.00	0.00	0.00
6,500.0	5.00	156.60	6,479.1	-441.9	191.2	451.5	0.00	0.00	0.00
6,600.0	5.00	156.60	6,578.8	-449.9	194.7	459.6	0.00	0.00	0.00
6,700.0	5.00	156.60	6,678.4	-457.9	198.2	467.8	0.00	0.00	0.00
6,800.0	5.00	156.60	6,778.0	-465.9	201.6	476.0	0.00	0.00	0.00
6,900.0	5.00	156.60	6,877.6	-473.9	205.1	484.1	0.00	0.00	0.00
7,000.0	5.00	156.60	6,977.2	-481.9	208.6	492.3	0.00	0.00	0.00
7,100.0	5.00	156.60	7,076.9	-489.9	212.0	500.5	0.00	0.00	0.00
Brushy Canyon									
7,188.5	5.00	156.60	7,165.0	-497.0	215.1	507.7	0.00	0.00	0.00
7,200.0	5.00	156.60	7,176.5	-497.9	215.5	508.7	0.00	0.00	0.00
7,300.0	5.00	156.60	7,276.1	-505.9	218.9	516.8	0.00	0.00	0.00
7,400.0	5.00	156.60	7,375.7	-513.9	222.4	525.0	0.00	0.00	0.00
7,500.0	5.00	156.60	7,475.3	-521.9	225.9	533.2	0.00	0.00	0.00
7,600.0	5.00	156.60	7,574.9	-529.9	229.3	541.3	0.00	0.00	0.00
7,700.0	5.00	156.60	7,674.6	-537.9	232.8	549.5	0.00	0.00	0.00
7,800.0	5.00	156.60	7,774.2	-545.9	236.2	557.7	0.00	0.00	0.00
7,900.0	5.00	156.60	7,873.8	-553.9	239.7	565.9	0.00	0.00	0.00
8,000.0	5.00	156.60	7,973.4	-561.9	243.2	574.0	0.00	0.00	0.00
8,100.0	5.00	156.60	8,073.0	-569.9	246.6	582.2	0.00	0.00	0.00
8,200.0	5.00	156.60	8,172.7	-577.9	250.1	590.4	0.00	0.00	0.00
Drop 2°/100'									
8,279.9	5.00	156.60	8,252.3	-584.3	252.9	596.9	0.00	0.00	0.00
8,300.0	4.60	156.60	8,272.3	-585.9	253.5	598.5	2.00	-2.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well: Red Hills West 16 State #7H
Company:	Conoco Phillips	TVD Reference:	WELL @ 3215.0usft (Original Well Elev)
Project:	Lea County, New Mexico	MD Reference:	WELL @ 3215.0usft (Original Well Elev)
Site:	Sec.16, T26S, R32E, NMPM	North Reference:	Grid
Well:	Red Hills West 16 State #7H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
Bone Spring Top									
8,392.7	2.74	156.60	8,364.8	-591.3	255.9	604.0	2.00	-2.00	0.00
8,400.0	2.60	156.60	8,372.1	-591.6	256.0	604.4	2.00	-2.00	0.00
8,500.0	0.60	156.60	8,472.0	-594.2	257.1	607.0	2.00	-2.00	0.00
Bone Spring 1st Carb Top									
8,512.8	0.34	156.60	8,484.8	-594.3	257.2	607.1	2.00	-2.00	0.00
EOD @ Vertical									
8,529.9	0.00	0.00	8,501.9	-594.3	257.2	607.1	2.00	-2.00	0.00
8,600.0	0.00	0.00	8,572.0	-594.3	257.2	607.1	0.00	0.00	0.00
8,700.0	0.00	0.00	8,672.0	-594.3	257.2	607.1	0.00	0.00	0.00
Build 8.5°/100'									
8,729.9	0.00	0.00	8,701.9	-594.3	257.2	607.1	0.00	0.00	0.00
8,800.0	5.96	180.00	8,771.9	-598.0	257.2	610.8	8.50	8.50	0.00
Avalon A Shale Top									
8,856.5	10.76	180.00	8,827.8	-606.2	257.2	619.0	8.50	8.50	0.00
Bone Spring 1st Carb Base									
8,879.0	12.67	180.00	8,849.8	-610.7	257.2	623.5	8.50	8.50	0.00
8,900.0	14.46	180.00	8,870.2	-615.7	257.2	628.4	8.50	8.50	0.00
9,000.0	22.96	180.00	8,964.9	-647.7	257.2	660.4	8.50	8.50	0.00
Avalon A Shale Base									
9,091.7	30.76	180.00	9,046.7	-689.1	257.2	701.8	8.50	8.50	0.00
9,100.0	31.46	180.00	9,053.7	-693.4	257.2	706.1	8.50	8.50	0.00
Avalon B Zone Top									
9,101.1	31.55	180.00	9,054.6	-693.9	257.2	706.6	8.50	8.50	0.00
9,200.0	39.96	180.00	9,134.9	-751.7	257.2	764.3	8.50	8.50	0.00
9,300.0	48.46	180.00	9,206.5	-821.4	257.2	833.9	8.50	8.50	0.00
Avalon B Zone Base - Avalon C Shale Top									
9,327.6	50.81	180.00	9,224.4	-842.4	257.2	854.9	8.50	8.50	0.00
9,400.0	56.96	180.00	9,267.0	-900.8	257.2	913.2	8.50	8.50	0.00
9,500.0	65.46	180.00	9,315.1	-988.4	257.2	1,000.7	8.50	8.50	0.00
9,600.0	73.96	180.00	9,349.8	-1,082.1	257.2	1,094.2	8.50	8.50	0.00
9,700.0	82.46	180.00	9,370.2	-1,179.9	257.2	1,191.9	8.50	8.50	0.00
EOD @ 90.11° Inc / 180° Azm / 9376' TVD									
9,790.0	90.11	180.00	9,376.0	-1,269.7	257.2	1,281.6	8.50	8.50	0.00
9,800.0	90.11	180.00	9,376.0	-1,279.7	257.2	1,291.5	0.00	0.00	0.00
9,900.0	90.11	180.00	9,375.8	-1,379.7	257.2	1,391.4	0.00	0.00	0.00
10,000.0	90.11	180.00	9,375.6	-1,479.7	257.2	1,491.2	0.00	0.00	0.00
10,100.0	90.11	180.00	9,375.4	-1,579.7	257.2	1,591.1	0.00	0.00	0.00
10,200.0	90.11	180.00	9,375.2	-1,679.7	257.2	1,690.9	0.00	0.00	0.00
10,300.0	90.11	180.00	9,375.0	-1,779.7	257.2	1,790.8	0.00	0.00	0.00
10,400.0	90.11	180.00	9,374.8	-1,879.7	257.2	1,890.7	0.00	0.00	0.00
10,500.0	90.11	180.00	9,374.6	-1,979.7	257.2	1,990.5	0.00	0.00	0.00
10,600.0	90.11	180.00	9,374.4	-2,079.7	257.2	2,090.4	0.00	0.00	0.00
10,700.0	90.11	180.00	9,374.2	-2,179.7	257.2	2,190.2	0.00	0.00	0.00
10,800.0	90.11	180.00	9,374.0	-2,279.7	257.2	2,290.1	0.00	0.00	0.00
10,900.0	90.11	180.00	9,373.8	-2,379.7	257.2	2,389.9	0.00	0.00	0.00
11,000.0	90.11	180.00	9,373.6	-2,479.7	257.2	2,489.8	0.00	0.00	0.00
11,100.0	90.11	180.00	9,373.4	-2,579.7	257.2	2,589.7	0.00	0.00	0.00
11,200.0	90.11	180.00	9,373.2	-2,679.7	257.2	2,689.5	0.00	0.00	0.00
11,300.0	90.11	180.00	9,373.0	-2,779.7	257.2	2,789.4	0.00	0.00	0.00
11,400.0	90.11	180.00	9,372.9	-2,879.7	257.2	2,889.2	0.00	0.00	0.00
11,500.0	90.11	180.00	9,372.7	-2,979.7	257.2	2,989.1	0.00	0.00	0.00
11,600.0	90.11	180.00	9,372.5	-3,079.7	257.2	3,089.0	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well: Red Hills West 16 State #7H
Company:	Conoco Phillips	TVD Reference:	WELL @ 3215.0usft (Original Well Elev)
Project:	Lea County, New Mexico	MD Reference:	WELL @ 3215.0usft (Original Well Elev)
Site:	Sec 16 T26S R32E NMPM	North Reference:	Grnd
Well:	Red Hills West 16 State #7H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,700.0	90.11	180.00	9,372.3	-3,179.7	257.2	3,188.8	0.00	0.00	0.00
11,800.0	90.11	180.00	9,372.1	-3,279.7	257.2	3,288.7	0.00	0.00	0.00
11,900.0	90.11	180.00	9,371.9	-3,379.7	257.2	3,388.5	0.00	0.00	0.00
12,000.0	90.11	180.00	9,371.7	-3,479.7	257.2	3,488.4	0.00	0.00	0.00
12,100.0	90.11	180.00	9,371.5	-3,579.7	257.2	3,588.3	0.00	0.00	0.00
12,200.0	90.11	180.00	9,371.3	-3,679.7	257.2	3,688.1	0.00	0.00	0.00
12,300.0	90.11	180.00	9,371.1	-3,779.7	257.2	3,788.0	0.00	0.00	0.00
12,400.0	90.11	180.00	9,370.9	-3,879.7	257.2	3,887.8	0.00	0.00	0.00
12,500.0	90.11	180.00	9,370.7	-3,979.7	257.2	3,987.7	0.00	0.00	0.00
12,600.0	90.11	180.00	9,370.5	-4,079.7	257.2	4,087.6	0.00	0.00	0.00
12,700.0	90.11	180.00	9,370.3	-4,179.7	257.2	4,187.4	0.00	0.00	0.00
12,800.0	90.11	180.00	9,370.1	-4,279.7	257.2	4,287.3	0.00	0.00	0.00
12,900.0	90.11	180.00	9,369.9	-4,379.7	257.2	4,387.1	0.00	0.00	0.00
13,000.0	90.11	180.00	9,369.7	-4,479.7	257.2	4,487.0	0.00	0.00	0.00
13,100.0	90.11	180.00	9,369.5	-4,579.7	257.2	4,586.8	0.00	0.00	0.00
13,200.0	90.11	180.00	9,369.3	-4,679.7	257.2	4,686.7	0.00	0.00	0.00
13,300.0	90.11	180.00	9,369.1	-4,779.7	257.2	4,786.6	0.00	0.00	0.00
13,361.8	90.11	180.00	9,369.0	-4,841.5	257.2	4,848.3	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target	89.89	180.00	9,369.0	-4,841.5	257.2	377,548.59	703,557.93	32° 2' 10.658 N	103° 40' 35.152 W
- Shape									
PBHL Red Hills West - plan hits target center - Rectangle (sides W100.0 H45.0 D3,571.8)									

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Red Hills West 16 State #7H
Company:	Conoco Phillips	TVD Reference:	WELL @ 3215.0usft (Original Well Elev)
Project:	Lea County, New Mexico	MD Reference:	WELL @ 3215.0usft (Original Well Elev)
Site:	Sec 16, T26S, R32E NMPM	North Reference:	Grid
Well:	Red Hills West 16 State #7H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
762.0	762.0	Rustler		-0.11	176.96	
977.0	977.0	Salado		-0.11	176.96	
2,787.5	2,780.7	Castile		-0.11	176.96	
4,426.4	4,413.5	Delaware Top		-0.11	176.96	
4,464.6	4,451.5	Ramsey		-0.11	176.96	
4,536.8	4,523.4	Ford Sh		-0.11	176.96	
4,563.9	4,550.4	Olds		-0.11	176.96	
5,443.1	5,426.3	Cherry Canyon		-0.11	176.96	
7,188.5	7,165.0	Brushy Canyon		-0.11	176.96	
8,392.7	8,364.8	Bone Spring Top		-0.11	176.96	
8,512.8	8,484.8	Bone Spring 1st Carb Top		-0.11	176.96	
8,856.5	8,827.8	Avalon A Shale Top		-0.11	176.96	
8,879.0	8,849.8	Bone Spring 1st Carb Base		-0.11	176.96	
9,091.7	9,046.7	Avalon A Shale Base		-0.11	176.96	
9,101.1	9,054.6	Avalon B Zone Top		-0.11	176.96	
9,327.6	9,224.4	Avalon B Zone Base		-0.11	176.96	
9,327.6	9,224.4	Avalon C Shale Top		-0.11	176.96	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
850.0	850.0	0.0	0.0	Build 2"/100'	
1,100.0	1,099.7	-10.0	4.3	EOB @ 5° Inc / 156.60° Azm	
8,279.9	8,252.3	-584.3	252.9	Drop 2"/100'	
8,529.9	8,501.9	-594.3	257.2	EOD @ Vertical	
8,729.9	8,701.9	-594.3	257.2	Build 8.5"/100'	
9,790.0	9,376.0	-1,269.7	257.2	EOB @ 90.11° Inc / 180° Azm / 9376' TVD	
13,361.8	9,369.0	-4,841.5	257.2	TD @ 13362' MD / 9369' TVD	

RED HILLS WEST 16 STATE 7H

KB

3,230

(via survey plat)

Notes:

A pilot hole will not be drilled. This horizontal well will be drilled from N to S into the Avalon C Shale Zone. The well will be drilled relatively flat with a ~ 4,500' long lateral.

Surface Location

Sec 16

26S

32E

Lea Co. TX, Surface
Location: 180' FNL &
1960' FEL

RED HILLS WEST STATE 16 7H BHL

Sec 16

26S

32E

Lea Co. TX, Terminus
Location: 330' FSL &
1700' FEL

Formation Name

Formation
Top
(TVD)

Subsea
Depth

Gross
Thickness

Gross
Thickness

Gross
Thickness

Comments

Quaternary	Surface					
Rustler	761	2,469				
Salado	976	2,254				
Castile	2,780	450				
Delaware Top	4,413	-1,183				
Ramsey	4,451	-1,221				
Ford Sh	4,523	-1,293				
Olds	4,550	-1,320				
Cherry Canyon	5,426	-2,196				
Brushy Canyon	7,165	-3,935	365			
Bone Spring Top	8,365	-5,135				
Bone Spring 1st Carbonate Top	8,485	-5,255				Not a formation top.
Bone Spring 1st Carbonate Base	8,850	-5,620	219			
KOP (est)	8,713	-5,470				
Avalon A Shale Top	8,828	-5,598	170			
Avalon A Shale Base	9,047	-5,817				
Avalon B Zone Top	9,055	-5,825				
Avalon B Zone Base	9,225	-5,995				
Avalon C Shale Top	9,225	-5,995	45		627	
LANDING: Avalon C Shale Horizontal Upper Target Limit	9,350	-6,120				
LANDING: Avalon C Shale Horizontal Target Center	9,375	-6,145				
LANDING: Avalon C Shale Horizontal Lower Target Limit	9,395	-6,165	-4,455			
TERMINUS: Avalon C Shale Horizontal Upper Target Limit	9,343	-6,113				
TERMINUS: Avalon C Shale Horizontal Target Center	9,368	-6,138				
TERMINUS: Avalon C Shale Horizontal Lower Target Limit	4,888	-1,658				
Avalon C Shale Base (Should not penetrate)	9,455	-6,225				