

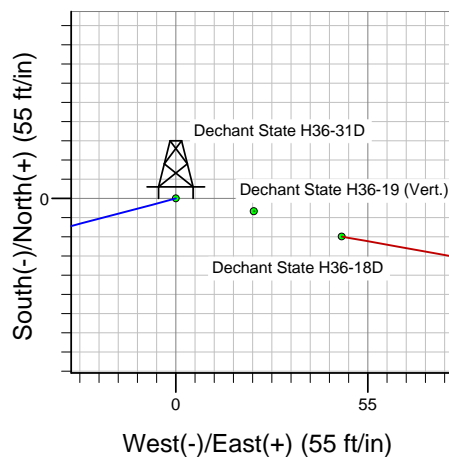
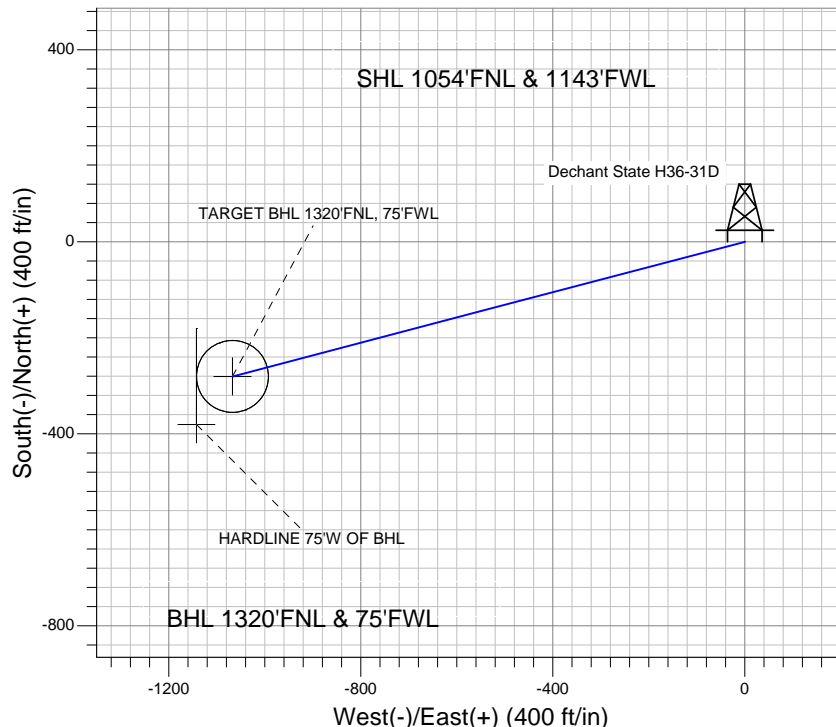
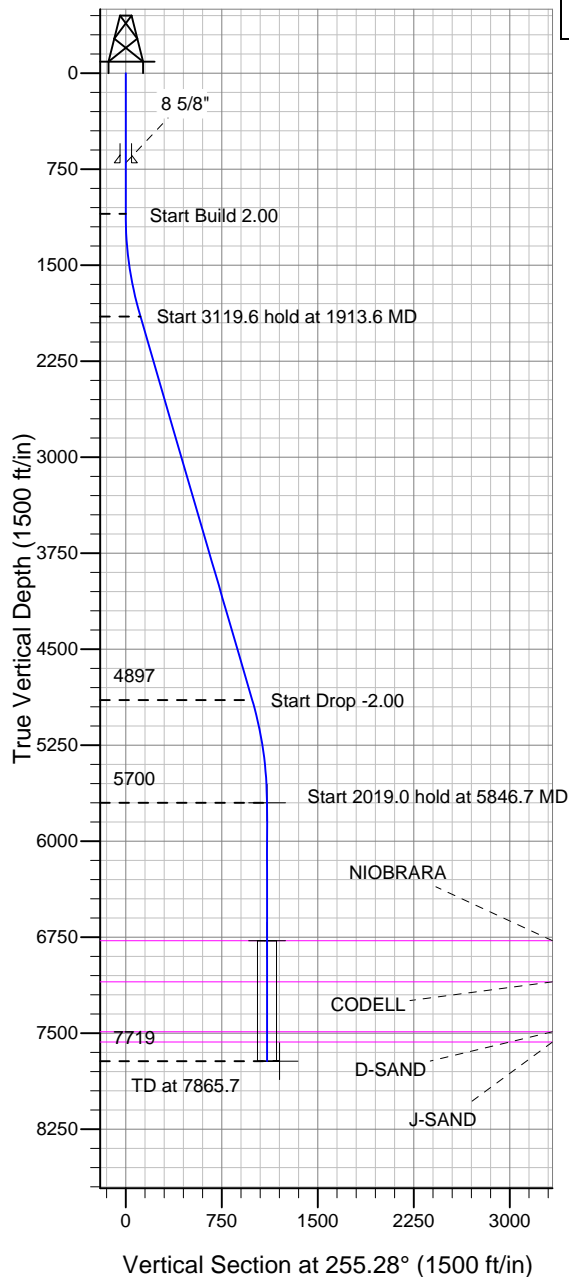
### Well Name: Dechant State H36-31D

Surface Location: Dechant State H36-18D Pad Sec. 36-T3N-R65W  
North American Datum 1983, US State Plane 1983 Colorado Northern Zone  
Ground Elevation: 4816.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1311803.38	3246507.13	40° 11' 9.348 N	104° 37' 3.648 W	

Original Well EleWELL @ 4829.0ft (Original Well Elev)

## NOBLE ENERGY INC WELD COUNTY CO



Dechant State H36-18D Pad Sec. 36-T3N-R65W  
Dechant State H36-31D  
Noble Dechant State H36-31D Plan #1 (8-27-10)  
16:40, August 30 2010



Azimuths to True North  
Magnetic North: 8.87°  
Magnetic Field  
Strength: 53119.4snT  
Dip Angle: 66.93°  
Date: 8/27/2010  
Model: IGRF2010

### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 1320'FNL, 75'FWL	5700.0	-280.5	-1067.3	40° 11' 6.576 N	104° 37' 17.400 W	Point
TARGET CIRCLE 1320'FNL, 75'FWL	6779.0	-280.5	-1067.3	40° 11' 6.576 N	104° 37' 17.400 W	Circle (Radius: 75.0)
HARDLINE 75'W OF BHL	7719.0	-380.5	-1142.3	40° 11' 5.588 N	104° 37' 18.366 W	Polygon

### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1100.0	0.00	0.00	1100.0	0.0	0.0	0.00	0.00	0.0	
3	1913.6	16.27	255.28	1902.7	-29.2	-111.0	2.00	255.28	114.7	
4	5033.2	16.27	255.28	4897.3	-251.3	-956.3	0.00	0.00	988.8	
5	5846.7	0.00	0.00	5700.0	-280.5	-1067.3	2.00	180.00	1103.6	TARGET BHL 1320'FNL, 75'FWL
6	7865.7	0.00	0.00	7719.0	-280.5	-1067.3	0.00	0.00	1103.6	



## **Directional**

### **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.36-T3N-R65W**

**Dechant State H36-18D Pad Sec. 36-T3N-R65W**

**Dechant State H36-31D**

**Wellbore #1**

**Plan: Noble Dechant State H36-31D Plan #1 (8-27-10)**

### **Standard Planning Report**

**30 August, 2010**



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Dechant State H36-31D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4829.0ft (Original Well Elev)
<b>Project:</b>	SEC.36-T3N-R65W	<b>MD Reference:</b>	WELL @ 4829.0ft (Original Well Elev)
<b>Site:</b>	Dechant State H36-18D Pad Sec. 36-T3N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Dechant State H36-31D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Dechant State H36-31D Plan #1 (8-27-10)		

<b>Project</b>	SEC.36-T3N-R65W, Weld County, Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

<b>Site</b>	Dechant State H36-18D Pad Sec. 36-T3N-R65W		
<b>Site Position:</b>		<b>Northing:</b>	1,311,792.94 ft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,246,554.73 ft
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	"
		<b>Latitude:</b>	40° 11' 9.240 N
		<b>Longitude:</b>	104° 37' 3.036 W
		<b>Grid Convergence:</b>	0.57 °

<b>Well</b>	Dechant State H36-31D		
<b>Well Position</b>	<b>+N/-S</b>	10.9 ft	<b>Northing:</b>
	<b>+E/-W</b>	-47.5 ft	<b>Easting:</b>
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>
			ft
			<b>Latitude:</b>
			40° 11' 9.348 N
			<b>Longitude:</b>
			104° 37' 3.648 W
			<b>Ground Level:</b>
			4,816.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	8/27/2010	8.87	66.93	53,119

<b>Design</b>	Noble Dechant State H36-31D Plan #1 (8-27-10)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	255.28

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,913.6	16.27	255.28	1,902.7	-29.2	-111.0	2.00	2.00	0.00	255.28	
5,033.2	16.27	255.28	4,897.3	-251.3	-956.3	0.00	0.00	0.00	0.00	
5,846.7	0.00	0.00	5,700.0	-280.5	-1,067.3	2.00	-2.00	0.00	180.00	TARGET BHL 132C
7,865.7	0.00	0.00	7,719.0	-280.5	-1,067.3	0.00	0.00	0.00	0.00	

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Dechant State H36-31D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4829.0ft (Original Well Elev)
<b>Project:</b>	SEC.36-T3N-R65W	<b>MD Reference:</b>	WELL @ 4829.0ft (Original Well Elev)
<b>Site:</b>	Dechant State H36-18D Pad Sec. 36-T3N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Dechant State H36-31D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Dechant State H36-31D Plan #1 (8-27-10)		

**Planned Survey**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	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
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	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
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	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
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	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
<b>8 5/8"</b>									
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.00	0.00	760.0	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
840.0	0.00	0.00	840.0	0.0	0.0	0.0	0.00	0.00	0.00
880.0	0.00	0.00	880.0	0.0	0.0	0.0	0.00	0.00	0.00
920.0	0.00	0.00	920.0	0.0	0.0	0.0	0.00	0.00	0.00
960.0	0.00	0.00	960.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,040.0	0.00	0.00	1,040.0	0.0	0.0	0.0	0.00	0.00	0.00
1,080.0	0.00	0.00	1,080.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,120.0	0.40	255.28	1,120.0	0.0	-0.1	0.1	2.00	2.00	0.00
1,160.0	1.20	255.28	1,160.0	-0.2	-0.6	0.6	2.00	2.00	0.00
1,200.0	2.00	255.28	1,200.0	-0.4	-1.7	1.7	2.00	2.00	0.00
1,240.0	2.80	255.28	1,239.9	-0.9	-3.3	3.4	2.00	2.00	0.00
1,280.0	3.60	255.28	1,279.9	-1.4	-5.5	5.7	2.00	2.00	0.00
1,320.0	4.40	255.28	1,319.8	-2.1	-8.2	8.4	2.00	2.00	0.00
1,360.0	5.20	255.28	1,359.6	-3.0	-11.4	11.8	2.00	2.00	0.00
1,400.0	6.00	255.28	1,399.5	-4.0	-15.2	15.7	2.00	2.00	0.00
1,440.0	6.80	255.28	1,439.2	-5.1	-19.5	20.2	2.00	2.00	0.00
1,480.0	7.60	255.28	1,478.9	-6.4	-24.3	25.2	2.00	2.00	0.00
1,520.0	8.40	255.28	1,518.5	-7.8	-29.7	30.7	2.00	2.00	0.00
1,560.0	9.20	255.28	1,558.0	-9.4	-35.6	36.9	2.00	2.00	0.00
1,600.0	10.00	255.28	1,597.5	-11.1	-42.1	43.5	2.00	2.00	0.00
1,640.0	10.80	255.28	1,636.8	-12.9	-49.1	50.7	2.00	2.00	0.00
1,680.0	11.60	255.28	1,676.0	-14.9	-56.6	58.5	2.00	2.00	0.00
1,720.0	12.40	255.28	1,715.2	-17.0	-64.6	66.8	2.00	2.00	0.00
1,760.0	13.20	255.28	1,754.2	-19.2	-73.2	75.7	2.00	2.00	0.00
1,800.0	14.00	255.28	1,793.1	-21.6	-82.3	85.1	2.00	2.00	0.00
1,840.0	14.80	255.28	1,831.8	-24.2	-91.9	95.0	2.00	2.00	0.00
1,880.0	15.60	255.28	1,870.4	-26.8	-102.1	105.5	2.00	2.00	0.00
1,913.6	16.27	255.28	1,902.7	-29.2	-111.0	114.7	2.00	2.00	0.00
1,920.0	16.27	255.28	1,908.9	-29.6	-112.7	116.5	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Dechant State H36-31D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4829.0ft (Original Well Elev)
<b>Project:</b>	SEC.36-T3N-R65W	<b>MD Reference:</b>	WELL @ 4829.0ft (Original Well Elev)
<b>Site:</b>	Dechant State H36-18D Pad Sec. 36-T3N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Dechant State H36-31D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Dechant State H36-31D Plan #1 (8-27-11)		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
1,960.0	16.27	255.28	1,947.2	-32.5	-123.6	127.8	0.00	0.00	0.00	
2,000.0	16.27	255.28	1,985.6	-35.3	-134.4	139.0	0.00	0.00	0.00	
2,040.0	16.27	255.28	2,024.0	-38.2	-145.2	150.2	0.00	0.00	0.00	
2,080.0	16.27	255.28	2,062.4	-41.0	-156.1	161.4	0.00	0.00	0.00	
2,120.0	16.27	255.28	2,100.8	-43.9	-166.9	172.6	0.00	0.00	0.00	
2,160.0	16.27	255.28	2,139.2	-46.7	-177.8	183.8	0.00	0.00	0.00	
2,200.0	16.27	255.28	2,177.6	-49.6	-188.6	195.0	0.00	0.00	0.00	
2,240.0	16.27	255.28	2,216.0	-52.4	-199.4	206.2	0.00	0.00	0.00	
2,280.0	16.27	255.28	2,254.4	-55.3	-210.3	217.4	0.00	0.00	0.00	
2,320.0	16.27	255.28	2,292.8	-58.1	-221.1	228.6	0.00	0.00	0.00	
2,360.0	16.27	255.28	2,331.2	-61.0	-232.0	239.8	0.00	0.00	0.00	
2,400.0	16.27	255.28	2,369.6	-63.8	-242.8	251.0	0.00	0.00	0.00	
2,440.0	16.27	255.28	2,408.0	-66.7	-253.6	262.2	0.00	0.00	0.00	
2,480.0	16.27	255.28	2,446.4	-69.5	-264.5	273.5	0.00	0.00	0.00	
2,520.0	16.27	255.28	2,484.8	-72.3	-275.3	284.7	0.00	0.00	0.00	
2,560.0	16.27	255.28	2,523.2	-75.2	-286.2	295.9	0.00	0.00	0.00	
2,600.0	16.27	255.28	2,561.6	-78.0	-297.0	307.1	0.00	0.00	0.00	
2,640.0	16.27	255.28	2,600.0	-80.9	-307.8	318.3	0.00	0.00	0.00	
2,680.0	16.27	255.28	2,638.4	-83.7	-318.7	329.5	0.00	0.00	0.00	
2,720.0	16.27	255.28	2,676.8	-86.6	-329.5	340.7	0.00	0.00	0.00	
2,760.0	16.27	255.28	2,715.2	-89.4	-340.4	351.9	0.00	0.00	0.00	
2,800.0	16.27	255.28	2,753.6	-92.3	-351.2	363.1	0.00	0.00	0.00	
2,840.0	16.27	255.28	2,792.0	-95.1	-362.0	374.3	0.00	0.00	0.00	
2,880.0	16.27	255.28	2,830.4	-98.0	-372.9	385.5	0.00	0.00	0.00	
2,920.0	16.27	255.28	2,868.8	-100.8	-383.7	396.7	0.00	0.00	0.00	
2,960.0	16.27	255.28	2,907.2	-103.7	-394.5	407.9	0.00	0.00	0.00	
3,000.0	16.27	255.28	2,945.6	-106.5	-405.4	419.2	0.00	0.00	0.00	
3,040.0	16.27	255.28	2,984.0	-109.4	-416.2	430.4	0.00	0.00	0.00	
3,080.0	16.27	255.28	3,022.4	-112.2	-427.1	441.6	0.00	0.00	0.00	
3,120.0	16.27	255.28	3,060.8	-115.1	-437.9	452.8	0.00	0.00	0.00	
3,160.0	16.27	255.28	3,099.2	-117.9	-448.7	464.0	0.00	0.00	0.00	
3,200.0	16.27	255.28	3,137.6	-120.8	-459.6	475.2	0.00	0.00	0.00	
3,240.0	16.27	255.28	3,176.0	-123.6	-470.4	486.4	0.00	0.00	0.00	
3,280.0	16.27	255.28	3,214.4	-126.5	-481.3	497.6	0.00	0.00	0.00	
3,320.0	16.27	255.28	3,252.8	-129.3	-492.1	508.8	0.00	0.00	0.00	
3,360.0	16.27	255.28	3,291.2	-132.2	-502.9	520.0	0.00	0.00	0.00	
3,400.0	16.27	255.28	3,329.6	-135.0	-513.8	531.2	0.00	0.00	0.00	
3,440.0	16.27	255.28	3,368.0	-137.9	-524.6	542.4	0.00	0.00	0.00	
3,480.0	16.27	255.28	3,406.4	-140.7	-535.5	553.6	0.00	0.00	0.00	
3,520.0	16.27	255.28	3,444.8	-143.6	-546.3	564.8	0.00	0.00	0.00	
3,560.0	16.27	255.28	3,483.2	-146.4	-557.1	576.1	0.00	0.00	0.00	
3,600.0	16.27	255.28	3,521.6	-149.3	-568.0	587.3	0.00	0.00	0.00	
3,640.0	16.27	255.28	3,560.0	-152.1	-578.8	598.5	0.00	0.00	0.00	
3,680.0	16.27	255.28	3,598.4	-155.0	-589.7	609.7	0.00	0.00	0.00	
3,720.0	16.27	255.28	3,636.8	-157.8	-600.5	620.9	0.00	0.00	0.00	
3,760.0	16.27	255.28	3,675.2	-160.7	-611.3	632.1	0.00	0.00	0.00	
3,800.0	16.27	255.28	3,713.5	-163.5	-622.2	643.3	0.00	0.00	0.00	
3,840.0	16.27	255.28	3,751.9	-166.3	-633.0	654.5	0.00	0.00	0.00	
3,880.0	16.27	255.28	3,790.3	-169.2	-643.9	665.7	0.00	0.00	0.00	
3,920.0	16.27	255.28	3,828.7	-172.0	-654.7	676.9	0.00	0.00	0.00	
3,960.0	16.27	255.28	3,867.1	-174.9	-665.5	688.1	0.00	0.00	0.00	
4,000.0	16.27	255.28	3,905.5	-177.7	-676.4	699.3	0.00	0.00	0.00	
4,040.0	16.27	255.28	3,943.9	-180.6	-687.2	710.5	0.00	0.00	0.00	

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Dechant State H36-31D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4829.0ft (Original Well Elev)
<b>Project:</b>	SEC.36-T3N-R65W	<b>MD Reference:</b>	WELL @ 4829.0ft (Original Well Elev)
<b>Site:</b>	Dechant State H36-18D Pad Sec. 36-T3N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Dechant State H36-31D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Dechant State H36-31D Plan #1 (8-27-11)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,080.0	16.27	255.28	3,982.3	-183.4	-698.1	721.8	0.00	0.00	0.00
4,120.0	16.27	255.28	4,020.7	-186.3	-708.9	733.0	0.00	0.00	0.00
4,160.0	16.27	255.28	4,059.1	-189.1	-719.7	744.2	0.00	0.00	0.00
4,200.0	16.27	255.28	4,097.5	-192.0	-730.6	755.4	0.00	0.00	0.00
4,240.0	16.27	255.28	4,135.9	-194.8	-741.4	766.6	0.00	0.00	0.00
4,280.0	16.27	255.28	4,174.3	-197.7	-752.3	777.8	0.00	0.00	0.00
4,320.0	16.27	255.28	4,212.7	-200.5	-763.1	789.0	0.00	0.00	0.00
4,360.0	16.27	255.28	4,251.1	-203.4	-773.9	800.2	0.00	0.00	0.00
4,400.0	16.27	255.28	4,289.5	-206.2	-784.8	811.4	0.00	0.00	0.00
4,440.0	16.27	255.28	4,327.9	-209.1	-795.6	822.6	0.00	0.00	0.00
4,480.0	16.27	255.28	4,366.3	-211.9	-806.4	833.8	0.00	0.00	0.00
4,520.0	16.27	255.28	4,404.7	-214.8	-817.3	845.0	0.00	0.00	0.00
4,560.0	16.27	255.28	4,443.1	-217.6	-828.1	856.2	0.00	0.00	0.00
4,600.0	16.27	255.28	4,481.5	-220.5	-839.0	867.5	0.00	0.00	0.00
4,640.0	16.27	255.28	4,519.9	-223.3	-849.8	878.7	0.00	0.00	0.00
4,680.0	16.27	255.28	4,558.3	-226.2	-860.6	889.9	0.00	0.00	0.00
4,720.0	16.27	255.28	4,596.7	-229.0	-871.5	901.1	0.00	0.00	0.00
4,760.0	16.27	255.28	4,635.1	-231.9	-882.3	912.3	0.00	0.00	0.00
4,800.0	16.27	255.28	4,673.5	-234.7	-893.2	923.5	0.00	0.00	0.00
4,840.0	16.27	255.28	4,711.9	-237.6	-904.0	934.7	0.00	0.00	0.00
4,880.0	16.27	255.28	4,750.3	-240.4	-914.8	945.9	0.00	0.00	0.00
4,920.0	16.27	255.28	4,788.7	-243.3	-925.7	957.1	0.00	0.00	0.00
4,960.0	16.27	255.28	4,827.1	-246.1	-936.5	968.3	0.00	0.00	0.00
5,000.0	16.27	255.28	4,865.5	-249.0	-947.4	979.5	0.00	0.00	0.00
5,033.2	16.27	255.28	4,897.3	-251.3	-956.3	988.8	0.00	0.00	0.00
5,040.0	16.13	255.28	4,903.9	-251.8	-958.2	990.7	2.00	-2.00	0.00
5,080.0	15.33	255.28	4,942.4	-254.6	-968.7	1,001.6	2.00	-2.00	0.00
5,120.0	14.53	255.28	4,981.0	-257.2	-978.7	1,011.9	2.00	-2.00	0.00
5,160.0	13.73	255.28	5,019.8	-259.7	-988.1	1,021.6	2.00	-2.00	0.00
5,200.0	12.93	255.28	5,058.7	-262.0	-997.0	1,030.9	2.00	-2.00	0.00
5,240.0	12.13	255.28	5,097.8	-264.2	-1,005.4	1,039.6	2.00	-2.00	0.00
5,280.0	11.33	255.28	5,137.0	-266.3	-1,013.3	1,047.7	2.00	-2.00	0.00
5,320.0	10.53	255.28	5,176.2	-268.2	-1,020.6	1,055.3	2.00	-2.00	0.00
5,360.0	9.73	255.28	5,215.6	-270.0	-1,027.4	1,062.3	2.00	-2.00	0.00
5,400.0	8.93	255.28	5,255.1	-271.6	-1,033.7	1,068.8	2.00	-2.00	0.00
5,440.0	8.13	255.28	5,294.6	-273.2	-1,039.4	1,074.7	2.00	-2.00	0.00
5,480.0	7.33	255.28	5,334.3	-274.5	-1,044.7	1,080.1	2.00	-2.00	0.00
5,520.0	6.53	255.28	5,374.0	-275.7	-1,049.3	1,085.0	2.00	-2.00	0.00
5,560.0	5.73	255.28	5,413.7	-276.8	-1,053.5	1,089.2	2.00	-2.00	0.00
5,600.0	4.93	255.28	5,453.6	-277.8	-1,057.1	1,092.9	2.00	-2.00	0.00
5,640.0	4.13	255.28	5,493.4	-278.6	-1,060.1	1,096.1	2.00	-2.00	0.00
5,680.0	3.33	255.28	5,533.4	-279.2	-1,062.6	1,098.7	2.00	-2.00	0.00
5,720.0	2.53	255.28	5,573.3	-279.8	-1,064.6	1,100.8	2.00	-2.00	0.00
5,760.0	1.73	255.28	5,613.3	-280.1	-1,066.1	1,102.3	2.00	-2.00	0.00
5,800.0	0.93	255.28	5,653.3	-280.4	-1,067.0	1,103.2	2.00	-2.00	0.00
5,840.0	0.13	255.28	5,693.3	-280.5	-1,067.3	1,103.6	2.00	-2.00	0.00
5,846.7	0.00	0.00	5,700.0	-280.5	-1,067.3	1,103.6	2.00	-2.00	1,554.39
TARGET BHL 1320'FNL, 75'FWL									
5,880.0	0.00	0.00	5,733.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
5,920.0	0.00	0.00	5,773.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
5,960.0	0.00	0.00	5,813.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
6,000.0	0.00	0.00	5,853.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
6,040.0	0.00	0.00	5,893.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Dechant State H36-31D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4829.0ft (Original Well Elev)
<b>Project:</b>	SEC.36-T3N-R65W	<b>MD Reference:</b>	WELL @ 4829.0ft (Original Well Elev)
<b>Site:</b>	Dechant State H36-18D Pad Sec. 36-T3N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Dechant State H36-31D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Dechant State H36-31D Plan #1 (8-27-11)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,080.0	0.00	0.00	5,933.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
6,120.0	0.00	0.00	5,973.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
6,160.0	0.00	0.00	6,013.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
6,200.0	0.00	0.00	6,053.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
6,240.0	0.00	0.00	6,093.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
6,280.0	0.00	0.00	6,133.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
6,320.0	0.00	0.00	6,173.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
6,360.0	0.00	0.00	6,213.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
6,400.0	0.00	0.00	6,253.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
6,440.0	0.00	0.00	6,293.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
6,480.0	0.00	0.00	6,333.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
6,520.0	0.00	0.00	6,373.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
6,560.0	0.00	0.00	6,413.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
6,600.0	0.00	0.00	6,453.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
6,640.0	0.00	0.00	6,493.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
6,680.0	0.00	0.00	6,533.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
6,720.0	0.00	0.00	6,573.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
6,760.0	0.00	0.00	6,613.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
6,800.0	0.00	0.00	6,653.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
6,840.0	0.00	0.00	6,693.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
6,880.0	0.00	0.00	6,733.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
6,920.0	0.00	0.00	6,773.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
6,925.7	0.00	0.00	6,779.0	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
<b>NIOBRARA - TARGET CIRCLE 1320'FNL, 75'FWL</b>									
6,960.0	0.00	0.00	6,813.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
7,000.0	0.00	0.00	6,853.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
7,040.0	0.00	0.00	6,893.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
7,080.0	0.00	0.00	6,933.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
7,120.0	0.00	0.00	6,973.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
7,160.0	0.00	0.00	7,013.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
7,200.0	0.00	0.00	7,053.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
7,240.0	0.00	0.00	7,093.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
7,245.7	0.00	0.00	7,099.0	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
<b>CODELL</b>									
7,280.0	0.00	0.00	7,133.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
7,320.0	0.00	0.00	7,173.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
7,360.0	0.00	0.00	7,213.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
7,400.0	0.00	0.00	7,253.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
7,440.0	0.00	0.00	7,293.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
7,480.0	0.00	0.00	7,333.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
7,520.0	0.00	0.00	7,373.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
7,560.0	0.00	0.00	7,413.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
7,600.0	0.00	0.00	7,453.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
7,635.7	0.00	0.00	7,489.0	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
<b>D-SAND</b>									
7,640.0	0.00	0.00	7,493.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
7,680.0	0.00	0.00	7,533.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
7,715.7	0.00	0.00	7,569.0	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
<b>J-SAND</b>									
7,720.0	0.00	0.00	7,573.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
7,760.0	0.00	0.00	7,613.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
7,800.0	0.00	0.00	7,653.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Dechant State H36-31D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4829.0ft (Original Well Elev)
<b>Project:</b>	SEC.36-T3N-R65W	<b>MD Reference:</b>	WELL @ 4829.0ft (Original Well Elev)
<b>Site:</b>	Dechant State H36-18D Pad Sec. 36-T3N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Dechant State H36-31D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Dechant State H36-31D Plan #1 (8-27-10)		

**Planned Survey**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,840.0	0.00	0.00	7,693.3	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
7,865.7	0.00	0.00	7,719.0	-280.5	-1,067.3	1,103.6	0.00	0.00	0.00
<b>HARDLINE 75'W OF BHL</b>									

**Targets**

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
TARGET CIRCLE 132' - plan hits target - Circle (radius 75.0)	0.00	0.00	6,779.0	-280.5	-1,067.3	1,311,512.31	3,245,442.69	40° 11' 6.576 N	104° 37' 17.400 W
TARGET BHL 1320'F - plan hits target - Point	0.00	0.00	5,700.0	-280.5	-1,067.3	1,311,512.31	3,245,442.69	40° 11' 6.576 N	104° 37' 17.400 W
HARDLINE 75'W OF I - plan misses by 125.0ft at 7865.7ft MD (7719.0 TVD, -280.5 N, -1067.3 E) - Polygon	0.00	0.00	7,719.0	-380.5	-1,142.3	1,311,411.55	3,245,368.72	40° 11' 5.588 N	104° 37' 18.366 W
Point 1			7,719.0	0.0	0.0	1,311,411.55	3,245,368.72		
Point 2			7,719.0	200.0	0.0	1,311,611.54	3,245,366.73		

**Casing Points**

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
700.0	700.0	8 5/8"	8-5/8	12-1/4

**Formations**

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,925.7	6,779.0	NIOBRARA		0.00	
7,245.7	7,099.0	CODELL		0.00	
7,635.7	7,489.0	D-SAND		0.00	
7,715.7	7,569.0	J-SAND		0.00	





## **Directional**

# **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.36-T3N-R65W**

**Dechant State H36-18D Pad Sec. 36-T3N-R65W**

**Dechant State H36-31D**

**Wellbore #1**

**Noble Dechant State H36-31D Plan #1 (8-27-10)**

## **Anticollision Report**

**30 August, 2010**



<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Dechant State H36-31D
<b>Project:</b>	SEC.36-T3N-R65W	<b>TVD Reference:</b>	WELL @ 4829.0ft (Original Well Elev)
<b>Reference Site:</b>	Dechant State H36-18D Pad Sec. 36-T3N-R65W	<b>MD Reference:</b>	WELL @ 4829.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dechant State H36-31D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Noble Dechant State H36-31D Plan #1 (8-27-10)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Noble Dechant State H36-31D Plan		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 10,000.0ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b> 8/30/2010			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	7,865.7	Noble Dechant State H36-31D Plan #1 (8- MWD		MWD - Standard

<b>Summary</b>						
<b>Site Name</b>	<b>Reference Measured Depth (ft)</b>	<b>Offset Measured Depth (ft)</b>	<b>Distance Between Centres (ft)</b>	<b>Distance Between Ellipses (ft)</b>	<b>Separation Factor</b>	<b>Warning</b>
Offset Well - Wellbore - Design						
Dechant State H36-18D Pad Sec. 36-T3N-R65W						
Dechant State H36-19 (Vert.) - Wellbore #1 - Design #1	1,100.0	1,100.0	22.6	17.9	4.798	CC, ES
Dechant State H36-19 (Vert.) - Wellbore #1 - Design #1	1,200.0	1,200.0	24.3	19.1	4.708	SF

<b>Offset Design</b> Dechant State H36-18D Pad Sec. 36-T3N-R65W - Dechant State H36-19 (Vert.) - Wellbore #1 - Design												
Survey Program: 0-MWD												
<b>Reference</b>	<b>Offset</b>	<b>Semi Major Axis</b>			<b>Distance</b>							
<b>Measured Depth (ft)</b>	<b>Vertical Depth (ft)</b>	<b>Measured Depth (ft)</b>	<b>Vertical Depth (ft)</b>	<b>Reference (ft)</b>	<b>Offset (ft)</b>	<b>Highside Toolface (°)</b>	<b>Offset Wellbore Centre +N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Between Centres (ft)</b>	<b>Between Ellipses (ft)</b>	<b>Minimum Separation (ft)</b>	<b>Separation Factor</b>
0.0	0.0	0.0	0.0	0.0	0.0	99.26	-3.6	22.4	22.6			
100.0	100.0	100.0	100.0	0.1	0.1	99.26	-3.6	22.4	22.6	22.4	0.22	100.759
200.0	200.0	200.0	200.0	0.3	0.3	99.26	-3.6	22.4	22.6	22.0	0.67	33.586
300.0	300.0	300.0	300.0	0.6	0.6	99.26	-3.6	22.4	22.6	21.5	1.12	20.152
400.0	400.0	400.0	400.0	0.8	0.8	99.26	-3.6	22.4	22.6	21.1	1.57	14.394
500.0	500.0	500.0	500.0	1.0	1.0	99.26	-3.6	22.4	22.6	20.6	2.02	11.195
600.0	600.0	600.0	600.0	1.2	1.2	99.26	-3.6	22.4	22.6	20.2	2.47	9.160
700.0	700.0	700.0	700.0	1.5	1.5	99.26	-3.6	22.4	22.6	19.7	2.92	7.751
800.0	800.0	800.0	800.0	1.7	1.7	99.26	-3.6	22.4	22.6	19.3	3.37	6.717
900.0	900.0	900.0	900.0	1.9	1.9	99.26	-3.6	22.4	22.6	18.8	3.82	5.927
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	99.26	-3.6	22.4	22.6	18.4	4.27	5.303
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	99.26	-3.6	22.4	22.6	17.9	4.72	4.798 CC, ES
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-157.68	-3.6	22.4	24.3	19.1	5.15	4.708 SF
1,300.0	1,299.8	1,299.8	1,299.8	2.8	2.8	-161.56	-3.6	22.4	29.2	23.6	5.56	5.241
1,400.0	1,399.5	1,399.5	1,399.5	3.0	3.0	-165.73	-3.6	22.4	37.5	31.6	5.98	6.280
1,500.0	1,498.7	1,498.7	1,498.7	3.2	3.3	-169.17	-3.6	22.4	49.4	43.0	6.39	7.740
1,600.0	1,597.5	1,597.5	1,597.5	3.5	3.5	-171.72	-3.6	22.4	64.9	58.1	6.79	9.548
1,700.0	1,695.6	1,695.6	1,695.6	3.8	3.7	-173.55	-3.6	22.4	83.8	76.6	7.20	11.643
1,800.0	1,793.1	1,793.1	1,793.1	4.1	3.9	-174.88	-3.6	22.4	106.2	98.6	7.60	13.977
1,900.0	1,889.6	1,889.6	1,889.6	4.6	4.1	-175.84	-3.6	22.4	132.0	124.0	7.99	16.511
1,913.6	1,902.7	1,902.7	1,902.7	4.6	4.2	-175.95	-3.6	22.4	135.8	127.7	8.05	16.869
2,000.0	1,985.6	1,985.6	1,985.6	5.0	4.4	-176.56	-3.6	22.4	159.9	151.5	8.44	18.954
2,100.0	2,081.6	2,081.6	2,081.6	5.5	4.6	-177.08	-3.6	22.4	187.9	179.0	8.90	21.124

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Dechant State H36-31D
<b>Project:</b>	SEC.36-T3N-R65W	<b>TVD Reference:</b>	WELL @ 4829.0ft (Original Well Elev)
<b>Reference Site:</b>	Dechant State H36-18D Pad Sec. 36-T3N-R65W	<b>MD Reference:</b>	WELL @ 4829.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dechant State H36-31D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Noble Dechant State H36-31D Plan #1 (8-27-10)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Dechant State H36-18D Pad Sec. 36-T3N-R65W - Dechant State H36-19 (Vert.) - Wellbore #1 - Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,200.0	2,177.6	2,177.6	2,177.6	6.0	4.8	-177.45	-3.6	22.4	215.9	206.5	9.36	23.069		
2,300.0	2,273.6	2,273.6	2,273.6	6.6	5.0	-177.75	-3.6	22.4	243.9	234.1	9.83	24.817		
2,400.0	2,369.6	2,369.6	2,369.6	7.1	5.2	-177.98	-3.6	22.4	271.9	261.6	10.30	26.397		
2,500.0	2,465.6	2,465.6	2,465.6	7.7	5.4	-178.17	-3.6	22.4	299.9	289.1	10.78	27.828		
2,600.0	2,561.6	2,561.6	2,561.6	8.2	5.6	-178.32	-3.6	22.4	327.9	316.6	11.26	29.130		
2,700.0	2,657.6	2,657.6	2,657.6	8.8	5.9	-178.46	-3.6	22.4	355.9	344.2	11.74	30.319		
2,800.0	2,753.6	2,753.6	2,753.6	9.4	6.1	-178.57	-3.6	22.4	383.9	371.7	12.22	31.408		
2,900.0	2,849.6	2,849.6	2,849.6	9.9	6.3	-178.67	-3.6	22.4	411.9	399.2	12.71	32.408		
3,000.0	2,945.6	2,945.6	2,945.6	10.5	6.5	-178.75	-3.6	22.4	439.9	426.7	13.20	33.330		
3,100.0	3,041.6	3,041.6	3,041.6	11.1	6.7	-178.83	-3.6	22.4	468.0	454.3	13.69	34.183		
3,200.0	3,137.6	3,137.6	3,137.6	11.7	6.9	-178.89	-3.6	22.4	496.0	481.8	14.18	34.972		
3,300.0	3,233.6	3,233.6	3,233.6	12.2	7.2	-178.95	-3.6	22.4	524.0	509.3	14.67	35.706		
3,400.0	3,329.6	3,329.6	3,329.6	12.8	7.4	-179.00	-3.6	22.4	552.0	536.8	15.17	36.389		
3,500.0	3,425.6	3,425.6	3,425.6	13.4	7.6	-179.05	-3.6	22.4	580.0	564.3	15.66	37.026		
3,600.0	3,521.6	3,521.6	3,521.6	14.0	7.8	-179.10	-3.6	22.4	608.0	591.9	16.16	37.622		
3,700.0	3,617.6	3,617.6	3,617.6	14.6	8.0	-179.14	-3.6	22.4	636.0	619.4	16.66	38.181		
3,800.0	3,713.5	3,713.5	3,713.5	15.2	8.2	-179.17	-3.6	22.4	664.1	646.9	17.16	38.705		
3,900.0	3,809.5	3,809.5	3,809.5	15.8	8.5	-179.21	-3.6	22.4	692.1	674.4	17.66	39.198		
4,000.0	3,905.5	3,905.5	3,905.5	16.4	8.7	-179.24	-3.6	22.4	720.1	701.9	18.16	39.663		
4,100.0	4,001.5	4,001.5	4,001.5	17.0	8.9	-179.27	-3.6	22.4	748.1	729.5	18.66	40.101		
4,200.0	4,097.5	4,097.5	4,097.5	17.6	9.1	-179.29	-3.6	22.4	776.1	757.0	19.16	40.515		
4,300.0	4,193.5	4,193.5	4,193.5	18.2	9.3	-179.32	-3.6	22.4	804.1	784.5	19.66	40.907		
4,400.0	4,289.5	4,289.5	4,289.5	18.8	9.5	-179.34	-3.6	22.4	832.2	812.0	20.16	41.278		
4,500.0	4,385.5	4,385.5	4,385.5	19.3	9.7	-179.36	-3.6	22.4	860.2	839.5	20.66	41.631		
4,600.0	4,481.5	4,481.5	4,481.5	19.9	10.0	-179.38	-3.6	22.4	888.2	867.0	21.16	41.966		
4,700.0	4,577.5	4,577.5	4,577.5	20.5	10.2	-179.40	-3.6	22.4	916.2	894.5	21.67	42.284		
4,800.0	4,673.5	4,673.5	4,673.5	21.1	10.4	-179.42	-3.6	22.4	944.2	922.1	22.17	42.587		
4,900.0	4,769.5	4,769.5	4,769.5	21.7	10.6	-179.43	-3.6	22.4	972.2	949.6	22.68	42.876		
5,000.0	4,865.5	4,865.5	4,865.5	22.3	10.8	-179.45	-3.6	22.4	1,000.3	977.1	23.18	43.152		
5,033.2	4,897.3	4,897.3	4,897.3	22.5	10.9	-179.46	-3.6	22.4	1,009.6	986.2	23.35	43.241		
5,100.0	4,961.7	4,961.7	4,961.7	22.9	11.0	-179.47	-3.6	22.4	1,027.5	1,003.8	23.74	43.283		
5,200.0	5,058.7	5,058.7	5,058.7	23.3	11.3	-179.49	-3.6	22.4	1,051.6	1,027.3	24.28	43.306		
5,300.0	5,156.6	5,156.6	5,156.6	23.6	11.5	-179.50	-3.6	22.4	1,072.3	1,047.5	24.79	43.249		
5,400.0	5,255.1	5,255.1	5,255.1	23.9	11.7	-179.51	-3.6	22.4	1,089.5	1,064.3	25.27	43.118		
5,500.0	5,354.1	5,354.1	5,354.1	24.2	11.9	-179.52	-3.6	22.4	1,103.3	1,077.6	25.71	42.917		
5,600.0	5,453.6	5,453.6	5,453.6	24.4	12.1	-179.52	-3.6	22.4	1,113.7	1,087.6	26.11	42.651		
5,700.0	5,553.3	5,553.3	5,553.3	24.6	12.4	-179.53	-3.6	22.4	1,120.5	1,094.1	26.48	42.322		
5,800.0	5,653.3	5,653.3	5,653.3	24.7	12.6	-179.53	-3.6	22.4	1,123.9	1,097.1	26.80	41.934		
5,846.7	5,700.0	5,700.0	5,700.0	24.8	12.7	75.75	-3.6	22.4	1,124.3	1,097.4	26.94	41.728		
5,900.0	5,753.3	5,753.3	5,753.3	24.8	12.8	75.75	-3.6	22.4	1,124.3	1,097.1	27.15	41.405		
6,000.0	5,853.3	5,853.3	5,853.3	24.9	13.0	75.75	-3.6	22.4	1,124.3	1,096.7	27.55	40.808		
6,100.0	5,953.3	5,953.3	5,953.3	25.0	13.3	75.75	-3.6	22.4	1,124.3	1,096.3	27.95	40.226		
6,200.0	6,053.3	6,053.3	6,053.3	25.1	13.5	75.75	-3.6	22.4	1,124.3	1,095.9	28.35	39.658		
6,300.0	6,153.3	6,153.3	6,153.3	25.3	13.7	75.75	-3.6	22.4	1,124.3	1,095.5	28.75	39.105		
6,400.0	6,253.3	6,253.3	6,253.3	25.4	13.9	75.75	-3.6	22.4	1,124.3	1,095.1	29.15	38.565		
6,500.0	6,353.3	6,353.3	6,353.3	25.5	14.2	75.75	-3.6	22.4	1,124.3	1,094.7	29.56	38.038		
6,600.0	6,453.3	6,453.3	6,453.3	25.6	14.4	75.75	-3.6	22.4	1,124.3	1,094.3	29.96	37.524		
6,700.0	6,553.3	6,553.3	6,553.3	25.7	14.6	75.75	-3.6	22.4	1,124.3	1,093.9	30.37	37.022		
6,800.0	6,653.3	6,653.3	6,653.3	25.8	14.8	75.75	-3.6	22.4	1,124.3	1,093.5	30.78	36.532		
6,900.0	6,753.3	6,753.3	6,753.3	26.0	15.1	75.75	-3.6	22.4	1,124.3	1,093.1	31.18	36.054		
7,000.0	6,853.3	6,853.3	6,853.3	26.1	15.3	75.75	-3.6	22.4	1,124.3	1,092.7	31.59	35.587		

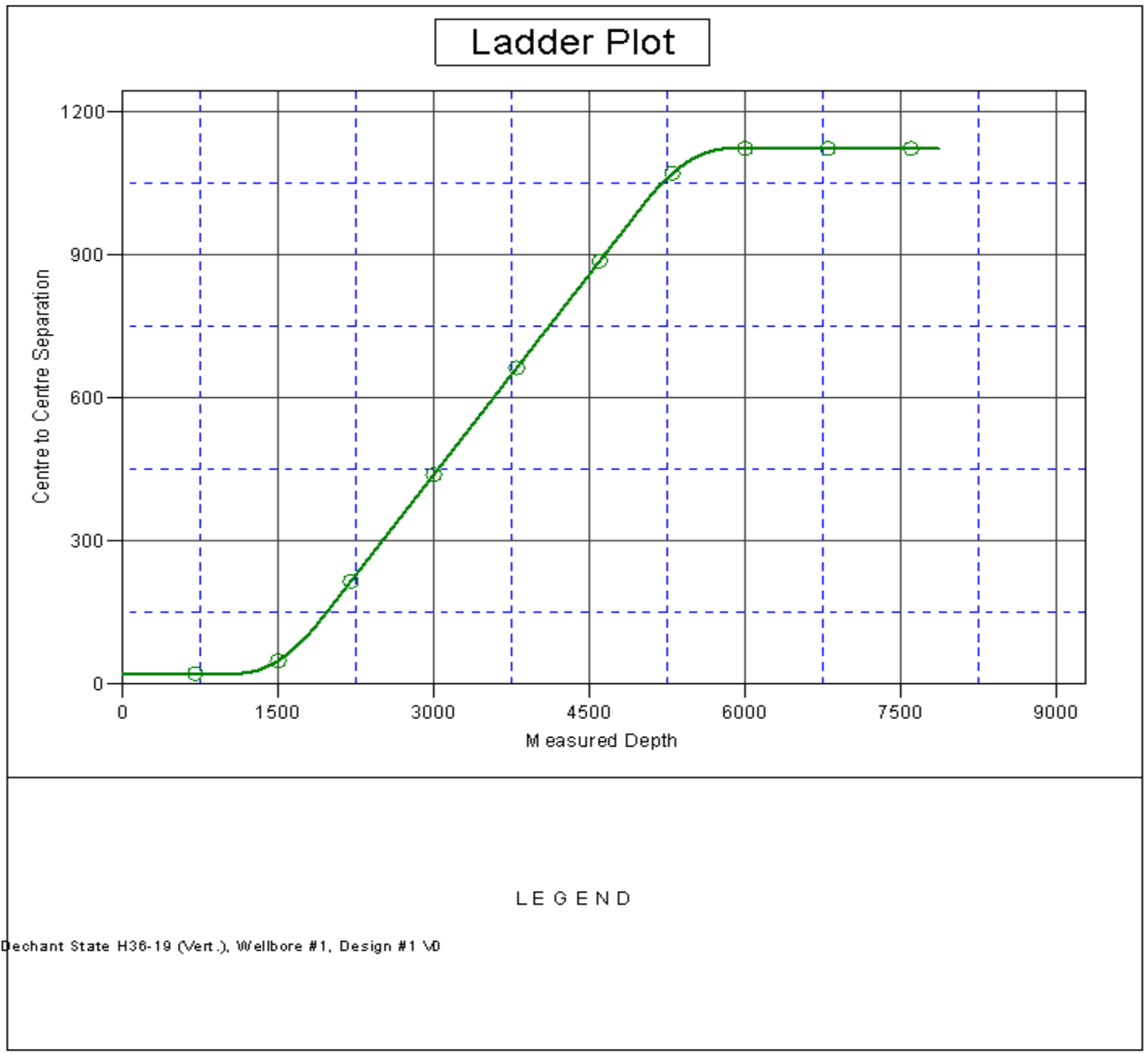
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Dechant State H36-31D
<b>Project:</b>	SEC.36-T3N-R65W	<b>TVD Reference:</b>	WELL @ 4829.0ft (Original Well Elev)
<b>Reference Site:</b>	Dechant State H36-18D Pad Sec. 36-T3N-R65W	<b>MD Reference:</b>	WELL @ 4829.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dechant State H36-31D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Noble Dechant State H36-31D Plan #1 (8-27-10)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Dechant State H36-18D Pad Sec. 36-T3N-R65W - Dechant State H36-19 (Vert.) - Wellbore #1 - Design													<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD													<b>Offset Well Error:</b>	0.0 ft
Reference	Offset	Semi Major Axis		Distance		Warning								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,100.0	6,953.3	6,953.3	6,953.3	26.2	15.5	75.75	-3.6	22.4	1,124.3	1,092.3	32.00	35.130		
7,200.0	7,053.3	7,053.3	7,053.3	26.3	15.7	75.75	-3.6	22.4	1,124.3	1,091.9	32.41	34.685		
7,300.0	7,153.3	7,153.3	7,153.3	26.4	16.0	75.75	-3.6	22.4	1,124.3	1,091.5	32.83	34.249		
7,400.0	7,253.3	7,253.3	7,253.3	26.6	16.2	75.75	-3.6	22.4	1,124.3	1,091.1	33.24	33.823		
7,500.0	7,353.3	7,353.3	7,353.3	26.7	16.4	75.75	-3.6	22.4	1,124.3	1,090.6	33.65	33.407		
7,600.0	7,453.3	7,453.3	7,453.3	26.8	16.6	75.75	-3.6	22.4	1,124.3	1,090.2	34.07	33.000		
7,700.0	7,553.3	7,553.3	7,553.3	27.0	16.9	75.75	-3.6	22.4	1,124.3	1,089.8	34.48	32.603		
7,800.0	7,653.3	7,653.3	7,653.3	27.1	17.1	75.75	-3.6	22.4	1,124.3	1,089.4	34.90	32.214		
7,865.7	7,719.0	7,719.0	7,719.0	27.2	17.2	75.75	-3.6	22.4	1,124.3	1,089.1	35.18	31.963		

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Dechant State H36-31D
<b>Project:</b>	SEC.36-T3N-R65W	<b>TVD Reference:</b>	WELL @ 4829.0ft (Original Well Elev)
<b>Reference Site:</b>	Dechant State H36-18D Pad Sec. 36-T3N-R65W	<b>MD Reference:</b>	WELL @ 4829.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dechant State H36-31D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Noble Dechant State H36-31D Plan #1 (8-27-10)	<b>Offset TVD Reference:</b>	Offset Datum

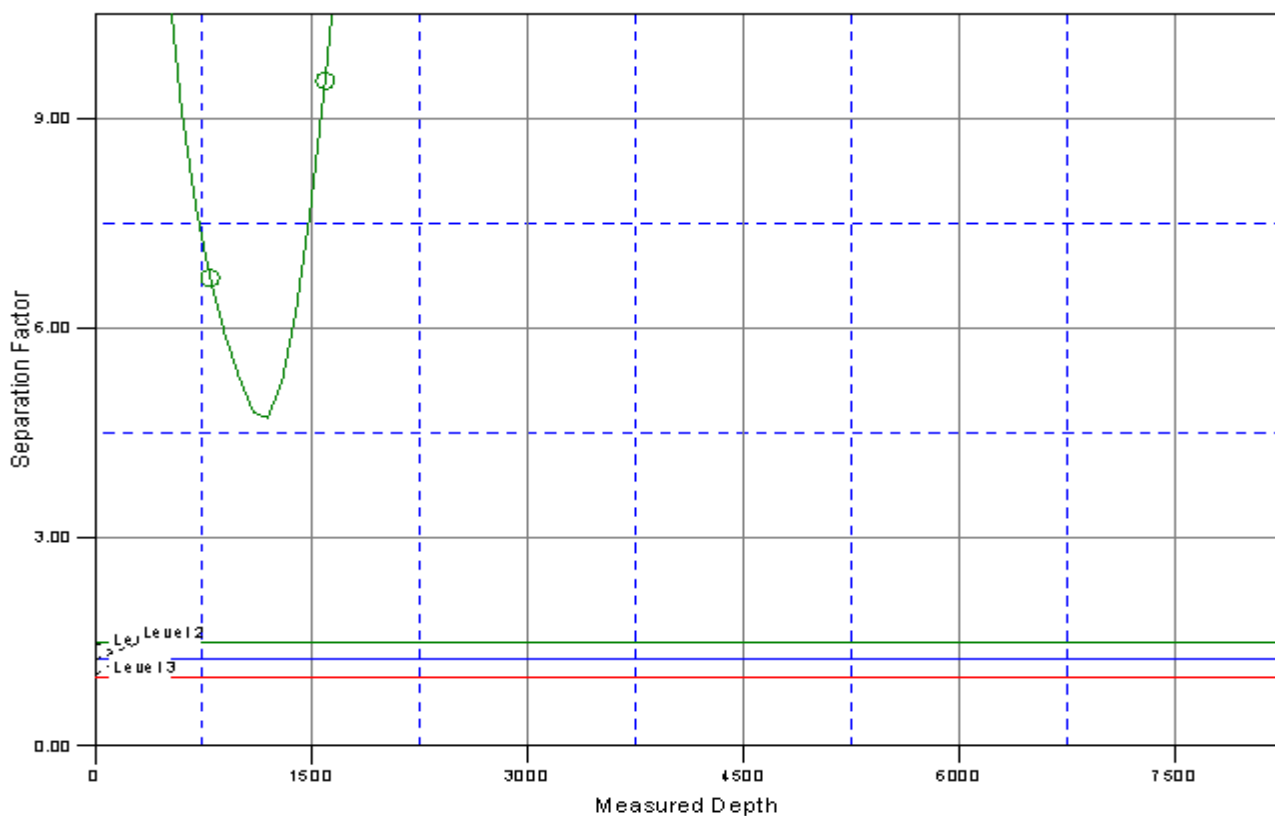
Reference Depths are relative to WELL @ 4829.0ft (Original Well Elev) Coordinates are relative to: Dechant State H36-31D  
Offset Depths are relative to Offset Datum  
Central Meridian is 105° 30' 0.000 W °  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.57°



<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Dechant State H36-31D
<b>Project:</b>	SEC.36-T3N-R65W	<b>TVD Reference:</b>	WELL @ 4829.0ft (Original Well Elev)
<b>Reference Site:</b>	Dechant State H36-18D Pad Sec. 36-T3N-R65W	<b>MD Reference:</b>	WELL @ 4829.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dechant State H36-31D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Noble Dechant State H36-31D Plan #1 (8-27-10)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4829.0ft (Original Well Elev)Coordinates are relative to: Dechant State H36-31D  
Offset Depths are relative to Offset Datum  
Central Meridian is 105° 30' 0.000 W °  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.57°

## Separation Factor Plot



### LEGEND

Dechant State H36-19 (Vert.), Wellbore #1, Design #1 W