

# PETROLEUM DEVELOPMENT CORP Weld County CO

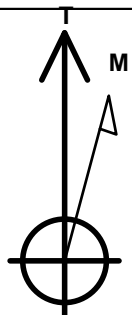
Well Name: **Chesnut 28M-203**

Surface Location: Chesnut 28M-HZ Pad Sec.28-T5N-R64W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
Ground Elevation: 4620.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1381420.65	3264654.74	40.376510	-104.550060	
RKB - 15' WELL @ 4635.0ft (RKB - 15')						

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 380'FNL, 1340'FEL, SEC. 28	1.0	0.0	0.0	Point
BHL 2136'FNL, 2585'FEL, SEC.33	6624.0	-7045.7	-1217.9	Point



Azimuths to True North  
Magnetic North: 8.53°

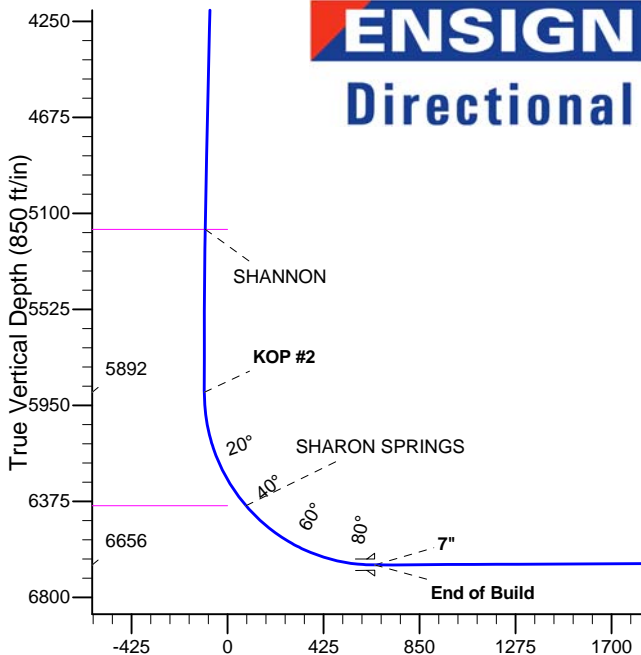
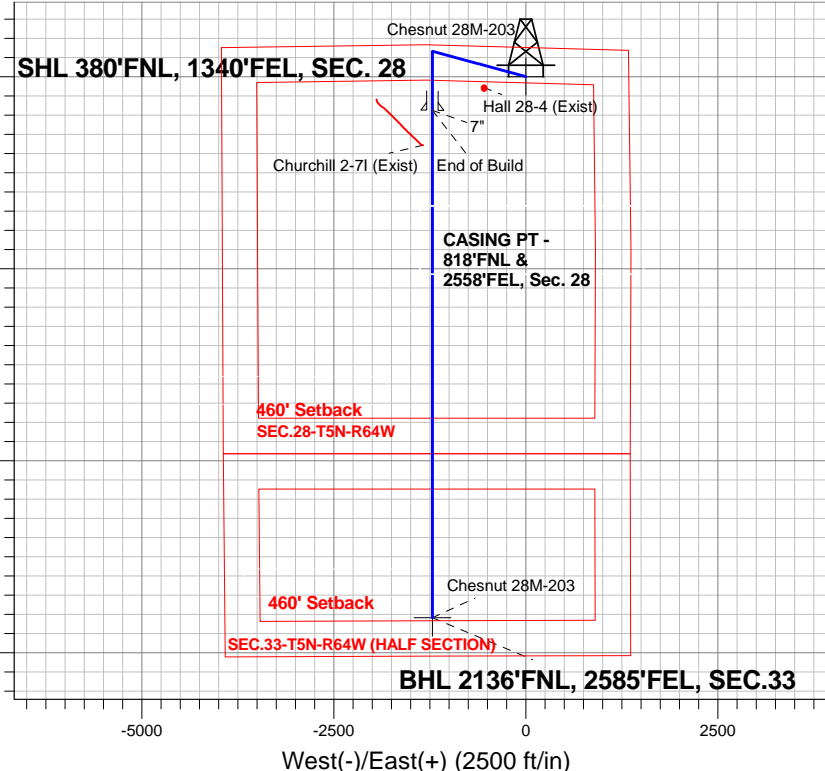
Magnetic Field  
Strength: 52972.2srT  
Dip Angle: 67.01°  
Date: 1/29/2013  
Model: IGRF2010

Chesnut 28M-HZ Pad Sec.28-T5N-R64W  
Chesnut 28M-203  
Plan #2 (4-30-14)  
8:24, May 01 2014

## ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	KOP #1
5892.3	6048.6	KOP #2
6656.3	7252.4	End of Build

South(-)/North(+) (2500 ft/in)



## 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	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	943.5	14.87	285.16	935.2	25.1	-92.6	2.00	285.16	-7.9	
4	5112.8	14.87	285.16	4964.8	304.9	-1125.3	0.00	0.00	-95.5	
5	5856.3	0.00	0.00	5700.0	330.0	-1217.9	2.00	180.00	-103.4	
6	6048.6	0.00	0.00	5892.4	330.0	-1217.9	0.00	0.00	-103.4	
7	7252.4	90.28	180.00	6656.3	-437.7	-1217.9	7.50	180.00	651.5	
8	13860.5	90.28	180.00	6624.0	-7045.7	-1217.9	0.00	0.00	7149.7	BHL 2136'FNL, 2585'FEL, SEC.33

BHL 2136'FNL, 2585'FEL, SEC.33

Vertical Section at 190.46° (850 ft/in)



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.28-T5N-R64W**

**Chesnut 28M-HZ Pad Sec.28-T5N-R64W**

**Chesnut 28M-203**

**Wellbore #1**

**Plan: Plan #2 (4-30-14)**

## **Standard Planning Report**

**01 May, 2014**

<b>Database:</b>	landmark	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28M-203
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Project:</b>	SEC.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Site:</b>	Chesnut 28M-HZ Pad Sec.28-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Chesnut 28M-203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (4-30-14)		

<b>Project</b>	SEC.28-T5N-R64W, 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>	Chesnut 28M-HZ Pad Sec.28-T5N-R64W		
<b>Site Position:</b>		<b>Northing:</b>	1,381,420.67 ft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,264,654.74 ft
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	"
		<b>Latitude:</b>	40.376510
		<b>Longitude:</b>	-104.550060
		<b>Grid Convergence:</b>	0.61 °

<b>Well</b>	Chesnut 28M-203		
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b> 1,381,420.65 ft
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b> 3,264,654.74 ft
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b> ft
			<b>Latitude:</b> 40.376510
			<b>Longitude:</b> -104.550060
			<b>Ground Level:</b> 4,620.0 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	1/29/2013	8.53	67.01	52,972

<b>Design</b>	Plan #2 (4-30-14)			
<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	190.46

<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	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
943.5	14.87	285.16	935.2	25.1	-92.6	2.00	2.00	0.00	285.16	
5,112.8	14.87	285.16	4,964.8	304.9	-1,125.3	0.00	0.00	0.00	0.00	
5,856.3	0.00	0.00	5,700.0	330.0	-1,217.9	2.00	-2.00	0.00	180.00	
6,048.6	0.00	0.00	5,892.4	330.0	-1,217.9	0.00	0.00	0.00	0.00	
7,252.4	90.28	180.00	6,656.3	-437.7	-1,217.9	7.50	7.50	0.00	180.00	
13,860.5	90.28	180.00	6,624.0	-7,045.7	-1,217.9	0.00	0.00	0.00	0.00	BHL 2136°FNL, 258

<b>Database:</b>	landmark	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28M-203
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Project:</b>	SEC.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Site:</b>	Chesnut 28M-HZ Pad Sec.28-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Chesnut 28M-203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (4-30-14)		

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
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>SHL 380'FNL, 1340'FEL, SEC. 28</b>									
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
<b>KOP #1</b>									
300.0	2.00	285.16	300.0	0.5	-1.7	-0.1	2.00	2.00	0.00
400.0	4.00	285.16	399.8	1.8	-6.7	-0.6	2.00	2.00	0.00
500.0	6.00	285.16	499.5	4.1	-15.1	-1.3	2.00	2.00	0.00
600.0	8.00	285.16	598.7	7.3	-26.9	-2.3	2.00	2.00	0.00
700.0	10.00	285.16	697.5	11.4	-42.0	-3.6	2.00	2.00	0.00
800.0	12.00	285.16	795.6	16.4	-60.4	-5.1	2.00	2.00	0.00
900.0	14.00	285.16	893.1	22.3	-82.1	-7.0	2.00	2.00	0.00
943.5	14.87	285.16	935.2	25.1	-92.6	-7.9	2.00	2.00	0.00
1,000.0	14.87	285.16	989.8	28.9	-106.6	-9.0	0.00	0.00	0.00
1,100.0	14.87	285.16	1,086.4	35.6	-131.4	-11.2	0.00	0.00	0.00
1,200.0	14.87	285.16	1,183.1	42.3	-156.1	-13.3	0.00	0.00	0.00
1,300.0	14.87	285.16	1,279.7	49.0	-180.9	-15.4	0.00	0.00	0.00
1,400.0	14.87	285.16	1,376.4	55.7	-205.7	-17.5	0.00	0.00	0.00
1,500.0	14.87	285.16	1,473.0	62.4	-230.4	-19.6	0.00	0.00	0.00
1,600.0	14.87	285.16	1,569.7	69.2	-255.2	-21.7	0.00	0.00	0.00
1,700.0	14.87	285.16	1,666.3	75.9	-280.0	-23.8	0.00	0.00	0.00
1,800.0	14.87	285.16	1,763.0	82.6	-304.8	-25.9	0.00	0.00	0.00
1,900.0	14.87	285.16	1,859.6	89.3	-329.5	-28.0	0.00	0.00	0.00
2,000.0	14.87	285.16	1,956.3	96.0	-354.3	-30.1	0.00	0.00	0.00
2,100.0	14.87	285.16	2,053.0	102.7	-379.1	-32.2	0.00	0.00	0.00
2,200.0	14.87	285.16	2,149.6	109.4	-403.8	-34.3	0.00	0.00	0.00
2,300.0	14.87	285.16	2,246.3	116.1	-428.6	-36.4	0.00	0.00	0.00
2,400.0	14.87	285.16	2,342.9	122.8	-453.4	-38.5	0.00	0.00	0.00
2,500.0	14.87	285.16	2,439.6	129.6	-478.1	-40.6	0.00	0.00	0.00
2,600.0	14.87	285.16	2,536.2	136.3	-502.9	-42.7	0.00	0.00	0.00
2,700.0	14.87	285.16	2,632.9	143.0	-527.7	-44.8	0.00	0.00	0.00
2,800.0	14.87	285.16	2,729.5	149.7	-552.4	-46.9	0.00	0.00	0.00
2,900.0	14.87	285.16	2,826.2	156.4	-577.2	-49.0	0.00	0.00	0.00
3,000.0	14.87	285.16	2,922.8	163.1	-602.0	-51.1	0.00	0.00	0.00
3,100.0	14.87	285.16	3,019.5	169.8	-626.8	-53.2	0.00	0.00	0.00
3,200.0	14.87	285.16	3,116.1	176.5	-651.5	-55.3	0.00	0.00	0.00
3,300.0	14.87	285.16	3,212.8	183.2	-676.3	-57.4	0.00	0.00	0.00
3,400.0	14.87	285.16	3,309.4	190.0	-701.1	-59.5	0.00	0.00	0.00
3,500.0	14.87	285.16	3,406.1	196.7	-725.8	-61.6	0.00	0.00	0.00
3,600.0	14.87	285.16	3,502.7	203.4	-750.6	-63.7	0.00	0.00	0.00
3,650.0	14.87	285.16	3,551.0	206.7	-763.0	-64.8	0.00	0.00	0.00
<b>PARKMAN</b>									
3,700.0	14.87	285.16	3,599.4	210.1	-775.4	-65.8	0.00	0.00	0.00
3,800.0	14.87	285.16	3,696.0	216.8	-800.1	-67.9	0.00	0.00	0.00
3,900.0	14.87	285.16	3,792.7	223.5	-824.9	-70.0	0.00	0.00	0.00
4,000.0	14.87	285.16	3,889.3	230.2	-849.7	-72.1	0.00	0.00	0.00
4,100.0	14.87	285.16	3,986.0	236.9	-874.4	-74.2	0.00	0.00	0.00
4,200.0	14.87	285.16	4,082.6	243.7	-899.2	-76.3	0.00	0.00	0.00
4,286.3	14.87	285.16	4,166.0	249.4	-920.6	-78.1	0.00	0.00	0.00
<b>SUSSEX</b>									
4,300.0	14.87	285.16	4,179.3	250.4	-924.0	-78.4	0.00	0.00	0.00
4,400.0	14.87	285.16	4,275.9	257.1	-948.8	-80.5	0.00	0.00	0.00

<b>Database:</b>	landmark	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28M-203
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Project:</b>	SEC.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Site:</b>	Chesnut 28M-HZ Pad Sec.28-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Chesnut 28M-203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (4-30-14)		

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)
4,500.0	14.87	285.16	4,372.6	263.8	-973.5	-82.6	0.00	0.00	0.00
4,600.0	14.87	285.16	4,469.2	270.5	-998.3	-84.7	0.00	0.00	0.00
4,700.0	14.87	285.16	4,565.9	277.2	-1,023.1	-86.8	0.00	0.00	0.00
4,800.0	14.87	285.16	4,662.5	283.9	-1,047.8	-88.9	0.00	0.00	0.00
4,900.0	14.87	285.16	4,759.2	290.6	-1,072.6	-91.0	0.00	0.00	0.00
5,000.0	14.87	285.16	4,855.8	297.3	-1,097.4	-93.1	0.00	0.00	0.00
5,100.0	14.87	285.16	4,952.5	304.1	-1,122.1	-95.2	0.00	0.00	0.00
5,112.8	14.87	285.16	4,964.8	304.9	-1,125.3	-95.5	0.00	0.00	0.00
5,200.0	13.13	285.16	5,049.5	310.4	-1,145.7	-97.2	2.00	-2.00	0.00
5,300.0	11.13	285.16	5,147.2	315.9	-1,165.9	-99.0	2.00	-2.00	0.00
5,324.2	10.64	285.16	5,171.0	317.1	-1,170.3	-99.3	2.00	-2.00	0.00
SHANNON									
5,400.0	9.13	285.16	5,245.7	320.5	-1,182.9	-100.4	2.00	-2.00	0.00
5,500.0	7.13	285.16	5,344.7	324.2	-1,196.5	-101.6	2.00	-2.00	0.00
5,600.0	5.13	285.16	5,444.1	327.0	-1,206.8	-102.4	2.00	-2.00	0.00
5,700.0	3.13	285.16	5,543.8	328.9	-1,213.8	-103.0	2.00	-2.00	0.00
5,800.0	1.13	285.16	5,643.7	329.9	-1,217.4	-103.3	2.00	-2.00	0.00
5,856.3	0.00	0.00	5,700.0	330.0	-1,217.9	-103.4	2.00	-2.00	0.00
5,900.0	0.00	0.00	5,743.7	330.0	-1,217.9	-103.4	0.00	0.00	0.00
6,000.0	0.00	0.00	5,843.7	330.0	-1,217.9	-103.4	0.00	0.00	0.00
6,048.6	0.00	0.00	5,892.3	330.0	-1,217.9	-103.4	0.00	0.00	0.00
KOP #2									
6,100.0	3.85	180.00	5,943.7	328.3	-1,217.9	-101.7	7.50	7.50	0.00
6,200.0	11.35	180.00	6,042.7	315.1	-1,217.9	-88.7	7.50	7.50	0.00
6,300.0	18.85	180.00	6,139.2	289.0	-1,217.9	-63.1	7.50	7.50	0.00
6,400.0	26.35	180.00	6,231.5	250.6	-1,217.9	-25.3	7.50	7.50	0.00
6,500.0	33.85	180.00	6,317.9	200.5	-1,217.9	24.0	7.50	7.50	0.00
6,595.9	41.04	180.00	6,394.0	142.2	-1,217.9	81.3	7.50	7.50	0.00
SHARON SPRINGS									
6,600.0	41.35	180.00	6,397.1	139.5	-1,217.9	84.0	7.50	7.50	0.00
6,700.0	48.85	180.00	6,467.6	68.7	-1,217.9	153.6	7.50	7.50	0.00
6,800.0	56.35	180.00	6,528.3	-10.7	-1,217.9	231.6	7.50	7.50	0.00
6,900.0	63.85	180.00	6,578.1	-97.3	-1,217.9	316.8	7.50	7.50	0.00
7,000.0	71.35	180.00	6,616.2	-189.7	-1,217.9	407.7	7.50	7.50	0.00
7,100.0	78.85	180.00	6,641.9	-286.3	-1,217.9	502.6	7.50	7.50	0.00
7,200.0	86.35	180.00	6,654.8	-385.4	-1,217.9	600.1	7.50	7.50	0.00
7,252.4	90.28	180.00	6,656.3	-437.7	-1,217.9	651.6	7.49	7.49	0.00
End of Build - 7"									
7,300.0	90.28	180.00	6,656.1	-485.3	-1,217.9	698.4	0.00	0.00	0.00
7,400.0	90.28	180.00	6,655.6	-585.3	-1,217.9	796.7	0.00	0.00	0.00
7,500.0	90.28	180.00	6,655.1	-685.3	-1,217.9	895.1	0.00	0.00	0.00
7,600.0	90.28	180.00	6,654.6	-785.3	-1,217.9	993.4	0.00	0.00	0.00
7,700.0	90.28	180.00	6,654.1	-885.3	-1,217.9	1,091.7	0.00	0.00	0.00
7,800.0	90.28	180.00	6,653.6	-985.3	-1,217.9	1,190.1	0.00	0.00	0.00
7,900.0	90.28	180.00	6,653.1	-1,085.3	-1,217.9	1,288.4	0.00	0.00	0.00
8,000.0	90.28	180.00	6,652.6	-1,185.3	-1,217.9	1,386.8	0.00	0.00	0.00
8,100.0	90.28	180.00	6,652.2	-1,285.3	-1,217.9	1,485.1	0.00	0.00	0.00
8,200.0	90.28	180.00	6,651.7	-1,385.3	-1,217.9	1,583.4	0.00	0.00	0.00
8,300.0	90.28	180.00	6,651.2	-1,485.3	-1,217.9	1,681.8	0.00	0.00	0.00
8,400.0	90.28	180.00	6,650.7	-1,585.3	-1,217.9	1,780.1	0.00	0.00	0.00
8,500.0	90.28	180.00	6,650.2	-1,685.3	-1,217.9	1,878.4	0.00	0.00	0.00
8,600.0	90.28	180.00	6,649.7	-1,785.3	-1,217.9	1,976.8	0.00	0.00	0.00

<b>Database:</b>	landmark	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28M-203
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Project:</b>	SEC.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Site:</b>	Chesnut 28M-HZ Pad Sec.28-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Chesnut 28M-203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (4-30-14)		

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)
8,700.0	90.28	180.00	6,649.2	-1,885.3	-1,217.9	2,075.1	0.00	0.00	0.00
8,800.0	90.28	180.00	6,648.7	-1,985.3	-1,217.9	2,173.4	0.00	0.00	0.00
8,900.0	90.28	180.00	6,648.2	-2,085.3	-1,217.9	2,271.8	0.00	0.00	0.00
9,000.0	90.28	180.00	6,647.8	-2,185.3	-1,217.9	2,370.1	0.00	0.00	0.00
9,100.0	90.28	180.00	6,647.3	-2,285.3	-1,217.9	2,468.5	0.00	0.00	0.00
9,200.0	90.28	180.00	6,646.8	-2,385.3	-1,217.9	2,566.8	0.00	0.00	0.00
9,300.0	90.28	180.00	6,646.3	-2,485.3	-1,217.9	2,665.1	0.00	0.00	0.00
9,400.0	90.28	180.00	6,645.8	-2,585.3	-1,217.9	2,763.5	0.00	0.00	0.00
9,500.0	90.28	180.00	6,645.3	-2,685.3	-1,217.9	2,861.8	0.00	0.00	0.00
9,600.0	90.28	180.00	6,644.8	-2,785.3	-1,217.9	2,960.1	0.00	0.00	0.00
9,700.0	90.28	180.00	6,644.3	-2,885.3	-1,217.9	3,058.5	0.00	0.00	0.00
9,800.0	90.28	180.00	6,643.8	-2,985.3	-1,217.9	3,156.8	0.00	0.00	0.00
9,900.0	90.28	180.00	6,643.4	-3,085.3	-1,217.9	3,255.1	0.00	0.00	0.00
10,000.0	90.28	180.00	6,642.9	-3,185.3	-1,217.9	3,353.5	0.00	0.00	0.00
10,100.0	90.28	180.00	6,642.4	-3,285.3	-1,217.9	3,451.8	0.00	0.00	0.00
10,200.0	90.28	180.00	6,641.9	-3,385.3	-1,217.9	3,550.2	0.00	0.00	0.00
10,300.0	90.28	180.00	6,641.4	-3,485.3	-1,217.9	3,648.5	0.00	0.00	0.00
10,400.0	90.28	180.00	6,640.9	-3,585.3	-1,217.9	3,746.8	0.00	0.00	0.00
10,500.0	90.28	180.00	6,640.4	-3,685.3	-1,217.9	3,845.2	0.00	0.00	0.00
10,600.0	90.28	180.00	6,639.9	-3,785.3	-1,217.9	3,943.5	0.00	0.00	0.00
10,700.0	90.28	180.00	6,639.4	-3,885.3	-1,217.9	4,041.8	0.00	0.00	0.00
10,800.0	90.28	180.00	6,639.0	-3,985.3	-1,217.9	4,140.2	0.00	0.00	0.00
10,900.0	90.28	180.00	6,638.5	-4,085.3	-1,217.9	4,238.5	0.00	0.00	0.00
11,000.0	90.28	180.00	6,638.0	-4,185.3	-1,217.9	4,336.8	0.00	0.00	0.00
11,100.0	90.28	180.00	6,637.5	-4,285.3	-1,217.9	4,435.2	0.00	0.00	0.00
11,200.0	90.28	180.00	6,637.0	-4,385.3	-1,217.9	4,533.5	0.00	0.00	0.00
11,300.0	90.28	180.00	6,636.5	-4,485.3	-1,217.9	4,631.9	0.00	0.00	0.00
11,400.0	90.28	180.00	6,636.0	-4,585.3	-1,217.9	4,730.2	0.00	0.00	0.00
11,500.0	90.28	180.00	6,635.5	-4,685.3	-1,217.9	4,828.5	0.00	0.00	0.00
11,600.0	90.28	180.00	6,635.0	-4,785.3	-1,217.9	4,926.9	0.00	0.00	0.00
11,700.0	90.28	180.00	6,634.6	-4,885.3	-1,217.9	5,025.2	0.00	0.00	0.00
11,800.0	90.28	180.00	6,634.1	-4,985.3	-1,217.9	5,123.5	0.00	0.00	0.00
11,900.0	90.28	180.00	6,633.6	-5,085.3	-1,217.9	5,221.9	0.00	0.00	0.00
12,000.0	90.28	180.00	6,633.1	-5,185.3	-1,217.9	5,320.2	0.00	0.00	0.00
12,100.0	90.28	180.00	6,632.6	-5,285.3	-1,217.9	5,418.5	0.00	0.00	0.00
12,200.0	90.28	180.00	6,632.1	-5,385.3	-1,217.9	5,516.9	0.00	0.00	0.00
12,300.0	90.28	180.00	6,631.6	-5,485.3	-1,217.9	5,615.2	0.00	0.00	0.00
12,400.0	90.28	180.00	6,631.1	-5,585.3	-1,217.9	5,713.6	0.00	0.00	0.00
12,500.0	90.28	180.00	6,630.6	-5,685.3	-1,217.9	5,811.9	0.00	0.00	0.00
12,600.0	90.28	180.00	6,630.2	-5,785.3	-1,217.9	5,910.2	0.00	0.00	0.00
12,700.0	90.28	180.00	6,629.7	-5,885.3	-1,217.9	6,008.6	0.00	0.00	0.00
12,800.0	90.28	180.00	6,629.2	-5,985.3	-1,217.9	6,106.9	0.00	0.00	0.00
12,900.0	90.28	180.00	6,628.7	-6,085.3	-1,217.9	6,205.2	0.00	0.00	0.00
13,000.0	90.28	180.00	6,628.2	-6,185.3	-1,217.9	6,303.6	0.00	0.00	0.00
13,100.0	90.28	180.00	6,627.7	-6,285.3	-1,217.9	6,401.9	0.00	0.00	0.00
13,200.0	90.28	180.00	6,627.2	-6,385.2	-1,217.9	6,500.3	0.00	0.00	0.00
13,300.0	90.28	180.00	6,626.7	-6,485.2	-1,217.9	6,598.6	0.00	0.00	0.00
13,400.0	90.28	180.00	6,626.3	-6,585.2	-1,217.9	6,696.9	0.00	0.00	0.00
13,500.0	90.28	180.00	6,625.8	-6,685.2	-1,217.9	6,795.3	0.00	0.00	0.00
13,600.0	90.28	180.00	6,625.3	-6,785.2	-1,217.9	6,893.6	0.00	0.00	0.00
13,700.0	90.28	180.00	6,624.8	-6,885.2	-1,217.9	6,991.9	0.00	0.00	0.00
13,800.0	90.28	180.00	6,624.3	-6,985.2	-1,217.9	7,090.3	0.00	0.00	0.00
13,860.5	90.28	180.00	6,624.0	-7,045.7	-1,217.9	7,149.7	0.00	0.00	0.00

<b>Database:</b>	landmark	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28M-203
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Project:</b>	SEC.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Site:</b>	Chesnut 28M-HZ Pad Sec.28-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Chesnut 28M-203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (4-30-14)		

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)
BHL 2136'FNL, 2585'FEL, SEC.33									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
7,252.4	6,656.3	7"	7	7-1/2	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,650.0	3,551.0	PARKMAN				
4,286.3	4,166.0	SUSSEX				
5,324.2	5,171.0	SHANNON				
6,595.9	6,394.0	SHARON SPRINGS				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
200.0	200.0	0.0	0.0	KOP #1	
6,048.6	5,892.3	330.0	-1,217.9	KOP #2	
7,252.4	6,656.3	-437.7	-1,217.9	End of Build	



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.28-T5N-R64W**

**Chesnut 28M-HZ Pad Sec.28-T5N-R64W**

**Chesnut 28M-203**

**Wellbore #1**

**Plan #2 (4-30-14)**

## **Anticollision Report**

**01 May, 2014**





<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28M-203
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28M-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28M-203	<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>	Plan #2 (4-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #2 (4-30-14)		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	MD Interval 100.0ft	<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 1,000.0ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b> 5/1/2014			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	13,860.5	Plan #2 (4-30-14) (Wellbore #1)	MWD	MWD - Standard

<b>Summary</b>						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
<b>Offset Well - Wellbore - Design</b>						
Chesnut 28M-HZ Pad Sec.28-T5N-R64W						
Chesnut 28M-323 - Wellbore #1 - Plan #2 (4-30-14)	200.0	200.0	58.6	57.9	86.894	CC, ES
Chesnut 28M-323 - Wellbore #1 - Plan #2 (4-30-14)	13,860.5	13,858.5	535.1	262.2	1.961	SF
Chesnut 28M-423 - Wellbore #1 - Plan #2 (4-30-14)	200.0	200.0	29.3	28.6	43.440	CC, ES
Chesnut 28M-423 - Wellbore #1 - Plan #2 (4-30-14)	13,860.5	13,962.1	330.0	96.1	1.411	Level 3, SF
Chesnut 28R-203 - Wellbore #1 - Plan #1 (1-29-14)	200.0	200.0	121.8	121.1	180.562	CC, ES
Chesnut 28R-203 - Wellbore #1 - Plan #1 (1-29-14)	5,200.0	5,133.3	995.9	967.4	34.919	SF
Chesnut 28R-443 - Wellbore #1 - Plan #2 (4-30-14)	200.0	200.0	89.8	89.1	133.116	CC, ES
Chesnut 28R-443 - Wellbore #1 - Plan #2 (4-30-14)	13,860.5	13,906.4	818.3	549.8	3.047	SF
<b>Existing Wells - Chesnut Pads - Sec.28-T5N-R64W</b>						
Hall 28-4 (Exist) - Wellbore #1 - Wellbore #1	2,478.8	2,404.1	279.9	220.8	4.737	CC
Hall 28-4 (Exist) - Wellbore #1 - Wellbore #1	2,600.0	2,521.2	281.7	219.6	4.538	ES
Hall 28-4 (Exist) - Wellbore #1 - Wellbore #1	2,900.0	2,811.2	300.1	231.2	4.359	SF
<b>Existing Wells - Churchill 28J-HZ Sec.28-T5N-R64W</b>						
Churchill 2-7I (Exist) - Wellbore #1 - Wellbore #1	7,706.7	6,720.7	132.2	89.8	3.117	CC, ES, SF

<b>Offset Design</b> Chesnut 28M-HZ Pad Sec.28-T5N-R64W - Chesnut 28M-323 - Wellbore #1 - Plan #2 (4-30-14)													<b>Offset Site Error:</b>	0.0 ft
<b>Survey Program:</b> 0-MWD													<b>Offset Well Error:</b>	0.0 ft
Reference Measured Depth (ft)	Vertical Depth (ft)	Offset Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	138.26	-43.7	39.0	58.6					
100.0	100.0	100.0	100.0	0.1	0.1	138.26	-43.7	39.0	58.6	58.4	0.22	260.682		
200.0	200.0	200.0	200.0	0.3	0.3	138.26	-43.7	39.0	58.6	57.9	0.67	86.894	CC, ES	
300.0	300.0	300.0	300.0	0.6	0.6	-147.79	-43.7	39.0	60.1	58.9	1.12	53.552		
400.0	399.8	399.8	399.8	0.8	0.8	-150.22	-43.7	39.0	64.6	63.0	1.57	40.999		
500.0	499.5	499.5	499.5	1.0	1.0	-153.59	-43.7	39.0	72.2	70.2	2.04	35.471		
600.0	598.7	598.7	598.7	1.3	1.2	-157.23	-43.7	39.0	83.4	80.8	2.51	33.270		
700.0	697.5	697.5	697.5	1.7	1.5	-160.67	-43.7	39.0	98.0	95.0	2.98	32.916		
800.0	795.6	795.6	795.6	2.0	1.7	-163.67	-43.7	39.0	116.2	112.7	3.45	33.685		
900.0	893.1	893.1	893.1	2.5	1.9	-166.19	-43.7	39.0	137.9	134.0	3.92	35.173		
1,000.0	989.8	989.8	989.8	3.0	2.1	-168.28	-43.7	39.0	162.7	158.3	4.40	37.011		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28M-203
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28M-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28M-203	<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>	Plan #2 (4-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 28M-HZ Pad Sec.28-T5N-R64W - Chesnut 28M-323 - Wellbore #1 - Plan #2 (4-30-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
1,100.0	1,086.4	1,092.5	1,092.5	3.5	2.3	-169.97		-43.0	37.7	186.5	181.7	4.87	38.286	
1,200.0	1,183.1	1,197.5	1,197.3	4.0	2.6	-171.35		-40.6	33.0	207.0	201.6	5.34	38.725	
1,300.0	1,279.7	1,303.9	1,303.4	4.6	2.8	-172.56		-36.4	24.7	223.9	218.0	5.83	38.403	
1,400.0	1,376.4	1,411.6	1,410.2	5.1	3.1	-173.70		-30.3	12.7	237.1	230.8	6.33	37.484	
1,500.0	1,473.0	1,520.2	1,517.3	5.7	3.4	-174.82		-22.2	-2.9	246.8	240.0	6.83	36.109	
1,600.0	1,569.7	1,621.8	1,617.2	6.2	3.7	-175.87		-13.5	-19.9	253.9	246.6	7.34	34.587	
1,700.0	1,666.3	1,721.5	1,715.0	6.7	4.0	-176.84		-4.9	-36.6	261.0	253.2	7.85	33.243	
1,800.0	1,763.0	1,821.1	1,812.9	7.3	4.4	-177.76		3.6	-53.3	268.2	259.8	8.37	32.048	
1,900.0	1,859.6	1,920.8	1,910.8	7.8	4.8	-178.64		12.2	-70.1	275.4	266.5	8.89	30.993	
2,000.0	1,956.3	2,020.4	2,008.6	8.4	5.1	-179.47		20.8	-86.8	282.7	273.3	9.41	30.031	
2,100.0	2,053.0	2,120.1	2,106.5	8.9	5.5	-179.75		29.4	-103.5	290.1	280.1	9.95	29.162	
2,200.0	2,149.6	2,219.7	2,204.3	9.5	5.9	-179.00		38.0	-120.3	297.5	287.0	10.49	28.372	
2,300.0	2,246.3	2,319.4	2,302.2	10.0	6.3	-178.29		46.5	-137.0	305.0	293.9	11.03	27.649	
2,400.0	2,342.9	2,419.1	2,400.1	10.6	6.7	-177.61		55.1	-153.7	312.5	300.9	11.58	26.987	
2,500.0	2,439.6	2,518.7	2,497.9	11.1	7.1	-176.97		63.7	-170.5	320.0	307.9	12.13	26.376	
2,600.0	2,536.2	2,618.4	2,595.8	11.7	7.5	-176.35		72.3	-187.2	327.6	314.9	12.69	25.812	
2,700.0	2,632.9	2,718.0	2,693.7	12.2	7.9	-175.76		80.9	-203.9	335.2	322.0	13.26	25.289	
2,800.0	2,729.5	2,817.7	2,791.5	12.8	8.3	-175.20		89.4	-220.7	342.9	329.0	13.82	24.803	
2,900.0	2,826.2	2,917.3	2,889.4	13.3	8.7	-174.66		98.0	-237.4	350.5	336.2	14.40	24.349	
3,000.0	2,922.8	3,017.0	2,987.2	13.9	9.1	-174.15		106.6	-254.1	358.3	343.3	14.97	23.926	
3,100.0	3,019.5	3,116.6	3,085.1	14.4	9.5	-173.66		115.2	-270.9	366.0	350.4	15.56	23.529	
3,200.0	3,116.1	3,216.3	3,183.0	15.0	9.9	-173.18		123.8	-287.6	373.8	357.6	16.14	23.157	
3,300.0	3,212.8	3,315.9	3,280.8	15.5	10.3	-172.73		132.3	-304.3	381.6	364.8	16.73	22.807	
3,400.0	3,309.4	3,415.6	3,378.7	16.1	10.8	-172.30		140.9	-321.0	389.4	372.1	17.32	22.478	
3,500.0	3,406.1	3,515.2	3,476.5	16.7	11.2	-171.88		149.5	-337.8	397.2	379.3	17.92	22.167	
3,600.0	3,502.7	3,614.9	3,574.4	17.2	11.6	-171.48		158.1	-354.5	405.1	386.5	18.52	21.873	
3,700.0	3,599.4	3,714.5	3,672.3	17.8	12.0	-171.09		166.6	-371.2	412.9	393.8	19.12	21.595	
3,800.0	3,696.0	3,814.2	3,770.1	18.3	12.4	-170.72		175.2	-388.0	420.8	401.1	19.73	21.332	
3,900.0	3,792.7	3,913.8	3,868.0	18.9	12.8	-170.36		183.8	-404.7	428.7	408.4	20.34	21.082	
4,000.0	3,889.3	4,013.5	3,965.9	19.4	13.3	-170.02		192.4	-421.4	436.7	415.7	20.95	20.844	
4,100.0	3,986.0	4,113.1	4,063.7	20.0	13.7	-169.68		201.0	-438.2	444.6	423.0	21.56	20.618	
4,200.0	4,082.6	4,212.8	4,161.6	20.5	14.1	-169.36		209.5	-454.9	452.6	430.4	22.18	20.403	
4,300.0	4,179.3	4,312.4	4,259.4	21.1	14.5	-169.05		218.1	-471.6	460.5	437.7	22.80	20.198	
4,400.0	4,275.9	4,412.1	4,357.3	21.6	14.9	-168.75		226.7	-488.4	468.5	445.1	23.42	20.003	
4,500.0	4,372.6	4,511.7	4,455.2	22.2	15.3	-168.46		235.3	-505.1	476.5	452.5	24.05	19.816	
4,600.0	4,469.2	4,611.4	4,553.0	22.7	15.8	-168.18		243.9	-521.8	484.5	459.8	24.67	19.637	
4,700.0	4,565.9	4,711.0	4,650.9	23.3	16.2	-167.91		252.4	-538.6	492.5	467.2	25.30	19.466	
4,800.0	4,662.5	4,810.7	4,748.7	23.8	16.6	-167.65		261.0	-555.3	500.6	474.6	25.93	19.302	
4,900.0	4,759.2	4,910.3	4,846.6	24.4	17.0	-167.40		269.6	-572.0	508.6	482.0	26.57	19.145	
5,000.0	4,855.8	5,010.0	4,944.5	24.9	17.4	-167.15		278.2	-588.8	516.6	489.4	27.20	18.995	
5,100.0	4,952.5	5,109.6	5,042.3	25.5	17.9	-166.91		286.8	-605.5	524.7	496.9	27.84	18.850	
5,200.0	5,049.5	5,209.4	5,140.3	26.0	18.3	-166.67		295.4	-622.2	531.5	503.0	28.49	18.655	
5,300.0	5,147.2	5,309.3	5,238.4	26.3	18.7	-166.35		303.9	-639.0	534.9	505.8	29.11	18.377	
5,400.0	5,245.7	5,400.0	5,327.6	26.6	19.0	-166.00		311.4	-653.5	535.8	506.1	29.64	18.076	
5,500.0	5,344.7	5,483.4	5,410.1	26.9	19.3	-165.71		317.1	-664.7	535.9	505.9	30.06	17.826	
5,600.0	5,444.1	5,569.1	5,495.1	27.1	19.5	-165.46		321.9	-673.9	535.4	505.0	30.43	17.593	
5,700.0	5,543.8	5,654.7	5,580.4	27.3	19.7	-165.24		325.4	-680.9	534.2	503.4	30.74	17.380	
5,800.0	5,643.7	5,740.4	5,666.0	27.4	19.8	-165.07		327.8	-685.6	532.2	501.3	30.97	17.183	
5,900.0	5,743.7	5,826.2	5,751.7	27.5	19.9	-164.90		329.1	-688.0	529.9	498.7	31.22	16.974	
5,976.2	5,819.9	5,894.5	5,819.9	27.6	20.0	-164.73		329.3	-688.4	529.5	498.1	31.45	16.835	
6,000.0	5,843.7	5,918.3	5,843.7	27.6	20.1	-164.56		329.3	-688.4	529.5	498.0	31.53	16.793	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28M-203
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28M-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28M-203	<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>	Plan #2 (4-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Chesnut 28M-HZ Pad Sec.28-T5N-R64W - Chesnut 28M-323 - Wellbore #1 - Plan #2 (4-30-14)										Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
6,058.6	5,902.3	5,976.8	5,902.3	27.6	20.1	-90.05	329.3	-688.4	529.5	497.8	31.75	16.679		
6,100.0	5,943.7	6,018.2	5,943.7	27.7	20.2	-90.11	329.3	-688.4	529.5	497.6	31.89	16.603		
6,200.0	6,042.7	6,118.4	6,043.8	27.7	20.3	-91.18	326.0	-688.4	529.6	497.3	32.35	16.372		
6,300.0	6,139.2	6,220.0	6,144.0	27.7	20.3	-92.30	309.8	-688.4	529.9	497.3	32.65	16.230		
6,400.0	6,231.5	6,323.1	6,242.6	27.7	20.3	-93.39	280.1	-688.4	530.4	497.7	32.78	16.180		
6,500.0	6,317.9	6,427.6	6,337.5	27.7	20.3	-94.42	236.6	-688.4	531.1	498.3	32.78	16.204		
6,600.0	6,397.1	6,533.5	6,426.8	27.6	20.2	-95.38	179.7	-688.4	531.9	499.2	32.70	16.267		
6,700.0	6,467.6	6,640.8	6,508.3	27.6	20.0	-96.24	110.1	-688.4	532.7	500.0	32.64	16.318		
6,800.0	6,528.3	6,749.3	6,580.1	27.5	19.9	-97.00	28.8	-688.4	533.5	500.7	32.75	16.291		
6,900.0	6,578.1	6,858.9	6,640.1	27.5	19.9	-97.62	-62.7	-688.4	534.2	501.1	33.15	16.116		
7,000.0	6,616.2	6,969.4	6,686.8	27.6	19.9	-98.11	-162.8	-688.4	534.9	500.9	33.97	15.745		
7,100.0	6,641.9	7,080.6	6,718.6	27.8	20.1	-98.44	-269.2	-688.4	535.3	500.0	35.27	15.178		
7,200.0	6,654.8	7,192.2	6,734.8	28.0	20.5	-98.61	-379.6	-688.4	535.6	498.5	37.05	14.453		
7,300.0	6,656.1	7,298.4	6,736.5	28.4	21.2	-98.64	-485.8	-688.4	535.6	496.5	39.11	13.695		
7,400.0	6,655.6	7,398.4	6,736.0	29.0	22.1	-98.63	-585.8	-688.4	535.6	494.3	41.28	12.973		
7,500.0	6,655.1	7,498.4	6,735.4	29.6	23.1	-98.63	-685.8	-688.4	535.6	491.9	43.68	12.261		
7,600.0	6,654.6	7,598.4	6,734.9	30.4	24.3	-98.62	-785.8	-688.4	535.6	489.3	46.27	11.575		
7,700.0	6,654.1	7,698.4	6,734.3	31.3	25.5	-98.62	-885.7	-688.4	535.6	486.5	49.01	10.926		
7,800.0	6,653.6	7,798.4	6,733.8	32.3	26.9	-98.61	-985.7	-688.4	535.5	483.6	51.90	10.320		
7,900.0	6,653.1	7,898.4	6,733.2	33.5	28.3	-98.60	-1,085.7	-688.4	535.5	480.6	54.89	9.757		
8,000.0	6,652.6	7,998.4	6,732.7	34.7	29.8	-98.60	-1,185.7	-688.4	535.5	477.6	57.98	9.237		
8,100.0	6,652.2	8,098.4	6,732.2	36.0	31.4	-98.59	-1,285.7	-688.4	535.5	474.4	61.15	8.758		
8,200.0	6,651.7	8,198.4	6,731.6	37.3	32.9	-98.59	-1,385.7	-688.4	535.5	471.1	64.39	8.317		
8,300.0	6,651.2	8,298.4	6,731.1	38.8	34.5	-98.58	-1,485.7	-688.4	535.5	467.8	67.68	7.912		
8,400.0	6,650.7	8,398.4	6,730.5	40.2	36.2	-98.58	-1,585.7	-688.4	535.5	464.5	71.03	7.539		
8,500.0	6,650.2	8,498.4	6,730.0	41.7	37.9	-98.57	-1,685.7	-688.4	535.5	461.1	74.42	7.195		
8,600.0	6,649.7	8,598.4	6,729.5	43.3	39.5	-98.57	-1,785.7	-688.4	535.5	457.6	77.85	6.878		
8,700.0	6,649.2	8,698.4	6,728.9	44.9	41.3	-98.56	-1,885.7	-688.4	535.5	454.2	81.32	6.585		
8,800.0	6,648.7	8,798.4	6,728.4	46.5	43.0	-98.55	-1,985.7	-688.4	535.5	450.7	84.81	6.314		
8,900.0	6,648.2	8,898.4	6,727.8	48.1	44.7	-98.55	-2,085.7	-688.4	535.5	447.1	88.33	6.062		
9,000.0	6,647.8	8,998.4	6,727.3	49.8	46.5	-98.54	-2,185.7	-688.4	535.5	443.6	91.87	5.828		
9,100.0	6,647.3	9,098.4	6,726.8	51.4	48.2	-98.54	-2,285.7	-688.4	535.4	440.0	95.44	5.610		
9,200.0	6,646.8	9,198.4	6,726.2	53.1	50.0	-98.53	-2,385.7	-688.4	535.4	436.4	99.02	5.407		
9,300.0	6,646.3	9,298.4	6,725.7	54.8	51.8	-98.53	-2,485.7	-688.4	535.4	432.8	102.61	5.218		
9,400.0	6,645.8	9,398.4	6,725.1	56.6	53.6	-98.52	-2,585.7	-688.4	535.4	429.2	106.23	5.040		
9,500.0	6,645.3	9,498.4	6,724.6	58.3	55.4	-98.52	-2,685.7	-688.4	535.4	425.6	109.85	4.874		
9,600.0	6,644.8	9,598.4	6,724.0	60.0	57.2	-98.51	-2,785.7	-688.4	535.4	421.9	113.49	4.718		
9,700.0	6,644.3	9,698.4	6,723.5	61.8	59.1	-98.50	-2,885.7	-688.4	535.4	418.3	117.14	4.571		
9,800.0	6,643.8	9,798.4	6,723.0	63.6	60.9	-98.50	-2,985.7	-688.4	535.4	414.6	120.79	4.432		
9,900.0	6,643.4	9,898.4	6,722.4	65.3	62.7	-98.49	-3,085.7	-688.4	535.4	410.9	124.46	4.302		
10,000.0	6,642.9	9,998.4	6,721.9	67.1	64.5	-98.49	-3,185.7	-688.4	535.4	407.2	128.14	4.178		
10,100.0	6,642.4	10,098.4	6,721.3	68.9	66.4	-98.48	-3,285.7	-688.4	535.4	403.5	131.82	4.061		
10,200.0	6,641.9	10,198.4	6,720.8	70.7	68.2	-98.48	-3,385.7	-688.4	535.4	399.9	135.51	3.951		
10,300.0	6,641.4	10,298.4	6,720.3	72.5	70.1	-98.47	-3,485.7	-688.4	535.4	396.1	139.20	3.846		
10,400.0	6,640.9	10,398.4	6,719.7	74.3	71.9	-98.47	-3,585.7	-688.4	535.3	392.4	142.91	3.746		
10,500.0	6,640.4	10,498.4	6,719.2	76.1	73.8	-98.46	-3,685.7	-688.4	535.3	388.7	146.61	3.651		
10,600.0	6,639.9	10,598.4	6,718.6	78.0	75.7	-98.45	-3,785.7	-688.4	535.3	385.0	150.33	3.561		
10,700.0	6,639.4	10,698.4	6,718.1	79.8	77.5	-98.45	-3,885.7	-688.4	535.3	381.3	154.04	3.475		
10,800.0	6,639.0	10,798.4	6,717.6	81.6	79.4	-98.44	-3,985.7	-688.4	535.3	377.5	157.76	3.393		
10,900.0	6,638.5	10,898.4	6,717.0	83.5	81.2	-98.44	-4,085.7	-688.4	535.3	373.8	161.49	3.315		
11,000.0	6,638.0	10,998.4	6,716.5	85.3	83.1	-98.43	-4,185.7	-688.4	535.3	370.1	165.22	3.240		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28M-203
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28M-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28M-203	<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>	Plan #2 (4-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 28M-HZ Pad Sec.28-T5N-R64W - Chesnut 28M-323 - Wellbore #1 - Plan #2 (4-30-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
11,100.0	6,637.5	11,098.4	6,715.9	87.1	85.0	-98.43	-4,285.7	-688.4	535.3	366.3	168.95	3.168		
11,200.0	6,637.0	11,198.4	6,715.4	89.0	86.9	-98.42	-4,385.7	-688.4	535.3	362.6	172.69	3.100		
11,300.0	6,636.5	11,298.4	6,714.9	90.8	88.7	-98.42	-4,485.7	-688.4	535.3	358.8	176.43	3.034		
11,400.0	6,636.0	11,398.4	6,714.3	92.7	90.6	-98.41	-4,585.7	-688.4	535.3	355.1	180.17	2.971		
11,500.0	6,635.5	11,498.4	6,713.8	94.5	92.5	-98.40	-4,685.7	-688.4	535.3	351.3	183.92	2.910		
11,600.0	6,635.0	11,598.4	6,713.2	96.4	94.4	-98.40	-4,785.7	-688.4	535.3	347.6	187.66	2.852		
11,700.0	6,634.6	11,698.4	6,712.7	98.3	96.3	-98.39	-4,885.7	-688.4	535.2	343.8	191.42	2.796		
11,800.0	6,634.1	11,798.4	6,712.1	100.1	98.1	-98.39	-4,985.7	-688.4	535.2	340.1	195.17	2.742		
11,900.0	6,633.6	11,898.4	6,711.6	102.0	100.0	-98.38	-5,085.7	-688.4	535.2	336.3	198.92	2.691		
12,000.0	6,633.1	11,998.4	6,711.1	103.8	101.9	-98.38	-5,185.7	-688.4	535.2	332.5	202.68	2.641		
12,100.0	6,632.6	12,098.4	6,710.5	105.7	103.8	-98.37	-5,285.7	-688.4	535.2	328.8	206.44	2.593		
12,200.0	6,632.1	12,198.4	6,710.0	107.6	105.7	-98.37	-5,385.7	-688.4	535.2	325.0	210.20	2.546		
12,300.0	6,631.6	12,298.4	6,709.4	109.5	107.6	-98.36	-5,485.7	-688.4	535.2	321.2	213.96	2.501		
12,400.0	6,631.1	12,398.4	6,708.9	111.3	109.5	-98.35	-5,585.7	-688.4	535.2	317.5	217.73	2.458		
12,500.0	6,630.6	12,498.4	6,708.4	113.2	111.4	-98.35	-5,685.7	-688.4	535.2	313.7	221.49	2.416		
12,600.0	6,630.2	12,598.4	6,707.8	115.1	113.3	-98.34	-5,785.7	-688.4	535.2	309.9	225.26	2.376		
12,700.0	6,629.7	12,698.4	6,707.3	117.0	115.2	-98.34	-5,885.7	-688.4	535.2	306.1	229.03	2.337		
12,800.0	6,629.2	12,798.4	6,706.7	118.8	117.1	-98.33	-5,985.7	-688.4	535.2	302.4	232.80	2.299		
12,900.0	6,628.7	12,898.4	6,706.2	120.7	119.0	-98.33	-6,085.7	-688.4	535.2	298.6	236.57	2.262		
13,000.0	6,628.2	12,998.4	6,705.7	122.6	120.9	-98.32	-6,185.7	-688.4	535.1	294.8	240.35	2.227		
13,100.0	6,627.7	13,098.4	6,705.1	124.5	122.8	-98.32	-6,285.7	-688.4	535.1	291.0	244.12	2.192		
13,200.0	6,627.2	13,198.4	6,704.6	126.4	124.6	-98.31	-6,385.7	-688.4	535.1	287.2	247.89	2.159		
13,300.0	6,626.7	13,298.4	6,704.0	128.3	126.5	-98.30	-6,485.7	-688.4	535.1	283.5	251.67	2.126		
13,400.0	6,626.3	13,398.4	6,703.5	130.1	128.4	-98.30	-6,585.7	-688.4	535.1	279.7	255.45	2.095		
13,500.0	6,625.8	13,498.4	6,702.9	132.0	130.3	-98.29	-6,685.7	-688.4	535.1	275.9	259.23	2.064		
13,600.0	6,625.3	13,598.4	6,702.4	133.9	132.2	-98.29	-6,785.7	-688.4	535.1	272.1	263.01	2.035		
13,700.0	6,624.8	13,698.4	6,701.9	135.8	134.2	-98.28	-6,885.7	-688.4	535.1	268.3	266.79	2.006		
13,800.0	6,624.3	13,798.4	6,701.3	137.7	136.1	-98.28	-6,985.7	-688.4	535.1	264.5	270.57	1.978		
13,843.0	6,624.1	13,841.5	6,701.1	138.5	136.9	-98.27	-7,028.7	-688.4	535.1	262.9	272.20	1.966		
13,860.5	6,624.0	13,858.5	6,701.0	138.8	137.2	-98.27	-7,045.7	-688.4	535.1	262.2	272.85	1.961 SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28M-203
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28M-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28M-203	<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>	Plan #2 (4-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Chesnut 28M-HZ Pad Sec.28-T5N-R64W - Chesnut 28M-423 - Wellbore #1 - Plan #2 (4-30-14)											Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	138.25	-21.9	19.5	29.3					
100.0	100.0	100.0	100.0	0.1	0.1	138.25	-21.9	19.5	29.3	29.1	0.22	130.321		
200.0	200.0	200.0	200.0	0.3	0.3	138.25	-21.9	19.5	29.3	28.6	0.67	43.440	CC, ES	
300.0	300.0	300.0	300.0	0.6	0.6	-148.67	-21.9	19.5	30.8	29.6	1.12	27.431		
400.0	399.8	399.8	399.8	0.8	0.8	-153.04	-21.9	19.5	35.3	33.8	1.57	22.446		
500.0	499.5	500.9	500.8	1.0	1.0	-157.58	-21.3	17.8	41.6	39.6	2.02	20.565		
600.0	598.7	602.2	602.0	1.3	1.2	-161.23	-19.4	12.8	48.0	45.5	2.47	19.412		
700.0	697.5	703.7	703.1	1.7	1.5	-164.31	-16.4	4.4	54.4	51.4	2.93	18.552		
800.0	795.6	805.5	804.1	2.0	1.8	-167.01	-12.1	-7.4	60.8	57.4	3.40	17.873		
900.0	893.1	907.5	904.8	2.5	2.1	-169.43	-6.6	-22.7	67.2	63.3	3.88	17.311		
1,000.0	989.8	1,009.4	1,004.8	3.0	2.5	-171.59	0.1	-41.2	73.0	68.6	4.38	16.685		
1,100.0	1,086.4	1,109.3	1,102.5	3.5	2.9	-173.39	7.1	-60.6	78.0	73.1	4.89	15.945		
1,200.0	1,183.1	1,209.1	1,200.2	4.0	3.3	-174.97	14.1	-80.0	83.0	77.6	5.41	15.342		
1,300.0	1,279.7	1,309.0	1,297.9	4.6	3.7	-176.37	21.2	-99.3	88.1	82.1	5.94	14.839		
1,400.0	1,376.4	1,408.8	1,395.6	5.1	4.1	-177.62	28.2	-118.7	93.2	86.7	6.46	14.421		
1,500.0	1,473.0	1,508.7	1,493.3	5.7	4.6	-178.74	35.2	-138.1	98.4	91.4	7.00	14.055		
1,600.0	1,569.7	1,608.5	1,591.0	6.2	5.0	-179.75	42.2	-157.5	103.6	96.0	7.54	13.737		
1,700.0	1,666.3	1,708.4	1,688.7	6.7	5.4	179.35	49.2	-176.9	108.8	100.7	8.08	13.458		
1,800.0	1,763.0	1,808.2	1,786.4	7.3	5.9	178.52	56.2	-196.3	114.1	105.4	8.63	13.210		
1,900.0	1,859.6	1,908.1	1,884.1	7.8	6.3	177.77	63.2	-215.7	119.3	110.1	9.19	12.988		
2,000.0	1,956.3	2,007.9	1,981.8	8.4	6.8	177.08	70.3	-235.0	124.6	114.9	9.75	12.788		
2,100.0	2,053.0	2,107.8	2,079.5	8.9	7.2	176.45	77.3	-254.4	129.9	119.6	10.31	12.606		
2,200.0	2,149.6	2,207.6	2,177.2	9.5	7.7	175.86	84.3	-273.8	135.3	124.4	10.87	12.441		
2,300.0	2,246.3	2,307.5	2,274.9	10.0	8.1	175.32	91.3	-293.2	140.6	129.2	11.44	12.289		
2,400.0	2,342.9	2,407.3	2,372.6	10.6	8.6	174.82	98.3	-312.6	145.9	133.9	12.01	12.150		
2,500.0	2,439.6	2,507.1	2,470.3	11.1	9.0	174.36	105.3	-332.0	151.3	138.7	12.59	12.022		
2,600.0	2,536.2	2,607.0	2,568.0	11.7	9.5	173.93	112.4	-351.4	156.7	143.5	13.16	11.903		
2,700.0	2,632.9	2,706.8	2,665.7	12.2	9.9	173.52	119.4	-370.7	162.1	148.3	13.74	11.793		
2,800.0	2,729.5	2,806.7	2,763.4	12.8	10.4	173.15	126.4	-390.1	167.4	153.1	14.32	11.690		
2,900.0	2,826.2	2,906.5	2,861.1	13.3	10.9	172.79	133.4	-409.5	172.8	157.9	14.91	11.594		
3,000.0	2,922.8	3,006.4	2,958.8	13.9	11.3	172.46	140.4	-428.9	178.2	162.7	15.49	11.505		
3,100.0	3,019.5	3,106.2	3,056.5	14.4	11.8	172.15	147.4	-448.3	183.6	167.6	16.08	11.421		
3,200.0	3,116.1	3,206.1	3,154.2	15.0	12.2	171.85	154.4	-467.7	189.0	172.4	16.67	11.342		
3,300.0	3,212.8	3,305.9	3,251.9	15.5	12.7	171.57	161.5	-487.1	194.5	177.2	17.26	11.268		
3,400.0	3,309.4	3,405.8	3,349.6	16.1	13.1	171.31	168.5	-506.4	199.9	182.0	17.85	11.198		
3,500.0	3,406.1	3,505.6	3,447.3	16.7	13.6	171.06	175.5	-525.8	205.3	186.8	18.44	11.132		
3,600.0	3,502.7	3,605.5	3,545.0	17.2	14.0	170.82	182.5	-545.2	210.7	191.7	19.04	11.069		
3,700.0	3,599.4	3,705.3	3,642.7	17.8	14.5	170.60	189.5	-564.6	216.1	196.5	19.63	11.010		
3,800.0	3,696.0	3,805.2	3,740.4	18.3	15.0	170.38	196.5	-584.0	221.6	201.3	20.23	10.954		
3,900.0	3,792.7	3,905.0	3,838.1	18.9	15.4	170.18	203.6	-603.4	227.0	206.2	20.83	10.900		
4,000.0	3,889.3	4,004.9	3,935.8	19.4	15.9	169.98	210.6	-622.8	232.4	211.0	21.42	10.850		
4,100.0	3,986.0	4,104.7	4,033.5	20.0	16.3	169.80	217.6	-642.1	237.9	215.9	22.02	10.802		
4,200.0	4,082.6	4,204.6	4,131.2	20.5	16.8	169.62	224.6	-661.5	243.3	220.7	22.62	10.756		
4,300.0	4,179.3	4,304.4	4,228.9	21.1	17.2	169.45	231.6	-680.9	248.8	225.6	23.22	10.712		
4,400.0	4,275.9	4,404.3	4,326.5	21.6	17.7	169.29	238.6	-700.3	254.2	230.4	23.83	10.670		
4,500.0	4,372.6	4,504.1	4,424.2	22.2	18.1	169.14	245.6	-719.7	259.7	235.2	24.43	10.630		
4,600.0	4,469.2	4,604.0	4,521.9	22.7	18.6	168.99	252.7	-739.1	265.1	240.1	25.03	10.591		
4,700.0	4,565.9	4,703.8	4,619.6	23.3	19.1	168.84	259.7	-758.5	270.6	244.9	25.64	10.555		
4,800.0	4,662.5	4,803.7	4,717.3	23.8	19.5	168.71	266.7	-777.8	276.0	249.8	26.24	10.519		
4,900.0	4,759.2	4,903.5	4,815.0	24.4	20.0	168.57	273.7	-797.2	281.5	254.6	26.84	10.486		
5,000.0	4,855.8	5,003.4	4,912.7	24.9	20.4	168.45	280.7	-816.6	286.9	259.5	27.45	10.453		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28M-203
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28M-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28M-203	<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>	Plan #2 (4-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Chesnut 28M-HZ Pad Sec.28-T5N-R64W - Chesnut 28M-423 - Wellbore #1 - Plan #2 (4-30-14)											Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
5,100.0	4,952.5	5,103.2	5,010.4	25.5	20.9	168.33	287.7	-836.0	292.4	264.3	28.06	10.422			
5,200.0	5,049.5	5,203.1	5,108.2	26.0	21.3	168.17	294.8	-855.4	296.6	267.9	28.67	10.344			
5,300.0	5,147.2	5,303.1	5,206.0	26.3	21.8	167.87	301.8	-874.8	297.3	268.1	29.25	10.164			
5,400.0	5,245.7	5,403.0	5,303.8	26.6	22.2	167.41	308.8	-894.2	294.7	264.9	29.83	9.880			
5,500.0	5,344.7	5,494.5	5,393.5	26.9	22.6	166.91	314.8	-910.8	290.1	259.8	30.32	9.566			
5,600.0	5,444.1	5,585.6	5,483.5	27.1	22.9	166.42	319.8	-924.6	285.1	254.4	30.74	9.274			
5,700.0	5,543.8	5,676.9	5,574.0	27.3	23.1	165.95	323.8	-935.7	279.8	248.7	31.10	8.995			
5,800.0	5,643.7	5,768.4	5,665.0	27.4	23.3	165.49	326.9	-944.1	274.1	242.7	31.41	8.726			
5,900.0	5,743.7	5,860.0	5,756.4	27.5	23.4	90.23	328.9	-949.8	268.4	236.7	31.73	8.458			
6,000.0	5,843.7	5,951.9	5,848.2	27.6	23.6	90.00	330.0	-952.8	265.2	233.1	32.10	8.262			
6,068.1	5,911.8	6,015.5	5,911.8	27.7	23.6	-90.37	330.1	-953.2	264.7	232.3	32.39	8.174			
6,100.0	5,943.7	6,047.3	5,943.7	27.7	23.7	-90.40	330.1	-953.2	264.7	232.2	32.49	8.147			
6,200.0	6,042.7	6,146.4	6,042.7	27.7	23.8	-93.20	330.1	-953.2	265.1	231.7	33.48	7.920			
6,300.0	6,139.2	6,247.6	6,143.7	27.7	23.9	-97.41	323.9	-953.2	267.0	232.2	34.78	7.678			
6,400.0	6,231.5	6,351.8	6,245.8	27.7	23.9	-101.49	303.6	-953.2	270.3	234.6	35.76	7.560			
6,500.0	6,317.9	6,459.0	6,347.0	27.7	23.9	-105.33	268.4	-953.2	274.8	238.6	36.26	7.580			
6,600.0	6,397.1	6,569.4	6,445.0	27.6	23.8	-108.85	217.7	-953.2	280.1	243.9	36.23	7.733			
6,700.0	6,467.6	6,683.0	6,537.1	27.6	23.7	-111.96	151.5	-953.2	285.9	250.1	35.76	7.995			
6,800.0	6,528.3	6,799.5	6,620.3	27.5	23.7	-114.62	70.1	-953.2	291.6	256.6	35.07	8.316			
6,900.0	6,578.1	6,918.9	6,691.7	27.5	23.6	-116.79	-25.4	-953.2	296.9	262.4	34.49	8.609			
7,000.0	6,616.2	7,040.7	6,748.4	27.6	23.6	-118.43	-133.1	-953.2	301.2	266.8	34.41	8.755			
7,100.0	6,641.9	7,164.3	6,787.6	27.8	23.8	-119.53	-250.2	-953.2	304.3	269.2	35.14	8.661			
7,200.0	6,654.8	7,285.2	6,807.5	28.0	24.1	-120.10	-369.3	-953.2	306.0	269.2	36.84	8.307			
7,300.0	6,656.1	7,391.5	6,817.6	28.4	24.6	-121.38	-475.1	-953.2	310.3	271.5	38.76	8.004			
7,400.0	6,655.6	7,501.7	6,819.9	29.0	25.4	-121.83	-585.3	-953.2	311.6	270.8	40.77	7.641			
7,500.0	6,655.1	7,601.7	6,819.9	29.6	26.2	-121.91	-685.3	-953.2	311.8	268.9	42.92	7.266			
7,600.0	6,654.6	7,701.7	6,819.9	30.4	27.1	-121.98	-785.3	-953.2	312.1	266.9	45.20	6.905			
7,700.0	6,654.1	7,801.7	6,819.9	31.3	28.2	-122.06	-885.3	-953.2	312.4	264.8	47.61	6.561			
7,800.0	6,653.6	7,901.7	6,819.9	32.3	29.4	-122.14	-985.3	-953.2	312.6	262.5	50.12	6.238			
7,900.0	6,653.1	8,001.7	6,820.0	33.5	30.7	-122.22	-1,085.3	-953.2	312.9	260.2	52.71	5.936			
8,000.0	6,652.6	8,101.7	6,820.0	34.7	32.1	-122.30	-1,185.3	-953.2	313.2	257.8	55.38	5.654			
8,100.0	6,652.2	8,201.7	6,820.0	36.0	33.5	-122.38	-1,285.3	-953.2	313.4	255.3	58.12	5.393			
8,200.0	6,651.7	8,301.7	6,820.0	37.3	35.0	-122.45	-1,385.3	-953.2	313.7	252.8	60.91	5.151			
8,300.0	6,651.2	8,401.7	6,820.0	38.8	36.5	-122.53	-1,485.3	-953.2	314.0	250.2	63.74	4.926			
8,400.0	6,650.7	8,501.7	6,820.0	40.2	38.1	-122.61	-1,585.3	-953.2	314.3	247.6	66.62	4.717			
8,500.0	6,650.2	8,601.7	6,820.1	41.7	39.7	-122.69	-1,685.3	-953.2	314.5	245.0	69.53	4.524			
8,600.0	6,649.7	8,701.7	6,820.1	43.3	41.3	-122.77	-1,785.3	-953.2	314.8	242.3	72.46	4.344			
8,700.0	6,649.2	8,801.7	6,820.1	44.9	43.0	-122.84	-1,885.3	-953.2	315.1	239.7	75.43	4.177			
8,800.0	6,648.7	8,901.7	6,820.1	46.5	44.6	-122.92	-1,985.3	-953.2	315.4	236.9	78.41	4.022			
8,900.0	6,648.2	9,001.7	6,820.1	48.1	46.3	-123.00	-2,085.3	-953.2	315.6	234.2	81.42	3.877			
9,000.0	6,647.8	9,101.7	6,820.2	49.8	48.0	-123.07	-2,185.3	-953.2	315.9	231.5	84.44	3.741			
9,100.0	6,647.3	9,201.7	6,820.2	51.4	49.8	-123.15	-2,285.3	-953.2	316.2	228.7	87.47	3.615			
9,200.0	6,646.8	9,301.7	6,820.2	53.1	51.5	-123.23	-2,385.3	-953.2	316.5	225.9	90.52	3.496			
9,300.0	6,646.3	9,401.7	6,820.2	54.8	53.2	-123.30	-2,485.3	-953.2	316.7	223.2	93.57	3.385			
9,400.0	6,645.8	9,501.7	6,820.2	56.6	55.0	-123.38	-2,585.3	-953.2	317.0	220.4	96.64	3.280			
9,500.0	6,645.3	9,601.7	6,820.2	58.3	56.8	-123.46	-2,685.3	-953.2	317.3	217.6	99.71	3.182			
9,600.0	6,644.8	9,701.7	6,820.3	60.0	58.6	-123.53	-2,785.3	-953.2	317.6	214.8	102.79	3.090			
9,700.0	6,644.3	9,801.7	6,820.3	61.8	60.4	-123.61	-2,885.3	-953.2	317.9	212.0	105.88	3.002			
9,800.0	6,643.8	9,901.7	6,820.3	63.6	62.2	-123.68	-2,985.3	-953.2	318.1	209.2	108.97	2.920			
9,900.0	6,643.4	10,001.7	6,820.3	65.3	64.0	-123.76	-3,085.3	-953.2	318.4	206.4	112.06	2.842			
10,000.0	6,642.9	10,101.7	6,820.3	67.1	65.8	-123.84	-3,185.3	-953.2	318.7	203.5	115.16	2.768			

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



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28M-203
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28M-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28M-203	<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>	Plan #2 (4-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 28M-HZ Pad Sec.28-T5N-R64W - Chesnut 28M-423 - Wellbore #1 - Plan #2 (4-30-14)													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	
10,100.0	6,642.4	10,201.7	6,820.3	68.9	67.6	-123.91	-3,285.3	-953.2	319.0	200.7	118.26	2.697		
10,200.0	6,641.9	10,301.7	6,820.4	70.7	69.4	-123.99	-3,385.3	-953.2	319.3	197.9	121.36	2.631		
10,300.0	6,641.4	10,401.7	6,820.4	72.5	71.2	-124.06	-3,485.3	-953.2	319.6	195.1	124.46	2.567		
10,400.0	6,640.9	10,501.7	6,820.4	74.3	73.1	-124.14	-3,585.2	-953.2	319.8	192.3	127.57	2.507		
10,500.0	6,640.4	10,601.7	6,820.4	76.1	74.9	-124.21	-3,685.2	-953.2	320.1	189.5	130.67	2.450		
10,600.0	6,639.9	10,701.7	6,820.4	78.0	76.7	-124.29	-3,785.2	-953.2	320.4	186.6	133.78	2.395		
10,700.0	6,639.4	10,801.7	6,820.4	79.8	78.6	-124.36	-3,885.2	-953.2	320.7	183.8	136.88	2.343		
10,800.0	6,639.0	10,901.7	6,820.5	81.6	80.4	-124.44	-3,985.2	-953.2	321.0	181.0	139.99	2.293		
10,900.0	6,638.5	11,001.7	6,820.5	83.5	82.3	-124.51	-4,085.2	-953.2	321.3	178.2	143.09	2.245		
11,000.0	6,638.0	11,101.7	6,820.5	85.3	84.1	-124.58	-4,185.2	-953.2	321.6	175.4	146.19	2.200		
11,100.0	6,637.5	11,201.7	6,820.5	87.1	86.0	-124.66	-4,285.2	-953.2	321.8	172.6	149.29	2.156		
11,200.0	6,637.0	11,301.7	6,820.5	89.0	87.9	-124.73	-4,385.2	-953.2	322.1	169.7	152.39	2.114		
11,300.0	6,636.5	11,401.7	6,820.6	90.8	89.7	-124.81	-4,485.2	-953.2	322.4	166.9	155.49	2.074		
11,400.0	6,636.0	11,501.7	6,820.6	92.7	91.6	-124.88	-4,585.2	-953.2	322.7	164.1	158.59	2.035		
11,500.0	6,635.5	11,601.7	6,820.6	94.5	93.5	-124.95	-4,685.2	-953.2	323.0	161.3	161.68	1.998		
11,600.0	6,635.0	11,701.6	6,820.6	96.4	95.3	-125.03	-4,785.2	-953.2	323.3	158.5	164.78	1.962		
11,700.0	6,634.6	11,801.6	6,820.6	98.3	97.2	-125.10	-4,885.2	-953.2	323.6	155.7	167.87	1.928		
11,800.0	6,634.1	11,901.6	6,820.6	100.1	99.1	-125.17	-4,985.2	-953.2	323.9	152.9	170.95	1.895		
11,900.0	6,633.6	12,001.6	6,820.7	102.0	101.0	-125.25	-5,085.2	-953.2	324.2	150.1	174.04	1.863		
12,000.0	6,633.1	12,101.6	6,820.7	103.8	102.8	-125.32	-5,185.2	-953.2	324.5	147.3	177.12	1.832		
12,100.0	6,632.6	12,201.6	6,820.7	105.7	104.7	-125.39	-5,285.2	-953.2	324.8	144.6	180.20	1.802		
12,200.0	6,632.1	12,301.6	6,820.7	107.6	106.6	-125.46	-5,385.2	-953.2	325.1	141.8	183.28	1.774		
12,300.0	6,631.6	12,401.6	6,820.7	109.5	108.5	-125.54	-5,485.2	-953.2	325.3	139.0	186.35	1.746		
12,400.0	6,631.1	12,501.6	6,820.7	111.3	110.3	-125.61	-5,585.2	-953.2	325.6	136.2	189.42	1.719		
12,500.0	6,630.6	12,601.6	6,820.8	113.2	112.2	-125.68	-5,685.2	-953.2	325.9	133.4	192.49	1.693		
12,600.0	6,630.2	12,701.6	6,820.8	115.1	114.1	-125.75	-5,785.2	-953.2	326.2	130.7	195.56	1.668		
12,700.0	6,629.7	12,801.6	6,820.8	117.0	116.0	-125.83	-5,885.2	-953.2	326.5	127.9	198.62	1.644		
12,800.0	6,629.2	12,901.6	6,820.8	118.8	117.9	-125.90	-5,985.2	-953.2	326.8	125.2	201.68	1.621		
12,900.0	6,628.7	13,001.6	6,820.8	120.7	119.8	-125.97	-6,085.2	-953.2	327.1	122.4	204.73	1.598		
13,000.0	6,628.2	13,101.6	6,820.8	122.6	121.7	-126.04	-6,185.2	-953.2	327.4	119.6	207.78	1.576		
13,100.0	6,627.7	13,201.6	6,820.9	124.5	123.6	-126.11	-6,285.2	-953.2	327.7	116.9	210.83	1.554		
13,200.0	6,627.2	13,301.6	6,820.9	126.4	125.5	-126.18	-6,385.2	-953.2	328.0	114.1	213.87	1.534		
13,300.0	6,626.7	13,401.6	6,820.9	128.3	127.3	-126.25	-6,485.2	-953.2	328.3	111.4	216.91	1.514		
13,400.0	6,626.3	13,501.6	6,820.9	130.1	129.2	-126.33	-6,585.2	-953.2	328.6	108.7	219.95	1.494 Level 3		
13,500.0	6,625.8	13,601.6	6,820.9	132.0	131.1	-126.40	-6,685.2	-953.2	328.9	105.9	222.98	1.475 Level 3		
13,600.0	6,625.3	13,701.6	6,821.0	133.9	133.0	-126.47	-6,785.2	-953.2	329.2	103.2	226.01	1.457 Level 3		
13,700.0	6,624.8	13,801.6	6,821.0	135.8	134.9	-126.54	-6,885.2	-953.2	329.5	100.5	229.04	1.439 Level 3		
13,800.0	6,624.3	13,901.6	6,821.0	137.7	136.8	-126.61	-6,985.2	-953.2	329.8	97.8	232.06	1.421 Level 3		
13,860.5	6,624.0	13,962.1	6,821.0	138.8	138.0	-126.65	-7,045.7	-953.2	330.0	96.1	233.89	1.411 Level 3, SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28M-203
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28M-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28M-203	<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>	Plan #2 (4-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 28M-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-203 - Wellbore #1 - Plan #1 (1-29-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	138.42	-91.1	80.8	121.8					
100.0	100.0	100.0	100.0	0.1	0.1	138.42	-91.1	80.8	121.8	121.5	0.22	541.686		
200.0	200.0	200.0	200.0	0.3	0.3	138.42	-91.1	80.8	121.8	121.1	0.67	180.562 CC, ES		
300.0	300.0	300.0	300.0	0.6	0.6	-147.17	-91.1	80.8	123.2	122.1	1.12	109.866		
400.0	399.8	399.8	399.8	0.8	0.8	-148.39	-91.1	80.8	127.6	126.1	1.57	81.082		
500.0	499.5	499.5	499.5	1.0	1.0	-150.25	-91.1	80.8	135.1	133.1	2.04	66.323		
600.0	598.7	598.7	598.7	1.3	1.2	-152.53	-91.1	80.8	145.9	143.4	2.51	58.107		
700.0	697.5	697.5	697.5	1.7	1.5	-154.99	-91.1	80.8	159.9	156.9	2.99	53.490		
800.0	795.6	795.6	795.6	2.0	1.7	-157.45	-91.1	80.8	177.5	174.0	3.47	51.074		
900.0	893.1	893.1	893.1	2.5	1.9	-159.79	-91.1	80.8	198.5	194.5	3.96	50.102		
1,000.0	989.8	989.8	989.8	3.0	2.1	-161.97	-91.1	80.8	222.5	218.1	4.45	50.009		
1,100.0	1,086.4	1,086.4	1,086.4	3.5	2.3	-163.81	-91.1	80.8	247.1	242.2	4.94	50.047		
1,200.0	1,183.1	1,183.1	1,183.1	4.0	2.5	-165.31	-91.1	80.8	271.9	266.5	5.43	50.112		
1,300.0	1,279.7	1,279.7	1,279.7	4.6	2.8	-166.57	-91.1	80.8	296.8	290.9	5.91	50.188		
1,400.0	1,376.4	1,376.4	1,376.4	5.1	3.0	-167.63	-91.1	80.8	321.9	315.5	6.40	50.266		
1,500.0	1,473.0	1,473.0	1,473.0	5.7	3.2	-168.53	-91.1	80.8	347.0	340.2	6.89	50.342		
1,600.0	1,569.7	1,569.7	1,569.7	6.2	3.4	-169.32	-91.1	80.8	372.3	364.9	7.38	50.413		
1,700.0	1,666.3	1,674.8	1,674.8	6.7	3.7	-170.14	-90.2	80.3	396.8	388.9	7.89	50.320		
1,800.0	1,763.0	1,784.9	1,784.8	7.3	3.9	-171.22	-85.9	77.8	418.6	410.2	8.38	49.927		
1,900.0	1,859.6	1,896.0	1,895.5	7.8	4.2	-172.53	-77.8	73.2	437.5	428.6	8.88	49.258		
2,000.0	1,956.3	2,007.2	2,005.8	8.4	4.4	-174.06	-66.0	66.4	453.5	444.1	9.38	48.338		
2,100.0	2,053.0	2,105.4	2,103.1	8.9	4.7	-175.46	-54.1	59.5	468.5	458.6	9.87	47.463		
2,200.0	2,149.6	2,203.7	2,200.4	9.5	4.9	-176.76	-42.2	52.7	483.7	473.3	10.37	46.638		
2,300.0	2,246.3	2,301.9	2,297.7	10.0	5.2	-177.99	-30.3	45.8	499.1	488.2	10.88	45.868		
2,400.0	2,342.9	2,400.2	2,394.9	10.6	5.5	-179.15	-18.4	38.9	514.8	503.4	11.40	45.145		
2,500.0	2,439.6	2,498.4	2,492.2	11.1	5.7	179.77	-6.5	32.1	530.6	518.7	11.93	44.463		
2,600.0	2,536.2	2,596.7	2,589.5	11.7	6.0	178.74	5.4	25.2	546.7	534.2	12.48	43.820		
2,700.0	2,632.9	2,694.9	2,686.8	12.2	6.3	177.78	17.3	18.3	562.9	549.8	13.03	43.212		
2,800.0	2,729.5	2,793.2	2,784.0	12.8	6.6	176.87	29.2	11.5	579.2	565.6	13.58	42.637		
2,900.0	2,826.2	2,891.4	2,881.3	13.3	6.9	176.00	41.2	4.6	595.7	581.5	14.15	42.092		
3,000.0	2,922.8	2,989.6	2,978.6	13.9	7.2	175.19	53.1	-2.3	612.3	597.6	14.73	41.575		
3,100.0	3,019.5	3,087.9	3,075.9	14.4	7.5	174.42	65.0	-9.1	629.0	613.7	15.31	41.085		
3,200.0	3,116.1	3,186.1	3,173.2	15.0	7.8	173.68	76.9	-16.0	645.8	629.9	15.90	40.620		
3,300.0	3,212.8	3,284.4	3,270.4	15.5	8.2	172.99	88.8	-22.9	662.7	646.2	16.50	40.178		
3,400.0	3,309.4	3,382.6	3,367.7	16.1	8.5	172.33	100.7	-29.7	679.8	662.7	17.10	39.758		
3,500.0	3,406.1	3,480.9	3,465.0	16.7	8.8	171.70	112.6	-36.6	696.8	679.1	17.70	39.359		
3,600.0	3,502.7	3,579.1	3,562.3	17.2	9.1	171.10	124.5	-43.4	714.0	695.7	18.32	38.979		
3,700.0	3,599.4	3,677.3	3,659.5	17.8	9.4	170.53	136.5	-50.3	731.3	712.3	18.94	38.618		
3,800.0	3,696.0	3,775.6	3,756.8	18.3	9.7	169.98	148.4	-57.2	748.6	729.0	19.56	38.274		
3,900.0	3,792.7	3,873.8	3,854.1	18.9	10.1	169.46	160.3	-64.0	766.0	745.8	20.19	37.946		
4,000.0	3,889.3	3,972.1	3,951.4	19.4	10.4	168.96	172.2	-70.9	783.4	762.6	20.82	37.633		
4,100.0	3,986.0	4,070.3	4,048.7	20.0	10.7	168.49	184.1	-77.8	800.9	779.4	21.45	37.335		
4,200.0	4,082.6	4,168.6	4,145.9	20.5	11.0	168.03	196.0	-84.6	818.4	796.3	22.09	37.051		
4,300.0	4,179.3	4,266.8	4,243.2	21.1	11.4	167.60	207.9	-91.5	836.0	813.3	22.73	36.779		
4,400.0	4,275.9	4,365.1	4,340.5	21.6	11.7	167.18	219.8	-98.4	853.7	830.3	23.38	36.519		
4,500.0	4,372.6	4,463.3	4,437.8	22.2	12.0	166.78	231.8	-105.2	871.3	847.3	24.02	36.270		
4,600.0	4,469.2	4,561.5	4,535.0	22.7	12.3	166.39	243.7	-112.1	889.1	864.4	24.67	36.033		
4,700.0	4,565.9	4,659.8	4,632.3	23.3	12.7	166.02	255.6	-118.9	906.8	881.5	25.33	35.805		
4,800.0	4,662.5	4,758.0	4,729.6	23.8	13.0	165.66	267.5	-125.8	924.6	898.6	25.98	35.587		
4,900.0	4,759.2	4,856.3	4,826.9	24.4	13.3	165.32	279.4	-132.7	942.4	915.8	26.64	35.378		
5,000.0	4,855.8	4,954.5	4,924.2	24.9	13.6	164.99	291.3	-139.5	960.3	933.0	27.30	35.177		

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



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28M-203
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28M-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28M-203	<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>	Plan #2 (4-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Chesnut 28M-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-203 - Wellbore #1 - Plan #1 (1-29-14)													<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		
5,100.0	4,952.5	5,049.5	5,018.2	25.5	14.0	164.69	302.8	-146.1	978.2	950.3	27.94	35.011		
5,200.0	5,049.5	5,133.3	5,101.4	26.0	14.2	164.58	311.4	-151.1	995.9	967.4	28.52	34.919 SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28M-203
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28M-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28M-203	<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>	Plan #2 (4-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 28M-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-443 - Wellbore #1 - Plan #2 (4-30-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	136.93	-65.6	61.3	89.8					
100.0	100.0	100.0	100.0	0.1	0.1	136.93	-65.6	61.3	89.8	89.5	0.22	399.349		
200.0	200.0	200.0	200.0	0.3	0.3	136.93	-65.6	61.3	89.8	89.1	0.67	133.116 CC, ES		
300.0	300.0	300.0	300.0	0.6	0.6	-148.79	-65.6	61.3	91.2	90.1	1.12	81.351		
400.0	399.8	399.8	399.8	0.8	0.8	-150.37	-65.6	61.3	95.8	94.2	1.57	60.823		
500.0	499.5	499.5	499.5	1.0	1.0	-152.68	-65.6	61.3	103.4	101.4	2.04	50.775		
600.0	598.7	598.7	598.7	1.3	1.2	-155.39	-65.6	61.3	114.4	111.9	2.51	45.632		
700.0	697.5	697.5	697.5	1.7	1.5	-158.18	-65.6	61.3	128.8	125.8	2.98	43.194		
800.0	795.6	795.6	795.6	2.0	1.7	-160.82	-65.6	61.3	146.7	143.3	3.46	42.408		
900.0	893.1	893.1	893.1	2.5	1.9	-163.21	-65.6	61.3	168.2	164.2	3.94	42.697		
1,000.0	989.8	989.8	989.8	3.0	2.1	-165.33	-65.6	61.3	192.6	188.2	4.42	43.594		
1,100.0	1,086.4	1,086.4	1,086.4	3.5	2.3	-167.04	-65.6	61.3	217.6	212.7	4.90	44.401		
1,200.0	1,183.1	1,183.1	1,183.1	4.0	2.5	-168.39	-65.6	61.3	242.7	237.3	5.38	45.075		
1,300.0	1,279.7	1,279.7	1,279.7	4.6	2.8	-169.65	-64.7	60.3	266.8	260.9	5.88	45.401		
1,400.0	1,376.4	1,395.5	1,395.3	5.1	3.0	-170.92	-61.4	56.1	287.4	281.1	6.36	45.183		
1,500.0	1,473.0	1,504.7	1,504.1	5.7	3.3	-172.23	-55.3	48.7	304.6	297.8	6.85	44.442		
1,600.0	1,569.7	1,615.0	1,613.5	6.2	3.5	-173.63	-46.6	38.0	318.3	310.9	7.36	43.274		
1,700.0	1,666.3	1,719.2	1,716.5	6.7	3.8	-175.02	-36.3	25.3	329.1	321.2	7.85	41.899		
1,800.0	1,763.0	1,818.4	1,814.4	7.3	4.1	-176.28	-26.2	13.0	339.7	331.4	8.36	40.658		
1,900.0	1,859.6	1,917.6	1,912.2	7.8	4.4	-177.47	-16.1	0.6	350.5	341.6	8.86	39.539		
2,000.0	1,956.3	2,016.7	2,010.1	8.4	4.7	-178.58	-6.0	-11.8	361.4	352.0	9.38	38.530		
2,100.0	2,053.0	2,115.9	2,108.0	8.9	5.0	-179.63	4.0	-24.2	372.5	362.6	9.90	37.604		
2,200.0	2,149.6	2,215.1	2,205.8	9.5	5.4	179.39	14.1	-36.5	383.6	373.2	10.44	36.755		
2,300.0	2,246.3	2,314.2	2,303.7	10.0	5.7	178.46	24.2	-48.9	394.9	383.9	10.98	35.973		
2,400.0	2,342.9	2,413.4	2,401.6	10.6	6.0	177.58	34.3	-61.3	406.2	394.7	11.52	35.249		
2,500.0	2,439.6	2,512.5	2,499.5	11.1	6.4	176.75	44.3	-73.6	417.7	405.6	12.08	34.578		
2,600.0	2,536.2	2,611.7	2,597.3	11.7	6.7	175.96	54.4	-86.0	429.2	416.6	12.64	33.954		
2,700.0	2,632.9	2,710.9	2,695.2	12.2	7.1	175.21	64.5	-98.4	440.8	427.6	13.21	33.371		
2,800.0	2,729.5	2,810.0	2,793.1	12.8	7.4	174.51	74.6	-110.8	452.5	438.7	13.79	32.827		
2,900.0	2,826.2	2,909.2	2,890.9	13.3	7.8	173.84	84.7	-123.1	464.3	449.9	14.37	32.317		
3,000.0	2,922.8	3,008.4	2,988.8	13.9	8.1	173.20	94.7	-135.5	476.1	461.1	14.95	31.838		
3,100.0	3,019.5	3,107.5	3,086.7	14.4	8.5	172.59	104.8	-147.9	487.9	472.4	15.55	31.388		
3,200.0	3,116.1	3,206.7	3,184.6	15.0	8.8	172.01	114.9	-160.2	499.8	483.7	16.14	30.964		
3,300.0	3,212.8	3,305.9	3,282.4	15.5	9.2	171.46	125.0	-172.6	511.8	495.1	16.75	30.564		
3,400.0	3,309.4	3,405.0	3,380.3	16.1	9.6	170.93	135.0	-185.0	523.8	506.5	17.35	30.187		
3,500.0	3,406.1	3,504.2	3,478.2	16.7	9.9	170.43	145.1	-197.4	535.9	517.9	17.96	29.830		
3,600.0	3,502.7	3,603.3	3,576.0	17.2	10.3	169.95	155.2	-209.7	547.9	529.4	18.58	29.492		
3,700.0	3,599.4	3,702.5	3,673.9	17.8	10.7	169.49	165.3	-222.1	560.1	540.9	19.20	29.172		
3,800.0	3,696.0	3,801.7	3,771.8	18.3	11.0	169.04	175.4	-234.5	572.2	552.4	19.82	28.869		
3,900.0	3,792.7	3,900.8	3,869.7	18.9	11.4	168.62	185.4	-246.8	584.4	564.0	20.45	28.580		
4,000.0	3,889.3	4,000.0	3,967.5	19.4	11.8	168.22	195.5	-259.2	596.6	575.6	21.08	28.306		
4,100.0	3,986.0	4,099.2	4,065.4	20.0	12.1	167.83	205.6	-271.6	608.9	587.2	21.71	28.045		
4,200.0	4,082.6	4,198.3	4,163.3	20.5	12.5	167.45	215.7	-284.0	621.1	598.8	22.35	27.796		
4,300.0	4,179.3	4,297.5	4,261.2	21.1	12.9	167.10	225.8	-296.3	633.4	610.5	22.99	27.559		
4,400.0	4,275.9	4,396.7	4,359.0	21.6	13.2	166.75	235.8	-308.7	645.8	622.1	23.63	27.333		
4,500.0	4,372.6	4,495.8	4,456.9	22.2	13.6	166.42	245.9	-321.1	658.1	633.8	24.27	27.116		
4,600.0	4,469.2	4,595.0	4,554.8	22.7	14.0	166.10	256.0	-333.4	670.5	645.6	24.92	26.910		
4,700.0	4,565.9	4,694.2	4,652.6	23.3	14.3	165.79	266.1	-345.8	682.9	657.3	25.56	26.712		
4,800.0	4,662.5	4,793.3	4,750.5	23.8	14.7	165.49	276.1	-358.2	695.3	669.1	26.21	26.523		
4,900.0	4,759.2	4,892.5	4,848.4	24.4	15.1	165.20	286.2	-370.6	707.7	680.8	26.87	26.341		
5,000.0	4,855.8	4,991.6	4,946.3	24.9	15.4	164.93	296.3	-382.9	720.1	692.6	27.52	26.167		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28M-203
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28M-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28M-203	<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>	Plan #2 (4-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 28M-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-443 - Wellbore #1 - Plan #2 (4-30-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)			
5,100.0	4,952.5	5,089.9	5,043.3	25.5	15.8	164.66	306.3	-395.2	732.6	704.4	28.17	26.004		
5,200.0	5,049.5	5,172.6	5,125.0	26.0	16.0	164.54	313.9	-404.5	745.0	716.3	28.73	25.932		
5,300.0	5,147.2	5,255.2	5,207.1	26.3	16.2	164.49	319.9	-412.0	756.4	727.2	29.20	25.899		
5,400.0	5,245.7	5,337.7	5,289.2	26.6	16.4	164.49	324.5	-417.6	766.6	737.0	29.61	25.888		
5,500.0	5,344.7	5,420.1	5,371.5	26.9	16.6	164.54	327.6	-421.4	775.7	745.7	29.95	25.899		
5,600.0	5,444.1	5,500.0	5,451.4	27.1	16.7	164.64	329.2	-423.3	783.6	753.4	30.22	25.933		
5,700.0	5,543.8	5,592.4	5,543.8	27.3	16.8	164.78	329.4	-423.6	790.2	759.7	30.44	25.958		
5,800.0	5,643.7	5,692.4	5,643.7	27.4	17.0	164.87	329.4	-423.6	793.8	763.1	30.66	25.888		
5,900.0	5,743.7	5,792.4	5,743.7	27.5	17.1	90.04	329.4	-423.6	794.3	763.4	30.92	25.686		
6,000.0	5,843.7	5,892.4	5,843.7	27.6	17.3	90.04	329.4	-423.6	794.3	763.0	31.26	25.407		
6,056.2	5,899.9	5,948.5	5,899.9	27.6	17.4	-90.04	329.4	-423.6	794.3	762.8	31.46	25.247		
6,100.0	5,943.7	5,992.3	5,943.7	27.7	17.5	-90.08	329.4	-423.6	794.3	762.7	31.61	25.125		
6,200.0	6,042.7	6,091.4	6,042.7	27.7	17.6	-91.02	329.4	-423.6	794.4	762.4	32.06	24.780		
6,300.0	6,139.2	6,192.5	6,143.6	27.7	17.7	-92.43	323.2	-423.6	795.0	762.6	32.46	24.495		
6,400.0	6,231.5	6,296.6	6,245.6	27.7	17.7	-93.83	302.9	-423.6	796.1	763.5	32.67	24.367		
6,500.0	6,317.9	6,403.7	6,346.7	27.7	17.7	-95.17	267.8	-423.6	797.7	764.9	32.71	24.383		
6,600.0	6,397.1	6,514.0	6,444.6	27.6	17.6	-96.45	217.2	-423.6	799.5	766.9	32.63	24.501		
6,700.0	6,467.6	6,627.4	6,536.6	27.6	17.4	-97.61	151.1	-423.6	801.5	769.0	32.52	24.647		
6,800.0	6,528.3	6,743.9	6,619.9	27.5	17.3	-98.65	69.8	-423.6	803.6	771.1	32.52	24.714		
6,900.0	6,578.1	6,863.2	6,691.3	27.5	17.1	-99.52	-25.5	-423.6	805.5	772.7	32.79	24.569		
7,000.0	6,616.2	6,984.8	6,748.0	27.6	17.1	-100.21	-133.1	-423.6	807.2	773.7	33.49	24.101		
7,100.0	6,641.9	7,108.4	6,787.4	27.8	17.2	-100.68	-250.0	-423.6	808.3	773.6	34.74	23.265		
7,200.0	6,654.8	7,229.5	6,807.4	28.0	17.9	-100.93	-369.3	-423.6	809.0	772.4	36.54	22.139		
7,300.0	6,656.1	7,335.6	6,817.5	28.4	18.9	-101.49	-475.0	-423.6	810.6	772.0	38.59	21.008		
7,400.0	6,655.6	7,446.0	6,819.9	29.0	20.0	-101.69	-585.3	-423.6	811.1	770.3	40.84	19.861		
7,500.0	6,655.1	7,546.0	6,819.9	29.6	21.2	-101.72	-685.3	-423.6	811.2	768.0	43.22	18.771		
7,600.0	6,654.6	7,646.0	6,819.9	30.4	22.5	-101.76	-785.3	-423.6	811.3	765.5	45.78	17.723		
7,700.0	6,654.1	7,746.0	6,819.9	31.3	23.9	-101.79	-885.3	-423.6	811.4	762.9	48.50	16.732		
7,800.0	6,653.6	7,846.0	6,819.9	32.3	25.4	-101.83	-985.3	-423.6	811.5	760.2	51.35	15.804		
7,900.0	6,653.1	7,946.0	6,820.0	33.5	26.9	-101.86	-1,085.3	-423.6	811.6	757.3	54.31	14.943		
8,000.0	6,652.6	8,046.0	6,820.0	34.7	28.4	-101.90	-1,185.3	-423.6	811.7	754.4	57.37	14.148		
8,100.0	6,652.2	8,146.0	6,820.0	36.0	30.0	-101.93	-1,285.3	-423.6	811.8	751.3	60.51	13.416		
8,200.0	6,651.7	8,246.0	6,820.0	37.3	31.6	-101.97	-1,385.3	-423.6	811.9	748.2	63.72	12.743		
8,300.0	6,651.2	8,346.0	6,820.0	38.8	33.3	-102.00	-1,485.3	-423.6	812.0	745.1	66.98	12.124		
8,400.0	6,650.7	8,446.0	6,820.0	40.2	35.0	-102.04	-1,585.3	-423.6	812.1	741.9	70.29	11.554		
8,500.0	6,650.2	8,546.0	6,820.1	41.7	36.7	-102.07	-1,685.3	-423.6	812.3	738.6	73.65	11.028		
8,600.0	6,649.7	8,646.0	6,820.1	43.3	38.4	-102.11	-1,785.3	-423.6	812.4	735.3	77.04	10.544		
8,700.0	6,649.2	8,746.0	6,820.1	44.9	40.1	-102.14	-1,885.3	-423.6	812.5	732.0	80.47	10.096		
8,800.0	6,648.7	8,846.0	6,820.1	46.5	41.9	-102.18	-1,985.3	-423.6	812.6	728.6	83.92	9.682		
8,900.0	6,648.2	8,946.0	6,820.1	48.1	43.7	-102.21	-2,085.3	-423.6	812.7	725.3	87.40	9.298		
9,000.0	6,647.8	9,046.0	6,820.2	49.8	45.4	-102.25	-2,185.3	-423.6	812.8	721.9	90.90	8.941		
9,100.0	6,647.3	9,146.0	6,820.2	51.4	47.2	-102.28	-2,285.3	-423.6	812.9	718.5	94.42	8.609		
9,200.0	6,646.8	9,246.0	6,820.2	53.1	49.0	-102.32	-2,385.3	-423.6	813.0	715.0	97.96	8.299		
9,300.0	6,646.3	9,346.0	6,820.2	54.8	50.8	-102.35	-2,485.3	-423.6	813.1	711.6	101.51	8.010		
9,400.0	6,645.8	9,446.0	6,820.2	56.6	52.7	-102.39	-2,585.3	-423.6	813.2	708.1	105.08	7.739		
9,500.0	6,645.3	9,546.0	6,820.2	58.3	54.5	-102.42	-2,685.3	-423.6	813.3	704.7	108.65	7.485		
9,600.0	6,644.8	9,646.0	6,820.3	60.0	56.3	-102.45	-2,785.3	-423.6	813.4	701.2	112.24	7.247		
9,700.0	6,644.3	9,746.0	6,820.3	61.8	58.2	-102.49	-2,885.3	-423.6	813.5	697.7	115.84	7.023		
9,800.0	6,643.8	9,845.9	6,820.3	63.6	60.0	-102.52	-2,985.3	-423.6	813.6	694.2	119.45	6.812		
9,900.0	6,643.3	9,945.9	6,820.3	65.3	61.8	-102.56	-3,085.3	-423.6	813.8	690.7	123.06	6.613		
10,000.0	6,642.9	10,045.9	6,820.3	67.1	63.7	-102.59	-3,185.3	-423.6	813.9	687.2	126.69	6.424		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28M-203
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28M-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28M-203	<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>	Plan #2 (4-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 28M-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-443 - Wellbore #1 - Plan #2 (4-30-14)												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
10,100.0	6,642.4	10,145.9	6,820.3	68.9	65.6	-102.63	-3,285.3	-423.6	814.0	683.7	130.31	6.246	
10,200.0	6,641.9	10,245.9	6,820.4	70.7	67.4	-102.66	-3,385.3	-423.6	814.1	680.1	133.95	6.078	
10,300.0	6,641.4	10,345.9	6,820.4	72.5	69.3	-102.70	-3,485.3	-423.6	814.2	676.6	137.59	5.918	
10,400.0	6,640.9	10,445.9	6,820.4	74.3	71.1	-102.73	-3,585.3	-423.6	814.3	673.1	141.23	5.766	
10,500.0	6,640.4	10,545.9	6,820.4	76.1	73.0	-102.77	-3,685.3	-423.6	814.4	669.5	144.88	5.621	
10,600.0	6,639.9	10,645.9	6,820.4	78.0	74.9	-102.80	-3,785.3	-423.6	814.5	666.0	148.54	5.484	
10,700.0	6,639.4	10,745.9	6,820.4	79.8	76.8	-102.84	-3,885.3	-423.6	814.6	662.5	152.19	5.353	
10,800.0	6,639.0	10,845.9	6,820.5	81.6	78.6	-102.87	-3,985.3	-423.6	814.8	658.9	155.85	5.228	
10,900.0	6,638.5	10,945.9	6,820.5	83.5	80.5	-102.91	-4,085.2	-423.6	814.9	655.4	159.52	5.108	
11,000.0	6,638.0	11,045.9	6,820.5	85.3	82.4	-102.94	-4,185.2	-423.6	815.0	651.8	163.18	4.994	
11,100.0	6,637.5	11,145.9	6,820.5	87.1	84.3	-102.98	-4,285.2	-423.6	815.1	648.2	166.85	4.885	
11,200.0	6,637.0	11,245.9	6,820.5	89.0	86.2	-103.01	-4,385.2	-423.6	815.2	644.7	170.52	4.781	
11,300.0	6,636.5	11,345.9	6,820.6	90.8	88.0	-103.05	-4,485.2	-423.6	815.3	641.1	174.20	4.681	
11,400.0	6,636.0	11,445.9	6,820.6	92.7	89.9	-103.08	-4,585.2	-423.6	815.4	637.6	177.87	4.584	
11,500.0	6,635.5	11,545.9	6,820.6	94.5	91.8	-103.11	-4,685.2	-423.6	815.6	634.0	181.55	4.492	
11,600.0	6,635.0	11,645.9	6,820.6	96.4	93.7	-103.15	-4,785.2	-423.6	815.7	630.4	185.23	4.404	
11,700.0	6,634.6	11,745.9	6,820.6	98.3	95.6	-103.18	-4,885.2	-423.6	815.8	626.9	188.90	4.318	
11,800.0	6,634.1	11,845.9	6,820.6	100.1	97.5	-103.22	-4,985.2	-423.6	815.9	623.3	192.59	4.237	
11,900.0	6,633.6	11,945.9	6,820.7	102.0	99.4	-103.25	-5,085.2	-423.6	816.0	619.7	196.27	4.158	
12,000.0	6,633.1	12,045.9	6,820.7	103.8	101.3	-103.29	-5,185.2	-423.6	816.1	616.2	199.95	4.082	
12,100.0	6,632.6	12,145.9	6,820.7	105.7	103.2	-103.32	-5,285.2	-423.6	816.2	612.6	203.63	4.008	
12,200.0	6,632.1	12,245.9	6,820.7	107.6	105.1	-103.36	-5,385.2	-423.6	816.4	609.0	207.32	3.938	
12,300.0	6,631.6	12,345.9	6,820.7	109.5	107.0	-103.39	-5,485.2	-423.6	816.5	605.5	211.00	3.869	
12,400.0	6,631.1	12,445.9	6,820.7	111.3	108.9	-103.43	-5,585.2	-423.6	816.6	601.9	214.69	3.804	
12,500.0	6,630.6	12,545.9	6,820.8	113.2	110.7	-103.46	-5,685.2	-423.6	816.7	598.3	218.38	3.740	
12,600.0	6,630.2	12,645.9	6,820.8	115.1	112.6	-103.50	-5,785.2	-423.6	816.8	594.8	222.06	3.678	
12,700.0	6,629.7	12,745.9	6,820.8	117.0	114.5	-103.53	-5,885.2	-423.6	816.9	591.2	225.75	3.619	
12,800.0	6,629.2	12,845.9	6,820.8	118.8	116.4	-103.56	-5,985.2	-423.6	817.1	587.6	229.44	3.561	
12,900.0	6,628.7	12,945.9	6,820.8	120.7	118.3	-103.60	-6,085.2	-423.6	817.2	584.1	233.13	3.505	
13,000.0	6,628.2	13,045.9	6,820.8	122.6	120.3	-103.63	-6,185.2	-423.6	817.3	580.5	236.82	3.451	
13,100.0	6,627.7	13,145.9	6,820.9	124.5	122.2	-103.67	-6,285.2	-423.6	817.4	576.9	240.50	3.399	
13,200.0	6,627.2	13,245.9	6,820.9	126.4	124.1	-103.70	-6,385.2	-423.6	817.5	573.4	244.19	3.348	
13,300.0	6,626.7	13,345.9	6,820.9	128.3	126.0	-103.74	-6,485.2	-423.6	817.7	569.8	247.88	3.299	
13,400.0	6,626.3	13,445.9	6,820.9	130.1	127.9	-103.77	-6,585.2	-423.6	817.8	566.2	251.57	3.251	
13,500.0	6,625.8	13,545.9	6,820.9	132.0	129.8	-103.81	-6,685.2	-423.6	817.9	562.6	255.26	3.204	
13,600.0	6,625.3	13,645.9	6,821.0	133.9	131.7	-103.84	-6,785.2	-423.6	818.0	559.1	258.94	3.159	
13,700.0	6,624.8	13,745.9	6,821.0	135.8	133.6	-103.87	-6,885.2	-423.6	818.1	555.5	262.63	3.115	
13,800.0	6,624.3	13,845.9	6,821.0	137.7	135.5	-103.91	-6,985.2	-423.6	818.3	551.9	266.32	3.072	
13,860.5	6,624.0	13,906.4	6,821.0	138.8	136.6	-103.93	-7,045.7	-423.6	818.3	549.8	268.55	3.047 SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28M-203
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28M-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28M-203	<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>	Plan #2 (4-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hall 28-4 (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7600-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-104.58		-142.1	-546.1	564.5				
100.0	100.0	85.0	85.0	0.1	1.7	-104.58		-142.1	-546.1	564.3	562.5	1.81	311.310	
200.0	200.0	185.0	185.0	0.3	3.7	-104.58		-142.1	-546.1	564.3	560.2	4.04	139.764	
300.0	300.0	285.0	285.0	0.6	5.7	-29.85		-142.1	-546.1	562.8	556.5	6.25	90.005	
400.0	399.8	384.8	384.8	0.8	7.7	-30.16		-142.1	-546.1	558.2	549.8	8.46	66.004	
500.0	499.5	484.5	484.5	1.0	9.7	-30.69		-142.1	-546.1	550.7	540.0	10.65	51.692	
600.0	598.7	583.7	583.7	1.3	11.7	-31.46		-142.1	-546.1	540.2	527.4	12.84	42.082	
700.0	697.5	682.5	682.5	1.7	13.6	-32.49		-142.1	-546.1	526.9	511.9	15.01	35.103	
800.0	795.6	780.6	780.6	2.0	15.6	-33.81		-142.1	-546.1	510.9	493.7	17.18	29.742	
900.0	893.1	878.1	878.1	2.5	17.6	-35.48		-142.1	-546.1	492.2	472.9	19.34	25.446	
1,000.0	989.8	974.8	974.8	3.0	19.5	-37.35		-142.1	-546.1	471.6	450.0	21.59	21.846	
1,100.0	1,086.4	1,071.4	1,071.4	3.5	21.4	-39.30		-142.1	-546.1	451.2	427.3	23.91	18.870	
1,200.0	1,183.1	1,168.1	1,168.1	4.0	23.4	-41.43		-142.1	-546.1	431.4	405.1	26.27	16.421	
1,300.0	1,279.7	1,264.7	1,264.7	4.6	25.3	-43.76		-142.1	-546.1	412.2	383.5	28.66	14.380	
1,400.0	1,376.4	1,361.4	1,361.4	5.1	27.2	-46.29		-142.1	-546.1	393.7	362.6	31.10	12.661	
1,500.0	1,473.0	1,458.0	1,458.0	5.7	29.2	-49.07		-142.1	-546.1	376.1	342.5	33.57	11.203	
1,600.0	1,569.7	1,554.7	1,554.7	6.2	31.1	-52.10		-142.1	-546.1	359.5	323.4	36.09	9.961	
1,700.0	1,666.3	1,651.3	1,651.3	6.7	33.0	-55.39		-142.1	-546.1	344.0	305.3	38.65	8.899	
1,800.0	1,763.0	1,748.0	1,748.0	7.3	35.0	-58.98		-142.1	-546.1	329.7	288.5	41.25	7.993	
1,900.0	1,859.6	1,844.6	1,844.6	7.8	36.9	-62.85		-142.1	-546.1	316.9	273.0	43.88	7.221	
2,000.0	1,956.3	1,941.3	1,941.3	8.4	38.8	-67.01		-142.1	-546.1	305.7	259.2	46.54	6.569	
2,100.0	2,053.0	2,038.0	2,038.0	8.9	40.8	-71.45		-142.1	-546.1	296.3	247.1	49.21	6.021	
2,200.0	2,149.6	2,134.6	2,134.6	9.5	42.7	-76.13		-142.1	-546.1	288.9	237.1	51.88	5.570	
2,300.0	2,246.3	2,231.3	2,231.3	10.0	44.6	-81.00		-142.1	-546.1	283.7	229.2	54.52	5.204	
2,400.0	2,342.9	2,327.9	2,327.9	10.6	46.6	-86.01		-142.1	-546.1	280.7	223.6	57.11	4.915	
2,478.8	2,419.1	2,404.1	2,404.1	11.0	48.1	-90.00		-142.1	-546.1	279.9	220.8	59.10	4.737 CC	
2,500.0	2,439.6	2,424.6	2,424.6	11.1	48.5	-91.08		-142.1	-546.1	280.0	220.4	59.63	4.696	
2,600.0	2,536.2	2,521.2	2,521.2	11.7	50.4	-96.13		-142.1	-546.1	281.7	219.6	62.07	4.538 ES	
2,700.0	2,632.9	2,617.9	2,617.9	12.2	52.4	-101.09		-142.1	-546.1	285.6	221.2	64.41	4.434	
2,800.0	2,729.5	2,714.5	2,714.5	12.8	54.3	-105.89		-142.1	-546.1	291.8	225.2	66.67	4.377	
2,900.0	2,826.2	2,811.2	2,811.2	13.3	56.2	-110.47		-142.1	-546.1	300.1	231.2	68.85	4.359 SF	
3,000.0	2,922.8	2,907.8	2,907.8	13.9	58.2	-114.79		-142.1	-546.1	310.3	239.3	70.95	4.373	
3,100.0	3,019.5	3,004.5	3,004.5	14.4	60.1	-118.83		-142.1	-546.1	322.2	249.2	72.99	4.414	
3,200.0	3,116.1	3,101.1	3,101.1	15.0	62.0	-122.58		-142.1	-546.1	335.6	260.6	74.98	4.476	
3,300.0	3,212.8	3,197.8	3,197.8	15.5	64.0	-126.04		-142.1	-546.1	350.4	273.5	76.95	4.554	
3,400.0	3,309.4	3,294.4	3,294.4	16.1	65.9	-129.22		-142.1	-546.1	366.4	287.5	78.89	4.645	
3,500.0	3,406.1	3,391.1	3,391.1	16.7	67.8	-132.14		-142.1	-546.1	383.5	302.7	80.81	4.745	
3,600.0	3,502.7	3,487.7	3,487.7	17.2	69.8	-134.81		-142.1	-546.1	401.4	318.7	82.74	4.852	
3,700.0	3,599.4	3,584.4	3,584.4	17.8	71.7	-137.26		-142.1	-546.1	420.2	335.6	84.66	4.963	
3,800.0	3,696.0	3,681.0	3,681.0	18.3	73.6	-139.49		-142.1	-546.1	439.7	353.1	86.59	5.078	
3,900.0	3,792.7	3,777.7	3,777.7	18.9	75.6	-141.54		-142.1	-546.1	459.8	371.2	88.53	5.194	
4,000.0	3,889.3	3,874.3	3,874.3	19.4	77.5	-143.43		-142.1	-546.1	480.4	389.9	90.47	5.310	
4,100.0	3,986.0	3,971.0	3,971.0	20.0	79.4	-145.15		-142.1	-546.1	501.5	409.0	92.43	5.425	
4,200.0	4,082.6	4,067.6	4,067.6	20.5	81.4	-146.75		-142.1	-546.1	522.9	428.6	94.39	5.540	
4,300.0	4,179.3	4,164.3	4,164.3	21.1	83.3	-148.21		-142.1	-546.1	544.8	448.4	96.37	5.653	
4,400.0	4,275.9	4,260.9	4,260.9	21.6	85.2	-149.57		-142.1	-546.1	567.0	468.6	98.35	5.765	
4,500.0	4,372.6	4,357.6	4,357.6	22.2	87.2	-150.82		-142.1	-546.1	589.4	489.1	100.35	5.874	
4,600.0	4,469.2	4,454.2	4,454.2	22.7	89.1	-151.98		-142.1	-546.1	612.1	509.8	102.36	5.980	
4,700.0	4,565.9	4,550.9	4,550.9	23.3	91.0	-153.06		-142.1	-546.1	635.1	530.7	104.37	6.085	
4,800.0	4,662.5	4,647.5	4,647.5	23.8	93.0	-154.07		-142.1	-546.1	658.2	551.8	106.39	6.186	
4,900.0	4,759.2	4,744.2	4,744.2	24.4	94.9	-155.01		-142.1	-546.1	681.5	573.1	108.43	6.285	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28M-203
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28M-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28M-203	<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>	Plan #2 (4-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hall 28-4 (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7600-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,000.0	4,855.8	4,840.8	4,840.8	24.9	96.8	-155.88	-142.1	-546.1	705.0	594.5	110.47	6.382		
5,100.0	4,952.5	4,937.5	4,937.5	25.5	98.7	-156.70	-142.1	-546.1	728.6	616.1	112.51	6.476		
5,200.0	5,049.5	5,034.5	5,034.5	26.0	100.7	-157.59	-142.1	-546.1	751.2	636.0	115.13	6.524		
5,300.0	5,147.2	5,132.2	5,132.2	26.3	102.6	-158.33	-142.1	-546.1	770.7	652.9	117.77	6.544		
5,400.0	5,245.7	5,230.7	5,230.7	26.6	104.6	-158.92	-142.1	-546.1	787.1	666.8	120.34	6.541		
5,500.0	5,344.7	5,329.7	5,329.7	26.9	106.6	-159.38	-142.1	-546.1	800.3	677.5	122.83	6.516		
5,600.0	5,444.1	5,429.1	5,429.1	27.1	108.6	-159.71	-142.1	-546.1	810.3	685.1	125.23	6.471		
5,700.0	5,543.8	5,528.8	5,528.8	27.3	110.6	-159.94	-142.1	-546.1	817.1	689.6	127.52	6.407		
5,800.0	5,643.7	5,628.7	5,628.7	27.4	112.6	-160.05	-142.1	-546.1	820.6	690.9	129.70	6.327		
5,900.0	5,743.7	5,728.7	5,728.7	27.5	114.6	125.10	-142.1	-546.1	821.1	689.3	131.80	6.230		
6,000.0	5,843.7	5,828.7	5,828.7	27.6	116.6	125.10	-142.1	-546.1	821.1	687.1	133.95	6.130		
6,100.0	5,943.7	5,928.7	5,928.7	27.7	118.6	-55.06	-142.1	-546.1	820.1	684.2	135.86	6.036		
6,200.0	6,042.7	6,027.7	6,027.7	27.7	120.6	-56.29	-142.1	-546.1	812.6	675.7	136.84	5.938		
6,300.0	6,139.2	6,124.2	6,124.2	27.7	122.5	-58.73	-142.1	-546.1	798.2	661.0	137.18	5.819		
6,400.0	6,231.5	6,216.5	6,216.5	27.7	124.3	-62.36	-142.1	-546.1	778.2	640.7	137.48	5.660		
6,500.0	6,317.9	6,302.9	6,302.9	27.7	126.1	-67.05	-142.1	-546.1	754.1	615.6	138.46	5.447		
6,600.0	6,397.1	6,382.1	6,382.1	27.6	127.6	-72.53	-142.1	-546.1	728.4	588.0	140.47	5.186		
6,700.0	6,467.6	6,452.6	6,452.6	27.6	129.1	-78.33	-142.1	-546.1	704.1	560.9	143.25	4.915		
6,800.0	6,528.3	6,513.3	6,513.3	27.5	130.3	-83.81	-142.1	-546.1	684.5	538.5	145.99	4.689		
6,900.0	6,578.1	6,563.1	6,563.1	27.5	131.3	-88.32	-142.1	-546.1	673.3	525.2	148.09	4.547		
6,949.1	6,598.3	6,583.3	6,583.3	27.6	131.7	-90.00	-142.1	-546.1	671.8	522.9	148.87	4.513		
7,000.0	6,616.2	6,601.2	6,601.2	27.6	132.0	-91.30	-142.1	-546.1	673.5	524.0	149.51	4.505		
7,100.0	6,641.9	6,626.9	6,626.9	27.8	132.5	-92.38	-142.1	-546.1	687.1	536.4	150.66	4.561		
7,200.0	6,654.8	6,639.8	6,639.8	28.0	132.8	-91.32	-142.1	-546.1	714.5	562.7	151.76	4.708		
7,300.0	6,656.1	6,641.1	6,641.1	28.4	132.8	-89.86	-142.1	-546.1	754.4	601.7	152.67	4.942		
7,400.0	6,655.6	6,640.6	6,640.6	29.0	132.8	-89.82	-142.1	-546.1	804.9	651.1	153.74	5.235		
7,500.0	6,655.1	6,640.1	6,640.1	29.6	132.8	-89.77	-142.1	-546.1	864.0	709.0	154.92	5.577		
7,600.0	6,654.6	6,639.6	6,639.6	30.4	132.8	-89.73	-142.1	-546.1	930.1	773.9	156.20	5.954		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28M-203
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28M-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28M-203	<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>	Plan #2 (4-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design				Existing Wells - Churchill 28J-HZ Sec.28-T5N-R64W - Churchill 2-7I (Exist) - Wellbore #1 - Wellbore #1									Offset Site Error:		0.0 ft		
Survey Program: 514-MWD															Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)						
6,700.0	6,467.6	6,519.4	6,450.0	27.6	19.8	12.16	-889.2	-1,355.6	967.8	934.3	33.50	28.891					
6,800.0	6,528.3	6,581.7	6,512.3	27.5	19.9	15.33	-890.2	-1,353.8	890.1	859.5	30.52	29.164					
6,900.0	6,578.1	6,634.6	6,565.2	27.5	20.0	20.68	-891.0	-1,352.3	805.0	776.9	28.17	28.581					
7,000.0	6,616.2	6,675.1	6,605.6	27.6	20.1	30.23	-891.5	-1,351.2	714.4	686.6	27.79	25.706					
7,100.0	6,641.9	6,702.5	6,633.1	27.8	20.1	47.90	-891.8	-1,350.5	619.9	588.6	31.34	19.778					
7,200.0	6,654.8	6,716.7	6,647.2	28.0	20.1	75.68	-891.9	-1,350.2	523.6	487.1	36.48	14.354					
7,300.0	6,656.1	6,718.9	6,649.5	28.4	20.1	90.61	-892.0	-1,350.1	427.6	390.2	37.43	11.423					
7,400.0	6,655.6	6,719.4	6,649.9	29.0	20.1	90.80	-892.0	-1,350.1	333.9	295.4	38.50	8.673					
7,500.0	6,655.1	6,719.8	6,650.4	29.6	20.1	91.00	-892.0	-1,350.1	245.3	205.6	39.69	6.182					
7,600.0	6,654.6	6,720.3	6,650.8	30.4	20.1	91.19	-892.0	-1,350.1	169.9	128.9	40.97	4.146					
7,700.0	6,654.1	6,720.7	6,651.3	31.3	20.1	91.38	-892.0	-1,350.1	132.4	90.1	42.33	3.128					
7,706.7	6,654.1	6,720.7	6,651.3	31.4	20.1	91.39	-892.0	-1,350.1	132.2	89.8	42.42	3.117	CC, ES, SF				
7,800.0	6,653.6	6,721.1	6,651.7	32.3	20.1	91.57	-892.0	-1,350.1	161.8	118.1	43.76	3.699					
7,900.0	6,653.1	6,721.6	6,652.1	33.5	20.1	91.75	-892.0	-1,350.1	234.2	189.0	45.25	5.177					
8,000.0	6,652.6	6,722.0	6,652.5	34.7	20.1	91.94	-892.0	-1,350.0	321.8	275.0	46.78	6.878					
8,100.0	6,652.2	6,722.4	6,653.0	36.0	20.1	92.12	-892.0	-1,350.0	415.0	366.6	48.36	8.581					
8,200.0	6,651.7	6,722.8	6,653.4	37.3	20.1	92.30	-892.0	-1,350.0	510.8	460.8	49.97	10.220					
8,300.0	6,651.2	6,723.3	6,653.8	38.8	20.1	92.49	-892.0	-1,350.0	607.9	556.3	51.62	11.777					
8,400.0	6,650.7	6,723.7	6,654.2	40.2	20.1	92.66	-892.0	-1,350.0	705.8	652.6	53.29	13.246					
8,500.0	6,650.2	6,724.1	6,654.6	41.7	20.1	92.84	-892.0	-1,350.0	804.3	749.3	54.98	14.630					
8,600.0	6,649.7	6,724.5	6,655.0	43.3	20.1	93.02	-892.0	-1,350.0	903.1	846.4	56.69	15.931					



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28M-203
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28M-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28M-203	<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>	Plan #2 (4-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4635.0ft (RKB - 15')

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Chesnut 28M-203

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.61°





<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28M-203
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28M-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4635.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28M-203	<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>	Plan #2 (4-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4635.0ft (RKB - 15')

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Coordinates are relative to: Chesnut 28M-203

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