

# PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Chesnut 28U-403**

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

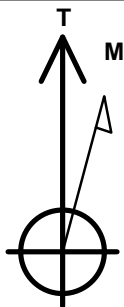
Ground Elevation: 4619.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1381411.67	3265175.86	40.376470	-104.548190	

RKB - 15' WELL @ 4634.0ft (RKB - 15')

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 380'FNL & 820'FEL, SEC. 28		0.0	0.0	Point
BHL 2130'FNL & 200'FEL, SEC. 33	6777.0	-7023.9	643.8	Point



Azimuths to True North  
Magnetic North: 8.39°

Magnetic Field  
Strength: 52866.5snT  
Dip Angle: 66.98°  
Date: 1/30/2014  
Model: IGRF2010

## ANNOTATIONS

TVD	MD	Annotation
1000.0	1000.0	KOP #1
6024.7	6081.3	KOP #2
6798.5	7399.1	End of Build

Chesnut 28U-HZ Pad Sec.28-T5N-R64W  
Chesnut 28U-403  
Plan #1 (2-13-14)  
7:44, February 14 2014

South(-)/North(+) (2400 ft/in)

**SHL 380'FNL & 820'FEL, SEC. 28**

**Casing Pt. - 734'FNL & 176'FEL, SEC.28**

P & A Farms 28-2 (Exist)

P & A Farms 28-1 (Exist)

**460' Setbacks**

**SEC.28-T5N-R64W**

**SEC.33-T5N-R64W (HALF SECTION)**

**460' Setbacks**

Hendricks 33-3 (Exist)

Hendricks 33-1 (Exist)

**BHL 2130'FNL & 200'FEL, SEC. 33**

West(-)/East(+) (2400 ft/in)

**ENSIGN**  
Directional

SHANNON

KOP #2

SHARON SPRINGS

End of Build

## 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	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1463.1	9.26	62.86	1461.1	17.0	33.2	2.00	62.86	-13.9	
4	5493.4	9.26	62.86	5438.9	313.0	610.6	0.00	0.00	-255.9	
5	5956.6	0.00	0.00	5900.0	330.0	643.8	2.00	180.00	-269.9	
6	6081.3	0.00	0.00	6024.7	330.0	643.8	0.00	0.00	-269.9	
7	7201.3	84.00	180.00	6784.5	-354.1	643.8	7.50	180.00	411.4	
8	7275.3	84.00	180.00	6792.2	-427.7	643.8	0.00	0.00	484.7	
9	7399.1	90.19	180.00	6798.5	-551.3	643.8	5.00	0.00	607.7	
10	13871.7	90.19	180.00	6777.0	-7023.9	643.8	0.00	0.00	7053.3	BHL 2130'FNL & 200'FEL, SEC. 33

**BHL 2130'FNL & 200'FEL, SEC. 33**

Vertical Section at 174.76° (800 ft/in)



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.28-T5N-R64W**

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

**Chesnut 28U-403**

**Wellbore #1**

**Plan: Plan #1 (2-13-14)**

## **Standard Planning Report**

**14 February, 2014**

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28U-403
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Project:</b>	SEC.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Chesnut 28U-403	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (2-13-14)		

<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

Site						Chesnut 28U-HZ Pad Sec.28-T5N-R64W											
Site Position:						Northing:			1,381,414.04 ft			Latitude:			40.376480		
From:			Lat/Long			Easting:			3,265,056.03 ft			Longitude:			-104.548620		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.61 °		

Well	Chesnut 28U-403					
Well Position	+N/-S	-3.7 ft	Northing:	1,381,411.67 ft	Latitude:	40.376470
	+E/-W	119.8 ft	Easting:	3,265,175.86 ft	Longitude:	-104.548190
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,619.0 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	1/30/2014	8.39	66.98	52,866

<b>Design</b>	Plan #1 (2-13-14)			
<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	174.76

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,463.1	9.26	62.86	1,461.1	17.0	33.2	2.00	2.00	0.00	62.86	
5,493.4	9.26	62.86	5,438.9	313.0	610.6	0.00	0.00	0.00	0.00	
5,956.6	0.00	0.00	5,900.0	330.0	643.8	2.00	-2.00	0.00	180.00	
6,081.3	0.00	0.00	6,024.7	330.0	643.8	0.00	0.00	0.00	0.00	
7,201.3	84.00	180.00	6,784.5	-354.1	643.8	7.50	7.50	0.00	180.00	
7,275.3	84.00	180.00	6,792.2	-427.7	643.8	0.00	0.00	0.00	0.00	
7,399.1	90.19	180.00	6,798.5	-551.3	643.8	5.00	5.00	0.00	0.00	
13,871.7	90.19	180.00	6,777.0	-7,023.9	643.8	0.00	0.00	0.00	0.00	BHL 2130'FNL & 2C

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28U-403
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Project:</b>	SEC.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Chesnut 28U-403	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (2-13-14)		

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 &amp; 820°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
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>KOP #1</b>									
1,100.0	2.00	62.86	1,100.0	0.8	1.6	-0.7	2.00	2.00	0.00
1,200.0	4.00	62.86	1,199.8	3.2	6.2	-2.6	2.00	2.00	0.00
1,300.0	6.00	62.86	1,299.5	7.2	14.0	-5.9	2.00	2.00	0.00
1,400.0	8.00	62.86	1,398.7	12.7	24.8	-10.4	2.00	2.00	0.00
1,463.1	9.26	62.86	1,461.1	17.0	33.2	-13.9	2.00	2.00	0.00
1,500.0	9.26	62.86	1,497.5	19.7	38.5	-16.1	0.00	0.00	0.00
1,600.0	9.26	62.86	1,596.2	27.1	52.8	-22.2	0.00	0.00	0.00
1,700.0	9.26	62.86	1,694.9	34.4	67.2	-28.2	0.00	0.00	0.00
1,800.0	9.26	62.86	1,793.6	41.8	81.5	-34.2	0.00	0.00	0.00
1,900.0	9.26	62.86	1,892.3	49.1	95.8	-40.2	0.00	0.00	0.00
2,000.0	9.26	62.86	1,991.0	56.5	110.1	-46.2	0.00	0.00	0.00
2,100.0	9.26	62.86	2,089.7	63.8	124.5	-52.2	0.00	0.00	0.00
2,200.0	9.26	62.86	2,188.4	71.1	138.8	-58.2	0.00	0.00	0.00
2,300.0	9.26	62.86	2,287.1	78.5	153.1	-64.2	0.00	0.00	0.00
2,400.0	9.26	62.86	2,385.8	85.8	167.4	-70.2	0.00	0.00	0.00
2,500.0	9.26	62.86	2,484.5	93.2	181.8	-76.2	0.00	0.00	0.00
2,600.0	9.26	62.86	2,583.2	100.5	196.1	-82.2	0.00	0.00	0.00
2,700.0	9.26	62.86	2,681.9	107.9	210.4	-88.2	0.00	0.00	0.00
2,800.0	9.26	62.86	2,780.6	115.2	224.7	-94.2	0.00	0.00	0.00
2,900.0	9.26	62.86	2,879.2	122.5	239.1	-100.2	0.00	0.00	0.00
3,000.0	9.26	62.86	2,977.9	129.9	253.4	-106.2	0.00	0.00	0.00
3,100.0	9.26	62.86	3,076.6	137.2	267.7	-112.2	0.00	0.00	0.00
3,200.0	9.26	62.86	3,175.3	144.6	282.0	-118.2	0.00	0.00	0.00
3,300.0	9.26	62.86	3,274.0	151.9	296.4	-124.2	0.00	0.00	0.00
3,400.0	9.26	62.86	3,372.7	159.3	310.7	-130.2	0.00	0.00	0.00
3,444.9	9.26	62.86	3,417.0	162.5	317.1	-132.9	0.00	0.00	0.00
<b>PARKMAN</b>									
3,500.0	9.26	62.86	3,471.4	166.6	325.0	-136.2	0.00	0.00	0.00
3,600.0	9.26	62.86	3,570.1	173.9	339.3	-142.2	0.00	0.00	0.00
3,700.0	9.26	62.86	3,668.8	181.3	353.7	-148.2	0.00	0.00	0.00
3,800.0	9.26	62.86	3,767.5	188.6	368.0	-154.2	0.00	0.00	0.00
3,900.0	9.26	62.86	3,866.2	196.0	382.3	-160.3	0.00	0.00	0.00
4,000.0	9.26	62.86	3,964.9	203.3	396.6	-166.3	0.00	0.00	0.00
4,100.0	9.26	62.86	4,063.6	210.6	411.0	-172.3	0.00	0.00	0.00
4,161.2	9.26	62.86	4,124.0	215.1	419.7	-175.9	0.00	0.00	0.00
<b>SUSSEX</b>									
4,200.0	9.26	62.86	4,162.3	218.0	425.3	-178.3	0.00	0.00	0.00
4,300.0	9.26	62.86	4,261.0	225.3	439.6	-184.3	0.00	0.00	0.00
4,400.0	9.26	62.86	4,359.7	232.7	453.9	-190.3	0.00	0.00	0.00

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<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Project:</b>	SEC.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Chesnut 28U-403	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (2-13-14)		

## 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	9.26	62.86	4,458.4	240.0	468.3	-196.3	0.00	0.00	0.00
4,600.0	9.26	62.86	4,557.1	247.4	482.6	-202.3	0.00	0.00	0.00
4,700.0	9.26	62.86	4,655.8	254.7	496.9	-208.3	0.00	0.00	0.00
4,800.0	9.26	62.86	4,754.5	262.0	511.2	-214.3	0.00	0.00	0.00
4,856.3	9.26	62.86	4,810.0	266.2	519.3	-217.7	0.00	0.00	0.00
<b>SHANNON</b>									
4,900.0	9.26	62.86	4,853.2	269.4	525.6	-220.3	0.00	0.00	0.00
5,000.0	9.26	62.86	4,951.9	276.7	539.9	-226.3	0.00	0.00	0.00
5,100.0	9.26	62.86	5,050.6	284.1	554.2	-232.3	0.00	0.00	0.00
5,200.0	9.26	62.86	5,149.3	291.4	568.5	-238.3	0.00	0.00	0.00
5,300.0	9.26	62.86	5,248.0	298.8	582.8	-244.3	0.00	0.00	0.00
5,400.0	9.26	62.86	5,346.6	306.1	597.2	-250.3	0.00	0.00	0.00
5,493.4	9.26	62.86	5,438.9	313.0	610.6	-255.9	0.00	0.00	0.00
5,500.0	9.13	62.86	5,445.3	313.4	611.5	-256.3	2.00	-2.00	0.00
5,600.0	7.13	62.86	5,544.3	319.9	624.1	-261.6	2.00	-2.00	0.00
5,700.0	5.13	62.86	5,643.8	324.8	633.6	-265.6	2.00	-2.00	0.00
5,800.0	3.13	62.86	5,743.5	328.0	640.0	-268.3	2.00	-2.00	0.00
5,900.0	1.13	62.86	5,843.4	329.7	643.3	-269.7	2.00	-2.00	0.00
5,956.6	0.00	0.00	5,900.0	330.0	643.8	-269.9	2.00	-2.00	0.00
6,000.0	0.00	0.00	5,943.4	330.0	643.8	-269.9	0.00	0.00	0.00
6,081.3	0.00	0.00	6,024.7	330.0	643.8	-269.9	0.00	0.00	0.00
<b>KOP #2</b>									
6,100.0	1.40	180.00	6,043.4	329.8	643.8	-269.6	7.51	7.51	0.00
6,200.0	8.90	180.00	6,142.9	320.8	643.8	-260.7	7.50	7.50	0.00
6,300.0	16.40	180.00	6,240.4	298.9	643.8	-238.9	7.50	7.50	0.00
6,400.0	23.90	180.00	6,334.3	264.5	643.8	-204.6	7.50	7.50	0.00
6,500.0	31.40	180.00	6,422.8	218.1	643.8	-158.4	7.50	7.50	0.00
6,506.2	31.87	180.00	6,428.0	214.9	643.8	-155.2	7.50	7.50	0.00
<b>SHARON SPRINGS</b>									
6,600.0	38.90	180.00	6,504.5	160.6	643.8	-101.1	7.50	7.50	0.00
6,700.0	46.40	180.00	6,578.0	92.8	643.8	-33.7	7.50	7.50	0.00
6,800.0	53.90	180.00	6,642.0	16.1	643.8	42.7	7.50	7.50	0.00
6,900.0	61.40	180.00	6,695.5	-68.3	643.8	126.8	7.50	7.50	0.00
7,000.0	68.90	180.00	6,737.4	-159.0	643.8	217.1	7.50	7.50	0.00
7,100.0	76.40	180.00	6,767.2	-254.4	643.8	312.1	7.50	7.50	0.00
7,200.0	83.90	180.00	6,784.3	-352.8	643.8	410.1	7.50	7.50	0.00
7,201.3	84.00	180.00	6,784.5	-354.1	643.8	411.4	7.41	7.41	0.00
<b>7"</b>									
7,275.3	84.00	180.00	6,792.2	-427.7	643.8	484.7	0.00	0.00	0.00
7,300.0	85.24	180.00	6,794.5	-452.3	643.8	509.2	5.00	5.00	0.00
7,399.1	90.19	180.00	6,798.5	-551.3	643.8	607.7	5.00	5.00	0.00
<b>End of Build</b>									
7,400.0	90.19	180.00	6,798.5	-552.2	643.8	608.6	0.00	0.00	0.00
7,500.0	90.19	180.00	6,798.1	-652.2	643.8	708.2	0.00	0.00	0.00
7,600.0	90.19	180.00	6,797.8	-752.2	643.8	807.8	0.00	0.00	0.00
7,700.0	90.19	180.00	6,797.5	-852.2	643.8	907.4	0.00	0.00	0.00
7,800.0	90.19	180.00	6,797.1	-952.2	643.8	1,007.0	0.00	0.00	0.00
7,900.0	90.19	180.00	6,796.8	-1,052.2	643.8	1,106.6	0.00	0.00	0.00
8,000.0	90.19	180.00	6,796.5	-1,152.2	643.8	1,206.1	0.00	0.00	0.00
8,100.0	90.19	180.00	6,796.1	-1,252.2	643.8	1,305.7	0.00	0.00	0.00
8,200.0	90.19	180.00	6,795.8	-1,352.2	643.8	1,405.3	0.00	0.00	0.00
8,300.0	90.19	180.00	6,795.5	-1,452.2	643.8	1,504.9	0.00	0.00	0.00

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<b>Project:</b>	SEC.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Chesnut 28U-403	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (2-13-14)		

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)
8,400.0	90.19	180.00	6,795.1	-1,552.2	643.8	1,604.5	0.00	0.00	0.00
8,500.0	90.19	180.00	6,794.8	-1,652.2	643.8	1,704.0	0.00	0.00	0.00
8,600.0	90.19	180.00	6,794.5	-1,752.2	643.8	1,803.6	0.00	0.00	0.00
8,700.0	90.19	180.00	6,794.2	-1,852.2	643.8	1,903.2	0.00	0.00	0.00
8,800.0	90.19	180.00	6,793.8	-1,952.2	643.8	2,002.8	0.00	0.00	0.00
8,900.0	90.19	180.00	6,793.5	-2,052.2	643.8	2,102.4	0.00	0.00	0.00
9,000.0	90.19	180.00	6,793.2	-2,152.2	643.8	2,202.0	0.00	0.00	0.00
9,100.0	90.19	180.00	6,792.8	-2,252.2	643.8	2,301.5	0.00	0.00	0.00
9,200.0	90.19	180.00	6,792.5	-2,352.2	643.8	2,401.1	0.00	0.00	0.00
9,300.0	90.19	180.00	6,792.2	-2,452.2	643.8	2,500.7	0.00	0.00	0.00
9,400.0	90.19	180.00	6,791.8	-2,552.2	643.8	2,600.3	0.00	0.00	0.00
9,500.0	90.19	180.00	6,791.5	-2,652.2	643.8	2,699.9	0.00	0.00	0.00
9,600.0	90.19	180.00	6,791.2	-2,752.2	643.8	2,799.4	0.00	0.00	0.00
9,700.0	90.19	180.00	6,790.8	-2,852.2	643.8	2,899.0	0.00	0.00	0.00
9,800.0	90.19	180.00	6,790.5	-2,952.2	643.8	2,998.6	0.00	0.00	0.00
9,900.0	90.19	180.00	6,790.2	-3,052.2	643.8	3,098.2	0.00	0.00	0.00
10,000.0	90.19	180.00	6,789.8	-3,152.2	643.8	3,197.8	0.00	0.00	0.00
10,100.0	90.19	180.00	6,789.5	-3,252.2	643.8	3,297.4	0.00	0.00	0.00
10,200.0	90.19	180.00	6,789.2	-3,352.2	643.8	3,396.9	0.00	0.00	0.00
10,300.0	90.19	180.00	6,788.8	-3,452.2	643.8	3,496.5	0.00	0.00	0.00
10,400.0	90.19	180.00	6,788.5	-3,552.2	643.8	3,596.1	0.00	0.00	0.00
10,500.0	90.19	180.00	6,788.2	-3,652.2	643.8	3,695.7	0.00	0.00	0.00
10,600.0	90.19	180.00	6,787.8	-3,752.2	643.8	3,795.3	0.00	0.00	0.00
10,700.0	90.19	180.00	6,787.5	-3,852.2	643.8	3,894.8	0.00	0.00	0.00
10,800.0	90.19	180.00	6,787.2	-3,952.2	643.8	3,994.4	0.00	0.00	0.00
10,900.0	90.19	180.00	6,786.9	-4,052.2	643.8	4,094.0	0.00	0.00	0.00
11,000.0	90.19	180.00	6,786.5	-4,152.2	643.8	4,193.6	0.00	0.00	0.00
11,100.0	90.19	180.00	6,786.2	-4,252.2	643.8	4,293.2	0.00	0.00	0.00
11,200.0	90.19	180.00	6,785.9	-4,352.2	643.8	4,392.8	0.00	0.00	0.00
11,300.0	90.19	180.00	6,785.5	-4,452.2	643.8	4,492.3	0.00	0.00	0.00
11,400.0	90.19	180.00	6,785.2	-4,552.2	643.8	4,591.9	0.00	0.00	0.00
11,500.0	90.19	180.00	6,784.9	-4,652.2	643.8	4,691.5	0.00	0.00	0.00
11,600.0	90.19	180.00	6,784.5	-4,752.2	643.8	4,791.1	0.00	0.00	0.00
11,700.0	90.19	180.00	6,784.2	-4,852.2	643.8	4,890.7	0.00	0.00	0.00
11,800.0	90.19	180.00	6,783.9	-4,952.2	643.8	4,990.2	0.00	0.00	0.00
11,900.0	90.19	180.00	6,783.5	-5,052.2	643.8	5,089.8	0.00	0.00	0.00
12,000.0	90.19	180.00	6,783.2	-5,152.2	643.8	5,189.4	0.00	0.00	0.00
12,100.0	90.19	180.00	6,782.9	-5,252.2	643.8	5,289.0	0.00	0.00	0.00
12,200.0	90.19	180.00	6,782.5	-5,352.2	643.8	5,388.6	0.00	0.00	0.00
12,300.0	90.19	180.00	6,782.2	-5,452.2	643.8	5,488.2	0.00	0.00	0.00
12,400.0	90.19	180.00	6,781.9	-5,552.2	643.8	5,587.7	0.00	0.00	0.00
12,500.0	90.19	180.00	6,781.5	-5,652.2	643.8	5,687.3	0.00	0.00	0.00
12,600.0	90.19	180.00	6,781.2	-5,752.2	643.8	5,786.9	0.00	0.00	0.00
12,700.0	90.19	180.00	6,780.9	-5,852.2	643.8	5,886.5	0.00	0.00	0.00
12,800.0	90.19	180.00	6,780.6	-5,952.2	643.8	5,986.1	0.00	0.00	0.00
12,900.0	90.19	180.00	6,780.2	-6,052.2	643.8	6,085.7	0.00	0.00	0.00
13,000.0	90.19	180.00	6,779.9	-6,152.2	643.8	6,185.2	0.00	0.00	0.00
13,100.0	90.19	180.00	6,779.6	-6,252.2	643.8	6,284.8	0.00	0.00	0.00
13,200.0	90.19	180.00	6,779.2	-6,352.2	643.8	6,384.4	0.00	0.00	0.00
13,300.0	90.19	180.00	6,778.9	-6,452.2	643.8	6,484.0	0.00	0.00	0.00
13,400.0	90.19	180.00	6,778.6	-6,552.1	643.8	6,583.6	0.00	0.00	0.00
13,500.0	90.19	180.00	6,778.2	-6,652.1	643.8	6,683.1	0.00	0.00	0.00
13,600.0	90.19	180.00	6,777.9	-6,752.1	643.8	6,782.7	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28U-403
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Project:</b>	SEC.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Chesnut 28U-403	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (2-13-14)		

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)
13,700.0	90.19	180.00	6,777.6	-6,852.1	643.8	6,882.3	0.00	0.00	0.00
13,800.0	90.19	180.00	6,777.2	-6,952.1	643.8	6,981.9	0.00	0.00	0.00
13,871.7	90.19	180.00	6,777.0	-7,023.9	643.8	7,053.3	0.00	0.00	0.00
BHL 2130'FNL & 200'FEL, SEC. 33									

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,201.3	6,784.5	7"	7	7-1/2

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,444.9	3,417.0	PARKMAN		0.00	
4,161.2	4,124.0	SUSSEX		0.00	
4,856.3	4,810.0	SHANNON		0.00	
6,506.2	6,428.0	SHARON SPRINGS		0.00	

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,000.0	1,000.0	0.0	0.0	KOP #1
6,081.3	6,024.7	330.0	643.8	KOP #2
7,399.1	6,798.5	-551.3	643.8	End of Build



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.28-T5N-R64W**

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

**Chesnut 28U-403**

**Wellbore #1**

**Plan #1 (2-13-14)**

## **Anticollision Report**

**14 February, 2014**





<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #1 (2-13-14)
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria
<b>Interpolation Method:</b>	MD Interval 100.0ft
<b>Depth Range:</b>	Unlimited
<b>Results Limited by:</b>	Maximum center-center distance of 10,000.0ft
<b>Warning Levels Evaluated at:</b>	2.00 Sigma
<b>Error Model:</b>	ISCWSA
<b>Scan Method:</b>	Closest Approach 3D
<b>Error Surface:</b>	Elliptical Conic

Survey Tool Program		Date	2/13/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	13,871.7	Plan #1 (2-13-14) (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Chesnut 28U-HZ Pad Sec.28-T5N-R64W						
Chesnut 28R-323 - Wellbore #1 - Plan #1 (2-13-14)	1,000.0	1,001.0	91.9	87.7	21.518	CC, ES
Chesnut 28R-323 - Wellbore #1 - Plan #1 (2-13-14)	13,871.7	13,814.5	694.5	423.0	2.558	SF
Chesnut 28R-403 - Wellbore #1 - Plan #1 (2-13-14)	966.3	967.3	119.9	115.7	29.082	CC
Chesnut 28R-403 - Wellbore #1 - Plan #1 (2-13-14)	1,000.0	1,000.0	119.9	115.6	28.068	ES
Chesnut 28R-403 - Wellbore #1 - Plan #1 (2-13-14)	13,871.7	13,841.1	1,059.0	785.2	3.867	SF
Chesnut 28R-423 - Wellbore #1 - Plan #1 (2-13-14)	1,000.0	1,001.0	61.3	57.0	14.346	CC, ES
Chesnut 28R-423 - Wellbore #1 - Plan #1 (2-13-14)	13,871.7	13,842.1	362.5	88.7	1.324	Level 3, SF
Chesnut 28U-243 - Wellbore #1 - Plan #1 (2-13-14)	1,000.0	1,001.0	30.6	26.4	7.173	CC
Chesnut 28U-243 - Wellbore #1 - Plan #1 (2-13-14)	13,871.7	13,755.1	278.7	17.6	1.067	Level 2, ES, SF
Existing Wells - Chesnut Pads - Sec.28-T5N-R64W						
Hall 28-1 (Exist) - Wellbore #1 - Wellbore #1	8,133.8	6,777.0	788.7	623.1	4.763	CC, ES
Hall 28-1 (Exist) - Wellbore #1 - Wellbore #1	8,200.0	6,776.8	791.5	624.8	4.748	SF
Hall 28-2 (Exist) - Wellbore #1 - Wellbore #1	1,324.5	1,304.8	312.3	283.4	10.789	CC
Hall 28-2 (Exist) - Wellbore #1 - Wellbore #1	1,600.0	1,577.2	315.0	279.9	8.964	ES
Hall 28-2 (Exist) - Wellbore #1 - Wellbore #1	7,115.6	6,751.7	485.0	333.3	3.197	SF
Hendricks 33-1 (Exist) - Wellbore #1 - Wellbore #1	13,744.2	6,801.4	462.6	192.2	1.711	CC, ES, SF
Hendricks 33-3 (Exist) - Wellbore #1 - Wellbore #1	12,090.3	6,791.9	532.3	293.6	2.229	CC
Hendricks 33-3 (Exist) - Wellbore #1 - Wellbore #1	12,100.0	6,791.9	532.4	293.5	2.228	ES, SF
P & A Farms 28-1 (Exist) - Wellbore #1 - Wellbore #1	10,877.1	6,805.9	568.6	352.5	2.631	CC, ES
P & A Farms 28-1 (Exist) - Wellbore #1 - Wellbore #1	10,900.0	6,805.9	569.0	352.5	2.628	SF
P & A Farms 28-2 (Exist) - Wellbore #1 - Wellbore #1	9,780.5	6,790.6	914.1	718.8	4.681	CC
P & A Farms 28-2 (Exist) - Wellbore #1 - Wellbore #1	9,800.0	6,790.5	914.3	718.7	4.674	ES
P & A Farms 28-2 (Exist) - Wellbore #1 - Wellbore #1	9,900.0	6,790.2	921.9	724.4	4.668	SF

<b>Offset Design</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-323 - Wellbore #1 - Plan #1 (2-13-14)											<b>Offset Site Error:</b>	0.0 ft
<b>Survey Program:</b>	0-MWD											<b>Offset Well Error:</b>	0.0 ft
Reference	Offset	Semi Major Axis		Distance									
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
0.0	0.0	1.0	1.0	0.0	0.0	-90.00	0.0	-91.9	91.9	91.9	0.00	N/A	
100.0	100.0	101.0	101.0	0.1	0.1	-90.00	0.0	-91.9	91.9	91.7	0.23	405.016	
200.0	200.0	201.0	201.0	0.3	0.3	-90.00	0.0	-91.9	91.9	91.3	0.68	135.902	
300.0	300.0	301.0	301.0	0.6	0.6	-90.00	0.0	-91.9	91.9	90.8	1.13	81.650	

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 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-323 - Wellbore #1 - Plan #1 (2-13-14)												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	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
400.0	400.0	401.0	401.0	0.8	0.8	-90.00	0.0	-91.9	91.9	90.4	1.58	58.355	
500.0	500.0	501.0	501.0	1.0	1.0	-90.00	0.0	-91.9	91.9	89.9	2.03	45.401	
600.0	600.0	601.0	601.0	1.2	1.2	-90.00	0.0	-91.9	91.9	89.5	2.47	37.154	
700.0	700.0	701.0	701.0	1.5	1.5	-90.00	0.0	-91.9	91.9	89.0	2.92	31.442	
800.0	800.0	801.0	801.0	1.7	1.7	-90.00	0.0	-91.9	91.9	88.6	3.37	27.253	
900.0	900.0	901.0	901.0	1.9	1.9	-90.00	0.0	-91.9	91.9	88.1	3.82	24.049	
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	-90.00	0.0	-91.9	91.9	87.7	4.27	21.518 CC, ES	
1,100.0	1,100.0	1,101.0	1,101.0	2.4	2.4	-153.34	0.0	-91.9	93.5	88.8	4.71	19.836	
1,200.0	1,199.8	1,200.8	1,200.8	2.6	2.6	-154.67	0.0	-91.9	98.2	93.1	5.15	19.084	
1,300.0	1,299.5	1,300.5	1,300.5	2.8	2.8	-156.62	0.0	-91.9	106.2	100.6	5.58	19.035	
1,400.0	1,398.7	1,399.7	1,399.7	3.0	3.0	-158.89	0.0	-91.9	117.4	111.4	6.00	19.560	
1,500.0	1,497.5	1,498.5	1,498.5	3.3	3.3	-161.24	0.0	-91.9	132.0	125.5	6.44	20.502	
1,600.0	1,596.2	1,597.2	1,597.2	3.6	3.5	-163.25	0.0	-91.9	147.3	140.4	6.88	21.404	
1,700.0	1,694.9	1,695.9	1,695.9	3.9	3.7	-164.88	0.0	-91.9	162.8	155.5	7.33	22.206	
1,800.0	1,793.6	1,794.6	1,794.6	4.2	3.9	-166.23	0.0	-91.9	178.4	170.6	7.78	22.922	
1,900.0	1,892.3	1,893.3	1,893.3	4.6	4.1	-167.36	0.0	-91.9	194.1	185.8	8.24	23.563	
2,000.0	1,991.0	1,992.0	1,992.0	4.9	4.4	-168.32	0.0	-91.9	209.8	201.1	8.69	24.139	
2,100.0	2,089.7	2,093.7	2,093.7	5.2	4.6	-168.82	1.5	-91.7	225.0	215.9	9.16	24.576	
2,200.0	2,188.4	2,196.2	2,196.0	5.6	4.8	-168.45	6.6	-91.0	238.8	229.1	9.62	24.811	
2,300.0	2,287.1	2,298.7	2,298.2	5.9	5.1	-167.35	15.4	-89.7	251.1	241.0	10.10	24.866	
2,400.0	2,385.8	2,397.8	2,396.8	6.3	5.3	-166.03	25.6	-88.3	262.9	252.3	10.58	24.851	
2,500.0	2,484.5	2,497.0	2,495.4	6.6	5.5	-164.83	35.7	-86.8	274.8	263.8	11.07	24.828	
2,600.0	2,583.2	2,596.1	2,594.0	7.0	5.8	-163.74	45.9	-85.3	286.9	275.3	11.57	24.800	
2,700.0	2,681.9	2,695.2	2,692.6	7.4	6.0	-162.72	56.0	-83.9	299.0	286.9	12.07	24.767	
2,800.0	2,780.6	2,794.4	2,791.2	7.7	6.2	-161.79	66.2	-82.4	311.2	298.6	12.58	24.730	
2,900.0	2,879.2	2,893.5	2,889.8	8.1	6.5	-160.93	76.4	-81.0	323.5	310.4	13.10	24.690	
3,000.0	2,977.9	2,992.6	2,988.4	8.4	6.7	-160.13	86.5	-79.5	335.8	322.2	13.62	24.648	
3,100.0	3,076.6	3,091.8	3,086.9	8.8	7.0	-159.39	96.7	-78.0	348.2	334.1	14.15	24.605	
3,200.0	3,175.3	3,190.9	3,185.5	9.2	7.3	-158.70	106.8	-76.6	360.7	346.0	14.69	24.560	
3,300.0	3,274.0	3,290.0	3,284.1	9.5	7.5	-158.06	117.0	-75.1	373.2	358.0	15.22	24.516	
3,400.0	3,372.7	3,389.1	3,382.7	9.9	7.8	-157.45	127.2	-73.6	385.8	370.0	15.76	24.471	
3,500.0	3,471.4	3,488.3	3,481.3	10.3	8.1	-156.89	137.3	-72.2	398.4	382.1	16.31	24.426	
3,600.0	3,570.1	3,587.4	3,579.9	10.7	8.3	-156.36	147.5	-70.7	411.0	394.1	16.86	24.382	
3,700.0	3,668.8	3,686.5	3,678.5	11.0	8.6	-155.86	157.6	-69.3	423.7	406.3	17.41	24.339	
3,800.0	3,767.5	3,785.7	3,777.1	11.4	8.9	-155.39	167.8	-67.8	436.4	418.4	17.96	24.296	
3,900.0	3,866.2	3,884.8	3,875.7	11.8	9.1	-154.95	178.0	-66.3	449.1	430.6	18.52	24.254	
4,000.0	3,964.9	3,983.9	3,974.3	12.1	9.4	-154.53	188.1	-64.9	461.8	442.8	19.07	24.213	
4,100.0	4,063.6	4,083.0	4,072.9	12.5	9.7	-154.13	198.3	-63.4	474.6	455.0	19.63	24.173	
4,200.0	4,162.3	4,182.2	4,171.5	12.9	9.9	-153.76	208.4	-61.9	487.4	467.2	20.20	24.134	
4,300.0	4,261.0	4,281.3	4,270.1	13.2	10.2	-153.40	218.6	-60.5	500.2	479.4	20.76	24.095	
4,400.0	4,359.7	4,380.4	4,368.7	13.6	10.5	-153.06	228.7	-59.0	513.0	491.7	21.32	24.058	
4,500.0	4,458.4	4,479.6	4,467.3	14.0	10.8	-152.74	238.9	-57.6	525.9	504.0	21.89	24.022	
4,600.0	4,557.1	4,578.7	4,565.9	14.4	11.1	-152.43	249.1	-56.1	538.7	516.3	22.46	23.987	
4,700.0	4,655.8	4,677.8	4,664.5	14.7	11.3	-152.14	259.2	-54.6	551.6	528.6	23.03	23.953	
4,800.0	4,754.5	4,776.9	4,763.1	15.1	11.6	-151.86	269.4	-53.2	564.5	540.9	23.60	23.920	
4,900.0	4,853.2	4,876.1	4,861.7	15.5	11.9	-151.60	279.5	-51.7	577.4	553.2	24.17	23.888	
5,000.0	4,951.9	4,975.2	4,960.3	15.9	12.2	-151.34	289.7	-50.2	590.3	565.6	24.74	23.857	
5,100.0	5,050.6	5,074.3	5,058.9	16.2	12.4	-151.10	299.9	-48.8	603.2	577.9	25.32	23.827	
5,200.0	5,149.3	5,173.5	5,157.5	16.6	12.7	-150.86	310.0	-47.3	616.2	590.3	25.89	23.798	
5,300.0	5,248.0	5,271.3	5,254.9	17.0	13.0	-150.69	319.6	-45.9	629.2	602.7	26.44	23.795	
5,400.0	5,346.6	5,368.1	5,351.4	17.4	13.2	-150.78	326.2	-45.0	642.5	615.6	26.92	23.869	

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 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-323 - Wellbore #1 - Plan #1 (2-13-14)												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	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,500.0	5,445.3	5,464.5	5,447.8	17.7	13.4	-151.16	329.5	-44.5	656.2	628.9	27.34	23.998	
5,600.0	5,544.3	5,562.1	5,545.3	18.0	13.5	-151.81	330.0	-44.4	668.6	640.9	27.73	24.111	
5,700.0	5,643.8	5,661.5	5,644.8	18.2	13.7	-152.32	330.0	-44.4	678.0	649.9	28.11	24.120	
5,800.0	5,743.5	5,761.3	5,744.5	18.4	13.9	-152.66	330.0	-44.4	684.4	656.0	28.48	24.034	
5,900.0	5,843.4	5,861.2	5,844.4	18.6	14.1	-152.84	330.0	-44.4	687.7	658.9	28.82	23.863	
6,000.0	5,943.4	5,961.2	5,944.4	18.7	14.3	-90.00	330.0	-44.4	688.2	659.1	29.17	23.595	
6,048.4	5,991.9	6,009.6	5,992.9	18.8	14.4	90.02	330.0	-44.4	688.2	658.9	29.36	23.445	
6,100.0	6,043.4	6,061.2	6,044.4	18.9	14.5	89.95	329.2	-44.4	688.2	658.7	29.53	23.307	
6,200.0	6,142.9	6,160.9	6,143.4	19.0	14.6	89.76	318.0	-44.4	688.3	658.5	29.71	23.166	
6,300.0	6,240.4	6,260.4	6,239.9	19.0	14.6	89.58	294.1	-44.4	688.3	658.5	29.74	23.139	
6,400.0	6,334.3	6,359.6	6,332.2	19.0	14.6	89.40	258.0	-44.4	688.3	658.6	29.68	23.192	
6,500.0	6,422.8	6,458.5	6,418.9	18.9	14.5	89.24	210.4	-44.4	688.3	658.7	29.57	23.274	
6,600.0	6,504.5	6,557.2	6,498.4	18.8	14.5	89.09	152.2	-44.4	688.3	658.8	29.51	23.326	
6,700.0	6,578.0	6,655.6	6,569.7	18.8	14.5	88.95	84.3	-44.4	688.4	658.8	29.58	23.275	
6,800.0	6,642.0	6,753.9	6,631.6	18.7	14.7	88.83	8.0	-44.4	688.4	658.5	29.86	23.056	
6,900.0	6,695.5	6,852.0	6,683.0	18.8	15.0	88.74	-75.4	-44.4	688.4	658.0	30.43	22.622	
7,000.0	6,737.4	6,950.0	6,723.4	18.9	15.5	88.66	-164.6	-44.4	688.4	657.1	31.35	21.962	
7,100.0	6,767.2	7,047.9	6,751.9	19.2	16.2	88.60	-258.2	-44.4	688.4	655.8	32.63	21.101	
7,200.0	6,784.3	7,145.7	6,768.3	19.8	17.0	88.57	-354.6	-44.4	688.5	654.2	34.25	20.101	
7,300.0	6,794.5	7,243.3	6,772.2	20.5	18.0	88.07	-452.0	-44.4	688.6	652.5	36.16	19.043	
7,400.0	6,798.5	7,343.1	6,770.9	21.5	19.1	87.62	-551.8	-44.4	688.8	650.5	38.36	17.956	
7,500.0	6,798.1	7,443.1	6,769.6	22.6	20.4	87.54	-651.8	-44.4	688.9	648.1	40.82	16.875	
7,600.0	6,797.8	7,543.1	6,768.2	23.8	21.7	87.46	-751.8	-44.4	688.9	645.4	43.48	15.844	
7,700.0	6,797.5	7,643.1	6,766.9	25.1	23.2	87.38	-851.8	-44.4	689.0	642.7	46.30	14.879	
7,800.0	6,797.1	7,743.1	6,765.6	26.5	24.7	87.29	-951.7	-44.4	689.0	639.7	49.26	13.986	
7,900.0	6,796.8	7,843.1	6,764.3	27.9	26.2	87.21	-1,051.7	-44.4	689.1	636.7	52.34	13.166	
8,000.0	6,796.5	7,943.1	6,762.9	29.4	27.8	87.13	-1,151.7	-44.4	689.1	633.6	55.50	12.416	
8,100.0	6,796.1	8,043.1	6,761.6	31.0	29.5	87.05	-1,251.7	-44.4	689.2	630.4	58.75	11.730	
8,200.0	6,795.8	8,143.1	6,760.3	32.5	31.1	86.96	-1,351.7	-44.4	689.2	627.1	62.06	11.105	
8,300.0	6,795.5	8,243.0	6,759.0	34.2	32.8	86.88	-1,451.7	-44.4	689.3	623.8	65.43	10.534	
8,400.0	6,795.1	8,343.0	6,757.6	35.8	34.5	86.80	-1,551.7	-44.4	689.3	620.5	68.85	10.012	
8,500.0	6,794.8	8,443.0	6,756.3	37.5	36.3	86.72	-1,651.7	-44.4	689.4	617.1	72.30	9.535	
8,600.0	6,794.5	8,543.0	6,755.0	39.2	38.0	86.63	-1,751.6	-44.4	689.4	613.6	75.80	9.096	
8,700.0	6,794.2	8,643.0	6,753.7	40.9	39.8	86.55	-1,851.6	-44.4	689.5	610.2	79.32	8.693	
8,800.0	6,793.8	8,743.0	6,752.3	42.6	41.6	86.47	-1,951.6	-44.4	689.6	606.7	82.87	8.321	
8,900.0	6,793.5	8,843.0	6,751.0	44.4	43.4	86.39	-2,051.6	-44.4	689.6	603.2	86.44	7.978	
9,000.0	6,793.2	8,943.0	6,749.7	46.1	45.2	86.30	-2,151.6	-44.4	689.7	599.6	90.03	7.660	
9,100.0	6,792.8	9,043.0	6,748.4	47.9	47.0	86.22	-2,251.6	-44.4	689.7	596.1	93.64	7.366	
9,200.0	6,792.5	9,143.0	6,747.0	49.7	48.9	86.14	-2,351.6	-44.4	689.8	592.5	97.27	7.092	
9,300.0	6,792.2	9,243.0	6,745.7	51.5	50.7	86.06	-2,451.5	-44.4	689.9	589.0	100.91	6.837	
9,400.0	6,791.8	9,343.0	6,744.4	53.3	52.5	85.97	-2,551.5	-44.4	689.9	585.4	104.56	6.599	
9,500.0	6,791.5	9,443.0	6,743.0	55.1	54.4	85.89	-2,651.5	-44.4	690.0	581.8	108.22	6.376	
9,600.0	6,791.2	9,543.0	6,741.7	56.9	56.2	85.81	-2,751.5	-44.4	690.1	578.2	111.89	6.167	
9,700.0	6,790.8	9,643.0	6,740.4	58.8	58.1	85.73	-2,851.5	-44.4	690.2	574.6	115.57	5.972	
9,800.0	6,790.5	9,743.0	6,739.1	60.6	59.9	85.64	-2,951.5	-44.4	690.2	571.0	119.26	5.787	
9,900.0	6,790.2	9,843.0	6,737.7	62.4	61.8	85.56	-3,051.5	-44.4	690.3	567.4	122.96	5.614	
10,000.0	6,789.8	9,943.0	6,736.4	64.3	63.7	85.48	-3,151.4	-44.4	690.4	563.7	126.66	5.451	
10,100.0	6,789.5	10,043.0	6,735.1	66.1	65.5	85.40	-3,251.4	-44.4	690.5	560.1	130.37	5.296	
10,200.0	6,789.2	10,143.0	6,733.8	68.0	67.4	85.31	-3,351.4	-44.4	690.5	556.5	134.08	5.150	
10,300.0	6,788.8	10,243.0	6,732.4	69.8	69.3	85.23	-3,451.4	-44.4	690.6	552.8	137.80	5.012	
10,400.0	6,788.5	10,342.9	6,731.1	71.7	71.1	85.15	-3,551.4	-44.4	690.7	549.2	141.52	4.881	

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 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-323 - Wellbore #1 - Plan #1 (2-13-14)												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)			
10,500.0	6,788.2	10,442.9	6,729.8	73.5	73.0	85.07	-3,651.4	-44.4	690.8	545.6	145.25	4.756	
10,600.0	6,787.8	10,542.9	6,728.5	75.4	74.9	84.99	-3,751.4	-44.4	690.9	541.9	148.98	4.638	
10,700.0	6,787.5	10,642.9	6,727.1	77.3	76.8	84.90	-3,851.4	-44.4	691.0	538.3	152.71	4.525	
10,800.0	6,787.2	10,742.9	6,725.8	79.1	78.7	84.82	-3,951.3	-44.4	691.1	534.6	156.44	4.417	
10,900.0	6,786.9	10,842.9	6,724.5	81.0	80.6	84.74	-4,051.3	-44.4	691.2	531.0	160.18	4.315	
11,000.0	6,786.5	10,942.9	6,723.2	82.9	82.5	84.66	-4,151.3	-44.4	691.2	527.3	163.92	4.217	
11,100.0	6,786.2	11,042.9	6,721.8	84.7	84.3	84.57	-4,251.3	-44.4	691.3	523.7	167.66	4.123	
11,200.0	6,785.9	11,142.9	6,720.5	86.6	86.2	84.49	-4,351.3	-44.4	691.4	520.0	171.40	4.034	
11,300.0	6,785.5	11,242.9	6,719.2	88.5	88.1	84.41	-4,451.3	-44.4	691.5	516.4	175.15	3.948	
11,400.0	6,785.2	11,342.9	6,717.8	90.4	90.0	84.33	-4,551.3	-44.4	691.6	512.7	178.89	3.866	
11,500.0	6,784.9	11,442.9	6,716.5	92.3	91.9	84.25	-4,651.2	-44.4	691.7	509.1	182.64	3.787	
11,600.0	6,784.5	11,542.9	6,715.2	94.1	93.8	84.16	-4,751.2	-44.4	691.8	505.4	186.39	3.712	
11,700.0	6,784.2	11,642.9	6,713.9	96.0	95.7	84.08	-4,851.2	-44.4	691.9	501.8	190.14	3.639	
11,800.0	6,783.9	11,742.9	6,712.5	97.9	97.6	84.00	-4,951.2	-44.4	692.0	498.1	193.88	3.569	
11,900.0	6,783.5	11,842.9	6,711.2	99.8	99.5	83.92	-5,051.2	-44.4	692.1	494.5	197.63	3.502	
12,000.0	6,783.2	11,942.9	6,709.9	101.7	101.4	83.84	-5,151.2	-44.4	692.2	490.9	201.38	3.437	
12,100.0	6,782.9	12,042.9	6,708.6	103.6	103.3	83.75	-5,251.2	-44.4	692.3	487.2	205.13	3.375	
12,200.0	6,782.5	12,142.9	6,707.2	105.5	105.2	83.67	-5,351.1	-44.4	692.5	483.6	208.88	3.315	
12,300.0	6,782.2	12,242.9	6,705.9	107.4	107.1	83.59	-5,451.1	-44.4	692.6	479.9	212.63	3.257	
12,400.0	6,781.9	12,342.8	6,704.6	109.3	109.0	83.51	-5,551.1	-44.4	692.7	476.3	216.38	3.201	
12,500.0	6,781.5	12,442.8	6,703.3	111.2	110.9	83.43	-5,651.1	-44.4	692.8	472.7	220.14	3.147	
12,600.0	6,781.2	12,542.8	6,701.9	113.1	112.8	83.35	-5,751.1	-44.4	692.9	469.0	223.89	3.095	
12,700.0	6,780.9	12,642.8	6,700.6	115.0	114.7	83.26	-5,851.1	-44.4	693.0	465.4	227.63	3.044	
12,800.0	6,780.6	12,742.8	6,699.3	116.8	116.6	83.18	-5,951.1	-44.4	693.1	461.8	231.38	2.996	
12,900.0	6,780.2	12,842.8	6,698.0	118.7	118.5	83.10	-6,051.0	-44.4	693.3	458.1	235.13	2.948	
13,000.0	6,779.9	12,942.8	6,696.6	120.6	120.4	83.02	-6,151.0	-44.4	693.4	454.5	238.88	2.903	
13,100.0	6,779.6	13,042.8	6,695.3	122.5	122.3	82.94	-6,251.0	-44.4	693.5	450.9	242.63	2.858	
13,200.0	6,779.2	13,142.8	6,694.0	124.4	124.2	82.86	-6,351.0	-44.4	693.6	447.2	246.38	2.815	
13,300.0	6,778.9	13,242.8	6,692.6	126.3	126.1	82.77	-6,451.0	-44.4	693.7	443.6	250.12	2.774	
13,400.0	6,778.6	13,342.8	6,691.3	128.2	128.1	82.69	-6,551.0	-44.4	693.9	440.0	253.87	2.733	
13,500.0	6,778.2	13,442.8	6,690.0	130.1	130.0	82.61	-6,651.0	-44.4	694.0	436.4	257.62	2.694	
13,600.0	6,777.9	13,542.8	6,688.7	132.0	131.9	82.53	-6,751.0	-44.4	694.1	432.8	261.36	2.656	
13,700.0	6,777.6	13,642.8	6,687.3	134.0	133.8	82.45	-6,850.9	-44.4	694.3	429.2	265.10	2.619	
13,800.0	6,777.2	13,742.8	6,686.0	135.9	135.7	82.37	-6,950.9	-44.4	694.4	425.5	268.85	2.583	
13,871.7	6,777.0	13,814.5	6,685.1	137.2	137.0	82.31	-7,022.6	-44.4	694.5	423.0	271.48	2.558 SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-403 - Wellbore #1 - Plan #1 (2-13-14)													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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	-88.26	-88.26	3.6	-119.8	119.9	119.9	0.00	N/A	
100.0	100.0	101.0	101.0	0.1	0.1	-88.26	-88.26	3.6	-119.8	119.9	119.6	0.23	527.992	
200.0	200.0	201.0	201.0	0.3	0.3	-88.26	-88.26	3.6	-119.8	119.9	119.2	0.68	177.167	
300.0	300.0	301.0	301.0	0.6	0.6	-88.26	-88.26	3.6	-119.8	119.9	118.7	1.13	106.442	
400.0	400.0	401.0	401.0	0.8	0.8	-88.26	-88.26	3.6	-119.8	119.9	118.3	1.58	76.073	
500.0	500.0	501.0	501.0	1.0	1.0	-88.26	-88.26	3.6	-119.8	119.9	117.8	2.03	59.187	
600.0	600.0	601.0	601.0	1.2	1.2	-88.26	-88.26	3.6	-119.8	119.9	117.4	2.47	48.435	
700.0	700.0	701.0	701.0	1.5	1.5	-88.26	-88.26	3.6	-119.8	119.9	116.9	2.92	40.989	
800.0	800.0	801.0	801.0	1.7	1.7	-88.26	-88.26	3.6	-119.8	119.9	116.5	3.37	35.528	
900.0	900.0	901.0	901.0	1.9	1.9	-88.26	-88.26	3.6	-119.8	119.9	116.0	3.82	31.351	
966.3	966.3	967.3	967.3	2.1	2.1	-88.26	-88.26	3.6	-119.8	119.9	115.7	4.12	29.082 CC	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-88.26	-88.26	3.6	-119.8	119.9	115.6	4.27	28.068 ES	
1,100.0	1,100.0	1,098.1	1,098.1	2.4	2.4	-150.91	-150.91	4.9	-120.9	122.6	117.9	4.70	26.057	
1,200.0	1,199.8	1,194.8	1,194.6	2.6	2.6	-150.34	-150.34	8.6	-124.2	130.7	125.6	5.13	25.485	
1,300.0	1,299.5	1,290.6	1,290.1	2.8	2.8	-149.53	-149.53	14.6	-129.6	144.2	138.6	5.56	25.944	
1,400.0	1,398.7	1,386.8	1,385.7	3.0	3.0	-148.67	-148.67	22.9	-137.0	162.7	156.7	6.00	27.141	
1,500.0	1,497.5	1,484.5	1,482.6	3.3	3.3	-148.41	-148.41	31.6	-144.8	184.4	178.0	6.45	28.612	
1,600.0	1,596.2	1,581.9	1,579.4	3.6	3.5	-148.42	-148.42	40.3	-152.7	206.7	199.8	6.92	29.890	
1,700.0	1,694.9	1,679.4	1,676.2	3.9	3.8	-148.42	-148.42	49.1	-160.5	229.0	221.6	7.40	30.958	
1,800.0	1,793.6	1,776.9	1,772.9	4.2	4.1	-148.43	-148.43	57.8	-168.3	251.3	243.4	7.89	31.857	
1,900.0	1,892.3	1,874.4	1,869.7	4.6	4.4	-148.44	-148.44	66.6	-176.1	273.5	265.1	8.39	32.616	
2,000.0	1,991.0	1,971.9	1,966.5	4.9	4.6	-148.44	-148.44	75.3	-184.0	295.8	286.9	8.89	33.271	
2,100.0	2,089.7	2,069.4	2,063.3	5.2	4.9	-148.44	-148.44	84.0	-191.8	318.1	308.7	9.40	33.835	
2,200.0	2,188.4	2,166.9	2,160.1	5.6	5.2	-148.45	-148.45	92.8	-199.6	340.4	330.4	9.92	34.324	
2,300.0	2,287.1	2,264.4	2,256.8	5.9	5.5	-148.45	-148.45	101.5	-207.4	362.6	352.2	10.43	34.752	
2,400.0	2,385.8	2,361.8	2,353.6	6.3	5.8	-148.45	-148.45	110.3	-215.3	384.9	373.9	10.96	35.129	
2,500.0	2,484.5	2,459.3	2,450.4	6.6	6.1	-148.46	-148.46	119.0	-223.1	407.2	395.7	11.48	35.463	
2,600.0	2,583.2	2,556.8	2,547.2	7.0	6.4	-148.46	-148.46	127.7	-230.9	429.5	417.4	12.01	35.759	
2,700.0	2,681.9	2,654.3	2,644.0	7.4	6.7	-148.46	-148.46	136.5	-238.7	451.7	439.2	12.54	36.025	
2,800.0	2,780.6	2,751.8	2,740.7	7.7	7.0	-148.46	-148.46	145.2	-246.5	474.0	460.9	13.07	36.263	
2,900.0	2,879.2	2,849.3	2,837.5	8.1	7.3	-148.46	-148.46	154.0	-254.4	496.3	482.7	13.60	36.479	
3,000.0	2,977.9	2,946.8	2,934.3	8.4	7.6	-148.47	-148.47	162.7	-262.2	518.6	504.4	14.14	36.674	
3,100.0	3,076.6	3,044.3	3,031.1	8.8	7.9	-148.47	-148.47	171.5	-270.0	540.8	526.2	14.68	36.851	
3,200.0	3,175.3	3,141.7	3,127.9	9.2	8.2	-148.47	-148.47	180.2	-277.8	563.1	547.9	15.21	37.013	
3,300.0	3,274.0	3,239.2	3,224.6	9.5	8.5	-148.47	-148.47	188.9	-285.7	585.4	569.6	15.75	37.161	
3,400.0	3,372.7	3,336.7	3,321.4	9.9	8.8	-148.47	-148.47	197.7	-293.5	607.7	591.4	16.29	37.297	
3,500.0	3,471.4	3,434.2	3,418.2	10.3	9.1	-148.47	-148.47	206.4	-301.3	629.9	613.1	16.83	37.423	
3,600.0	3,570.1	3,531.7	3,515.0	10.7	9.4	-148.47	-148.47	215.2	-309.1	652.2	634.8	17.37	37.538	
3,700.0	3,668.8	3,629.2	3,611.8	11.0	9.7	-148.47	-148.47	223.9	-317.0	674.5	656.6	17.92	37.646	
3,800.0	3,767.5	3,726.7	3,708.5	11.4	10.0	-148.47	-148.47	232.6	-324.8	696.8	678.3	18.46	37.745	
3,900.0	3,866.2	3,824.2	3,805.3	11.8	10.3	-148.47	-148.47	241.4	-332.6	719.0	700.0	19.00	37.838	
4,000.0	3,964.9	3,921.6	3,902.1	12.1	10.6	-148.48	-148.48	250.1	-340.4	741.3	721.8	19.55	37.924	
4,100.0	4,063.6	4,019.1	3,998.9	12.5	10.9	-148.48	-148.48	258.9	-348.3	763.6	743.5	20.09	38.005	
4,200.0	4,162.3	4,116.6	4,095.7	12.9	11.2	-148.48	-148.48	267.6	-356.1	785.9	765.2	20.64	38.080	
4,300.0	4,261.0	4,214.1	4,192.4	13.2	11.5	-148.48	-148.48	276.3	-363.9	808.1	786.9	21.18	38.151	
4,400.0	4,359.7	4,311.6	4,289.2	13.6	11.8	-148.48	-148.48	285.1	-371.7	830.4	808.7	21.73	38.217	
4,500.0	4,458.4	4,409.1	4,386.0	14.0	12.1	-148.48	-148.48	293.8	-379.6	852.7	830.4	22.28	38.279	
4,600.0	4,557.1	4,506.6	4,482.8	14.4	12.4	-148.48	-148.48	302.6	-387.4	875.0	852.1	22.82	38.338	
4,700.0	4,655.8	4,604.1	4,579.5	14.7	12.7	-148.48	-148.48	311.3	-395.2	897.2	873.9	23.37	38.393	
4,800.0	4,754.5	4,707.9	4,682.6	15.1	13.0	-148.49	-148.49	320.5	-403.4	919.4	895.5	23.92	38.433	
4,900.0	4,853.2	4,835.4	4,809.6	15.5	13.3	-148.66	-148.66	328.9	-411.0	939.5	915.0	24.46	38.411	

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 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-403 - Wellbore #1 - Plan #1 (2-13-14)													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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,951.9	4,964.1	4,938.2	15.9	13.6	-149.08		333.1	-414.8	956.4	931.5	24.96	38.316	
5,100.0	5,050.6	5,077.5	5,051.6	16.2	13.7	-149.61		333.6	-415.2	970.7	945.3	25.42	38.184	
5,200.0	5,149.3	5,176.2	5,150.3	16.6	13.9	-150.08		333.6	-415.2	984.6	958.8	25.87	38.055	
5,300.0	5,248.0	5,274.9	5,249.0	17.0	14.1	-150.54		333.6	-415.2	998.7	972.3	26.33	37.928	
5,400.0	5,346.6	5,373.6	5,347.6	17.4	14.3	-150.98		333.6	-415.2	1,012.8	986.0	26.79	37.809	
5,500.0	5,445.3	5,472.3	5,446.3	17.7	14.4	-151.43		333.6	-415.2	1,026.9	999.6	27.24	37.691	
5,600.0	5,544.3	5,571.2	5,545.3	18.0	14.6	-151.92		333.6	-415.2	1,039.4	1,011.7	27.71	37.510	
5,700.0	5,643.8	5,670.7	5,644.8	18.2	14.8	-152.28		333.6	-415.2	1,048.8	1,020.7	28.14	37.269	
5,800.0	5,743.5	5,770.4	5,744.5	18.4	15.0	-152.52		333.6	-415.2	1,055.2	1,026.7	28.54	36.970	
5,900.0	5,843.4	5,870.3	5,844.4	18.6	15.2	-152.65		333.6	-415.2	1,058.5	1,029.6	28.91	36.615	
6,000.0	5,943.4	5,970.3	5,944.4	18.7	15.4	-89.80		333.6	-415.2	1,059.0	1,029.7	29.26	36.188	
6,100.0	6,043.4	6,070.4	6,044.5	18.9	15.5	90.19		333.3	-415.2	1,059.0	1,029.4	29.63	35.742	
6,200.0	6,142.9	6,170.8	6,144.4	19.0	15.6	90.16		323.6	-415.2	1,059.0	1,029.2	29.83	35.498	
6,300.0	6,240.4	6,271.2	6,242.1	19.0	15.7	90.12		301.0	-415.2	1,059.0	1,029.1	29.88	35.437	
6,400.0	6,334.3	6,371.4	6,335.8	19.0	15.6	90.08		265.8	-415.2	1,059.0	1,029.2	29.83	35.507	
6,500.0	6,422.8	6,471.6	6,424.1	18.9	15.6	90.04		218.7	-415.2	1,059.0	1,029.3	29.72	35.634	
6,572.4	6,482.7	6,544.0	6,483.8	18.9	15.5	90.01		177.6	-415.2	1,059.0	1,029.3	29.66	35.705	
6,600.0	6,504.5	6,571.6	6,505.4	18.8	15.5	90.00		160.5	-415.2	1,059.0	1,029.4	29.64	35.724	
6,700.0	6,578.0	6,671.5	6,578.4	18.8	15.4	89.96		92.3	-415.2	1,059.0	1,029.3	29.69	35.665	
6,800.0	6,642.0	6,771.4	6,641.7	18.7	15.4	89.91		15.2	-415.2	1,059.0	1,029.1	29.96	35.351	
6,900.0	6,695.5	6,871.1	6,694.4	18.8	15.4	89.88		-69.4	-415.2	1,059.0	1,028.5	30.52	34.704	
7,000.0	6,737.4	6,970.8	6,735.7	18.9	15.7	89.84		-160.0	-415.2	1,059.0	1,027.6	31.42	33.700	
7,100.0	6,767.2	7,070.3	6,764.7	19.2	16.4	89.80		-255.2	-415.2	1,059.0	1,026.3	32.70	32.381	
7,200.0	6,784.3	7,169.8	6,781.2	19.8	17.3	89.77		-353.2	-415.2	1,059.0	1,024.7	34.33	30.844	
7,300.0	6,794.5	7,269.7	6,791.3	20.5	18.3	89.77		-452.6	-415.2	1,059.0	1,022.7	36.30	29.175	
7,400.0	6,798.5	7,369.4	6,794.9	21.5	19.4	89.75		-552.2	-415.2	1,059.0	1,020.5	38.52	27.493	
7,500.0	6,798.1	7,469.4	6,794.5	22.6	20.7	89.75		-652.2	-415.2	1,059.0	1,018.0	40.99	25.835	
7,600.0	6,797.8	7,569.4	6,794.1	23.8	22.0	89.75		-752.2	-415.2	1,059.0	1,015.4	43.65	24.261	
7,700.0	6,797.5	7,669.4	6,793.7	25.1	23.5	89.74		-852.2	-415.2	1,059.0	1,012.5	46.48	22.786	
7,800.0	6,797.1	7,769.4	6,793.3	26.5	24.9	89.74		-952.2	-415.2	1,059.0	1,009.6	49.44	21.421	
7,900.0	6,796.8	7,869.4	6,792.9	27.9	26.5	89.74		-1,052.2	-415.2	1,059.0	1,006.5	52.52	20.166	
8,000.0	6,796.5	7,969.4	6,792.6	29.4	28.1	89.73		-1,152.2	-415.2	1,059.0	1,003.3	55.69	19.017	
8,100.0	6,796.1	8,069.4	6,792.2	31.0	29.7	89.73		-1,252.2	-415.2	1,059.0	1,000.1	58.94	17.968	
8,200.0	6,795.8	8,169.4	6,791.8	32.5	31.4	89.73		-1,352.2	-415.2	1,059.0	996.8	62.26	17.010	
8,300.0	6,795.5	8,269.4	6,791.4	34.2	33.0	89.73		-1,452.2	-415.2	1,059.0	993.4	65.63	16.135	
8,400.0	6,795.1	8,369.4	6,791.0	35.8	34.8	89.72		-1,552.2	-415.2	1,059.0	990.0	69.06	15.335	
8,500.0	6,794.8	8,469.4	6,790.6	37.5	36.5	89.72		-1,652.2	-415.2	1,059.0	986.5	72.53	14.602	
8,600.0	6,794.5	8,569.4	6,790.3	39.2	38.2	89.72		-1,752.2	-415.2	1,059.0	983.0	76.03	13.929	
8,700.0	6,794.2	8,669.4	6,789.9	40.9	40.0	89.71		-1,852.2	-415.2	1,059.0	979.5	79.56	13.311	
8,800.0	6,793.8	8,769.4	6,789.5	42.6	41.8	89.71		-1,952.2	-415.2	1,059.0	975.9	83.12	12.740	
8,900.0	6,793.5	8,869.4	6,789.1	44.4	43.6	89.71		-2,052.2	-415.2	1,059.0	972.3	86.71	12.213	
9,000.0	6,793.2	8,969.4	6,788.7	46.1	45.4	89.71		-2,152.2	-415.2	1,059.0	968.7	90.32	11.726	
9,100.0	6,792.8	9,069.4	6,788.3	47.9	47.2	89.70		-2,252.1	-415.2	1,059.0	965.1	93.94	11.273	
9,200.0	6,792.5	9,169.4	6,788.0	49.7	49.0	89.70		-2,352.1	-415.2	1,059.0	961.4	97.58	10.853	
9,300.0	6,792.2	9,269.4	6,787.6	51.5	50.8	89.70		-2,452.1	-415.2	1,059.0	957.8	101.24	10.461	
9,400.0	6,791.8	9,369.4	6,787.2	53.3	52.7	89.69		-2,552.1	-415.2	1,059.0	954.1	104.91	10.095	
9,500.0	6,791.5	9,469.4	6,786.8	55.1	54.5	89.69		-2,652.1	-415.2	1,059.0	950.4	108.59	9.753	
9,600.0	6,791.2	9,569.4	6,786.4	56.9	56.3	89.69		-2,752.1	-415.2	1,059.0	946.7	112.28	9.432	
9,700.0	6,790.8	9,669.4	6,786.0	58.8	58.2	89.69		-2,852.1	-415.2	1,059.0	943.0	115.98	9.131	
9,800.0	6,790.5	9,769.4	6,785.6	60.6	60.0	89.68		-2,952.1	-415.2	1,059.0	939.3	119.70	8.848	
9,900.0	6,790.2	9,869.4	6,785.3	62.4	61.9	89.68		-3,052.1	-415.2	1,059.0	935.6	123.41	8.581	

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 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-403 - Wellbore #1 - Plan #1 (2-13-14)													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)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
10,000.0	6,789.8	9,969.4	6,784.9	64.3	63.8	89.68	-3,152.1	-415.2	1,059.0	931.9	127.14	8.330		
10,100.0	6,789.5	10,069.4	6,784.5	66.1	65.6	89.67	-3,252.1	-415.2	1,059.0	928.2	130.87	8.092		
10,200.0	6,789.2	10,169.4	6,784.1	68.0	67.5	89.67	-3,352.1	-415.2	1,059.0	924.4	134.61	7.867		
10,300.0	6,788.8	10,269.4	6,783.7	69.8	69.4	89.67	-3,452.1	-415.2	1,059.0	920.7	138.36	7.654		
10,400.0	6,788.5	10,369.4	6,783.3	71.7	71.2	89.67	-3,552.1	-415.2	1,059.0	916.9	142.11	7.452		
10,500.0	6,788.2	10,469.4	6,783.0	73.5	73.1	89.66	-3,652.1	-415.2	1,059.0	913.2	145.86	7.261		
10,600.0	6,787.8	10,569.4	6,782.6	75.4	75.0	89.66	-3,752.1	-415.2	1,059.0	909.4	149.62	7.078		
10,700.0	6,787.5	10,669.4	6,782.2	77.3	76.9	89.66	-3,852.1	-415.2	1,059.0	905.6	153.38	6.905		
10,800.0	6,787.2	10,769.4	6,781.8	79.1	78.8	89.65	-3,952.1	-415.2	1,059.0	901.9	157.15	6.739		
10,900.0	6,786.9	10,869.4	6,781.4	81.0	80.6	89.65	-4,052.1	-415.2	1,059.0	898.1	160.92	6.581		
11,000.0	6,786.5	10,969.4	6,781.0	82.9	82.5	89.65	-4,152.1	-415.2	1,059.0	894.3	164.69	6.430		
11,100.0	6,786.2	11,069.4	6,780.7	84.7	84.4	89.65	-4,252.1	-415.2	1,059.0	890.6	168.47	6.286		
11,200.0	6,785.9	11,169.4	6,780.3	86.6	86.3	89.64	-4,352.1	-415.2	1,059.0	886.8	172.25	6.148		
11,300.0	6,785.5	11,269.4	6,779.9	88.5	88.2	89.64	-4,452.1	-415.2	1,059.0	883.0	176.03	6.016		
11,400.0	6,785.2	11,369.4	6,779.5	90.4	90.1	89.64	-4,552.1	-415.2	1,059.0	879.2	179.82	5.890		
11,500.0	6,784.9	11,469.4	6,779.1	92.3	92.0	89.64	-4,652.1	-415.2	1,059.0	875.4	183.60	5.768		
11,600.0	6,784.5	11,569.4	6,778.7	94.1	93.9	89.63	-4,752.1	-415.2	1,059.0	871.6	187.39	5.651		
11,700.0	6,784.2	11,669.4	6,778.4	96.0	95.8	89.63	-4,852.1	-415.2	1,059.0	867.9	191.18	5.539		
11,800.0	6,783.9	11,769.4	6,778.0	97.9	97.7	89.63	-4,952.1	-415.2	1,059.0	864.1	194.98	5.432		
11,900.0	6,783.5	11,869.4	6,777.6	99.8	99.6	89.62	-5,052.1	-415.2	1,059.0	860.3	198.77	5.328		
12,000.0	6,783.2	11,969.4	6,777.2	101.7	101.5	89.62	-5,152.1	-415.2	1,059.0	856.5	202.57	5.228		
12,100.0	6,782.9	12,069.4	6,776.8	103.6	103.4	89.62	-5,252.1	-415.2	1,059.0	852.7	206.37	5.132		
12,200.0	6,782.5	12,169.4	6,776.4	105.5	105.3	89.62	-5,352.1	-415.2	1,059.0	848.9	210.17	5.039		
12,300.0	6,782.2	12,269.4	6,776.0	107.4	107.2	89.61	-5,452.1	-415.2	1,059.0	845.1	213.97	4.949		
12,400.0	6,781.9	12,369.4	6,775.7	109.3	109.1	89.61	-5,552.1	-415.2	1,059.0	841.3	217.77	4.863		
12,500.0	6,781.5	12,469.4	6,775.3	111.2	111.0	89.61	-5,652.1	-415.2	1,059.0	837.5	221.58	4.780		
12,600.0	6,781.2	12,569.4	6,774.9	113.1	112.9	89.60	-5,752.1	-415.2	1,059.0	833.7	225.38	4.699		
12,700.0	6,780.9	12,669.4	6,774.5	115.0	114.8	89.60	-5,852.1	-415.2	1,059.0	829.9	229.19	4.621		
12,800.0	6,780.6	12,769.4	6,774.1	116.8	116.7	89.60	-5,952.1	-415.2	1,059.0	826.0	233.00	4.545		
12,900.0	6,780.2	12,869.4	6,773.7	118.7	118.6	89.60	-6,052.1	-415.2	1,059.0	822.2	236.81	4.472		
13,000.0	6,779.9	12,969.4	6,773.4	120.6	120.5	89.59	-6,152.1	-415.2	1,059.0	818.4	240.62	4.401		
13,100.0	6,779.6	13,069.4	6,773.0	122.5	122.4	89.59	-6,252.1	-415.2	1,059.0	814.6	244.43	4.333		
13,200.0	6,779.2	13,169.4	6,772.6	124.4	124.3	89.59	-6,352.1	-415.2	1,059.0	810.8	248.24	4.266		
13,300.0	6,778.9	13,269.4	6,772.2	126.3	126.2	89.58	-6,452.1	-415.2	1,059.0	807.0	252.05	4.202		
13,400.0	6,778.6	13,369.4	6,771.8	128.2	128.1	89.58	-6,552.1	-415.2	1,059.0	803.2	255.87	4.139		
13,500.0	6,778.2	13,469.4	6,771.4	130.1	130.0	89.58	-6,652.1	-415.2	1,059.0	799.4	259.68	4.078		
13,600.0	6,777.9	13,569.4	6,771.1	132.0	131.9	89.58	-6,752.1	-415.2	1,059.0	795.5	263.50	4.019		
13,700.0	6,777.6	13,669.4	6,770.7	134.0	133.8	89.57	-6,852.1	-415.2	1,059.0	791.7	267.31	3.962		
13,800.0	6,777.2	13,769.4	6,770.3	135.9	135.7	89.57	-6,952.1	-415.2	1,059.0	787.9	271.13	3.906		
13,871.7	6,777.0	13,841.1	6,770.0	137.2	137.1	89.57	-7,023.8	-415.2	1,059.0	785.2	273.87	3.867 SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-423 - Wellbore #1 - Plan #1 (2-13-14)													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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	-90.00	-90.00	0.0	-61.3	61.3	61.3	0.00	N/A	
100.0	100.0	101.0	101.0	0.1	0.1	-90.00	-90.00	0.0	-61.3	61.3	61.1	0.23	270.011	
200.0	200.0	201.0	201.0	0.3	0.3	-90.00	-90.00	0.0	-61.3	61.3	60.6	0.68	90.602	
300.0	300.0	301.0	301.0	0.6	0.6	-90.00	-90.00	0.0	-61.3	61.3	60.2	1.13	54.433	
400.0	400.0	401.0	401.0	0.8	0.8	-90.00	-90.00	0.0	-61.3	61.3	59.7	1.58	38.903	
500.0	500.0	501.0	501.0	1.0	1.0	-90.00	-90.00	0.0	-61.3	61.3	59.3	2.03	30.268	
600.0	600.0	601.0	601.0	1.2	1.2	-90.00	-90.00	0.0	-61.3	61.3	58.8	2.47	24.769	
700.0	700.0	701.0	701.0	1.5	1.5	-90.00	-90.00	0.0	-61.3	61.3	58.4	2.92	20.962	
800.0	800.0	801.0	801.0	1.7	1.7	-90.00	-90.00	0.0	-61.3	61.3	57.9	3.37	18.169	
900.0	900.0	901.0	901.0	1.9	1.9	-90.00	-90.00	0.0	-61.3	61.3	57.5	3.82	16.032	
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	-90.00	-90.00	0.0	-61.3	61.3	57.0	4.27	14.346 CC, ES	
1,100.0	1,100.0	1,101.0	1,101.0	2.4	2.4	-153.57	-153.57	0.0	-61.3	62.9	58.1	4.71	13.334	
1,200.0	1,199.8	1,200.8	1,200.8	2.6	2.6	-155.51	-155.51	0.0	-61.3	67.6	62.4	5.15	13.133	
1,300.0	1,299.5	1,300.5	1,300.5	2.8	2.8	-158.19	-158.19	0.0	-61.3	75.6	70.0	5.58	13.558	
1,400.0	1,398.7	1,399.7	1,399.7	3.0	3.0	-161.09	-161.09	0.0	-61.3	87.0	81.0	6.00	14.499	
1,500.0	1,497.5	1,498.5	1,498.5	3.3	3.3	-163.85	-163.85	0.0	-61.3	101.8	95.3	6.43	15.816	
1,600.0	1,596.2	1,600.7	1,600.7	3.6	3.5	-165.66	-165.66	1.2	-60.0	115.8	109.0	6.88	16.841	
1,700.0	1,694.9	1,703.8	1,703.7	3.9	3.7	-166.24	-166.24	5.0	-56.1	126.9	119.6	7.33	17.328	
1,800.0	1,793.6	1,807.6	1,807.0	4.2	3.9	-165.94	-165.94	11.4	-49.4	134.9	127.2	7.78	17.339	
1,900.0	1,892.3	1,908.5	1,907.2	4.6	4.2	-165.12	-165.12	19.5	-41.1	140.7	132.5	8.25	17.067	
2,000.0	1,991.0	2,008.3	2,006.4	4.9	4.4	-164.36	-164.36	27.5	-32.7	146.5	137.7	8.72	16.802	
2,100.0	2,089.7	2,108.1	2,105.5	5.2	4.7	-163.65	-163.65	35.6	-24.3	152.2	143.0	9.19	16.554	
2,200.0	2,188.4	2,207.9	2,204.7	5.6	4.9	-162.99	-162.99	43.6	-16.0	158.0	148.3	9.68	16.321	
2,300.0	2,287.1	2,307.8	2,303.8	5.9	5.2	-162.38	-162.38	51.7	-7.6	163.7	153.6	10.17	16.103	
2,400.0	2,385.8	2,407.6	2,402.9	6.3	5.5	-161.81	-161.81	59.7	0.7	169.5	158.9	10.66	15.898	
2,500.0	2,484.5	2,507.4	2,502.1	6.6	5.7	-161.28	-161.28	67.8	9.1	175.3	164.2	11.16	15.705	
2,600.0	2,583.2	2,607.2	2,601.2	7.0	6.0	-160.78	-160.78	75.8	17.4	181.2	169.5	11.67	15.524	
2,700.0	2,681.9	2,707.0	2,700.4	7.4	6.3	-160.32	-160.32	83.9	25.8	187.0	174.8	12.18	15.354	
2,800.0	2,780.6	2,806.8	2,799.5	7.7	6.6	-159.88	-159.88	91.9	34.1	192.9	180.2	12.69	15.194	
2,900.0	2,879.2	2,906.7	2,898.6	8.1	6.9	-159.47	-159.47	100.0	42.5	198.7	185.5	13.21	15.043	
3,000.0	2,977.9	3,006.5	2,997.8	8.4	7.2	-159.08	-159.08	108.0	50.8	204.6	190.9	13.73	14.900	
3,100.0	3,076.6	3,106.3	3,096.9	8.8	7.4	-158.71	-158.71	116.1	59.2	210.5	196.2	14.25	14.765	
3,200.0	3,175.3	3,206.1	3,196.1	9.2	7.7	-158.37	-158.37	124.1	67.5	216.4	201.6	14.78	14.638	
3,300.0	3,274.0	3,305.9	3,295.2	9.5	8.0	-158.04	-158.04	132.1	75.9	222.3	207.0	15.31	14.518	
3,400.0	3,372.7	3,405.8	3,394.4	9.9	8.3	-157.73	-157.73	140.2	84.3	228.2	212.3	15.84	14.403	
3,500.0	3,471.4	3,505.6	3,493.5	10.3	8.6	-157.43	-157.43	148.2	92.6	234.1	217.7	16.37	14.295	
3,600.0	3,570.1	3,605.4	3,592.6	10.7	8.9	-157.15	-157.15	156.3	101.0	240.0	223.1	16.91	14.192	
3,700.0	3,668.8	3,705.2	3,691.8	11.0	9.2	-156.88	-156.88	164.3	109.3	245.9	228.5	17.45	14.094	
3,800.0	3,767.5	3,805.0	3,790.9	11.4	9.5	-156.63	-156.63	172.4	117.7	251.8	233.9	17.99	14.001	
3,900.0	3,866.2	3,904.8	3,890.1	11.8	9.8	-156.39	-156.39	180.4	126.0	257.8	239.2	18.53	13.913	
4,000.0	3,964.9	4,004.7	3,989.2	12.1	10.1	-156.15	-156.15	188.5	134.4	263.7	244.6	19.07	13.828	
4,100.0	4,063.6	4,104.5	4,088.3	12.5	10.4	-155.93	-155.93	196.5	142.7	269.6	250.0	19.61	13.748	
4,200.0	4,162.3	4,204.3	4,187.5	12.9	10.7	-155.72	-155.72	204.6	151.1	275.6	255.4	20.16	13.671	
4,300.0	4,261.0	4,304.1	4,286.6	13.2	11.0	-155.52	-155.52	212.6	159.4	281.5	260.8	20.71	13.597	
4,400.0	4,359.7	4,403.9	4,385.8	13.6	11.3	-155.32	-155.32	220.7	167.8	287.5	266.2	21.25	13.527	
4,500.0	4,458.4	4,503.8	4,484.9	14.0	11.6	-155.13	-155.13	228.7	176.1	293.4	271.6	21.80	13.459	
4,600.0	4,557.1	4,603.6	4,584.1	14.4	11.9	-154.95	-154.95	236.8	184.5	299.4	277.0	22.35	13.395	
4,700.0	4,655.8	4,703.4	4,683.2	14.7	12.2	-154.78	-154.78	244.8	192.8	305.4	282.5	22.90	13.333	
4,800.0	4,754.5	4,803.2	4,782.3	15.1	12.5	-154.61	-154.61	252.8	201.2	311.3	287.9	23.45	13.274	
4,900.0	4,853.2	4,903.0	4,881.5	15.5	12.8	-154.45	-154.45	260.9	209.6	317.3	293.3	24.01	13.216	
5,000.0	4,951.9	5,002.8	4,980.6	15.9	13.1	-154.30	-154.30	268.9	217.9	323.3	298.7	24.56	13.162	

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 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-423 - Wellbore #1 - Plan #1 (2-13-14)													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)			
5,100.0	5,050.6	5,102.7	5,079.8	16.2	13.4	-154.15	277.0	226.3	329.2	304.1	25.11	13.109		
5,200.0	5,149.3	5,202.5	5,178.9	16.6	13.7	-154.01	285.0	234.6	335.2	309.5	25.67	13.058		
5,300.0	5,248.0	5,302.3	5,278.1	17.0	14.0	-153.87	293.1	243.0	341.2	314.9	26.23	13.009		
5,400.0	5,346.6	5,402.1	5,377.2	17.4	14.3	-153.74	301.1	251.3	347.1	320.4	26.78	12.962		
5,500.0	5,445.3	5,501.9	5,476.3	17.7	14.6	-153.61	309.2	259.7	353.1	325.8	27.34	12.916		
5,600.0	5,544.3	5,600.0	5,573.7	18.0	14.9	-153.39	317.1	267.9	357.3	329.5	27.87	12.820		
5,700.0	5,643.8	5,692.8	5,666.0	18.2	15.1	-153.13	323.4	274.4	359.8	331.5	28.31	12.710		
5,800.0	5,743.5	5,784.4	5,757.5	18.4	15.3	-152.96	327.5	278.7	361.5	332.8	28.68	12.603		
5,900.0	5,843.4	5,876.0	5,849.1	18.6	15.5	-152.87	329.7	281.0	362.4	333.4	28.99	12.498		
6,000.0	5,943.4	5,971.4	5,944.4	18.7	15.6	-90.00	330.0	281.3	362.5	333.2	29.30	12.372		
6,058.7	6,002.1	6,030.1	6,003.1	18.8	15.7	90.07	330.0	281.3	362.5	333.0	29.52	12.279		
6,100.0	6,043.4	6,071.4	6,044.4	18.9	15.8	90.00	329.7	281.3	362.5	332.8	29.66	12.221		
6,200.0	6,142.9	6,171.4	6,143.9	19.0	15.9	89.98	320.6	281.3	362.5	332.6	29.87	12.134		
6,300.0	6,240.4	6,271.4	6,241.4	19.0	16.0	89.96	298.6	281.3	362.5	332.6	29.93	12.111		
6,400.0	6,334.3	6,371.3	6,335.1	19.0	15.9	89.94	264.1	281.3	362.5	332.6	29.88	12.133		
6,500.0	6,422.8	6,471.2	6,423.5	18.9	15.9	89.92	217.7	281.3	362.5	332.7	29.77	12.175		
6,600.0	6,504.5	6,571.2	6,505.1	18.8	15.8	89.90	160.1	281.3	362.5	332.8	29.70	12.205		
6,700.0	6,578.0	6,671.1	6,578.4	18.8	15.7	89.89	92.4	281.3	362.5	332.8	29.75	12.186		
6,800.0	6,642.0	6,771.0	6,642.3	18.7	15.7	89.87	15.7	281.3	362.5	332.5	30.00	12.082		
6,900.0	6,695.5	6,870.9	6,695.7	18.8	15.7	89.86	-68.7	281.3	362.5	331.9	30.55	11.864		
7,000.0	6,737.4	6,970.8	6,737.6	18.9	16.0	89.85	-159.3	281.3	362.5	331.0	31.45	11.526		
7,100.0	6,767.2	7,070.6	6,767.3	19.2	16.6	89.85	-254.6	281.3	362.5	329.8	32.72	11.079		
7,200.0	6,784.3	7,170.5	6,784.3	19.8	17.5	89.84	-352.9	281.3	362.5	328.2	34.34	10.556		
7,300.0	6,794.5	7,270.5	6,794.5	20.5	18.5	89.84	-452.4	281.3	362.5	326.2	36.30	9.987		
7,400.0	6,798.5	7,370.4	6,798.5	21.5	19.6	89.84	-552.2	281.3	362.5	324.0	38.51	9.413		
7,500.0	6,798.1	7,470.4	6,798.1	22.6	20.8	89.84	-652.2	281.3	362.5	321.5	40.98	8.847		
7,600.0	6,797.8	7,570.4	6,797.8	23.8	22.2	89.84	-752.2	281.3	362.5	318.9	43.63	8.309		
7,700.0	6,797.5	7,670.4	6,797.5	25.1	23.6	89.84	-852.2	281.3	362.5	316.0	46.45	7.804		
7,800.0	6,797.1	7,770.4	6,797.1	26.5	25.0	89.84	-952.2	281.3	362.5	313.1	49.41	7.337		
7,900.0	6,796.8	7,870.4	6,796.8	27.9	26.6	89.84	-1,052.2	281.3	362.5	310.0	52.48	6.907		
8,000.0	6,796.5	7,970.4	6,796.5	29.4	28.2	89.84	-1,152.2	281.3	362.5	306.8	55.65	6.514		
8,100.0	6,796.1	8,070.4	6,796.2	31.0	29.8	89.84	-1,252.2	281.3	362.5	303.6	58.90	6.155		
8,200.0	6,795.8	8,170.4	6,795.8	32.5	31.4	89.84	-1,352.2	281.3	362.5	300.3	62.21	5.827		
8,300.0	6,795.5	8,270.4	6,795.5	34.2	33.1	89.84	-1,452.2	281.3	362.5	296.9	65.59	5.527		
8,400.0	6,795.1	8,370.4	6,795.2	35.8	34.8	89.84	-1,552.2	281.3	362.5	293.5	69.01	5.253		
8,500.0	6,794.8	8,470.4	6,794.8	37.5	36.5	89.84	-1,652.2	281.3	362.5	290.0	72.47	5.002		
8,600.0	6,794.5	8,570.4	6,794.5	39.2	38.3	89.84	-1,752.2	281.3	362.5	286.5	75.97	4.771		
8,700.0	6,794.2	8,670.4	6,794.2	40.9	40.0	89.84	-1,852.2	281.3	362.5	283.0	79.51	4.559		
8,800.0	6,793.8	8,770.4	6,793.8	42.6	41.8	89.84	-1,952.2	281.3	362.5	279.4	83.07	4.364		
8,900.0	6,793.5	8,870.4	6,793.5	44.4	43.6	89.84	-2,052.2	281.3	362.5	275.8	86.65	4.183		
9,000.0	6,793.2	8,970.4	6,793.2	46.1	45.4	89.84	-2,152.2	281.3	362.5	272.2	90.26	4.016		
9,100.0	6,792.8	9,070.4	6,792.8	47.9	47.2	89.84	-2,252.2	281.3	362.5	268.6	93.88	3.861		
9,200.0	6,792.5	9,170.4	6,792.5	49.7	49.0	89.84	-2,352.2	281.3	362.5	265.0	97.52	3.717		
9,300.0	6,792.2	9,270.4	6,792.2	51.5	50.8	89.84	-2,452.2	281.3	362.5	261.3	101.18	3.583		
9,400.0	6,791.8	9,370.4	6,791.8	53.3	52.7	89.84	-2,552.2	281.3	362.5	257.6	104.85	3.457		
9,500.0	6,791.5	9,470.4	6,791.5	55.1	54.5	89.84	-2,652.2	281.3	362.5	254.0	108.53	3.340		
9,600.0	6,791.2	9,570.4	6,791.2	56.9	56.3	89.84	-2,752.2	281.3	362.5	250.3	112.22	3.230		
9,700.0	6,790.8	9,670.4	6,790.8	58.8	58.2	89.84	-2,852.2	281.3	362.5	246.6	115.92	3.127		
9,800.0	6,790.5	9,770.4	6,790.5	60.6	60.0	89.84	-2,952.2	281.3	362.5	242.9	119.63	3.030		
9,900.0	6,790.2	9,870.4	6,790.2	62.4	61.9	89.84	-3,052.2	281.3	362.5	239.1	123.35	2.939		
10,000.0	6,789.8	9,970.4	6,789.9	64.3	63.8	89.84	-3,152.2	281.3	362.5	235.4	127.07	2.853		

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 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-423 - Wellbore #1 - Plan #1 (2-13-14)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Between Centres (ft)	Between Ellipses (ft)					
10,100.0	6,789.5	10,070.4	6,789.5	66.1	65.6	89.84	-3,252.2	281.3	362.5	231.7	130.81	2.771	
10,200.0	6,789.2	10,170.4	6,789.2	68.0	67.5	89.84	-3,352.2	281.3	362.5	227.9	134.54	2.694	
10,300.0	6,788.8	10,270.4	6,788.9	69.8	69.3	89.84	-3,452.2	281.3	362.5	224.2	138.29	2.621	
10,400.0	6,788.5	10,370.4	6,788.5	71.7	71.2	89.84	-3,552.2	281.3	362.5	220.5	142.04	2.552	
10,500.0	6,788.2	10,470.4	6,788.2	73.5	73.1	89.84	-3,652.2	281.3	362.5	216.7	145.79	2.486	
10,600.0	6,787.8	10,570.4	6,787.9	75.4	75.0	89.84	-3,752.2	281.3	362.5	212.9	149.55	2.424	
10,700.0	6,787.5	10,670.4	6,787.5	77.3	76.8	89.84	-3,852.2	281.3	362.5	209.2	153.31	2.364	
10,800.0	6,787.2	10,770.4	6,787.2	79.1	78.7	89.84	-3,952.2	281.3	362.5	205.4	157.08	2.308	
10,900.0	6,786.9	10,870.4	6,786.9	81.0	80.6	89.84	-4,052.2	281.3	362.5	201.6	160.85	2.254	
11,000.0	6,786.5	10,970.4	6,786.5	82.9	82.5	89.84	-4,152.2	281.3	362.5	197.9	164.62	2.202	
11,100.0	6,786.2	11,070.4	6,786.2	84.7	84.4	89.84	-4,252.2	281.3	362.5	194.1	168.40	2.153	
11,200.0	6,785.9	11,170.4	6,785.9	86.6	86.3	89.84	-4,352.2	281.3	362.5	190.3	172.18	2.105	
11,300.0	6,785.5	11,270.4	6,785.5	88.5	88.2	89.84	-4,452.2	281.3	362.5	186.5	175.96	2.060	
11,400.0	6,785.2	11,370.4	6,785.2	90.4	90.0	89.84	-4,552.2	281.3	362.5	182.7	179.75	2.017	
11,500.0	6,784.9	11,470.4	6,784.9	92.3	91.9	89.84	-4,652.2	281.3	362.5	179.0	183.53	1.975	
11,600.0	6,784.5	11,570.4	6,784.5	94.1	93.8	89.84	-4,752.2	281.3	362.5	175.2	187.32	1.935	
11,700.0	6,784.2	11,670.4	6,784.2	96.0	95.7	89.84	-4,852.2	281.3	362.5	171.4	191.12	1.897	
11,800.0	6,783.9	11,770.4	6,783.9	97.9	97.6	89.84	-4,952.2	281.3	362.5	167.6	194.91	1.860	
11,900.0	6,783.5	11,870.4	6,783.6	99.8	99.5	89.84	-5,052.2	281.3	362.5	163.8	198.70	1.824	
12,000.0	6,783.2	11,970.4	6,783.2	101.7	101.4	89.84	-5,152.2	281.3	362.5	160.0	202.50	1.790	
12,100.0	6,782.9	12,070.4	6,782.9	103.6	103.3	89.84	-5,252.2	281.3	362.5	156.2	206.30	1.757	
12,200.0	6,782.5	12,170.4	6,782.6	105.5	105.2	89.84	-5,352.2	281.3	362.5	152.4	210.10	1.725	
12,300.0	6,782.2	12,270.4	6,782.2	107.4	107.1	89.84	-5,452.2	281.3	362.5	148.6	213.90	1.695	
12,400.0	6,781.9	12,370.4	6,781.9	109.3	109.0	89.84	-5,552.2	281.3	362.5	144.8	217.70	1.665	
12,500.0	6,781.5	12,470.4	6,781.6	111.2	110.9	89.84	-5,652.2	281.3	362.5	141.0	221.51	1.636	
12,600.0	6,781.2	12,570.4	6,781.2	113.1	112.8	89.84	-5,752.2	281.3	362.5	137.2	225.31	1.609	
12,700.0	6,780.9	12,670.4	6,780.9	115.0	114.7	89.84	-5,852.2	281.3	362.5	133.4	229.12	1.582	
12,800.0	6,780.6	12,770.4	6,780.6	116.8	116.6	89.84	-5,952.1	281.3	362.5	129.6	232.93	1.556	
12,900.0	6,780.2	12,870.4	6,780.2	118.7	118.5	89.84	-6,052.1	281.3	362.5	125.8	236.74	1.531	
13,000.0	6,779.9	12,970.4	6,779.9	120.6	120.4	89.84	-6,152.1	281.3	362.5	121.9	240.55	1.507	
13,100.0	6,779.6	13,070.4	6,779.6	122.5	122.3	89.84	-6,252.1	281.3	362.5	118.1	244.36	1.483 Level 3	
13,200.0	6,779.2	13,170.4	6,779.2	124.4	124.2	89.84	-6,352.1	281.3	362.5	114.3	248.17	1.461 Level 3	
13,300.0	6,778.9	13,270.4	6,778.9	126.3	126.1	89.84	-6,452.1	281.3	362.5	110.5	251.99	1.439 Level 3	
13,400.0	6,778.6	13,370.4	6,778.6	128.2	128.0	89.84	-6,552.1	281.3	362.5	106.7	255.80	1.417 Level 3	
13,500.0	6,778.2	13,470.4	6,778.2	130.1	130.0	89.84	-6,652.1	281.3	362.5	102.9	259.61	1.396 Level 3	
13,600.0	6,777.9	13,570.4	6,777.9	132.0	131.9	89.84	-6,752.1	281.3	362.5	99.1	263.43	1.376 Level 3	
13,700.0	6,777.6	13,670.4	6,777.6	134.0	133.8	89.84	-6,852.1	281.3	362.5	95.2	267.25	1.356 Level 3	
13,800.0	6,777.2	13,770.4	6,777.2	135.9	135.7	89.84	-6,952.1	281.3	362.5	91.4	271.06	1.337 Level 3	
13,871.7	6,777.0	13,842.1	6,777.0	137.2	137.0	89.84	-7,023.9	281.3	362.5	88.7	273.80	1.324 Level 3, SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28U-243 - Wellbore #1 - Plan #1 (2-13-14)													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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	-90.00	-90.00	0.0	-30.6	30.6	30.6	0.00	N/A	
100.0	100.0	101.0	101.0	0.1	0.1	-90.00	-90.00	0.0	-30.6	30.6	30.4	0.23	135.005	
200.0	200.0	201.0	201.0	0.3	0.3	-90.00	-90.00	0.0	-30.6	30.6	30.0	0.68	45.301	
300.0	300.0	301.0	301.0	0.6	0.6	-90.00	-90.00	0.0	-30.6	30.6	29.5	1.13	27.217	
400.0	400.0	401.0	401.0	0.8	0.8	-90.00	-90.00	0.0	-30.6	30.6	29.1	1.58	19.452	
500.0	500.0	501.0	501.0	1.0	1.0	-90.00	-90.00	0.0	-30.6	30.6	28.6	2.03	15.134	
600.0	600.0	601.0	601.0	1.2	1.2	-90.00	-90.00	0.0	-30.6	30.6	28.2	2.47	12.385	
700.0	700.0	701.0	701.0	1.5	1.5	-90.00	-90.00	0.0	-30.6	30.6	27.7	2.92	10.481	
800.0	800.0	801.0	801.0	1.7	1.7	-90.00	-90.00	0.0	-30.6	30.6	27.3	3.37	9.084	
900.0	900.0	901.0	901.0	1.9	1.9	-90.00	-90.00	0.0	-30.6	30.6	26.8	3.82	8.016	
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	-90.00	-90.00	0.0	-30.6	30.6	26.4	4.27	7.173 CC	
1,100.0	1,100.0	1,101.0	1,101.0	2.4	2.4	-154.26	-154.26	0.0	-30.6	32.2	27.5	4.71	6.833	
1,200.0	1,199.8	1,200.8	1,200.8	2.6	2.6	-157.75	-157.75	0.0	-30.6	37.0	31.8	5.15	7.189	
1,300.0	1,299.5	1,301.8	1,301.8	2.8	2.8	-160.76	-160.76	1.1	-29.2	43.6	38.1	5.57	7.835	
1,400.0	1,398.7	1,403.0	1,402.8	3.0	3.0	-162.20	-162.20	4.5	-25.0	50.6	44.6	5.99	8.456	
1,500.0	1,497.5	1,504.4	1,503.8	3.3	3.3	-162.54	-162.54	10.1	-18.1	57.6	51.2	6.41	8.986	
1,600.0	1,596.2	1,606.2	1,604.8	3.6	3.5	-161.43	-161.43	18.0	-8.3	62.2	55.4	6.87	9.059	
1,700.0	1,694.9	1,706.9	1,704.3	3.9	3.8	-159.14	-159.14	27.7	3.7	64.4	57.1	7.35	8.768	
1,800.0	1,793.6	1,806.8	1,803.1	4.2	4.1	-156.89	-156.89	37.4	15.7	66.4	58.6	7.84	8.476	
1,900.0	1,892.3	1,906.7	1,901.8	4.6	4.4	-154.78	-154.78	47.1	27.8	68.6	60.2	8.35	8.211	
2,000.0	1,991.0	2,006.7	2,000.5	4.9	4.7	-152.79	-152.79	56.8	39.9	70.8	61.9	8.88	7.971	
2,100.0	2,089.7	2,106.6	2,099.3	5.2	5.0	-150.93	-150.93	66.5	51.9	73.1	63.7	9.43	7.751	
2,200.0	2,188.4	2,206.6	2,198.0	5.6	5.3	-149.18	-149.18	76.2	64.0	75.5	65.5	9.99	7.550	
2,300.0	2,287.1	2,306.5	2,296.8	5.9	5.6	-147.54	-147.54	86.0	76.1	77.9	67.3	10.58	7.366	
2,400.0	2,385.8	2,406.5	2,395.5	6.3	5.9	-146.01	-146.01	95.7	88.1	80.4	69.2	11.17	7.198	
2,500.0	2,484.5	2,506.4	2,494.2	6.6	6.3	-144.56	-144.56	105.4	100.2	83.0	71.2	11.78	7.043	
2,600.0	2,583.2	2,606.4	2,593.0	7.0	6.6	-143.20	-143.20	115.1	112.3	85.6	73.2	12.40	6.901	
2,700.0	2,681.9	2,706.3	2,691.7	7.4	7.0	-141.93	-141.93	124.8	124.3	88.2	75.2	13.03	6.770	
2,800.0	2,780.6	2,806.3	2,790.4	7.7	7.3	-140.72	-140.72	134.5	136.4	90.9	77.2	13.67	6.649	
2,900.0	2,879.2	2,906.2	2,889.2	8.1	7.6	-139.59	-139.59	144.3	148.4	93.6	79.3	14.32	6.538	
3,000.0	2,977.9	3,006.2	2,987.9	8.4	8.0	-138.52	-138.52	154.0	160.5	96.4	81.4	14.97	6.436	
3,100.0	3,076.6	3,106.1	3,086.7	8.8	8.3	-137.52	-137.52	163.7	172.6	99.2	83.5	15.64	6.341	
3,200.0	3,175.3	3,206.0	3,185.4	9.2	8.7	-136.56	-136.56	173.4	184.6	102.0	85.7	16.31	6.253	
3,300.0	3,274.0	3,306.0	3,284.1	9.5	9.0	-135.66	-135.66	183.1	196.7	104.8	87.8	16.98	6.172	
3,400.0	3,372.7	3,405.9	3,382.9	9.9	9.4	-134.81	-134.81	192.8	208.8	107.7	90.0	17.67	6.097	
3,500.0	3,471.4	3,505.9	3,481.6	10.3	9.7	-134.00	-134.00	202.6	220.8	110.6	92.2	18.35	6.026	
3,600.0	3,570.1	3,605.8	3,580.4	10.7	10.1	-133.23	-133.23	212.3	232.9	113.5	94.5	19.04	5.961	
3,700.0	3,668.8	3,705.8	3,679.1	11.0	10.5	-132.50	-132.50	222.0	245.0	116.4	96.7	19.74	5.900	
3,800.0	3,767.5	3,805.7	3,777.8	11.4	10.8	-131.81	-131.81	231.7	257.0	119.4	99.0	20.43	5.844	
3,900.0	3,866.2	3,905.7	3,876.6	11.8	11.2	-131.15	-131.15	241.4	269.1	122.4	101.2	21.13	5.790	
4,000.0	3,964.9	4,005.6	3,975.3	12.1	11.5	-130.52	-130.52	251.1	281.1	125.4	103.5	21.84	5.741	
4,100.0	4,063.6	4,105.6	4,074.0	12.5	11.9	-129.92	-129.92	260.9	293.2	128.4	105.8	22.54	5.694	
4,200.0	4,162.3	4,205.5	4,172.8	12.9	12.2	-129.35	-129.35	270.6	305.3	131.4	108.1	23.25	5.650	
4,300.0	4,261.0	4,305.5	4,271.5	13.2	12.6	-128.81	-128.81	280.3	317.3	134.4	110.4	23.96	5.609	
4,400.0	4,359.7	4,405.4	4,370.3	13.6	13.0	-128.28	-128.28	290.0	329.4	137.4	112.8	24.67	5.571	
4,500.0	4,458.4	4,505.4	4,469.0	14.0	13.3	-127.78	-127.78	299.7	341.5	140.5	115.1	25.38	5.534	
4,600.0	4,557.1	4,605.0	4,567.5	14.4	13.7	-127.32	-127.32	309.4	353.5	143.5	117.5	26.09	5.502	
4,700.0	4,655.8	4,702.8	4,664.4	14.7	13.9	-127.59	-127.59	317.6	363.7	147.5	120.9	26.64	5.537	
4,800.0	4,754.5	4,800.0	4,761.1	15.1	14.2	-128.97	-128.97	323.7	371.3	153.0	126.0	27.05	5.659	
4,900.0	4,853.2	4,897.3	4,858.1	15.5	14.3	-131.29	-131.29	327.8	376.3	160.3	133.0	27.31	5.871	
5,000.0	4,951.9	4,993.5	4,954.3	15.9	14.5	-134.32	-134.32	329.8	378.8	169.6	142.2	27.43	6.183	

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 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28U-243 - Wellbore #1 - Plan #1 (2-13-14)													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	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	
5,100.0	5,050.6	5,090.8	5,051.6	16.2	14.7	-137.79	330.0	379.1	181.1	153.6	27.48	6.590		
5,200.0	5,149.3	5,189.5	5,150.3	16.6	14.8	-140.98	330.0	379.1	193.4	165.8	27.55	7.018		
5,300.0	5,248.0	5,288.2	5,249.0	17.0	15.0	-143.79	330.0	379.1	206.2	178.5	27.67	7.452		
5,400.0	5,346.6	5,386.9	5,347.6	17.4	15.1	-146.26	330.0	379.1	219.4	191.6	27.82	7.887		
5,500.0	5,445.3	5,485.6	5,446.3	17.7	15.3	-148.46	330.0	379.1	233.0	205.0	28.01	8.319		
5,600.0	5,544.3	5,584.5	5,545.3	18.0	15.5	-150.31	330.0	379.1	245.2	217.0	28.21	8.694		
5,700.0	5,643.8	5,684.0	5,644.8	18.2	15.6	-151.59	330.0	379.1	254.6	226.1	28.45	8.950		
5,800.0	5,743.5	5,783.7	5,744.5	18.4	15.8	-152.40	330.0	379.1	260.9	232.2	28.71	9.090		
5,900.0	5,843.4	5,883.6	5,844.4	18.6	16.0	-152.80	330.0	379.1	264.3	235.3	28.99	9.116		
6,000.0	5,943.4	5,983.6	5,944.4	18.7	16.2	-90.05	329.8	379.1	264.7	235.5	29.30	9.037		
6,100.0	6,043.4	6,082.7	6,043.0	18.9	16.3	88.09	321.0	379.1	264.9	235.5	29.36	9.021		
6,200.0	6,142.9	6,180.0	6,137.9	19.0	16.3	85.36	300.0	379.1	265.6	236.4	29.20	9.098		
6,300.0	6,240.4	6,275.7	6,228.0	19.0	16.3	82.75	267.7	379.1	266.9	238.0	28.96	9.218		
6,400.0	6,334.3	6,370.1	6,312.2	19.0	16.2	80.29	225.1	379.1	268.6	239.9	28.71	9.358		
6,500.0	6,422.8	6,463.3	6,389.5	18.9	16.1	78.03	173.2	379.1	270.7	242.2	28.50	9.499		
6,600.0	6,504.5	6,555.4	6,459.2	18.8	16.1	76.00	113.1	379.1	272.9	244.6	28.37	9.621		
6,700.0	6,578.0	6,646.6	6,520.5	18.8	16.0	74.21	45.7	379.1	275.2	246.8	28.37	9.701		
6,800.0	6,642.0	6,736.9	6,573.0	18.7	16.0	72.70	-27.8	379.1	277.4	248.8	28.54	9.718		
6,900.0	6,695.5	6,826.6	6,616.1	18.8	16.1	71.45	-106.4	379.1	279.3	250.4	28.90	9.663		
7,000.0	6,737.4	6,915.8	6,649.5	18.9	16.3	70.50	-189.1	379.1	280.9	251.4	29.51	9.519		
7,100.0	6,767.2	7,004.6	6,673.1	19.2	16.9	69.82	-274.6	379.1	282.1	251.7	30.37	9.289		
7,200.0	6,784.3	7,093.2	6,686.5	19.8	17.6	69.44	-362.1	379.1	282.8	251.3	31.50	8.977		
7,300.0	6,794.5	7,183.5	6,689.9	20.5	18.5	68.31	-452.3	379.1	285.1	252.1	32.96	8.649		
7,400.0	6,798.5	7,283.4	6,689.9	21.5	19.6	67.51	-552.2	379.1	286.5	251.9	34.59	8.283		
7,500.0	6,798.1	7,383.4	6,689.9	22.6	20.8	67.58	-652.2	379.1	286.4	249.5	36.89	7.763		
7,600.0	6,797.8	7,483.4	6,689.9	23.8	22.2	67.64	-752.2	379.0	286.3	246.9	39.39	7.268		
7,700.0	6,797.5	7,583.4	6,689.9	25.1	23.6	67.71	-852.2	379.0	286.1	244.1	42.05	6.804		
7,800.0	6,797.1	7,683.4	6,689.9	26.5	25.0	67.77	-952.2	379.0	286.0	241.2	44.85	6.377		
7,900.0	6,796.8	7,783.4	6,690.0	27.9	26.6	67.84	-1,052.2	379.0	285.9	238.1	47.76	5.986		
8,000.0	6,796.5	7,883.4	6,690.0	29.4	28.1	67.90	-1,152.2	379.0	285.7	235.0	50.76	5.629		
8,100.0	6,796.1	7,983.4	6,690.0	31.0	29.7	67.97	-1,252.2	379.0	285.6	231.8	53.84	5.305		
8,200.0	6,795.8	8,083.4	6,690.0	32.5	31.4	68.03	-1,352.2	379.0	285.5	228.5	56.99	5.009		
8,300.0	6,795.5	8,183.4	6,690.0	34.2	33.1	68.10	-1,452.2	379.0	285.3	225.2	60.19	4.741		
8,400.0	6,795.1	8,283.4	6,690.0	35.8	34.8	68.16	-1,552.2	379.0	285.2	221.8	63.44	4.496		
8,500.0	6,794.8	8,383.4	6,690.1	37.5	36.5	68.23	-1,652.2	379.0	285.1	218.4	66.73	4.272		
8,600.0	6,794.5	8,483.4	6,690.1	39.2	38.2	68.29	-1,752.2	379.0	285.0	214.9	70.06	4.067		
8,700.0	6,794.2	8,583.4	6,690.1	40.9	40.0	68.36	-1,852.2	379.0	284.8	211.4	73.42	3.879		
8,800.0	6,793.8	8,683.4	6,690.1	42.6	41.8	68.42	-1,952.2	379.0	284.7	207.9	76.81	3.707		
8,900.0	6,793.5	8,783.4	6,690.1	44.4	43.5	68.49	-2,052.2	379.0	284.6	204.4	80.22	3.547		
9,000.0	6,793.2	8,883.4	6,690.1	46.1	45.3	68.55	-2,152.2	379.0	284.4	200.8	83.66	3.400		
9,100.0	6,792.8	8,983.4	6,690.2	47.9	47.1	68.62	-2,252.2	379.0	284.3	197.2	87.11	3.264		
9,200.0	6,792.5	9,083.4	6,690.2	49.7	49.0	68.68	-2,352.2	379.0	284.2	193.6	90.58	3.137		
9,300.0	6,792.2	9,183.4	6,690.2	51.5	50.8	68.75	-2,452.2	379.0	284.1	190.0	94.07	3.020		
9,400.0	6,791.8	9,283.4	6,690.2	53.3	52.6	68.82	-2,552.2	379.0	283.9	186.4	97.57	2.910		
9,500.0	6,791.5	9,383.4	6,690.2	55.1	54.4	68.88	-2,652.2	379.0	283.8	182.7	101.09	2.808		
9,600.0	6,791.2	9,483.4	6,690.3	56.9	56.3	68.95	-2,752.2	379.0	283.7	179.1	104.62	2.712		
9,700.0	6,790.8	9,583.4	6,690.3	58.8	58.1	69.01	-2,852.2	379.0	283.6	175.4	108.16	2.622		
9,800.0	6,790.5	9,683.4	6,690.3	60.6	60.0	69.08	-2,952.2	379.0	283.4	171.7	111.71	2.537		
9,900.0	6,790.2	9,783.4	6,690.3	62.4	61.8	69.14	-3,052.2	379.0	283.3	168.0	115.27	2.458		
10,000.0	6,789.8	9,883.4	6,690.3	64.3	63.7	69.21	-3,152.2	379.0	283.2	164.4	118.84	2.383		
10,100.0	6,789.5	9,983.4	6,690.3	66.1	65.6	69.28	-3,252.2	379.0	283.1	160.6	122.42	2.312		

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 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28U-243 - Wellbore #1 - Plan #1 (2-13-14)												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)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,200.0	6,789.2	10,083.4	6,690.4	68.0	67.4	69.34	-3,352.2	379.0	282.9	156.9	126.00	2.246	
10,300.0	6,788.8	10,183.4	6,690.4	69.8	69.3	69.41	-3,452.2	379.0	282.8	153.2	129.60	2.182	
10,400.0	6,788.5	10,283.4	6,690.4	71.7	71.2	69.48	-3,552.2	379.0	282.7	149.5	133.20	2.122	
10,500.0	6,788.2	10,383.4	6,690.4	73.5	73.0	69.54	-3,652.2	379.0	282.6	145.8	136.80	2.066	
10,600.0	6,787.8	10,483.4	6,690.4	75.4	74.9	69.61	-3,752.2	379.0	282.5	142.0	140.42	2.012	
10,700.0	6,787.5	10,583.4	6,690.4	77.3	76.8	69.67	-3,852.2	379.0	282.3	138.3	144.04	1.960	
10,800.0	6,787.2	10,683.4	6,690.5	79.1	78.7	69.74	-3,952.2	379.0	282.2	134.5	147.66	1.911	
10,900.0	6,786.9	10,783.4	6,690.5	81.0	80.5	69.81	-4,052.2	379.0	282.1	130.8	151.30	1.864	
11,000.0	6,786.5	10,883.4	6,690.5	82.9	82.4	69.87	-4,152.2	379.0	282.0	127.0	154.93	1.820	
11,100.0	6,786.2	10,983.4	6,690.5	84.7	84.3	69.94	-4,252.2	379.0	281.9	123.3	158.58	1.777	
11,200.0	6,785.9	11,083.4	6,690.5	86.6	86.2	70.01	-4,352.2	379.0	281.7	119.5	162.22	1.737	
11,300.0	6,785.5	11,183.4	6,690.6	88.5	88.1	70.07	-4,452.2	379.0	281.6	115.7	165.88	1.698	
11,400.0	6,785.2	11,283.4	6,690.6	90.4	90.0	70.14	-4,552.2	379.0	281.5	112.0	169.53	1.660	
11,500.0	6,784.9	11,383.3	6,690.6	92.3	91.9	70.21	-4,652.2	379.0	281.4	108.2	173.19	1.625	
11,600.0	6,784.5	11,483.3	6,690.6	94.1	93.8	70.27	-4,752.2	379.0	281.3	104.4	176.86	1.590	
11,700.0	6,784.2	11,583.3	6,690.6	96.0	95.7	70.34	-4,852.2	379.0	281.1	100.6	180.53	1.557	
11,800.0	6,783.9	11,683.3	6,690.6	97.9	97.6	70.41	-4,952.2	379.0	281.0	96.8	184.21	1.526	
11,900.0	6,783.5	11,783.3	6,690.7	99.8	99.4	70.48	-5,052.2	379.0	280.9	93.0	187.88	1.495 Level 3	
12,000.0	6,783.2	11,883.3	6,690.7	101.7	101.3	70.54	-5,152.2	379.0	280.8	89.2	191.57	1.466 Level 3	
12,100.0	6,782.9	11,983.3	6,690.7	103.6	103.2	70.61	-5,252.2	379.0	280.7	85.4	195.25	1.437 Level 3	
12,200.0	6,782.5	12,083.3	6,690.7	105.5	105.1	70.68	-5,352.2	379.0	280.6	81.6	198.94	1.410 Level 3	
12,300.0	6,782.2	12,183.3	6,690.7	107.4	107.0	70.74	-5,452.2	379.0	280.4	77.8	202.64	1.384 Level 3	
12,400.0	6,781.9	12,283.3	6,690.7	109.3	108.9	70.81	-5,552.2	379.0	280.3	74.0	206.33	1.359 Level 3	
12,500.0	6,781.5	12,383.3	6,690.8	111.2	110.8	70.88	-5,652.2	379.0	280.2	70.2	210.03	1.334 Level 3	
12,600.0	6,781.2	12,483.3	6,690.8	113.1	112.7	70.95	-5,752.2	379.0	280.1	66.4	213.74	1.310 Level 3	
12,700.0	6,780.9	12,583.3	6,690.8	115.0	114.6	71.01	-5,852.2	379.0	280.0	62.5	217.45	1.288 Level 3	
12,800.0	6,780.6	12,683.3	6,690.8	116.8	116.5	71.08	-5,952.2	379.0	279.9	58.7	221.16	1.265 Level 3	
12,900.0	6,780.2	12,783.3	6,690.8	118.7	118.4	71.15	-6,052.2	379.0	279.8	54.9	224.87	1.244 Level 2	
13,000.0	6,779.9	12,883.3	6,690.8	120.6	120.4	71.22	-6,152.2	379.0	279.6	51.1	228.59	1.223 Level 2	
13,100.0	6,779.6	12,983.3	6,690.9	122.5	122.3	71.28	-6,252.2	379.0	279.5	47.2	232.31	1.203 Level 2	
13,200.0	6,779.2	13,083.3	6,690.9	124.4	124.2	71.35	-6,352.2	379.0	279.4	43.4	236.03	1.184 Level 2	
13,300.0	6,778.9	13,183.3	6,690.9	126.3	126.1	71.42	-6,452.2	379.0	279.3	39.6	239.76	1.165 Level 2	
13,400.0	6,778.6	13,283.3	6,690.9	128.2	128.0	71.49	-6,552.2	379.0	279.2	35.7	243.49	1.147 Level 2	
13,500.0	6,778.2	13,383.3	6,690.9	130.1	129.9	71.56	-6,652.2	379.0	279.1	31.9	247.22	1.129 Level 2	
13,600.0	6,777.9	13,483.3	6,691.0	132.0	131.8	71.62	-6,752.2	379.0	279.0	28.0	250.96	1.112 Level 2	
13,700.0	6,777.6	13,583.3	6,691.0	134.0	133.7	71.69	-6,852.2	379.0	278.9	24.2	254.70	1.095 Level 2	
13,800.0	6,777.2	13,683.3	6,691.0	135.9	135.6	71.76	-6,952.2	379.0	278.8	20.3	258.44	1.079 Level 2	
13,871.7	6,777.0	13,755.1	6,691.0	137.2	137.0	71.81	-7,023.9	379.0	278.7	17.6	261.13	1.067 Level 2, ES, SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hall 28-1 (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	-173.57	-173.57	-1,286.0	-144.9	1,294.3				
100.0	100.0	81.0	81.0	0.1	1.6	-173.57	-173.57	-1,286.0	-144.9	1,294.1	1,292.4	1.73	746.948	
200.0	200.0	181.0	181.0	0.3	3.6	-173.57	-173.57	-1,286.0	-144.9	1,294.1	1,290.2	3.96	327.024	
300.0	300.0	281.0	281.0	0.6	5.6	-173.57	-173.57	-1,286.0	-144.9	1,294.1	1,288.0	6.18	209.338	
400.0	400.0	381.0	381.0	0.8	7.6	-173.57	-173.57	-1,286.0	-144.9	1,294.1	1,285.7	8.41	153.939	
500.0	500.0	481.0	481.0	1.0	9.6	-173.57	-173.57	-1,286.0	-144.9	1,294.1	1,283.5	10.63	121.726	
600.0	600.0	581.0	581.0	1.2	11.6	-173.57	-173.57	-1,286.0	-144.9	1,294.1	1,281.3	12.86	100.662	
700.0	700.0	681.0	681.0	1.5	13.6	-173.57	-173.57	-1,286.0	-144.9	1,294.1	1,279.1	15.08	85.812	
800.0	800.0	781.0	781.0	1.7	15.6	-173.57	-173.57	-1,286.0	-144.9	1,294.1	1,276.8	17.31	74.781	
900.0	900.0	881.0	881.0	1.9	17.6	-173.57	-173.57	-1,286.0	-144.9	1,294.1	1,274.6	19.53	66.262	
1,000.0	1,000.0	981.0	981.0	2.1	19.6	-173.57	-173.57	-1,286.0	-144.9	1,294.1	1,272.4	21.76	59.486	
1,100.0	1,100.0	1,081.0	1,081.0	2.4	21.6	123.62	123.62	-1,286.0	-144.9	1,295.1	1,271.1	23.97	54.033	
1,200.0	1,199.8	1,180.8	1,180.8	2.6	23.6	123.76	123.76	-1,286.0	-144.9	1,298.0	1,271.9	26.17	49.605	
1,300.0	1,299.5	1,280.5	1,280.5	2.8	25.6	124.00	124.00	-1,286.0	-144.9	1,302.9	1,274.5	28.36	45.946	
1,400.0	1,398.7	1,379.7	1,379.7	3.0	27.6	124.32	124.32	-1,286.0	-144.9	1,309.8	1,279.2	30.54	42.890	
1,500.0	1,497.5	1,478.5	1,478.5	3.3	29.6	124.78	124.78	-1,286.0	-144.9	1,318.6	1,285.8	32.73	40.284	
1,600.0	1,596.2	1,577.2	1,577.2	3.6	31.5	125.35	125.35	-1,286.0	-144.9	1,327.9	1,292.9	34.97	37.974	
1,700.0	1,694.9	1,675.9	1,675.9	3.9	33.5	125.90	125.90	-1,286.0	-144.9	1,337.4	1,300.1	37.21	35.936	
1,800.0	1,793.6	1,774.6	1,774.6	4.2	35.5	126.45	126.45	-1,286.0	-144.9	1,346.9	1,307.5	39.47	34.128	
1,900.0	1,892.3	1,873.3	1,873.3	4.6	37.5	127.00	127.00	-1,286.0	-144.9	1,356.7	1,314.9	41.73	32.514	
2,000.0	1,991.0	1,972.0	1,972.0	4.9	39.4	127.53	127.53	-1,286.0	-144.9	1,366.5	1,322.5	43.99	31.066	
2,100.0	2,089.7	2,070.7	2,070.7	5.2	41.4	128.06	128.06	-1,286.0	-144.9	1,376.4	1,330.2	46.25	29.761	
2,200.0	2,188.4	2,169.4	2,169.4	5.6	43.4	128.58	128.58	-1,286.0	-144.9	1,386.5	1,338.0	48.51	28.579	
2,300.0	2,287.1	2,268.1	2,268.1	5.9	45.4	129.09	129.09	-1,286.0	-144.9	1,396.7	1,345.9	50.78	27.504	
2,400.0	2,385.8	2,366.8	2,366.8	6.3	47.3	129.60	129.60	-1,286.0	-144.9	1,406.9	1,353.9	53.05	26.523	
2,500.0	2,484.5	2,465.5	2,465.5	6.6	49.3	130.09	130.09	-1,286.0	-144.9	1,417.3	1,362.0	55.31	25.624	
2,600.0	2,583.2	2,564.2	2,564.2	7.0	51.3	130.58	130.58	-1,286.0	-144.9	1,427.8	1,370.3	57.58	24.798	
2,700.0	2,681.9	2,662.9	2,662.9	7.4	53.3	131.07	131.07	-1,286.0	-144.9	1,438.4	1,378.6	59.84	24.037	
2,800.0	2,780.6	2,761.6	2,761.6	7.7	55.2	131.54	131.54	-1,286.0	-144.9	1,449.1	1,387.0	62.11	23.332	
2,900.0	2,879.2	2,860.2	2,860.2	8.1	57.2	132.01	132.01	-1,286.0	-144.9	1,459.9	1,395.6	64.37	22.680	
3,000.0	2,977.9	2,958.9	2,958.9	8.4	59.2	132.47	132.47	-1,286.0	-144.9	1,470.8	1,404.2	66.63	22.073	
3,100.0	3,076.6	3,057.6	3,057.6	8.8	61.2	132.93	132.93	-1,286.0	-144.9	1,481.8	1,412.9	68.90	21.508	
3,200.0	3,175.3	3,156.3	3,156.3	9.2	63.1	133.38	133.38	-1,286.0	-144.9	1,492.9	1,421.8	71.16	20.981	
3,300.0	3,274.0	3,255.0	3,255.0	9.5	65.1	133.82	133.82	-1,286.0	-144.9	1,504.1	1,430.7	73.42	20.487	
3,400.0	3,372.7	3,353.7	3,353.7	9.9	67.1	134.26	134.26	-1,286.0	-144.9	1,515.4	1,439.7	75.67	20.025	
3,500.0	3,471.4	3,452.4	3,452.4	10.3	69.0	134.69	134.69	-1,286.0	-144.9	1,526.7	1,448.8	77.93	19.591	
3,600.0	3,570.1	3,551.1	3,551.1	10.7	71.0	135.11	135.11	-1,286.0	-144.9	1,538.2	1,458.0	80.19	19.182	
3,700.0	3,668.8	3,649.8	3,649.8	11.0	73.0	135.53	135.53	-1,286.0	-144.9	1,549.7	1,467.2	82.44	18.798	
3,800.0	3,767.5	3,748.5	3,748.5	11.4	75.0	135.94	135.94	-1,286.0	-144.9	1,561.3	1,476.6	84.69	18.435	
3,900.0	3,866.2	3,847.2	3,847.2	11.8	76.9	136.35	136.35	-1,286.0	-144.9	1,573.0	1,486.0	86.94	18.092	
4,000.0	3,964.9	3,945.9	3,945.9	12.1	78.9	136.75	136.75	-1,286.0	-144.9	1,584.7	1,495.5	89.19	17.767	
4,100.0	4,063.6	4,044.6	4,044.6	12.5	80.9	137.14	137.14	-1,286.0	-144.9	1,596.5	1,505.1	91.44	17.460	
4,200.0	4,162.3	4,143.3	4,143.3	12.9	82.9	137.53	137.53	-1,286.0	-144.9	1,608.5	1,514.8	93.69	17.168	
4,300.0	4,261.0	4,242.0	4,242.0	13.2	84.8	137.91	137.91	-1,286.0	-144.9	1,620.4	1,524.5	95.93	16.891	
4,400.0	4,359.7	4,340.7	4,340.7	13.6	86.8	138.28	138.28	-1,286.0	-144.9	1,632.5	1,534.3	98.18	16.628	
4,500.0	4,458.4	4,439.4	4,439.4	14.0	88.8	138.66	138.66	-1,286.0	-144.9	1,644.6	1,544.2	100.42	16.377	
4,600.0	4,557.1	4,538.1	4,538.1	14.4	90.8	139.02	139.02	-1,286.0	-144.9	1,656.8	1,554.1	102.66	16.138	
4,700.0	4,655.8	4,636.8	4,636.8	14.7	92.7	139.38	139.38	-1,286.0	-144.9	1,669.0	1,564.1	104.90	15.910	
4,800.0	4,754.5	4,735.5	4,735.5	15.1	94.7	139.74	139.74	-1,286.0	-144.9	1,681.4	1,574.2	107.14	15.693	
4,900.0	4,853.2	4,834.2	4,834.2	15.5	96.7	140.09	140.09	-1,286.0	-144.9	1,693.7	1,584.4	109.38	15.485	
5,000.0	4,951.9	4,932.9	4,932.9	15.9	98.7	140.43	140.43	-1,286.0	-144.9	1,706.2	1,594.6	111.62	15.286	

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 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hall 28-1 (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
5,100.0	5,050.6	5,031.6	5,031.6	16.2	100.6	140.77		-1,286.0	-144.9	1,718.7	1,604.8	113.85	15.096	
5,200.0	5,149.3	5,130.3	5,130.3	16.6	102.6	141.11		-1,286.0	-144.9	1,731.3	1,615.2	116.09	14.913	
5,300.0	5,248.0	5,229.0	5,229.0	17.0	104.6	141.44		-1,286.0	-144.9	1,743.9	1,625.6	118.32	14.739	
5,400.0	5,346.6	5,327.6	5,327.6	17.4	106.6	141.76		-1,286.0	-144.9	1,756.6	1,636.0	120.55	14.571	
5,500.0	5,445.3	5,426.3	5,426.3	17.7	108.5	142.09		-1,286.0	-144.9	1,769.3	1,646.5	122.81	14.407	
5,600.0	5,544.3	5,525.3	5,525.3	18.0	110.5	142.51		-1,286.0	-144.9	1,780.5	1,655.2	125.29	14.211	
5,700.0	5,643.8	5,624.8	5,624.8	18.2	112.5	142.82		-1,286.0	-144.9	1,789.0	1,661.3	127.70	14.010	
5,800.0	5,743.5	5,724.5	5,724.5	18.4	114.5	143.03		-1,286.0	-144.9	1,794.8	1,664.8	130.02	13.804	
5,900.0	5,843.4	5,824.4	5,824.4	18.6	116.5	143.14		-1,286.0	-144.9	1,797.8	1,665.5	132.25	13.594	
6,000.0	5,943.4	5,924.4	5,924.4	18.7	118.5	-153.99		-1,286.0	-144.9	1,798.2	1,663.8	134.40	13.380	
6,100.0	6,043.4	6,024.4	6,024.4	18.9	120.5	26.02		-1,286.0	-144.9	1,798.0	1,661.5	136.51	13.171	
6,200.0	6,142.9	6,123.9	6,123.9	19.0	122.5	26.42		-1,286.0	-144.9	1,789.9	1,652.7	137.20	13.046	
6,300.0	6,240.4	6,221.4	6,221.4	19.0	124.4	27.42		-1,286.0	-144.9	1,770.3	1,634.3	135.98	13.019	
6,400.0	6,334.3	6,315.3	6,315.3	19.0	126.3	29.09		-1,286.0	-144.9	1,739.6	1,606.5	133.07	13.072	
6,500.0	6,422.8	6,403.8	6,403.8	18.9	128.1	31.56		-1,286.0	-144.9	1,698.3	1,569.3	129.01	13.165	
6,600.0	6,504.5	6,485.5	6,485.5	18.8	129.7	35.02		-1,286.0	-144.9	1,647.6	1,522.8	124.76	13.206	
6,700.0	6,578.0	6,559.0	6,559.0	18.8	131.2	39.67		-1,286.0	-144.9	1,588.5	1,466.6	121.88	13.033	
6,800.0	6,642.0	6,623.0	6,623.0	18.7	132.5	45.79		-1,286.0	-144.9	1,522.4	1,400.1	122.24	12.454	
6,900.0	6,695.5	6,676.5	6,676.5	18.8	133.5	53.54		-1,286.0	-144.9	1,450.8	1,323.7	127.12	11.413	
7,000.0	6,737.4	6,718.4	6,718.4	18.9	134.4	62.78		-1,286.0	-144.9	1,375.6	1,239.9	135.73	10.135	
7,100.0	6,767.2	6,748.2	6,748.2	19.2	135.0	72.91		-1,286.0	-144.9	1,298.6	1,153.7	144.91	8.961	
7,200.0	6,784.3	6,765.3	6,765.3	19.8	135.3	82.84		-1,286.0	-144.9	1,221.8	1,070.6	151.25	8.078	
7,300.0	6,794.5	6,775.5	6,775.5	20.5	135.5	84.98		-1,286.0	-144.9	1,147.7	994.6	153.06	7.498	
7,400.0	6,798.5	6,779.5	6,779.5	21.5	135.6	90.18		-1,286.0	-144.9	1,077.3	922.3	154.98	6.951	
7,500.0	6,798.1	6,779.1	6,779.1	22.6	135.6	90.15		-1,286.0	-144.9	1,011.8	855.6	156.18	6.478	
7,600.0	6,797.8	6,778.8	6,778.8	23.8	135.6	90.13		-1,286.0	-144.9	952.4	794.9	157.49	6.047	
7,700.0	6,797.5	6,778.5	6,778.5	25.1	135.6	90.10		-1,286.0	-144.9	900.1	741.2	158.88	5.665	
7,800.0	6,797.1	6,778.1	6,778.1	26.5	135.6	90.08		-1,286.0	-144.9	856.4	696.1	160.34	5.341	
7,900.0	6,796.8	6,777.8	6,777.8	27.9	135.6	90.06		-1,286.0	-144.9	822.6	660.8	161.86	5.082	
8,000.0	6,796.5	6,777.5	6,777.5	29.4	135.5	90.03		-1,286.0	-144.9	800.0	636.5	163.43	4.895	
8,100.0	6,796.1	6,777.1	6,777.1	31.0	135.5	90.01		-1,286.0	-144.9	789.4	624.4	165.04	4.783	
8,133.8	6,796.0	6,777.0	6,777.0	31.5	135.5	90.00		-1,286.0	-144.9	788.7	623.1	165.60	4.763 CC, ES	
8,200.0	6,795.8	6,776.8	6,776.8	32.5	135.5	89.98		-1,286.0	-144.9	791.5	624.8	166.69	4.748 SF	
8,300.0	6,795.5	6,776.5	6,776.5	34.2	135.5	89.96		-1,286.0	-144.9	806.0	637.6	168.36	4.787	
8,400.0	6,795.1	6,776.1	6,776.1	35.8	135.5	89.94		-1,286.0	-144.9	832.4	662.3	170.06	4.895	
8,500.0	6,794.8	6,775.8	6,775.8	37.5	135.5	89.91		-1,286.0	-144.9	869.5	697.8	171.78	5.062	
8,600.0	6,794.5	6,775.5	6,775.5	39.2	135.5	89.89		-1,286.0	-144.9	916.2	742.6	173.52	5.280	
8,700.0	6,794.2	6,775.2	6,775.2	40.9	135.5	89.86		-1,286.0	-144.9	970.9	795.6	175.27	5.539	
8,800.0	6,793.8	6,774.8	6,774.8	42.6	135.5	89.84		-1,286.0	-144.9	1,032.4	855.3	177.04	5.831	
8,900.0	6,793.5	6,774.5	6,774.5	44.4	135.5	89.82		-1,286.0	-144.9	1,099.6	920.7	178.82	6.149	
9,000.0	6,793.2	6,774.2	6,774.2	46.1	135.5	89.79		-1,286.0	-144.9	1,171.4	990.8	180.61	6.486	
9,100.0	6,792.8	6,773.8	6,773.8	47.9	135.5	89.77		-1,286.0	-144.9	1,247.2	1,064.8	182.41	6.837	
9,200.0	6,792.5	6,773.5	6,773.5	49.7	135.5	89.74		-1,286.0	-144.9	1,326.2	1,141.9	184.22	7.199	
9,300.0	6,792.2	6,773.2	6,773.2	51.5	135.5	89.72		-1,286.0	-144.9	1,407.8	1,221.8	186.04	7.567	
9,400.0	6,791.8	6,772.8	6,772.8	53.3	135.5	89.69		-1,286.0	-144.9	1,491.7	1,303.8	187.86	7.940	
9,500.0	6,791.5	6,772.5	6,772.5	55.1	135.4	89.67		-1,286.0	-144.9	1,577.5	1,387.8	189.70	8.316	
9,600.0	6,791.2	6,772.2	6,772.2	56.9	135.4	89.65		-1,286.0	-144.9	1,664.8	1,473.3	191.53	8.692	
9,700.0	6,790.8	6,771.8	6,771.8	58.8	135.4	89.62		-1,286.0	-144.9	1,753.5	1,560.2	193.37	9.068	
9,800.0	6,790.5	6,771.5	6,771.5	60.6	135.4	89.60		-1,286.0	-144.9	1,843.4	1,648.2	195.22	9.443	
9,900.0	6,790.2	6,771.2	6,771.2	62.4	135.4	89.57		-1,286.0	-144.9	1,934.3	1,737.2	197.07	9.815	
10,000.0	6,789.8	6,770.8	6,770.8	64.3	135.4	89.55		-1,286.0	-144.9	2,026.0	1,827.1	198.92	10.185	

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 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hall 28-1 (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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	6,789.5	6,770.5	6,770.5	66.1	135.4	89.53	89.53	-1,286.0	-144.9	2,118.4	1,917.7	200.78	10.551	
10,200.0	6,789.2	6,770.2	6,770.2	68.0	135.4	89.50	89.50	-1,286.0	-144.9	2,211.6	2,008.9	202.64	10.914	
10,300.0	6,788.8	6,769.8	6,769.8	69.8	135.4	89.48	89.48	-1,286.0	-144.9	2,305.3	2,100.8	204.50	11.273	
10,400.0	6,788.5	6,769.5	6,769.5	71.7	135.4	89.45	89.45	-1,286.0	-144.9	2,399.5	2,193.1	206.36	11.627	
10,500.0	6,788.2	6,769.2	6,769.2	73.5	135.4	89.43	89.43	-1,286.0	-144.9	2,494.1	2,285.9	208.23	11.978	
10,600.0	6,787.8	6,768.8	6,768.8	75.4	135.4	89.41	89.41	-1,286.0	-144.9	2,589.2	2,379.1	210.10	12.324	
10,700.0	6,787.5	6,768.5	6,768.5	77.3	135.4	89.38	89.38	-1,286.0	-144.9	2,684.6	2,472.6	211.97	12.665	
10,800.0	6,787.2	6,768.2	6,768.2	79.1	135.4	89.36	89.36	-1,286.0	-144.9	2,780.4	2,566.5	213.85	13.002	
10,900.0	6,786.9	6,767.9	6,767.9	81.0	135.4	89.33	89.33	-1,286.0	-144.9	2,876.4	2,660.7	215.72	13.334	
11,000.0	6,786.5	6,767.5	6,767.5	82.9	135.4	89.31	89.31	-1,286.0	-144.9	2,972.7	2,755.1	217.60	13.661	
11,100.0	6,786.2	6,767.2	6,767.2	84.7	135.3	89.29	89.29	-1,286.0	-144.9	3,069.2	2,849.7	219.48	13.984	
11,200.0	6,785.9	6,766.9	6,766.9	86.6	135.3	89.26	89.26	-1,286.0	-144.9	3,166.0	2,944.6	221.36	14.302	
11,300.0	6,785.5	6,766.5	6,766.5	88.5	135.3	89.24	89.24	-1,286.0	-144.9	3,262.9	3,039.7	223.24	14.616	
11,400.0	6,785.2	6,766.2	6,766.2	90.4	135.3	89.21	89.21	-1,286.0	-144.9	3,360.0	3,134.9	225.12	14.925	
11,500.0	6,784.9	6,765.9	6,765.9	92.3	135.3	89.19	89.19	-1,286.0	-144.9	3,457.3	3,230.3	227.01	15.230	
11,600.0	6,784.5	6,765.5	6,765.5	94.1	135.3	89.17	89.17	-1,286.0	-144.9	3,554.7	3,325.9	228.89	15.530	
11,700.0	6,784.2	6,765.2	6,765.2	96.0	135.3	89.14	89.14	-1,286.0	-144.9	3,652.3	3,421.5	230.78	15.826	
11,800.0	6,783.9	6,764.9	6,764.9	97.9	135.3	89.12	89.12	-1,286.0	-144.9	3,750.0	3,517.4	232.66	16.118	
11,900.0	6,783.5	6,764.5	6,764.5	99.8	135.3	89.09	89.09	-1,286.0	-144.9	3,847.8	3,613.3	234.55	16.405	
12,000.0	6,783.2	6,764.2	6,764.2	101.7	135.3	89.07	89.07	-1,286.0	-144.9	3,945.8	3,709.3	236.44	16.688	
12,100.0	6,782.9	6,763.9	6,763.9	103.6	135.3	89.04	89.04	-1,286.0	-144.9	4,043.8	3,805.5	238.33	16.967	
12,200.0	6,782.5	6,763.5	6,763.5	105.5	135.3	89.02	89.02	-1,286.0	-144.9	4,141.9	3,901.7	240.22	17.242	
12,300.0	6,782.2	6,763.2	6,763.2	107.4	135.3	89.00	89.00	-1,286.0	-144.9	4,240.1	3,998.0	242.11	17.513	
12,400.0	6,781.9	6,762.9	6,762.9	109.3	135.3	88.97	88.97	-1,286.0	-144.9	4,338.4	4,094.4	244.00	17.780	
12,500.0	6,781.5	6,762.5	6,762.5	111.2	135.3	88.95	88.95	-1,286.0	-144.9	4,436.8	4,190.9	245.90	18.043	
12,600.0	6,781.2	6,762.2	6,762.2	113.1	135.2	88.92	88.92	-1,286.0	-144.9	4,535.2	4,287.5	247.79	18.303	
12,700.0	6,780.9	6,761.9	6,761.9	115.0	135.2	88.90	88.90	-1,286.0	-144.9	4,633.8	4,384.1	249.68	18.559	
12,800.0	6,780.6	6,761.6	6,761.6	116.8	135.2	88.88	88.88	-1,286.0	-144.9	4,732.3	4,480.7	251.58	18.811	
12,900.0	6,780.2	6,761.2	6,761.2	118.7	135.2	88.85	88.85	-1,286.0	-144.9	4,831.0	4,577.5	253.47	19.059	
13,000.0	6,779.9	6,760.9	6,760.9	120.6	135.2	88.83	88.83	-1,286.0	-144.9	4,929.6	4,674.3	255.36	19.304	
13,100.0	6,779.6	6,760.6	6,760.6	122.5	135.2	88.80	88.80	-1,286.0	-144.9	5,028.4	4,771.1	257.26	19.546	
13,200.0	6,779.2	6,760.2	6,760.2	124.4	135.2	88.78	88.78	-1,286.0	-144.9	5,127.2	4,868.0	259.16	19.784	
13,300.0	6,778.9	6,759.9	6,759.9	126.3	135.2	88.76	88.76	-1,286.0	-144.9	5,226.0	4,964.9	261.05	20.019	
13,400.0	6,778.6	6,759.6	6,759.6	128.2	135.2	88.73	88.73	-1,286.0	-144.9	5,324.9	5,061.9	262.95	20.251	
13,500.0	6,778.2	6,759.2	6,759.2	130.1	135.2	88.71	88.71	-1,286.0	-144.9	5,423.8	5,158.9	264.85	20.479	
13,600.0	6,777.9	6,758.9	6,758.9	132.0	135.2	88.68	88.68	-1,286.0	-144.9	5,522.7	5,256.0	266.74	20.704	
13,700.0	6,777.6	6,758.6	6,758.6	134.0	135.2	88.66	88.66	-1,286.0	-144.9	5,621.7	5,353.1	268.64	20.927	
13,800.0	6,777.2	6,758.2	6,758.2	135.9	135.2	88.64	88.64	-1,286.0	-144.9	5,720.8	5,450.2	270.54	21.146	
13,871.7	6,777.0	6,758.0	6,758.0	137.2	135.2	88.62	88.62	-1,286.0	-144.9	5,791.8	5,519.9	271.90	21.301	



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hall 28-2 (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	149.50	149.50	-269.6	158.8	313.5				
100.0	100.0	81.0	81.0	0.1	1.6	149.50	149.50	-269.6	158.8	312.9	311.2	1.73	180.590	
200.0	200.0	181.0	181.0	0.3	3.6	149.50	149.50	-269.6	158.8	312.9	308.9	3.96	79.065	
300.0	300.0	281.0	281.0	0.6	5.6	149.50	149.50	-269.6	158.8	312.9	306.7	6.18	50.612	
400.0	400.0	381.0	381.0	0.8	7.6	149.50	149.50	-269.6	158.8	312.9	304.5	8.41	37.218	
500.0	500.0	481.0	481.0	1.0	9.6	149.50	149.50	-269.6	158.8	312.9	302.3	10.63	29.430	
600.0	600.0	581.0	581.0	1.2	11.6	149.50	149.50	-269.6	158.8	312.9	300.0	12.86	24.337	
700.0	700.0	681.0	681.0	1.5	13.6	149.50	149.50	-269.6	158.8	312.9	297.8	15.08	20.747	
800.0	800.0	781.0	781.0	1.7	15.6	149.50	149.50	-269.6	158.8	312.9	295.6	17.31	18.080	
900.0	900.0	881.0	881.0	1.9	17.6	149.50	149.50	-269.6	158.8	312.9	293.4	19.53	16.020	
1,000.0	1,000.0	981.0	981.0	2.1	19.6	149.50	149.50	-269.6	158.8	312.9	291.1	21.76	14.382	
1,100.0	1,100.0	1,081.0	1,081.0	2.4	21.6	86.96	86.96	-269.6	158.8	312.8	288.8	23.97	13.048	
1,200.0	1,199.8	1,180.8	1,180.8	2.6	23.6	87.92	87.92	-269.6	158.8	312.6	286.4	26.19	11.936	
1,300.0	1,299.5	1,260.5	1,260.5	2.8	25.6	89.51	89.51	-269.6	158.8	312.4	284.0	28.40	10.997	
1,324.5	1,323.8	1,304.8	1,304.8	2.9	26.1	90.00	90.00	-269.6	158.8	312.3	283.4	28.95	10.789 CC	
1,400.0	1,398.7	1,379.7	1,379.7	3.0	27.6	91.73	91.73	-269.6	158.8	312.5	281.9	30.63	10.201	
1,500.0	1,497.5	1,478.5	1,478.5	3.3	29.6	94.50	94.50	-269.6	158.8	313.3	280.5	32.88	9.529	
1,600.0	1,596.2	1,577.2	1,577.2	3.6	31.5	97.39	97.39	-269.6	158.8	315.0	279.9	35.14	8.964 ES	
1,700.0	1,694.9	1,675.9	1,675.9	3.9	33.5	100.23	100.23	-269.6	158.8	317.5	280.1	37.42	8.486	
1,800.0	1,793.6	1,774.6	1,774.6	4.2	35.5	103.03	103.03	-269.6	158.8	320.8	281.1	39.70	8.082	
1,900.0	1,892.3	1,873.3	1,873.3	4.6	37.5	105.76	105.76	-269.6	158.8	324.9	282.9	41.98	7.739	
2,000.0	1,991.0	1,972.0	1,972.0	4.9	39.4	108.42	108.42	-269.6	158.8	329.7	285.4	44.25	7.449	
2,100.0	2,089.7	2,070.7	2,070.7	5.2	41.4	111.00	111.00	-269.6	158.8	335.2	288.6	46.53	7.203	
2,200.0	2,188.4	2,169.4	2,169.4	5.6	43.4	113.50	113.50	-269.6	158.8	341.3	292.5	48.80	6.994	
2,300.0	2,287.1	2,268.1	2,268.1	5.9	45.4	115.90	115.90	-269.6	158.8	348.1	297.1	51.06	6.817	
2,400.0	2,385.8	2,366.8	2,366.8	6.3	47.3	118.21	118.21	-269.6	158.8	355.5	302.2	53.32	6.668	
2,500.0	2,484.5	2,465.5	2,465.5	6.6	49.3	120.43	120.43	-269.6	158.8	363.5	307.9	55.57	6.541	
2,600.0	2,583.2	2,564.2	2,564.2	7.0	51.3	122.55	122.55	-269.6	158.8	372.0	314.2	57.82	6.434	
2,700.0	2,681.9	2,662.9	2,662.9	7.4	53.3	124.57	124.57	-269.6	158.8	381.0	320.9	60.05	6.343	
2,800.0	2,780.6	2,761.6	2,761.6	7.7	55.2	126.50	126.50	-269.6	158.8	390.4	328.1	62.29	6.268	
2,900.0	2,879.2	2,860.2	2,860.2	8.1	57.2	128.34	128.34	-269.6	158.8	400.3	335.7	64.51	6.204	
3,000.0	2,977.9	2,958.9	2,958.9	8.4	59.2	130.09	130.09	-269.6	158.8	410.5	343.8	66.73	6.152	
3,100.0	3,076.6	3,057.6	3,057.6	8.8	61.2	131.75	131.75	-269.6	158.8	421.1	352.2	68.95	6.108	
3,200.0	3,175.3	3,156.3	3,156.3	9.2	63.1	133.33	133.33	-269.6	158.8	432.1	360.9	71.16	6.072	
3,300.0	3,274.0	3,255.0	3,255.0	9.5	65.1	134.84	134.84	-269.6	158.8	443.4	370.0	73.37	6.043	
3,400.0	3,372.7	3,353.7	3,353.7	9.9	67.1	136.26	136.26	-269.6	158.8	454.9	379.4	75.57	6.020	
3,500.0	3,471.4	3,452.4	3,452.4	10.3	69.0	137.62	137.62	-269.6	158.8	466.8	389.0	77.77	6.002	
3,600.0	3,570.1	3,551.1	3,551.1	10.7	71.0	138.91	138.91	-269.6	158.8	478.9	398.9	79.97	5.988	
3,700.0	3,668.8	3,649.8	3,649.8	11.0	73.0	140.14	140.14	-269.6	158.8	491.2	409.0	82.16	5.978	
3,800.0	3,767.5	3,748.5	3,748.5	11.4	75.0	141.31	141.31	-269.6	158.8	503.7	419.3	84.36	5.971	
3,900.0	3,866.2	3,847.2	3,847.2	11.8	76.9	142.42	142.42	-269.6	158.8	516.4	429.9	86.55	5.967	
4,000.0	3,964.9	3,945.9	3,945.9	12.1	78.9	143.48	143.48	-269.6	158.8	529.3	440.6	88.74	5.965	
4,100.0	4,063.6	4,044.6	4,044.6	12.5	80.9	144.49	144.49	-269.6	158.8	542.4	451.5	90.93	5.965	
4,200.0	4,162.3	4,143.3	4,143.3	12.9	82.9	145.45	145.45	-269.6	158.8	555.6	462.5	93.11	5.967	
4,300.0	4,261.0	4,242.0	4,242.0	13.2	84.8	146.36	146.36	-269.6	158.8	569.0	473.7	95.30	5.971	
4,400.0	4,359.7	4,340.7	4,340.7	13.6	86.8	147.23	147.23	-269.6	158.8	582.5	485.1	97.49	5.976	
4,500.0	4,458.4	4,439.4	4,439.4	14.0	88.8	148.07	148.07	-269.6	158.8	596.2	496.5	99.67	5.982	
4,600.0	4,557.1	4,538.1	4,538.1	14.4	90.8	148.87	148.87	-269.6	158.8	610.0	508.1	101.86	5.988	
4,700.0	4,655.8	4,636.8	4,636.8	14.7	92.7	149.63	149.63	-269.6	158.8	623.8	519.8	104.04	5.996	
4,800.0	4,754.5	4,735.5	4,735.5	15.1	94.7	150.36	150.36	-269.6	158.8	637.8	531.6	106.22	6.005	
4,900.0	4,853.2	4,834.2	4,834.2	15.5	96.7	151.05	151.05	-269.6	158.8	651.9	543.5	108.41	6.013	

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 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hall 28-2 (Exist) - Wellbore #1 - Wellbore #1											Offset Site Error:		0.0 ft
Survey Program: 7600-UNKNOWN													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)					
5,000.0	4,951.9	4,932.9	4,932.9	15.9	98.7	151.72	-269.6	158.8	666.1	555.5	110.59	6.023			
5,100.0	5,050.6	5,031.6	5,031.6	16.2	100.6	152.36	-269.6	158.8	680.3	567.6	112.78	6.033			
5,200.0	5,149.3	5,130.3	5,130.3	16.6	102.6	152.98	-269.6	158.8	694.7	579.7	114.96	6.043			
5,300.0	5,248.0	5,229.0	5,229.0	17.0	104.6	153.57	-269.6	158.8	709.1	592.0	117.14	6.053			
5,400.0	5,346.6	5,327.6	5,327.6	17.4	106.6	154.13	-269.6	158.8	723.6	604.3	119.33	6.064			
5,500.0	5,445.3	5,426.3	5,426.3	17.7	108.5	154.68	-269.6	158.8	738.1	616.6	121.54	6.073			
5,600.0	5,544.3	5,525.3	5,525.3	18.0	110.5	155.25	-269.6	158.8	751.0	626.9	124.11	6.051			
5,700.0	5,643.8	5,624.8	5,624.8	18.2	112.5	155.67	-269.6	158.8	760.7	634.1	126.58	6.010			
5,800.0	5,743.5	5,724.5	5,724.5	18.4	114.5	155.95	-269.6	158.8	767.3	638.3	128.95	5.950			
5,900.0	5,843.4	5,824.4	5,824.4	18.6	116.5	156.09	-269.6	158.8	770.7	639.5	131.20	5.874			
6,000.0	5,943.4	5,924.4	5,924.4	18.7	118.5	-141.03	-269.6	158.8	771.2	637.8	133.36	5.783			
6,100.0	6,043.4	6,024.4	6,024.4	18.9	120.5	38.99	-269.6	158.8	771.0	635.5	135.49	5.690			
6,200.0	6,142.9	6,123.9	6,123.9	19.0	122.5	39.74	-269.6	158.8	764.0	627.5	136.51	5.597			
6,300.0	6,240.4	6,221.4	6,221.4	19.0	124.4	41.65	-269.6	158.8	747.3	611.0	136.23	5.485			
6,400.0	6,334.3	6,315.3	6,315.3	19.0	126.3	44.81	-269.6	158.8	721.4	586.2	135.17	5.337			
6,500.0	6,422.8	6,403.8	6,403.8	18.9	128.1	49.36	-269.6	158.8	687.8	553.5	134.29	5.122			
6,600.0	6,504.5	6,485.5	6,485.5	18.8	129.7	55.39	-269.6	158.8	648.3	513.4	134.82	4.808			
6,700.0	6,578.0	6,559.0	6,559.0	18.8	131.2	62.74	-269.6	158.8	605.5	467.9	137.58	4.401			
6,800.0	6,642.0	6,623.0	6,623.0	18.7	132.5	70.86	-269.6	158.8	562.9	420.8	142.07	3.962			
6,900.0	6,695.5	6,676.5	6,676.5	18.8	133.5	78.76	-269.6	158.8	525.1	378.5	146.59	3.582			
7,000.0	6,737.4	6,718.4	6,718.4	18.9	134.4	85.31	-269.6	158.8	497.4	347.7	149.74	3.322			
7,100.0	6,767.2	6,748.2	6,748.2	19.2	135.0	89.58	-269.6	158.8	485.2	333.7	151.48	3.203			
7,115.6	6,770.7	6,751.7	6,751.7	19.3	135.0	90.00	-269.6	158.8	485.0	333.3	151.68	3.197 SF			
7,200.0	6,784.3	6,765.3	6,765.3	19.8	135.3	91.04	-269.6	158.8	492.1	339.4	152.64	3.224			
7,300.0	6,794.5	6,775.5	6,775.5	20.5	135.5	91.79	-269.6	158.8	518.3	364.5	153.78	3.370			
7,400.0	6,798.5	6,779.5	6,779.5	21.5	135.6	89.89	-269.6	158.8	561.3	406.3	154.97	3.622			
7,500.0	6,798.1	6,779.1	6,779.1	22.6	135.6	89.85	-269.6	158.8	617.7	461.6	156.17	3.955			
7,600.0	6,797.8	6,778.8	6,778.8	23.8	135.6	89.81	-269.6	158.8	684.2	526.7	157.48	4.345			
7,700.0	6,797.5	6,778.5	6,778.5	25.1	135.6	89.77	-269.6	158.8	758.0	599.2	158.87	4.772			
7,800.0	6,797.1	6,778.1	6,778.1	26.5	135.6	89.73	-269.6	158.8	837.3	677.0	160.33	5.223			
7,900.0	6,796.8	6,777.8	6,777.8	27.9	135.6	89.69	-269.6	158.8	920.7	758.8	161.85	5.689			
8,000.0	6,796.5	6,777.5	6,777.5	29.4	135.5	89.65	-269.6	158.8	1,007.1	843.7	163.41	6.163			
8,100.0	6,796.1	6,777.1	6,777.1	31.0	135.5	89.62	-269.6	158.8	1,095.8	930.7	165.02	6.640			
8,200.0	6,795.8	6,776.8	6,776.8	32.5	135.5	89.58	-269.6	158.8	1,186.3	1,019.6	166.67	7.118			
8,300.0	6,795.5	6,776.5	6,776.5	34.2	135.5	89.54	-269.6	158.8	1,278.2	1,109.8	168.34	7.593			
8,400.0	6,795.1	6,776.1	6,776.1	35.8	135.5	89.50	-269.6	158.8	1,371.2	1,201.2	170.03	8.064			
8,500.0	6,794.8	6,775.8	6,775.8	37.5	135.5	89.46	-269.6	158.8	1,465.2	1,293.4	171.75	8.531			
8,600.0	6,794.5	6,775.5	6,775.5	39.2	135.5	89.42	-269.6	158.8	1,559.9	1,386.4	173.49	8.991			
8,700.0	6,794.2	6,775.2	6,775.2	40.9	135.5	89.38	-269.6	158.8	1,655.2	1,480.0	175.24	9.445			
8,800.0	6,793.8	6,774.8	6,774.8	42.6	135.5	89.34	-269.6	158.8	1,751.1	1,574.1	177.01	9.893			
8,900.0	6,793.5	6,774.5	6,774.5	44.4	135.5	89.30	-269.6	158.8	1,847.4	1,668.6	178.79	10.333			
9,000.0	6,793.2	6,774.2	6,774.2	46.1	135.5	89.26	-269.6	158.8	1,944.1	1,763.5	180.58	10.766			
9,100.0	6,792.8	6,773.8	6,773.8	47.9	135.5	89.22	-269.6	158.8	2,041.0	1,858.7	182.38	11.191			
9,200.0	6,792.5	6,773.5	6,773.5	49.7	135.5	89.18	-269.6	158.8	2,138.3	1,954.1	184.19	11.610			
9,300.0	6,792.2	6,773.2	6,773.2	51.5	135.5	89.15	-269.6	158.8	2,235.8	2,049.8	186.00	12.021			
9,400.0	6,791.8	6,772.8	6,772.8	53.3	135.5	89.11	-269.6	158.8	2,333.5	2,145.7	187.82	12.424			
9,500.0	6,791.5	6,772.5	6,772.5	55.1	135.4	89.07	-269.6	158.8	2,431.4	2,241.8	189.65	12.821			
9,600.0	6,791.2	6,772.2	6,772.2	56.9	135.4	89.03	-269.6	158.8	2,529.5	2,338.0	191.48	13.210			
9,700.0	6,790.8	6,771.8	6,771.8	58.8	135.4	88.99	-269.6	158.8	2,627.7	2,434.4	193.32	13.592			
9,800.0	6,790.5	6,771.5	6,771.5	60.6	135.4	88.95	-269.6	158.8	2,726.1	2,530.9	195.17	13.968			
9,900.0	6,790.2	6,771.2	6,771.2	62.4	135.4	88.91	-269.6	158.8	2,824.5	2,627.5	197.01	14.337			

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 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hall 28-2 (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)	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	
10,000.0	6,789.8	6,770.8	6,770.8	64.3	135.4	88.87	-269.6	158.8	2,923.1	2,724.2	198.86	14.699		
10,100.0	6,789.5	6,770.5	6,770.5	66.1	135.4	88.83	-269.6	158.8	3,021.8	2,821.0	200.72	15.055		
10,200.0	6,789.2	6,770.2	6,770.2	68.0	135.4	88.79	-269.6	158.8	3,120.5	2,917.9	202.57	15.404		
10,300.0	6,788.8	6,769.8	6,769.8	69.8	135.4	88.75	-269.6	158.8	3,219.3	3,014.9	204.43	15.748		
10,400.0	6,788.5	6,769.5	6,769.5	71.7	135.4	88.71	-269.6	158.8	3,318.2	3,111.9	206.30	16.085		
10,500.0	6,788.2	6,769.2	6,769.2	73.5	135.4	88.68	-269.6	158.8	3,417.2	3,209.0	208.16	16.416		
10,600.0	6,787.8	6,768.8	6,768.8	75.4	135.4	88.64	-269.6	158.8	3,516.2	3,306.2	210.03	16.742		
10,700.0	6,787.5	6,768.5	6,768.5	77.3	135.4	88.60	-269.6	158.8	3,615.3	3,403.4	211.90	17.062		
10,800.0	6,787.2	6,768.2	6,768.2	79.1	135.4	88.56	-269.6	158.8	3,714.4	3,500.6	213.77	17.376		
10,900.0	6,786.9	6,767.9	6,767.9	81.0	135.4	88.52	-269.6	158.8	3,813.5	3,597.9	215.64	17.685		
11,000.0	6,786.5	6,767.5	6,767.5	82.9	135.4	88.48	-269.6	158.8	3,912.8	3,695.2	217.51	17.989		
11,100.0	6,786.2	6,767.2	6,767.2	84.7	135.3	88.44	-269.6	158.8	4,012.0	3,792.6	219.39	18.287		
11,200.0	6,785.9	6,766.9	6,766.9	86.6	135.3	88.40	-269.6	158.8	4,111.3	3,890.0	221.26	18.581		
11,300.0	6,785.5	6,766.5	6,766.5	88.5	135.3	88.36	-269.6	158.8	4,210.6	3,987.5	223.14	18.870		
11,400.0	6,785.2	6,766.2	6,766.2	90.4	135.3	88.32	-269.6	158.8	4,309.9	4,084.9	225.02	19.154		
11,500.0	6,784.9	6,765.9	6,765.9	92.3	135.3	88.28	-269.6	158.8	4,409.3	4,182.4	226.90	19.433		
11,600.0	6,784.5	6,765.5	6,765.5	94.1	135.3	88.24	-269.6	158.8	4,508.7	4,280.0	228.78	19.708		
11,700.0	6,784.2	6,765.2	6,765.2	96.0	135.3	88.21	-269.6	158.8	4,608.2	4,377.5	230.66	19.978		
11,800.0	6,783.9	6,764.9	6,764.9	97.9	135.3	88.17	-269.6	158.8	4,707.6	4,475.1	232.54	20.244		
11,900.0	6,783.5	6,764.5	6,764.5	99.8	135.3	88.13	-269.6	158.8	4,807.1	4,572.7	234.43	20.506		
12,000.0	6,783.2	6,764.2	6,764.2	101.7	135.3	88.09	-269.6	158.8	4,906.6	4,670.3	236.31	20.763		
12,100.0	6,782.9	6,763.9	6,763.9	103.6	135.3	88.05	-269.6	158.8	5,006.1	4,767.9	238.20	21.017		
12,200.0	6,782.5	6,763.5	6,763.5	105.5	135.3	88.01	-269.6	158.8	5,105.7	4,865.6	240.08	21.266		
12,300.0	6,782.2	6,763.2	6,763.2	107.4	135.3	87.97	-269.6	158.8	5,205.2	4,963.2	241.97	21.512		
12,400.0	6,781.9	6,762.9	6,762.9	109.3	135.3	87.93	-269.6	158.8	5,304.8	5,060.9	243.85	21.754		
12,500.0	6,781.5	6,762.5	6,762.5	111.2	135.3	87.89	-269.6	158.8	5,404.4	5,158.6	245.74	21.992		
12,600.0	6,781.2	6,762.2	6,762.2	113.1	135.2	87.85	-269.6	158.8	5,504.0	5,256.3	247.63	22.227		
12,700.0	6,780.9	6,761.9	6,761.9	115.0	135.2	87.81	-269.6	158.8	5,603.6	5,354.1	249.52	22.458		
12,800.0	6,780.6	6,761.6	6,761.6	116.8	135.2	87.77	-269.6	158.8	5,703.2	5,451.8	251.40	22.685		
12,900.0	6,780.2	6,761.2	6,761.2	118.7	135.2	87.74	-269.6	158.8	5,802.9	5,549.6	253.29	22.910		
13,000.0	6,779.9	6,760.9	6,760.9	120.6	135.2	87.70	-269.6	158.8	5,902.5	5,647.3	255.18	23.131		
13,100.0	6,779.6	6,760.6	6,760.6	122.5	135.2	87.66	-269.6	158.8	6,002.2	5,745.1	257.07	23.348		
13,200.0	6,779.2	6,760.2	6,760.2	124.4	135.2	87.62	-269.6	158.8	6,101.9	5,842.9	258.96	23.563		
13,300.0	6,778.9	6,759.9	6,759.9	126.3	135.2	87.58	-269.6	158.8	6,201.6	5,940.7	260.85	23.774		
13,400.0	6,778.6	6,759.6	6,759.6	128.2	135.2	87.54	-269.6	158.8	6,301.3	6,038.5	262.74	23.983		
13,500.0	6,778.2	6,759.2	6,759.2	130.1	135.2	87.50	-269.6	158.8	6,401.0	6,136.3	264.63	24.188		
13,600.0	6,777.9	6,758.9	6,758.9	132.0	135.2	87.46	-269.6	158.8	6,500.7	6,234.2	266.52	24.391		
13,700.0	6,777.6	6,758.6	6,758.6	134.0	135.2	87.42	-269.6	158.8	6,600.4	6,332.0	268.41	24.591		
13,800.0	6,777.2	6,758.2	6,758.2	135.9	135.2	87.38	-269.6	158.8	6,700.1	6,429.8	270.30	24.787		
13,871.7	6,777.0	6,758.0	6,758.0	137.2	135.2	87.36	-269.6	158.8	6,771.7	6,500.0	271.66	24.927		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 7600-UNKNOWN												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
0.0	0.0	24.0	24.0	0.0	0.5	178.50	-6,896.4	181.2	6,898.8	6,898.3	0.48	N/A	
100.0	100.0	124.0	124.0	0.1	2.5	178.50	-6,896.4	181.2	6,898.8	6,896.2	2.59	2,660.964	
200.0	200.0	224.0	224.0	0.3	4.5	178.50	-6,896.4	181.2	6,898.8	6,893.9	4.82	1,432.067	
300.0	300.0	324.0	324.0	0.6	6.5	178.50	-6,896.4	181.2	6,898.8	6,891.7	7.04	979.644	
400.0	400.0	424.0	424.0	0.8	8.5	178.50	-6,896.4	181.2	6,898.8	6,889.5	9.27	744.454	
500.0	500.0	524.0	524.0	1.0	10.5	178.50	-6,896.4	181.2	6,898.8	6,887.3	11.49	600.329	
600.0	600.0	624.0	624.0	1.2	12.5	178.50	-6,896.4	181.2	6,898.8	6,885.0	13.72	502.957	
700.0	700.0	724.0	724.0	1.5	14.5	178.50	-6,896.4	181.2	6,898.8	6,882.8	15.94	432.764	
800.0	800.0	824.0	824.0	1.7	16.5	178.50	-6,896.4	181.2	6,898.8	6,880.6	18.17	379.764	
900.0	900.0	924.0	924.0	1.9	18.5	178.50	-6,896.4	181.2	6,898.8	6,878.4	20.39	338.329	
1,000.0	1,000.0	1,024.0	1,024.0	2.1	20.5	178.50	-6,896.4	181.2	6,898.8	6,876.1	22.62	305.046	
1,100.0	1,100.0	1,124.0	1,124.0	2.4	22.5	115.63	-6,896.4	181.2	6,899.5	6,874.7	24.83	277.866	
1,200.0	1,199.8	1,223.8	1,223.8	2.6	24.5	115.63	-6,896.4	181.2	6,901.8	6,874.7	27.03	255.297	
1,300.0	1,299.5	1,323.5	1,323.5	2.8	26.5	115.63	-6,896.4	181.2	6,905.6	6,876.3	29.24	236.201	
1,400.0	1,398.7	1,422.7	1,422.7	3.0	28.5	115.62	-6,896.4	181.2	6,910.9	6,879.4	31.44	219.825	
1,500.0	1,497.5	1,521.5	1,521.5	3.3	30.4	115.66	-6,896.4	181.2	6,917.6	6,883.9	33.66	205.531	
1,600.0	1,596.2	1,620.2	1,620.2	3.6	32.4	115.78	-6,896.4	181.2	6,924.7	6,888.7	35.91	192.833	
1,700.0	1,694.9	1,718.9	1,718.9	3.9	34.4	115.90	-6,896.4	181.2	6,931.7	6,893.6	38.18	181.577	
1,800.0	1,793.6	1,817.6	1,817.6	4.2	36.4	116.02	-6,896.4	181.2	6,938.9	6,898.4	40.45	171.543	
1,900.0	1,892.3	1,916.3	1,916.3	4.6	38.3	116.14	-6,896.4	181.2	6,946.0	6,903.3	42.73	162.549	
2,000.0	1,991.0	2,015.0	2,015.0	4.9	40.3	116.25	-6,896.4	181.2	6,953.2	6,908.2	45.02	154.448	
2,100.0	2,089.7	2,113.7	2,113.7	5.2	42.3	116.37	-6,896.4	181.2	6,960.4	6,913.1	47.31	147.117	
2,200.0	2,188.4	2,212.4	2,212.4	5.6	44.2	116.49	-6,896.4	181.2	6,967.7	6,918.0	49.61	140.453	
2,300.0	2,287.1	2,311.1	2,311.1	5.9	46.2	116.61	-6,896.4	181.2	6,974.9	6,923.0	51.91	134.371	
2,400.0	2,385.8	2,409.8	2,409.8	6.3	48.2	116.72	-6,896.4	181.2	6,982.2	6,928.0	54.21	128.800	
2,500.0	2,484.5	2,508.5	2,508.5	6.6	50.2	116.84	-6,896.4	181.2	6,989.6	6,933.0	56.51	123.679	
2,600.0	2,583.2	2,607.2	2,607.2	7.0	52.1	116.96	-6,896.4	181.2	6,996.9	6,938.1	58.82	118.956	
2,700.0	2,681.9	2,705.9	2,705.9	7.4	54.1	117.07	-6,896.4	181.2	7,004.3	6,943.2	61.13	114.588	
2,800.0	2,780.6	2,804.6	2,804.6	7.7	56.1	117.19	-6,896.4	181.2	7,011.7	6,948.3	63.43	110.536	
2,900.0	2,879.2	2,903.2	2,903.2	8.1	58.1	117.30	-6,896.4	181.2	7,019.2	6,953.4	65.74	106.767	
3,000.0	2,977.9	3,001.9	3,001.9	8.4	60.0	117.42	-6,896.4	181.2	7,026.6	6,958.6	68.05	103.253	
3,100.0	3,076.6	3,100.6	3,100.6	8.8	62.0	117.53	-6,896.4	181.2	7,034.1	6,963.8	70.36	99.970	
3,200.0	3,175.3	3,199.3	3,199.3	9.2	64.0	117.65	-6,896.4	181.2	7,041.7	6,969.0	72.67	96.895	
3,300.0	3,274.0	3,298.0	3,298.0	9.5	66.0	117.76	-6,896.4	181.2	7,049.2	6,974.2	74.98	94.009	
3,400.0	3,372.7	3,396.7	3,396.7	9.9	67.9	117.88	-6,896.4	181.2	7,056.8	6,979.5	77.30	91.296	
3,500.0	3,471.4	3,495.4	3,495.4	10.3	69.9	117.99	-6,896.4	181.2	7,064.4	6,984.8	79.61	88.741	
3,600.0	3,570.1	3,594.1	3,594.1	10.7	71.9	118.11	-6,896.4	181.2	7,072.1	6,990.2	81.92	86.330	
3,700.0	3,668.8	3,692.8	3,692.8	11.0	73.9	118.22	-6,896.4	181.2	7,079.8	6,995.5	84.23	84.052	
3,800.0	3,767.5	3,791.5	3,791.5	11.4	75.8	118.33	-6,896.4	181.2	7,087.5	7,000.9	86.54	81.895	
3,900.0	3,866.2	3,890.2	3,890.2	11.8	77.8	118.45	-6,896.4	181.2	7,095.2	7,006.3	88.85	79.852	
4,000.0	3,964.9	3,988.9	3,988.9	12.1	79.8	118.56	-6,896.4	181.2	7,103.0	7,011.8	91.17	77.912	
4,100.0	4,063.6	4,087.6	4,087.6	12.5	81.8	118.67	-6,896.4	181.2	7,110.7	7,017.3	93.48	76.069	
4,200.0	4,162.3	4,186.3	4,186.3	12.9	83.7	118.79	-6,896.4	181.2	7,118.6	7,022.8	95.79	74.315	
4,300.0	4,261.0	4,285.0	4,285.0	13.2	85.7	118.90	-6,896.4	181.2	7,126.4	7,028.3	98.10	72.644	
4,400.0	4,359.7	4,383.7	4,383.7	13.6	87.7	119.01	-6,896.4	181.2	7,134.3	7,033.9	100.41	71.050	
4,500.0	4,458.4	4,482.4	4,482.4	14.0	89.6	119.12	-6,896.4	181.2	7,142.2	7,039.4	102.72	69.528	
4,600.0	4,557.1	4,581.1	4,581.1	14.4	91.6	119.23	-6,896.4	181.2	7,150.1	7,045.1	105.03	68.074	
4,700.0	4,655.8	4,679.8	4,679.8	14.7	93.6	119.34	-6,896.4	181.2	7,158.1	7,050.7	107.34	66.683	
4,800.0	4,754.5	4,778.5	4,778.5	15.1	95.6	119.46	-6,896.4	181.2	7,166.0	7,056.4	109.65	65.351	
4,900.0	4,853.2	4,877.2	4,877.2	15.5	97.5	119.57	-6,896.4	181.2	7,174.0	7,062.1	111.96	64.074	
5,000.0	4,951.9	4,975.9	4,975.9	15.9	99.5	119.68	-6,896.4	181.2	7,182.1	7,067.8	114.27	62.849	

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 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hendricks 33-1 (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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,050.6	5,074.6	5,074.6	16.2	101.5	119.79		-6,896.4	181.2	7,190.1	7,073.6	116.58	61.673	
5,200.0	5,149.3	5,173.3	5,173.3	16.6	103.5	119.90		-6,896.4	181.2	7,198.2	7,079.3	118.89	60.544	
5,300.0	5,248.0	5,272.0	5,272.0	17.0	105.4	120.01		-6,896.4	181.2	7,206.3	7,085.1	121.20	59.457	
5,400.0	5,346.6	5,370.6	5,370.6	17.4	107.4	120.12		-6,896.4	181.2	7,214.5	7,091.0	123.51	58.412	
5,500.0	5,445.3	5,469.3	5,469.3	17.7	109.4	120.24		-6,896.4	181.2	7,222.7	7,096.8	125.83	57.402	
5,600.0	5,544.3	5,568.3	5,568.3	18.0	111.4	120.46		-6,896.4	181.2	7,229.9	7,101.7	128.17	56.409	
5,700.0	5,643.8	5,667.8	5,667.8	18.2	113.4	120.62		-6,896.4	181.2	7,235.3	7,104.8	130.47	55.457	
5,800.0	5,743.5	5,767.5	5,767.5	18.4	115.3	120.74		-6,896.4	181.2	7,239.0	7,106.3	132.71	54.547	
5,900.0	5,843.4	5,867.4	5,867.4	18.6	117.3	120.79		-6,896.4	181.2	7,240.9	7,106.0	134.90	53.678	
6,000.0	5,943.4	5,967.4	5,967.4	18.7	119.3	-176.34		-6,896.4	181.2	7,241.2	7,104.1	137.04	52.841	
6,100.0	6,043.4	6,067.4	6,067.4	18.9	121.3	3.66		-6,896.4	181.2	7,240.9	7,101.8	139.14	52.042	
6,200.0	6,142.9	6,166.9	6,166.9	19.0	123.3	3.71		-6,896.4	181.2	7,232.0	7,092.5	139.54	51.828	
6,300.0	6,240.4	6,264.4	6,264.4	19.0	125.3	3.83		-6,896.4	181.2	7,210.1	7,072.7	137.47	52.449	
6,400.0	6,334.3	6,358.3	6,358.3	19.0	127.2	4.04		-6,896.4	181.2	7,175.8	7,042.9	132.89	53.998	
6,500.0	6,422.8	6,446.8	6,446.8	18.9	128.9	4.36		-6,896.4	181.2	7,129.5	7,003.7	125.82	56.662	
6,600.0	6,504.5	6,528.5	6,528.5	18.8	130.6	4.82		-6,896.4	181.2	7,072.1	6,955.7	116.39	60.764	
6,700.0	6,578.0	6,602.0	6,602.0	18.8	132.0	5.48		-6,896.4	181.2	7,004.5	6,899.7	104.79	66.841	
6,800.0	6,642.0	6,666.0	6,666.0	18.7	133.3	6.48		-6,896.4	181.2	6,928.0	6,836.5	91.44	75.768	
6,900.0	6,695.5	6,719.5	6,719.5	18.8	134.4	8.06		-6,896.4	181.2	6,843.7	6,766.7	77.08	88.789	
7,000.0	6,737.4	6,761.4	6,761.4	18.9	135.2	10.80		-6,896.4	181.2	6,753.3	6,689.6	63.68	106.051	
7,100.0	6,767.2	6,791.2	6,791.2	19.2	135.8	16.50		-6,896.4	181.2	6,658.1	6,599.9	58.26	114.278	
7,200.0	6,784.3	6,808.3	6,808.3	19.8	136.2	33.65		-6,896.4	181.2	6,559.9	6,472.8	87.08	75.329	
7,300.0	6,794.5	6,818.5	6,818.5	20.5	136.4	40.84		-6,896.4	181.2	6,460.7	6,358.7	102.00	63.340	
7,400.0	6,798.5	6,822.5	6,822.5	21.5	136.4	92.60		-6,896.4	181.2	6,361.0	6,205.3	155.78	40.833	
7,500.0	6,798.1	6,822.1	6,822.1	22.6	136.4	92.56		-6,896.4	181.2	6,261.3	6,104.3	156.99	39.883	
7,600.0	6,797.8	6,821.8	6,821.8	23.8	136.4	92.52		-6,896.4	181.2	6,161.6	6,003.3	158.30	38.923	
7,700.0	6,797.5	6,821.5	6,821.5	25.1	136.4	92.48		-6,896.4	181.2	6,061.9	5,902.2	159.70	37.959	
7,800.0	6,797.1	6,821.1	6,821.1	26.5	136.4	92.44		-6,896.4	181.2	5,962.2	5,801.0	161.16	36.995	
7,900.0	6,796.8	6,820.8	6,820.8	27.9	136.4	92.40		-6,896.4	181.2	5,862.5	5,699.8	162.68	36.036	
8,000.0	6,796.5	6,820.5	6,820.5	29.4	136.4	92.36		-6,896.4	181.2	5,762.8	5,598.5	164.26	35.084	
8,100.0	6,796.1	6,820.1	6,820.1	31.0	136.4	92.32		-6,896.4	181.2	5,663.1	5,497.3	165.87	34.142	
8,200.0	6,795.8	6,819.8	6,819.8	32.5	136.4	92.28		-6,896.4	181.2	5,563.5	5,396.0	167.51	33.212	
8,300.0	6,795.5	6,819.5	6,819.5	34.2	136.4	92.23		-6,896.4	181.2	5,463.8	5,294.6	169.19	32.294	
8,400.0	6,795.1	6,819.1	6,819.1	35.8	136.4	92.19		-6,896.4	181.2	5,364.2	5,193.3	170.89	31.390	
8,500.0	6,794.8	6,818.8	6,818.8	37.5	136.4	92.15		-6,896.4	181.2	5,264.6	5,092.0	172.61	30.499	
8,600.0	6,794.5	6,818.5	6,818.5	39.2	136.4	92.11		-6,896.4	181.2	5,165.0	4,990.6	174.35	29.624	
8,700.0	6,794.2	6,818.2	6,818.2	40.9	136.4	92.07		-6,896.4	181.2	5,065.4	4,889.3	176.11	28.763	
8,800.0	6,793.8	6,817.8	6,817.8	42.6	136.4	92.03		-6,896.4	181.2	4,965.8	4,787.9	177.88	27.916	
8,900.0	6,793.5	6,817.5	6,817.5	44.4	136.3	91.99		-6,896.4	181.2	4,866.2	4,686.6	179.66	27.085	
9,000.0	6,793.2	6,817.2	6,817.2	46.1	136.3	91.95		-6,896.4	181.2	4,766.7	4,585.3	181.46	26.269	
9,100.0	6,792.8	6,816.8	6,816.8	47.9	136.3	91.91		-6,896.4	181.2	4,667.2	4,483.9	183.26	25.467	
9,200.0	6,792.5	6,816.5	6,816.5	49.7	136.3	91.87		-6,896.4	181.2	4,567.7	4,382.6	185.07	24.680	
9,300.0	6,792.2	6,816.2	6,816.2	51.5	136.3	91.82		-6,896.4	181.2	4,468.2	4,281.3	186.89	23.908	
9,400.0	6,791.8	6,815.8	6,815.8	53.3	136.3	91.78		-6,896.4	181.2	4,368.8	4,180.1	188.72	23.149	
9,500.0	6,791.5	6,815.5	6,815.5	55.1	136.3	91.74		-6,896.4	181.2	4,269.4	4,078.8	190.55	22.405	
9,600.0	6,791.2	6,815.2	6,815.2	56.9	136.3	91.70		-6,896.4	181.2	4,170.0	3,977.6	192.39	21.674	
9,700.0	6,790.8	6,814.8	6,814.8	58.8	136.3	91.66		-6,896.4	181.2	4,070.6	3,876.4	194.24	20.957	
9,800.0	6,790.5	6,814.5	6,814.5	60.6	136.3	91.62		-6,896.4	181.2	3,971.3	3,775.2	196.08	20.253	
9,900.0	6,790.2	6,814.2	6,814.2	62.4	136.3	91.58		-6,896.4	181.2	3,872.0	3,674.0	197.94	19.562	
10,000.0	6,789.8	6,813.8	6,813.8	64.3	136.3	91.54		-6,896.4	181.2	3,772.7	3,572.9	199.79	18.883	
10,100.0	6,789.5	6,813.5	6,813.5	66.1	136.3	91.50		-6,896.4	181.2	3,673.5	3,471.8	201.65	18.217	

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 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hendricks 33-1 (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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,200.0	6,789.2	6,813.2	6,813.2	68.0	136.3	91.46		-6,896.4	181.2	3,574.3	3,370.8	203.51	17.563	
10,300.0	6,788.8	6,812.8	6,812.8	69.8	136.3	91.41		-6,896.4	181.2	3,475.1	3,269.8	205.38	16.921	
10,400.0	6,788.5	6,812.5	6,812.5	71.7	136.3	91.37		-6,896.4	181.2	3,376.1	3,168.8	207.25	16.290	
10,500.0	6,788.2	6,812.2	6,812.2	73.5	136.2	91.33		-6,896.4	181.2	3,277.0	3,067.9	209.12	15.671	
10,600.0	6,787.8	6,811.8	6,811.8	75.4	136.2	91.29		-6,896.4	181.2	3,178.1	2,967.1	210.99	15.063	
10,700.0	6,787.5	6,811.5	6,811.5	77.3	136.2	91.25		-6,896.4	181.2	3,079.2	2,866.3	212.87	14.465	
10,800.0	6,787.2	6,811.2	6,811.2	79.1	136.2	91.21		-6,896.4	181.2	2,980.3	2,765.6	214.74	13.879	
10,900.0	6,786.9	6,810.9	6,810.9	81.0	136.2	91.17		-6,896.4	181.2	2,881.6	2,665.0	216.62	13.302	
11,000.0	6,786.5	6,810.5	6,810.5	82.9	136.2	91.13		-6,896.4	181.2	2,782.9	2,564.4	218.50	12.736	
11,100.0	6,786.2	6,810.2	6,810.2	84.7	136.2	91.09		-6,896.4	181.2	2,684.4	2,464.0	220.38	12.181	
11,200.0	6,785.9	6,809.9	6,809.9	86.6	136.2	91.04		-6,896.4	181.2	2,585.9	2,363.7	222.27	11.634	
11,300.0	6,785.5	6,809.5	6,809.5	88.5	136.2	91.00		-6,896.4	181.2	2,487.6	2,263.5	224.15	11.098	
11,400.0	6,785.2	6,809.2	6,809.2	90.4	136.2	90.96		-6,896.4	181.2	2,389.4	2,163.4	226.04	10.571	
11,500.0	6,784.9	6,808.9	6,808.9	92.3	136.2	90.92		-6,896.4	181.2	2,291.4	2,063.5	227.92	10.053	
11,600.0	6,784.5	6,808.5	6,808.5	94.1	136.2	90.88		-6,896.4	181.2	2,193.6	1,963.8	229.81	9.545	
11,700.0	6,784.2	6,808.2	6,808.2	96.0	136.2	90.84		-6,896.4	181.2	2,095.9	1,864.2	231.70	9.046	
11,800.0	6,783.9	6,807.9	6,807.9	97.9	136.2	90.80		-6,896.4	181.2	1,998.5	1,764.9	233.59	8.556	
11,900.0	6,783.5	6,807.5	6,807.5	99.8	136.2	90.76		-6,896.4	181.2	1,901.4	1,665.9	235.48	8.074	
12,000.0	6,783.2	6,807.2	6,807.2	101.7	136.1	90.72		-6,896.4	181.2	1,804.5	1,567.2	237.37	7.602	
12,100.0	6,782.9	6,806.9	6,806.9	103.6	136.1	90.68		-6,896.4	181.2	1,708.1	1,468.8	239.27	7.139	
12,200.0	6,782.5	6,806.5	6,806.5	105.5	136.1	90.63		-6,896.4	181.2	1,612.0	1,370.9	241.16	6.685	
12,300.0	6,782.2	6,806.2	6,806.2	107.4	136.1	90.59		-6,896.4	181.2	1,516.5	1,273.5	243.05	6.239	
12,400.0	6,781.9	6,805.9	6,805.9	109.3	136.1	90.55		-6,896.4	181.2	1,421.6	1,176.7	244.95	5.804	
12,500.0	6,781.5	6,805.5	6,805.5	111.2	136.1	90.51		-6,896.4	181.2	1,327.5	1,080.6	246.84	5.378	
12,600.0	6,781.2	6,805.2	6,805.2	113.1	136.1	90.47		-6,896.4	181.2	1,234.2	985.5	248.74	4.962	
12,700.0	6,780.9	6,804.9	6,804.9	115.0	136.1	90.43		-6,896.4	181.2	1,142.1	891.5	250.63	4.557	
12,800.0	6,780.6	6,804.6	6,804.6	116.8	136.1	90.39		-6,896.4	181.2	1,051.5	798.9	252.53	4.164	
12,900.0	6,780.2	6,804.2	6,804.2	118.7	136.1	90.35		-6,896.4	181.2	962.7	708.3	254.43	3.784	
13,000.0	6,779.9	6,803.9	6,803.9	120.6	136.1	90.31		-6,896.4	181.2	876.3	620.0	256.32	3.419	
13,100.0	6,779.6	6,803.6	6,803.6	122.5	136.1	90.26		-6,896.4	181.2	793.1	534.9	258.22	3.072	
13,200.0	6,779.2	6,803.2	6,803.2	124.4	136.1	90.22		-6,896.4	181.2	714.3	454.2	260.12	2.746	
13,300.0	6,778.9	6,802.9	6,802.9	126.3	136.1	90.18		-6,896.4	181.2	641.4	379.4	262.02	2.448	
13,400.0	6,778.6	6,802.6	6,802.6	128.2	136.1	90.14		-6,896.4	181.2	576.7	312.7	263.92	2.185	
13,500.0	6,778.2	6,802.2	6,802.2	130.1	136.0	90.10		-6,896.4	181.2	523.1	257.3	265.82	1.968	
13,600.0	6,777.9	6,801.9	6,801.9	132.0	136.0	90.06		-6,896.4	181.2	484.6	216.9	267.72	1.810	
13,700.0	6,777.6	6,801.6	6,801.6	134.0	136.0	90.02		-6,896.4	181.2	464.7	195.1	269.62	1.724	
13,744.2	6,777.4	6,801.4	6,801.4	134.8	136.0	90.00		-6,896.4	181.2	462.6	192.2	270.46	1.711 CC, ES, SF	
13,800.0	6,777.2	6,801.2	6,801.2	135.9	136.0	89.98		-6,896.4	181.2	466.0	194.5	271.52	1.716	
13,871.7	6,777.0	6,801.0	6,801.0	137.2	136.0	89.95		-6,896.4	181.2	479.9	207.0	272.88	1.759	



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hendricks 33-3 (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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	9.0	9.0	0.0	0.2	178.78	-5,242.4	111.5	5,243.6	5,243.4	0.18	N/A		
100.0	100.0	109.0	109.0	0.1	2.2	178.78	-5,242.4	111.5	5,243.6	5,241.3	2.29	2,287.206		
200.0	200.0	209.0	209.0	0.3	4.2	178.78	-5,242.4	111.5	5,243.6	5,239.1	4.52	1,160.771		
300.0	300.0	309.0	309.0	0.6	6.2	178.78	-5,242.4	111.5	5,243.6	5,236.9	6.74	777.739		
400.0	400.0	409.0	409.0	0.8	8.2	178.78	-5,242.4	111.5	5,243.6	5,234.6	8.97	584.775		
500.0	500.0	509.0	509.0	1.0	10.2	178.78	-5,242.4	111.5	5,243.6	5,232.4	11.19	468.529		
600.0	600.0	609.0	609.0	1.2	12.2	178.78	-5,242.4	111.5	5,243.6	5,230.2	13.42	390.835		
700.0	700.0	709.0	709.0	1.5	14.2	178.78	-5,242.4	111.5	5,243.6	5,228.0	15.64	335.244		
800.0	800.0	809.0	809.0	1.7	16.2	178.78	-5,242.4	111.5	5,243.6	5,225.7	17.87	293.497		
900.0	900.0	909.0	909.0	1.9	18.2	178.78	-5,242.4	111.5	5,243.6	5,223.5	20.09	260.997		
1,000.0	1,000.0	1,009.0	1,009.0	2.1	20.2	178.78	-5,242.4	111.5	5,243.6	5,221.3	22.32	234.976		
1,100.0	1,100.0	1,109.0	1,109.0	2.4	22.2	115.92	-5,242.4	111.5	5,244.4	5,219.8	24.53	213.791		
1,200.0	1,199.8	1,208.8	1,208.8	2.6	24.2	115.93	-5,242.4	111.5	5,246.7	5,219.9	26.73	196.252		
1,300.0	1,299.5	1,308.5	1,308.5	2.8	26.2	115.95	-5,242.4	111.5	5,250.5	5,221.5	28.94	181.454		
1,400.0	1,398.7	1,407.7	1,407.7	3.0	28.2	115.97	-5,242.4	111.5	5,255.8	5,224.7	31.14	168.797		
1,500.0	1,497.5	1,506.5	1,506.5	3.3	30.1	116.05	-5,242.4	111.5	5,262.7	5,229.3	33.36	157.776		
1,600.0	1,596.2	1,605.2	1,605.2	3.6	32.1	116.20	-5,242.4	111.5	5,269.8	5,234.2	35.61	147.997		
1,700.0	1,694.9	1,703.9	1,703.9	3.9	34.1	116.36	-5,242.4	111.5	5,277.0	5,239.2	37.87	139.339		
1,800.0	1,793.6	1,802.6	1,802.6	4.2	36.1	116.51	-5,242.4	111.5	5,284.3	5,244.1	40.15	131.629		
1,900.0	1,892.3	1,901.3	1,901.3	4.6	38.0	116.67	-5,242.4	111.5	5,291.6	5,249.1	42.43	124.724		
2,000.0	1,991.0	2,000.0	2,000.0	4.9	40.0	116.82	-5,242.4	111.5	5,298.9	5,254.2	44.71	118.510		
2,100.0	2,089.7	2,098.7	2,098.7	5.2	42.0	116.97	-5,242.4	111.5	5,306.2	5,259.2	47.00	112.890		
2,200.0	2,188.4	2,197.4	2,197.4	5.6	43.9	117.13	-5,242.4	111.5	5,313.6	5,264.3	49.30	107.785		
2,300.0	2,287.1	2,296.1	2,296.1	5.9	45.9	117.28	-5,242.4	111.5	5,321.1	5,269.5	51.60	103.130		
2,400.0	2,385.8	2,394.8	2,394.8	6.3	47.9	117.43	-5,242.4	111.5	5,328.5	5,274.6	53.90	98.867		
2,500.0	2,484.5	2,493.5	2,493.5	6.6	49.9	117.58	-5,242.4	111.5	5,336.1	5,279.9	56.20	94.952		
2,600.0	2,583.2	2,592.2	2,592.2	7.0	51.8	117.74	-5,242.4	111.5	5,343.6	5,285.1	58.50	91.342		
2,700.0	2,681.9	2,690.9	2,690.9	7.4	53.8	117.89	-5,242.4	111.5	5,351.2	5,290.4	60.81	88.005		
2,800.0	2,780.6	2,789.6	2,789.6	7.7	55.8	118.04	-5,242.4	111.5	5,358.8	5,295.7	63.11	84.911		
2,900.0	2,879.2	2,888.2	2,888.2	8.1	57.8	118.19	-5,242.4	111.5	5,366.5	5,301.1	65.42	82.035		
3,000.0	2,977.9	2,986.9	2,986.9	8.4	59.7	118.34	-5,242.4	111.5	5,374.2	5,306.4	67.72	79.354		
3,100.0	3,076.6	3,085.6	3,085.6	8.8	61.7	118.49	-5,242.4	111.5	5,381.9	5,311.9	70.03	76.850		
3,200.0	3,175.3	3,184.3	3,184.3	9.2	63.7	118.63	-5,242.4	111.5	5,389.7	5,317.3	72.34	74.506		
3,300.0	3,274.0	3,283.0	3,283.0	9.5	65.7	118.78	-5,242.4	111.5	5,397.5	5,322.8	74.65	72.307		
3,400.0	3,372.7	3,381.7	3,381.7	9.9	67.6	118.93	-5,242.4	111.5	5,405.3	5,328.4	76.95	70.241		
3,500.0	3,471.4	3,480.4	3,480.4	10.3	69.6	119.08	-5,242.4	111.5	5,413.2	5,334.0	79.26	68.295		
3,600.0	3,570.1	3,579.1	3,579.1	10.7	71.6	119.23	-5,242.4	111.5	5,421.1	5,339.6	81.57	66.460		
3,700.0	3,668.8	3,677.8	3,677.8	11.0	73.6	119.37	-5,242.4	111.5	5,429.1	5,345.2	83.88	64.726		
3,800.0	3,767.5	3,776.5	3,776.5	11.4	75.5	119.52	-5,242.4	111.5	5,437.1	5,350.9	86.19	63.085		
3,900.0	3,866.2	3,875.2	3,875.2	11.8	77.5	119.67	-5,242.4	111.5	5,445.1	5,356.6	88.49	61.531		
4,000.0	3,964.9	3,973.9	3,973.9	12.1	79.5	119.81	-5,242.4	111.5	5,453.2	5,362.4	90.80	60.056		
4,100.0	4,063.6	4,072.6	4,072.6	12.5	81.5	119.96	-5,242.4	111.5	5,461.3	5,368.2	93.11	58.655		
4,200.0	4,162.3	4,171.3	4,171.3	12.9	83.4	120.10	-5,242.4	111.5	5,469.4	5,374.0	95.42	57.322		
4,300.0	4,261.0	4,270.0	4,270.0	13.2	85.4	120.24	-5,242.4	111.5	5,477.6	5,379.9	97.72	56.053		
4,400.0	4,359.7	4,368.7	4,368.7	13.6	87.4	120.39	-5,242.4	111.5	5,485.8	5,385.8	100.03	54.842		
4,500.0	4,458.4	4,467.4	4,467.4	14.0	89.3	120.53	-5,242.4	111.5	5,494.0	5,391.7	102.33	53.687		
4,600.0	4,557.1	4,566.1	4,566.1	14.4	91.3	120.68	-5,242.4	111.5	5,502.3	5,397.7	104.64	52.583		
4,700.0	4,655.8	4,664.8	4,664.8	14.7	93.3	120.82	-5,242.4	111.5	5,510.6	5,403.7	106.95	51.527		
4,800.0	4,754.5	4,763.5	4,763.5	15.1	95.3	120.96	-5,242.4	111.5	5,519.0	5,409.7	109.25	50.517		
4,900.0	4,853.2	4,862.2	4,862.2	15.5	97.2	121.10	-5,242.4	111.5	5,527.3	5,415.8	111.55	49.548		
5,000.0	4,951.9	4,960.9	4,960.9	15.9	99.2	121.24	-5,242.4	111.5	5,535.7	5,421.9	113.86	48.619		

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 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hendricks 33-3 (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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,050.6	5,059.6	5,059.6	16.2	101.2	121.38		-5,242.4	111.5	5,544.2	5,428.0	116.16	47.728	
5,200.0	5,149.3	5,158.3	5,158.3	16.6	103.2	121.52		-5,242.4	111.5	5,552.7	5,434.2	118.47	46.872	
5,300.0	5,248.0	5,257.0	5,257.0	17.0	105.1	121.66		-5,242.4	111.5	5,561.2	5,440.4	120.77	46.048	
5,400.0	5,346.6	5,355.6	5,355.6	17.4	107.1	121.80		-5,242.4	111.5	5,569.7	5,446.7	123.07	45.256	
5,500.0	5,445.3	5,454.3	5,454.3	17.7	109.1	121.95		-5,242.4	111.5	5,578.3	5,452.9	125.38	44.491	
5,600.0	5,544.3	5,553.3	5,553.3	18.0	111.1	122.20		-5,242.4	111.5	5,585.9	5,458.1	127.73	43.731	
5,700.0	5,643.8	5,652.8	5,652.8	18.2	113.1	122.39		-5,242.4	111.5	5,591.6	5,461.6	130.04	43.001	
5,800.0	5,743.5	5,752.5	5,752.5	18.4	115.0	122.52		-5,242.4	111.5	5,595.5	5,463.2	132.28	42.299	
5,900.0	5,843.4	5,852.4	5,852.4	18.6	117.0	122.59		-5,242.4	111.5	5,597.5	5,463.0	134.47	41.626	
6,000.0	5,943.4	5,952.4	5,952.4	18.7	119.0	-174.54		-5,242.4	111.5	5,597.8	5,461.2	136.61	40.975	
6,100.0	6,043.4	6,052.4	6,052.4	18.9	121.0	5.46		-5,242.4	111.5	5,597.6	5,458.8	138.72	40.353	
6,200.0	6,142.9	6,151.9	6,151.9	19.0	123.0	5.53		-5,242.4	111.5	5,588.6	5,449.5	139.13	40.170	
6,300.0	6,240.4	6,249.4	6,249.4	19.0	125.0	5.72		-5,242.4	111.5	5,566.8	5,429.7	137.09	40.608	
6,400.0	6,334.3	6,343.3	6,343.3	19.0	126.9	6.04		-5,242.4	111.5	5,532.6	5,400.0	132.56	41.736	
6,500.0	6,422.8	6,431.8	6,431.8	18.9	128.6	6.52		-5,242.4	111.5	5,486.4	5,360.8	125.59	43.684	
6,600.0	6,504.5	6,513.5	6,513.5	18.8	130.3	7.22		-5,242.4	111.5	5,429.1	5,312.8	116.33	46.671	
6,700.0	6,578.0	6,587.0	6,587.0	18.8	131.7	8.23		-5,242.4	111.5	5,361.8	5,256.7	105.05	51.038	
6,800.0	6,642.0	6,651.0	6,651.0	18.7	133.0	9.75		-5,242.4	111.5	5,285.4	5,193.1	92.34	57.237	
6,900.0	6,695.5	6,704.5	6,704.5	18.8	134.1	12.13		-5,242.4	111.5	5,201.4	5,122.0	79.44	65.472	
7,000.0	6,737.4	6,746.4	6,746.4	18.9	134.9	16.22		-5,242.4	111.5	5,111.2	5,041.5	69.69	73.341	
7,100.0	6,767.2	6,776.2	6,776.2	19.2	135.5	24.42		-5,242.4	111.5	5,016.4	4,943.6	72.76	68.948	
7,200.0	6,784.3	6,793.3	6,793.3	19.8	135.9	45.71		-5,242.4	111.5	4,918.5	4,808.2	110.34	44.575	
7,300.0	6,794.5	6,803.5	6,803.5	20.5	136.1	53.23		-5,242.4	111.5	4,819.6	4,695.9	123.68	38.970	
7,400.0	6,798.5	6,807.5	6,807.5	21.5	136.1	91.67		-5,242.4	111.5	4,720.3	4,564.8	155.54	30.349	
7,500.0	6,798.1	6,807.1	6,807.1	22.6	136.1	91.64		-5,242.4	111.5	4,621.0	4,464.3	156.74	29.481	
7,600.0	6,797.8	6,806.8	6,806.8	23.8	136.1	91.60		-5,242.4	111.5	4,521.7	4,363.6	158.05	28.609	
7,700.0	6,797.5	6,806.5	6,806.5	25.1	136.1	91.57		-5,242.4	111.5	4,422.4	4,262.9	159.45	27.736	
7,800.0	6,797.1	6,806.1	6,806.1	26.5	136.1	91.53		-5,242.4	111.5	4,323.1	4,162.2	160.91	26.867	
7,900.0	6,796.8	6,805.8	6,805.8	27.9	136.1	91.50		-5,242.4	111.5	4,223.9	4,061.5	162.43	26.004	
8,000.0	6,796.5	6,805.5	6,805.5	29.4	136.1	91.46		-5,242.4	111.5	4,124.7	3,960.7	164.00	25.151	
8,100.0	6,796.1	6,805.1	6,805.1	31.0	136.1	91.42		-5,242.4	111.5	4,025.6	3,860.0	165.61	24.307	
8,200.0	6,795.8	6,804.8	6,804.8	32.5	136.1	91.39		-5,242.4	111.5	3,926.5	3,759.2	167.26	23.476	
8,300.0	6,795.5	6,804.5	6,804.5	34.2	136.1	91.35		-5,242.4	111.5	3,827.4	3,658.5	168.93	22.657	
8,400.0	6,795.1	6,804.1	6,804.1	35.8	136.1	91.32		-5,242.4	111.5	3,728.4	3,557.8	170.63	21.851	
8,500.0	6,794.8	6,803.8	6,803.8	37.5	136.1	91.28		-5,242.4	111.5	3,629.5	3,457.1	172.35	21.059	
8,600.0	6,794.5	6,803.5	6,803.5	39.2	136.1	91.25		-5,242.4	111.5	3,530.6	3,356.5	174.09	20.280	
8,700.0	6,794.2	6,803.2	6,803.2	40.9	136.1	91.21		-5,242.4	111.5	3,431.8	3,255.9	175.85	19.516	
8,800.0	6,793.8	6,802.8	6,802.8	42.6	136.1	91.17		-5,242.4	111.5	3,333.0	3,155.4	177.62	18.765	
8,900.0	6,793.5	6,802.5	6,802.5	44.4	136.0	91.14		-5,242.4	111.5	3,234.4	3,055.0	179.40	18.029	
9,000.0	6,793.2	6,802.2	6,802.2	46.1	136.0	91.10		-5,242.4	111.5	3,135.8	2,954.6	181.19	17.306	
9,100.0	6,792.8	6,801.8	6,801.8	47.9	136.0	91.07		-5,242.4	111.5	3,037.3	2,854.3	183.00	16.597	
9,200.0	6,792.5	6,801.5	6,801.5	49.7	136.0	91.03		-5,242.4	111.5	2,938.9	2,754.1	184.81	15.902	
9,300.0	6,792.2	6,801.2	6,801.2	51.5	136.0	91.00		-5,242.4	111.5	2,840.6	2,653.9	186.63	15.221	
9,400.0	6,791.8	6,800.8	6,800.8	53.3	136.0	90.96		-5,242.4	111.5	2,742.4	2,554.0	188.45	14.552	
9,500.0	6,791.5	6,800.5	6,800.5	55.1	136.0	90.92		-5,242.4	111.5	2,644.4	2,454.1	190.28	13.897	
9,600.0	6,791.2	6,800.2	6,800.2	56.9	136.0	90.89		-5,242.4	111.5	2,546.5	2,354.4	192.12	13.255	
9,700.0	6,790.8	6,799.8	6,799.8	58.8	136.0	90.85		-5,242.4	111.5	2,448.8	2,254.8	193.96	12.625	
9,800.0	6,790.5	6,799.5	6,799.5	60.6	136.0	90.82		-5,242.4	111.5	2,351.3	2,155.5	195.81	12.008	
9,900.0	6,790.2	6,799.2	6,799.2	62.4	136.0	90.78		-5,242.4	111.5	2,254.0	2,056.3	197.66	11.403	
10,000.0	6,789.8	6,798.8	6,798.8	64.3	136.0	90.75		-5,242.4	111.5	2,157.0	1,957.5	199.51	10.811	
10,100.0	6,789.5	6,798.5	6,798.5	66.1	136.0	90.71		-5,242.4	111.5	2,060.2	1,858.8	201.37	10.231	

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 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hendricks 33-3 (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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,200.0	6,789.2	6,798.2	6,798.2	68.0	136.0	90.67	90.67	-5,242.4	111.5	1,963.8	1,760.5	203.23	9.663	
10,300.0	6,788.8	6,797.8	6,797.8	69.8	136.0	90.64	90.64	-5,242.4	111.5	1,867.7	1,662.6	205.10	9.106	
10,400.0	6,788.5	6,797.5	6,797.5	71.7	136.0	90.60	90.60	-5,242.4	111.5	1,772.1	1,565.1	206.96	8.562	
10,500.0	6,788.2	6,797.2	6,797.2	73.5	135.9	90.57	90.57	-5,242.4	111.5	1,677.0	1,468.1	208.83	8.030	
10,600.0	6,787.8	6,796.8	6,796.8	75.4	135.9	90.53	90.53	-5,242.4	111.5	1,582.5	1,371.8	210.70	7.510	
10,700.0	6,787.5	6,796.5	6,796.5	77.3	135.9	90.50	90.50	-5,242.4	111.5	1,488.7	1,276.1	212.58	7.003	
10,800.0	6,787.2	6,796.2	6,796.2	79.1	135.9	90.46	90.46	-5,242.4	111.5	1,395.8	1,181.3	214.45	6.508	
10,900.0	6,786.9	6,795.9	6,795.9	81.0	135.9	90.42	90.42	-5,242.4	111.5	1,303.9	1,087.5	216.33	6.027	
11,000.0	6,786.5	6,795.5	6,795.5	82.9	135.9	90.39	90.39	-5,242.4	111.5	1,213.3	995.1	218.21	5.560	
11,100.0	6,786.2	6,795.2	6,795.2	84.7	135.9	90.35	90.35	-5,242.4	111.5	1,124.3	904.2	220.09	5.108	
11,200.0	6,785.9	6,794.9	6,794.9	86.6	135.9	90.32	90.32	-5,242.4	111.5	1,037.3	815.3	221.97	4.673	
11,300.0	6,785.5	6,794.5	6,794.5	88.5	135.9	90.28	90.28	-5,242.4	111.5	952.8	729.0	223.85	4.256	
11,400.0	6,785.2	6,794.2	6,794.2	90.4	135.9	90.25	90.25	-5,242.4	111.5	871.7	645.9	225.74	3.861	
11,500.0	6,784.9	6,793.9	6,793.9	92.3	135.9	90.21	90.21	-5,242.4	111.5	794.8	567.2	227.62	3.492	
11,600.0	6,784.5	6,793.5	6,793.5	94.1	135.9	90.17	90.17	-5,242.4	111.5	723.7	494.2	229.51	3.153	
11,700.0	6,784.2	6,793.2	6,793.2	96.0	135.9	90.14	90.14	-5,242.4	111.5	660.1	428.7	231.40	2.852	
11,800.0	6,783.9	6,792.9	6,792.9	97.9	135.9	90.10	90.10	-5,242.4	111.5	606.3	373.0	233.29	2.599	
11,900.0	6,783.5	6,792.5	6,792.5	99.8	135.9	90.07	90.07	-5,242.4	111.5	565.3	330.1	235.18	2.404	
12,000.0	6,783.2	6,792.2	6,792.2	101.7	135.8	90.03	90.03	-5,242.4	111.5	539.9	302.9	237.07	2.278	
12,090.3	6,782.9	6,791.9	6,791.9	103.4	135.8	90.00	90.00	-5,242.4	111.5	532.3	293.6	238.77	2.229 CC	
12,100.0	6,782.9	6,791.9	6,791.9	103.6	135.8	90.00	90.00	-5,242.4	111.5	532.4	293.5	238.96	2.228 ES, SF	
12,200.0	6,782.5	6,791.5	6,791.5	105.5	135.8	89.96	89.96	-5,242.4	111.5	543.5	302.7	240.85	2.257	
12,300.0	6,782.2	6,791.2	6,791.2	107.4	135.8	89.93	89.93	-5,242.4	111.5	572.2	329.4	242.74	2.357	
12,400.0	6,781.9	6,790.9	6,790.9	109.3	135.8	89.89	89.89	-5,242.4	111.5	615.9	371.2	244.63	2.518	
12,500.0	6,781.5	6,790.5	6,790.5	111.2	135.8	89.85	89.85	-5,242.4	111.5	671.8	425.2	246.53	2.725	
12,600.0	6,781.2	6,790.2	6,790.2	113.1	135.8	89.82	89.82	-5,242.4	111.5	737.0	488.6	248.42	2.967	
12,700.0	6,780.9	6,789.9	6,789.9	115.0	135.8	89.78	89.78	-5,242.4	111.5	809.4	559.1	250.31	3.234	
12,800.0	6,780.6	6,789.6	6,789.6	116.8	135.8	89.75	89.75	-5,242.4	111.5	887.2	635.0	252.21	3.518	
12,900.0	6,780.2	6,789.2	6,789.2	118.7	135.8	89.71	89.71	-5,242.4	111.5	969.0	714.9	254.11	3.814	
13,000.0	6,779.9	6,788.9	6,788.9	120.6	135.8	89.68	89.68	-5,242.4	111.5	1,054.0	798.0	256.00	4.117	
13,100.0	6,779.6	6,788.6	6,788.6	122.5	135.8	89.64	89.64	-5,242.4	111.5	1,141.5	883.6	257.90	4.426	
13,200.0	6,779.2	6,788.2	6,788.2	124.4	135.8	89.60	89.60	-5,242.4	111.5	1,230.8	971.0	259.79	4.738	
13,300.0	6,778.9	6,787.9	6,787.9	126.3	135.8	89.57	89.57	-5,242.4	111.5	1,321.7	1,060.0	261.69	5.051	
13,400.0	6,778.6	6,787.6	6,787.6	128.2	135.8	89.53	89.53	-5,242.4	111.5	1,413.8	1,150.2	263.59	5.364	
13,500.0	6,778.2	6,787.2	6,787.2	130.1	135.7	89.50	89.50	-5,242.4	111.5	1,506.9	1,241.4	265.49	5.676	
13,600.0	6,777.9	6,786.9	6,786.9	132.0	135.7	89.46	89.46	-5,242.4	111.5	1,600.8	1,333.4	267.38	5.987	
13,700.0	6,777.6	6,786.6	6,786.6	134.0	135.7	89.43	89.43	-5,242.4	111.5	1,695.5	1,426.2	269.28	6.296	
13,800.0	6,777.2	6,786.2	6,786.2	135.9	135.7	89.39	89.39	-5,242.4	111.5	1,790.7	1,519.5	271.18	6.603	
13,871.7	6,777.0	6,786.0	6,786.0	137.2	135.7	89.36	89.36	-5,242.4	111.5	1,859.3	1,586.7	272.54	6.822	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - P & A Farms 28-1 (Exist) - Wellbore #1 - Wellbore													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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	19.0	19.0	0.0	0.4	178.93	178.93	-4,029.3	75.2	4,030.0	4,029.6	0.38	N/A	
100.0	100.0	119.0	119.0	0.1	2.4	178.93	178.93	-4,029.3	75.2	4,030.0	4,027.5	2.49	1,616.786	
200.0	200.0	219.0	219.0	0.3	4.4	178.93	178.93	-4,029.3	75.2	4,030.0	4,025.3	4.72	854.288	
300.0	300.0	319.0	319.0	0.6	6.4	178.93	178.93	-4,029.3	75.2	4,030.0	4,023.0	6.94	580.511	
400.0	400.0	419.0	419.0	0.8	8.4	178.93	178.93	-4,029.3	75.2	4,030.0	4,020.8	9.17	439.623	
500.0	500.0	519.0	519.0	1.0	10.4	178.93	178.93	-4,029.3	75.2	4,030.0	4,018.6	11.39	353.766	
600.0	600.0	619.0	619.0	1.2	12.4	178.93	178.93	-4,029.3	75.2	4,030.0	4,016.4	13.62	295.964	
700.0	700.0	719.0	719.0	1.5	14.4	178.93	178.93	-4,029.3	75.2	4,030.0	4,014.1	15.84	254.399	
800.0	800.0	819.0	819.0	1.7	16.4	178.93	178.93	-4,029.3	75.2	4,030.0	4,011.9	18.07	223.070	
900.0	900.0	919.0	919.0	1.9	18.4	178.93	178.93	-4,029.3	75.2	4,030.0	4,009.7	20.29	198.612	
1,000.0	1,000.0	1,019.0	1,019.0	2.1	20.4	178.93	178.93	-4,029.3	75.2	4,030.0	4,007.5	22.52	178.987	
1,100.0	1,100.0	1,119.0	1,119.0	2.4	22.4	116.08	116.08	-4,029.3	75.2	4,030.7	4,006.0	24.73	162.988	
1,200.0	1,199.8	1,218.8	1,218.8	2.6	24.4	116.10	116.10	-4,029.3	75.2	4,033.0	4,006.1	26.93	149.738	
1,300.0	1,299.5	1,318.5	1,318.5	2.8	26.4	116.14	116.14	-4,029.3	75.2	4,036.9	4,007.8	29.13	138.558	
1,400.0	1,398.7	1,417.7	1,417.7	3.0	28.4	116.20	116.20	-4,029.3	75.2	4,042.3	4,011.0	31.34	129.000	
1,500.0	1,497.5	1,516.5	1,516.5	3.3	30.3	116.32	116.32	-4,029.3	75.2	4,049.2	4,015.6	33.55	120.680	
1,600.0	1,596.2	1,615.2	1,615.2	3.6	32.3	116.52	116.52	-4,029.3	75.2	4,056.4	4,020.6	35.80	113.293	
1,700.0	1,694.9	1,713.9	1,713.9	3.9	34.3	116.72	116.72	-4,029.3	75.2	4,063.7	4,025.6	38.07	106.749	
1,800.0	1,793.6	1,812.6	1,812.6	4.2	36.3	116.92	116.92	-4,029.3	75.2	4,071.0	4,030.7	40.34	100.917	
1,900.0	1,892.3	1,911.3	1,911.3	4.6	38.2	117.12	117.12	-4,029.3	75.2	4,078.4	4,035.8	42.62	95.693	
2,000.0	1,991.0	2,010.0	2,010.0	4.9	40.2	117.32	117.32	-4,029.3	75.2	4,085.9	4,041.0	44.91	90.989	
2,100.0	2,089.7	2,108.7	2,108.7	5.2	42.2	117.52	117.52	-4,029.3	75.2	4,093.4	4,046.2	47.19	86.734	
2,200.0	2,188.4	2,207.4	2,207.4	5.6	44.1	117.72	117.72	-4,029.3	75.2	4,100.9	4,051.4	49.49	82.868	
2,300.0	2,287.1	2,306.1	2,306.1	5.9	46.1	117.91	117.91	-4,029.3	75.2	4,108.5	4,056.7	51.78	79.340	
2,400.0	2,385.8	2,404.8	2,404.8	6.3	48.1	118.11	118.11	-4,029.3	75.2	4,116.1	4,062.0	54.08	76.111	
2,500.0	2,484.5	2,503.5	2,503.5	6.6	50.1	118.30	118.30	-4,029.3	75.2	4,123.8	4,067.4	56.38	73.143	
2,600.0	2,583.2	2,602.2	2,602.2	7.0	52.0	118.50	118.50	-4,029.3	75.2	4,131.5	4,072.9	58.68	70.407	
2,700.0	2,681.9	2,700.9	2,700.9	7.4	54.0	118.69	118.69	-4,029.3	75.2	4,139.3	4,078.3	60.98	67.877	
2,800.0	2,780.6	2,799.6	2,799.6	7.7	56.0	118.89	118.89	-4,029.3	75.2	4,147.2	4,083.9	63.29	65.531	
2,900.0	2,879.2	2,898.2	2,898.2	8.1	58.0	119.08	119.08	-4,029.3	75.2	4,155.0	4,089.4	65.59	63.350	
3,000.0	2,977.9	2,996.9	2,996.9	8.4	59.9	119.27	119.27	-4,029.3	75.2	4,163.0	4,095.1	67.89	61.317	
3,100.0	3,076.6	3,095.6	3,095.6	8.8	61.9	119.46	119.46	-4,029.3	75.2	4,170.9	4,100.7	70.20	59.418	
3,200.0	3,175.3	3,194.3	3,194.3	9.2	63.9	119.65	119.65	-4,029.3	75.2	4,179.0	4,106.5	72.50	57.640	
3,300.0	3,274.0	3,293.0	3,293.0	9.5	65.9	119.84	119.84	-4,029.3	75.2	4,187.0	4,112.2	74.80	55.973	
3,400.0	3,372.7	3,391.7	3,391.7	9.9	67.8	120.03	120.03	-4,029.3	75.2	4,195.1	4,118.0	77.11	54.405	
3,500.0	3,471.4	3,490.4	3,490.4	10.3	69.8	120.22	120.22	-4,029.3	75.2	4,203.3	4,123.9	79.41	52.930	
3,600.0	3,570.1	3,589.1	3,589.1	10.7	71.8	120.40	120.40	-4,029.3	75.2	4,211.5	4,129.8	81.72	51.538	
3,700.0	3,668.8	3,687.8	3,687.8	11.0	73.8	120.59	120.59	-4,029.3	75.2	4,219.7	4,135.7	84.02	50.223	
3,800.0	3,767.5	3,786.5	3,786.5	11.4	75.7	120.78	120.78	-4,029.3	75.2	4,228.0	4,141.7	86.32	48.979	
3,900.0	3,866.2	3,885.2	3,885.2	11.8	77.7	120.96	120.96	-4,029.3	75.2	4,236.4	4,147.7	88.63	47.801	
4,000.0	3,964.9	3,983.9	3,983.9	12.1	79.7	121.15	121.15	-4,029.3	75.2	4,244.8	4,153.8	90.93	46.683	
4,100.0	4,063.6	4,082.6	4,082.6	12.5	81.7	121.33	121.33	-4,029.3	75.2	4,253.2	4,160.0	93.23	45.620	
4,200.0	4,162.3	4,181.3	4,181.3	12.9	83.6	121.51	121.51	-4,029.3	75.2	4,261.7	4,166.1	95.53	44.610	
4,300.0	4,261.0	4,280.0	4,280.0	13.2	85.6	121.70	121.70	-4,029.3	75.2	4,270.2	4,172.3	97.83	43.648	
4,400.0	4,359.7	4,378.7	4,378.7	13.6	87.6	121.88	121.88	-4,029.3	75.2	4,278.7	4,178.6	100.13	42.730	
4,500.0	4,458.4	4,477.4	4,477.4	14.0	89.5	122.06	122.06	-4,029.3	75.2	4,287.3	4,184.9	102.43	41.855	
4,600.0	4,557.1	4,576.1	4,576.1	14.4	91.5	122.24	122.24	-4,029.3	75.2	4,296.0	4,191.2	104.73	41.018	
4,700.0	4,655.8	4,674.8	4,674.8	14.7	93.5	122.42	122.42	-4,029.3	75.2	4,304.7	4,197.6	107.03	40.219	
4,800.0	4,754.5	4,773.5	4,773.5	15.1	95.5	122.60	122.60	-4,029.3	75.2	4,313.4	4,204.1	109.33	39.453	
4,900.0	4,853.2	4,872.2	4,872.2	15.5	97.4	122.78	122.78	-4,029.3	75.2	4,322.2	4,210.5	111.63	38.719	
5,000.0	4,951.9	4,970.9	4,970.9	15.9	99.4	122.95	122.95	-4,029.3	75.2	4,331.0	4,217.1	113.93	38.016	

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 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - P & A Farms 28-1 (Exist) - Wellbore #1 - Wellbore													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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,050.6	5,069.6	5,069.6	16.2	101.4	123.13		-4,029.3	75.2	4,339.8	4,223.6	116.22	37.341	
5,200.0	5,149.3	5,168.3	5,168.3	16.6	103.4	123.31		-4,029.3	75.2	4,348.7	4,230.2	118.52	36.693	
5,300.0	5,248.0	5,267.0	5,267.0	17.0	105.3	123.48		-4,029.3	75.2	4,357.7	4,236.9	120.81	36.070	
5,400.0	5,346.6	5,365.6	5,365.6	17.4	107.3	123.66		-4,029.3	75.2	4,366.7	4,243.6	123.11	35.470	
5,500.0	5,445.3	5,464.3	5,464.3	17.7	109.3	123.84		-4,029.3	75.2	4,375.7	4,250.3	125.41	34.891	
5,600.0	5,544.3	5,563.3	5,563.3	18.0	111.3	124.12		-4,029.3	75.2	4,383.6	4,255.9	127.77	34.308	
5,700.0	5,643.8	5,662.8	5,662.8	18.2	113.3	124.34		-4,029.3	75.2	4,389.7	4,259.6	130.09	33.745	
5,800.0	5,743.5	5,762.5	5,762.5	18.4	115.2	124.48		-4,029.3	75.2	4,393.8	4,261.4	132.34	33.201	
5,900.0	5,843.4	5,862.4	5,862.4	18.6	117.2	124.56		-4,029.3	75.2	4,395.9	4,261.3	134.53	32.676	
6,000.0	5,943.4	5,962.4	5,962.4	18.7	119.2	-172.57		-4,029.3	75.2	4,396.2	4,259.5	136.67	32.166	
6,100.0	6,043.4	6,062.4	6,062.4	18.9	121.2	7.43		-4,029.3	75.2	4,396.0	4,257.2	138.78	31.677	
6,200.0	6,142.9	6,161.9	6,161.9	19.0	123.2	7.54		-4,029.3	75.2	4,387.1	4,247.9	139.19	31.518	
6,300.0	6,240.4	6,259.4	6,259.4	19.0	125.2	7.80		-4,029.3	75.2	4,365.4	4,228.2	137.18	31.822	
6,400.0	6,334.3	6,353.3	6,353.3	19.0	127.1	8.24		-4,029.3	75.2	4,331.2	4,198.5	132.71	32.636	
6,500.0	6,422.8	6,441.8	6,441.8	18.9	128.8	8.91		-4,029.3	75.2	4,285.2	4,159.4	125.86	34.048	
6,600.0	6,504.5	6,523.5	6,523.5	18.8	130.5	9.89		-4,029.3	75.2	4,228.2	4,111.4	116.81	36.197	
6,700.0	6,578.0	6,597.0	6,597.0	18.8	131.9	11.31		-4,029.3	75.2	4,161.1	4,055.2	105.98	39.262	
6,800.0	6,642.0	6,661.0	6,661.0	18.7	133.2	13.42		-4,029.3	75.2	4,085.2	3,990.9	94.21	43.362	
6,900.0	6,695.5	6,714.5	6,714.5	18.8	134.3	16.69		-4,029.3	75.2	4,001.6	3,918.2	83.38	47.989	
7,000.0	6,737.4	6,756.4	6,756.4	18.9	135.1	22.20		-4,029.3	75.2	3,911.8	3,833.7	78.15	50.054	
7,100.0	6,767.2	6,786.2	6,786.2	19.2	135.7	32.65		-4,029.3	75.2	3,817.5	3,728.9	88.62	43.077	
7,200.0	6,784.3	6,803.3	6,803.3	19.8	136.1	55.52		-4,029.3	75.2	3,720.2	3,593.6	126.53	29.402	
7,300.0	6,794.5	6,813.5	6,813.5	20.5	136.3	62.41		-4,029.3	75.2	3,621.9	3,485.1	136.73	26.489	
7,400.0	6,798.5	6,817.5	6,817.5	21.5	136.3	91.16		-4,029.3	75.2	3,523.3	3,367.5	155.75	22.622	
7,500.0	6,798.1	6,817.1	6,817.1	22.6	136.3	91.13		-4,029.3	75.2	3,424.6	3,267.7	156.95	21.819	
7,600.0	6,797.8	6,816.8	6,816.8	23.8	136.3	91.10		-4,029.3	75.2	3,326.0	3,167.8	158.26	21.016	
7,700.0	6,797.5	6,816.5	6,816.5	25.1	136.3	91.06		-4,029.3	75.2	3,227.6	3,067.9	159.66	20.216	
7,800.0	6,797.1	6,816.1	6,816.1	26.5	136.3	91.03		-4,029.3	75.2	3,129.2	2,968.1	161.12	19.421	
7,900.0	6,796.8	6,815.8	6,815.8	27.9	136.3	90.99		-4,029.3	75.2	3,030.9	2,868.3	162.64	18.636	
8,000.0	6,796.5	6,815.5	6,815.5	29.4	136.3	90.96		-4,029.3	75.2	2,932.7	2,768.5	164.21	17.860	
8,100.0	6,796.1	6,815.1	6,815.1	31.0	136.3	90.93		-4,029.3	75.2	2,834.7	2,668.9	165.82	17.095	
8,200.0	6,795.8	6,814.8	6,814.8	32.5	136.3	90.89		-4,029.3	75.2	2,736.8	2,569.3	167.46	16.343	
8,300.0	6,795.5	6,814.5	6,814.5	34.2	136.3	90.86		-4,029.3	75.2	2,639.1	2,469.9	169.14	15.603	
8,400.0	6,795.1	6,814.1	6,814.1	35.8	136.3	90.83		-4,029.3	75.2	2,541.5	2,370.7	170.84	14.877	
8,500.0	6,794.8	6,813.8	6,813.8	37.5	136.3	90.79		-4,029.3	75.2	2,444.1	2,271.6	172.56	14.164	
8,600.0	6,794.5	6,813.5	6,813.5	39.2	136.3	90.76		-4,029.3	75.2	2,347.0	2,172.7	174.30	13.465	
8,700.0	6,794.2	6,813.2	6,813.2	40.9	136.3	90.73		-4,029.3	75.2	2,250.1	2,074.1	176.05	12.781	
8,800.0	6,793.8	6,812.8	6,812.8	42.6	136.3	90.69		-4,029.3	75.2	2,153.5	1,975.7	177.82	12.110	
8,900.0	6,793.5	6,812.5	6,812.5	44.4	136.2	90.66		-4,029.3	75.2	2,057.2	1,877.6	179.60	11.454	
9,000.0	6,793.2	6,812.2	6,812.2	46.1	136.2	90.63		-4,029.3	75.2	1,961.3	1,779.9	181.40	10.812	
9,100.0	6,792.8	6,811.8	6,811.8	47.9	136.2	90.59		-4,029.3	75.2	1,865.8	1,682.6	183.20	10.185	
9,200.0	6,792.5	6,811.5	6,811.5	49.7	136.2	90.56		-4,029.3	75.2	1,770.8	1,585.8	185.01	9.572	
9,300.0	6,792.2	6,811.2	6,811.2	51.5	136.2	90.53		-4,029.3	75.2	1,676.5	1,489.6	186.83	8.973	
9,400.0	6,791.8	6,810.8	6,810.8	53.3	136.2	90.49		-4,029.3	75.2	1,582.7	1,394.1	188.65	8.390	
9,500.0	6,791.5	6,810.5	6,810.5	55.1	136.2	90.46		-4,029.3	75.2	1,489.8	1,299.4	190.48	7.821	
9,600.0	6,791.2	6,810.2	6,810.2	56.9	136.2	90.43		-4,029.3	75.2	1,397.9	1,205.6	192.32	7.269	
9,700.0	6,790.8	6,809.8	6,809.8	58.8	136.2	90.39		-4,029.3	75.2	1,307.2	1,113.1	194.16	6.733	
9,800.0	6,790.5	6,809.5	6,809.5	60.6	136.2	90.36		-4,029.3	75.2	1,217.9	1,021.9	196.01	6.214	
9,900.0	6,790.2	6,809.2	6,809.2	62.4	136.2	90.33		-4,029.3	75.2	1,130.5	932.6	197.86	5.714	
10,000.0	6,789.8	6,808.8	6,808.8	64.3	136.2	90.29		-4,029.3	75.2	1,045.3	845.5	199.71	5.234	
10,100.0	6,789.5	6,808.5	6,808.5	66.1	136.2	90.26		-4,029.3	75.2	962.9	761.3	201.57	4.777	

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 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - P & A Farms 28-1 (Exist) - Wellbore #1 - Wellbore													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)	Semi Major Axis (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,200.0	6,789.2	6,808.2	6,808.2	68.0	136.2	90.23	90.23	-4,029.3	75.2	884.1	680.7	203.43	4.346	
10,300.0	6,788.8	6,807.8	6,807.8	69.8	136.2	90.19	90.19	-4,029.3	75.2	810.1	604.8	205.29	3.946	
10,400.0	6,788.5	6,807.5	6,807.5	71.7	136.2	90.16	90.16	-4,029.3	75.2	742.2	535.1	207.16	3.583	
10,500.0	6,788.2	6,807.2	6,807.2	73.5	136.1	90.13	90.13	-4,029.3	75.2	682.2	473.2	209.03	3.264	
10,600.0	6,787.8	6,806.8	6,806.8	75.4	136.1	90.09	90.09	-4,029.3	75.2	632.5	421.6	210.90	2.999	
10,700.0	6,787.5	6,806.5	6,806.5	77.3	136.1	90.06	90.06	-4,029.3	75.2	595.5	382.7	212.77	2.799	
10,800.0	6,787.2	6,806.2	6,806.2	79.1	136.1	90.03	90.03	-4,029.3	75.2	573.8	359.1	214.64	2.673	
10,877.1	6,786.9	6,805.9	6,805.9	80.6	136.1	90.00	90.00	-4,029.3	75.2	568.6	352.5	216.09	2.631 CC, ES	
10,900.0	6,786.9	6,805.9	6,805.9	81.0	136.1	89.99	89.99	-4,029.3	75.2	569.0	352.5	216.52	2.628 SF	
11,000.0	6,786.5	6,805.5	6,805.5	82.9	136.1	89.96	89.96	-4,029.3	75.2	581.7	363.3	218.40	2.663	
11,100.0	6,786.2	6,805.2	6,805.2	84.7	136.1	89.93	89.93	-4,029.3	75.2	610.7	390.4	220.28	2.772	
11,200.0	6,785.9	6,804.9	6,804.9	86.6	136.1	89.89	89.89	-4,029.3	75.2	653.8	431.7	222.16	2.943	
11,300.0	6,785.5	6,804.5	6,804.5	88.5	136.1	89.86	89.86	-4,029.3	75.2	708.6	484.5	224.04	3.163	
11,400.0	6,785.2	6,804.2	6,804.2	90.4	136.1	89.83	89.83	-4,029.3	75.2	772.4	546.5	225.92	3.419	
11,500.0	6,784.9	6,803.9	6,803.9	92.3	136.1	89.79	89.79	-4,029.3	75.2	843.4	615.5	227.81	3.702	
11,600.0	6,784.5	6,803.5	6,803.5	94.1	136.1	89.76	89.76	-4,029.3	75.2	919.7	690.0	229.69	4.004	
11,700.0	6,784.2	6,803.2	6,803.2	96.0	136.1	89.73	89.73	-4,029.3	75.2	1,000.2	768.6	231.58	4.319	
11,800.0	6,783.9	6,802.9	6,802.9	97.9	136.1	89.69	89.69	-4,029.3	75.2	1,084.0	850.5	233.47	4.643	
11,900.0	6,783.5	6,802.5	6,802.5	99.8	136.1	89.66	89.66	-4,029.3	75.2	1,170.3	934.9	235.36	4.972	
12,000.0	6,783.2	6,802.2	6,802.2	101.7	136.0	89.62	89.62	-4,029.3	75.2	1,258.6	1,021.4	237.25	5.305	
12,100.0	6,782.9	6,801.9	6,801.9	103.6	136.0	89.59	89.59	-4,029.3	75.2	1,348.6	1,109.5	239.14	5.639	
12,200.0	6,782.5	6,801.5	6,801.5	105.5	136.0	89.56	89.56	-4,029.3	75.2	1,439.9	1,198.9	241.03	5.974	
12,300.0	6,782.2	6,801.2	6,801.2	107.4	136.0	89.52	89.52	-4,029.3	75.2	1,532.3	1,289.4	242.92	6.308	
12,400.0	6,781.9	6,800.9	6,800.9	109.3	136.0	89.49	89.49	-4,029.3	75.2	1,625.6	1,380.8	244.81	6.640	
12,500.0	6,781.5	6,800.5	6,800.5	111.2	136.0	89.46	89.46	-4,029.3	75.2	1,719.6	1,472.9	246.70	6.970	
12,600.0	6,781.2	6,800.2	6,800.2	113.1	136.0	89.42	89.42	-4,029.3	75.2	1,814.3	1,565.7	248.60	7.298	
12,700.0	6,780.9	6,799.9	6,799.9	115.0	136.0	89.39	89.39	-4,029.3	75.2	1,909.5	1,659.0	250.49	7.623	
12,800.0	6,780.6	6,799.6	6,799.6	116.8	136.0	89.36	89.36	-4,029.3	75.2	2,005.2	1,752.8	252.38	7.945	
12,900.0	6,780.2	6,799.2	6,799.2	118.7	136.0	89.32	89.32	-4,029.3	75.2	2,101.3	1,847.0	254.28	8.264	
13,000.0	6,779.9	6,798.9	6,798.9	120.6	136.0	89.29	89.29	-4,029.3	75.2	2,197.7	1,941.5	256.17	8.579	
13,100.0	6,779.6	6,798.6	6,798.6	122.5	136.0	89.26	89.26	-4,029.3	75.2	2,294.4	2,036.4	258.07	8.891	
13,200.0	6,779.2	6,798.2	6,798.2	124.4	136.0	89.22	89.22	-4,029.3	75.2	2,391.5	2,131.5	259.96	9.199	
13,300.0	6,778.9	6,797.9	6,797.9	126.3	136.0	89.19	89.19	-4,029.3	75.2	2,488.7	2,226.8	261.86	9.504	
13,400.0	6,778.6	6,797.6	6,797.6	128.2	136.0	89.16	89.16	-4,029.3	75.2	2,586.2	2,322.4	263.76	9.805	
13,500.0	6,778.2	6,797.2	6,797.2	130.1	135.9	89.12	89.12	-4,029.3	75.2	2,683.8	2,418.1	265.65	10.103	
13,600.0	6,777.9	6,796.9	6,796.9	132.0	135.9	89.09	89.09	-4,029.3	75.2	2,781.6	2,514.1	267.55	10.397	
13,700.0	6,777.6	6,796.6	6,796.6	134.0	135.9	89.06	89.06	-4,029.3	75.2	2,879.6	2,610.1	269.45	10.687	
13,800.0	6,777.2	6,796.2	6,796.2	135.9	135.9	89.02	89.02	-4,029.3	75.2	2,977.7	2,706.3	271.35	10.974	
13,871.7	6,777.0	6,796.0	6,796.0	137.2	135.9	89.00	89.00	-4,029.3	75.2	3,048.1	2,775.4	272.71	11.177	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - P & A Farms 28-2 (Exist) - Wellbore #1 - Wellbore											Offset Site Error:		0.0 ft
Survey Program: 7600-UNKNOWN													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)				
0.0	0.0	0.0	0.0	0.0	0.0	-174.73	-2,932.7	-270.3	2,945.1						
100.0	100.0	100.0	100.0	0.1	2.0	-174.73	-2,932.7	-270.3	2,945.1	2,943.0	2.11	1,394.087			
200.0	200.0	200.0	200.0	0.3	4.0	-174.73	-2,932.7	-270.3	2,945.1	2,940.8	4.34	679.015			
300.0	300.0	300.0	300.0	0.6	6.0	-174.73	-2,932.7	-270.3	2,945.1	2,938.6	6.56	448.807			
400.0	400.0	400.0	400.0	0.8	8.0	-174.73	-2,932.7	-270.3	2,945.1	2,936.3	8.79	335.173			
500.0	500.0	500.0	500.0	1.0	10.0	-174.73	-2,932.7	-270.3	2,945.1	2,934.1	11.01	267.455			
600.0	600.0	600.0	600.0	1.2	12.0	-174.73	-2,932.7	-270.3	2,945.1	2,931.9	13.24	222.502			
700.0	700.0	700.0	700.0	1.5	14.0	-174.73	-2,932.7	-270.3	2,945.1	2,929.7	15.46	190.485			
800.0	800.0	800.0	800.0	1.7	16.0	-174.73	-2,932.7	-270.3	2,945.1	2,927.4	17.69	166.523			
900.0	900.0	900.0	900.0	1.9	18.0	-174.73	-2,932.7	-270.3	2,945.1	2,925.2	19.91	147.917			
1,000.0	1,000.0	1,000.0	1,000.0	2.1	20.0	-174.73	-2,932.7	-270.3	2,945.1	2,923.0	22.14	133.050			
1,100.0	1,100.0	1,100.0	1,100.0	2.4	22.0	122.42	-2,932.7	-270.3	2,946.1	2,921.7	24.35	120.993			
1,200.0	1,199.8	1,199.8	1,199.8	2.6	24.0	122.46	-2,932.7	-270.3	2,948.9	2,922.3	26.55	111.076			
1,300.0	1,299.5	1,299.5	1,299.5	2.8	26.0	122.52	-2,932.7	-270.3	2,953.6	2,924.8	28.74	102.768			
1,400.0	1,398.7	1,398.7	1,398.7	3.0	28.0	122.61	-2,932.7	-270.3	2,960.2	2,929.2	30.93	95.719			
1,500.0	1,497.5	1,497.5	1,497.5	3.3	30.0	122.77	-2,932.7	-270.3	2,968.5	2,935.4	33.13	89.612			
1,600.0	1,596.2	1,596.2	1,596.2	3.6	31.9	123.02	-2,932.7	-270.3	2,977.4	2,942.0	35.37	84.180			
1,700.0	1,694.9	1,694.9	1,694.9	3.9	33.9	123.28	-2,932.7	-270.3	2,986.3	2,948.6	37.62	79.374			
1,800.0	1,793.6	1,793.6	1,793.6	4.2	35.9	123.54	-2,932.7	-270.3	2,995.2	2,955.3	39.88	75.099			
1,900.0	1,892.3	1,892.3	1,892.3	4.6	37.8	123.79	-2,932.7	-270.3	3,004.2	2,962.0	42.15	71.272			
2,000.0	1,991.0	1,991.0	1,991.0	4.9	39.8	124.04	-2,932.7	-270.3	3,013.3	2,968.8	44.42	67.831			
2,100.0	2,089.7	2,089.7	2,089.7	5.2	41.8	124.29	-2,932.7	-270.3	3,022.4	2,975.7	46.70	64.720			
2,200.0	2,188.4	2,188.4	2,188.4	5.6	43.8	124.54	-2,932.7	-270.3	3,031.6	2,982.6	48.98	61.897			
2,300.0	2,287.1	2,287.1	2,287.1	5.9	45.7	124.79	-2,932.7	-270.3	3,040.8	2,989.5	51.26	59.322			
2,400.0	2,385.8	2,385.8	2,385.8	6.3	47.7	125.04	-2,932.7	-270.3	3,050.1	2,996.6	53.54	56.967			
2,500.0	2,484.5	2,484.5	2,484.5	6.6	49.7	125.28	-2,932.7	-270.3	3,059.4	3,003.6	55.83	54.804			
2,600.0	2,583.2	2,583.2	2,583.2	7.0	51.7	125.52	-2,932.7	-270.3	3,068.9	3,010.7	58.11	52.811			
2,700.0	2,681.9	2,681.9	2,681.9	7.4	53.6	125.77	-2,932.7	-270.3	3,078.3	3,017.9	60.40	50.969			
2,800.0	2,780.6	2,780.6	2,780.6	7.7	55.6	126.01	-2,932.7	-270.3	3,087.8	3,025.1	62.68	49.262			
2,900.0	2,879.2	2,879.2	2,879.2	8.1	57.6	126.24	-2,932.7	-270.3	3,097.4	3,032.4	64.97	47.676			
3,000.0	2,977.9	2,977.9	2,977.9	8.4	59.6	126.48	-2,932.7	-270.3	3,107.0	3,039.8	67.25	46.199			
3,100.0	3,076.6	3,076.6	3,076.6	8.8	61.5	126.72	-2,932.7	-270.3	3,116.7	3,047.2	69.54	44.819			
3,200.0	3,175.3	3,175.3	3,175.3	9.2	63.5	126.95	-2,932.7	-270.3	3,126.4	3,054.6	71.82	43.529			
3,300.0	3,274.0	3,274.0	3,274.0	9.5	65.5	127.19	-2,932.7	-270.3	3,136.2	3,062.1	74.11	42.318			
3,400.0	3,372.7	3,372.7	3,372.7	9.9	67.5	127.42	-2,932.7	-270.3	3,146.1	3,069.7	76.40	41.181			
3,500.0	3,471.4	3,471.4	3,471.4	10.3	69.4	127.65	-2,932.7	-270.3	3,155.9	3,077.3	78.68	40.111			
3,600.0	3,570.1	3,570.1	3,570.1	10.7	71.4	127.88	-2,932.7	-270.3	3,165.9	3,084.9	80.96	39.102			
3,700.0	3,668.8	3,668.8	3,668.8	11.0	73.4	128.10	-2,932.7	-270.3	3,175.9	3,092.6	83.25	38.150			
3,800.0	3,767.5	3,767.5	3,767.5	11.4	75.4	128.33	-2,932.7	-270.3	3,185.9	3,100.4	85.53	37.249			
3,900.0	3,866.2	3,866.2	3,866.2	11.8	77.3	128.55	-2,932.7	-270.3	3,196.0	3,108.2	87.81	36.396			
4,000.0	3,964.9	3,964.9	3,964.9	12.1	79.3	128.78	-2,932.7	-270.3	3,206.1	3,116.0	90.09	35.586			
4,100.0	4,063.6	4,063.6	4,063.6	12.5	81.3	129.00	-2,932.7	-270.3	3,216.3	3,123.9	92.38	34.818			
4,200.0	4,162.3	4,162.3	4,162.3	12.9	83.2	129.22	-2,932.7	-270.3	3,226.5	3,131.9	94.66	34.087			
4,300.0	4,261.0	4,261.0	4,261.0	13.2	85.2	129.44	-2,932.7	-270.3	3,236.8	3,139.9	96.94	33.392			
4,400.0	4,359.7	4,359.7	4,359.7	13.6	87.2	129.66	-2,932.7	-270.3	3,247.2	3,147.9	99.21	32.729			
4,500.0	4,458.4	4,458.4	4,458.4	14.0	89.2	129.87	-2,932.7	-270.3	3,257.5	3,156.0	101.49	32.096			
4,600.0	4,557.1	4,557.1	4,557.1	14.4	91.1	130.09	-2,932.7	-270.3	3,268.0	3,164.2	103.77	31.492			
4,700.0	4,655.8	4,655.8	4,655.8	14.7	93.1	130.30	-2,932.7	-270.3	3,278.4	3,172.4	106.05	30.915			
4,800.0	4,754.5	4,754.5	4,754.5	15.1	95.1	130.51	-2,932.7	-270.3	3,288.9	3,180.6	108.32	30.363			
4,900.0	4,853.2	4,853.2	4,853.2	15.5	97.1	130.72	-2,932.7	-270.3	3,299.5	3,188.9	110.60	29.833			
5,000.0	4,951.9	4,951.9	4,951.9	15.9	99.0	130.93	-2,932.7	-270.3	3,310.1	3,197.2	112.87	29.326			

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 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - P & A Farms 28-2 (Exist) - Wellbore #1 - Wellbore													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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,050.6	5,050.6	5,050.6	16.2	101.0	131.14		-2,932.7	-270.3	3,320.7	3,205.6	115.14	28.840	
5,200.0	5,149.3	5,149.3	5,149.3	16.6	103.0	131.35		-2,932.7	-270.3	3,331.4	3,214.0	117.42	28.373	
5,300.0	5,248.0	5,248.0	5,248.0	17.0	105.0	131.55		-2,932.7	-270.3	3,342.2	3,222.5	119.69	27.924	
5,400.0	5,346.6	5,346.6	5,346.6	17.4	106.9	131.76		-2,932.7	-270.3	3,352.9	3,231.0	121.96	27.492	
5,500.0	5,445.3	5,445.3	5,445.3	17.7	108.9	131.97		-2,932.7	-270.3	3,363.8	3,239.5	124.24	27.074	
5,600.0	5,544.3	5,544.3	5,544.3	18.0	110.9	132.29		-2,932.7	-270.3	3,373.3	3,246.6	126.66	26.633	
5,700.0	5,643.8	5,643.8	5,643.8	18.2	112.9	132.53		-2,932.7	-270.3	3,380.5	3,251.5	129.02	26.202	
5,800.0	5,743.5	5,743.5	5,743.5	18.4	114.9	132.69		-2,932.7	-270.3	3,385.4	3,254.1	131.30	25.784	
5,900.0	5,843.4	5,843.4	5,843.4	18.6	116.9	132.78		-2,932.7	-270.3	3,387.9	3,254.4	133.51	25.377	
6,000.0	5,943.4	5,943.4	5,943.4	18.7	118.9	-164.35		-2,932.7	-270.3	3,388.3	3,252.7	135.65	24.978	
6,100.0	6,043.4	6,043.4	6,043.4	18.9	120.9	15.66		-2,932.7	-270.3	3,388.1	3,250.3	137.76	24.594	
6,200.0	6,142.9	6,142.9	6,142.9	19.0	122.9	15.87		-2,932.7	-270.3	3,379.5	3,241.2	138.26	24.443	
6,300.0	6,240.4	6,240.4	6,240.4	19.0	124.8	16.43		-2,932.7	-270.3	3,358.4	3,221.9	136.50	24.604	
6,400.0	6,334.3	6,334.3	6,334.3	19.0	126.7	17.37		-2,932.7	-270.3	3,325.3	3,192.7	132.53	25.090	
6,500.0	6,422.8	6,422.8	6,422.8	18.9	128.5	18.77		-2,932.7	-270.3	3,280.7	3,154.1	126.59	25.916	
6,600.0	6,504.5	6,504.5	6,504.5	18.8	130.1	20.79		-2,932.7	-270.3	3,225.5	3,106.3	119.18	27.064	
6,700.0	6,578.0	6,578.0	6,578.0	18.8	131.6	23.66		-2,932.7	-270.3	3,160.6	3,049.3	111.31	28.396	
6,800.0	6,642.0	6,642.0	6,642.0	18.7	132.8	27.75		-2,932.7	-270.3	3,087.2	2,982.4	104.86	29.443	
6,900.0	6,695.5	6,695.5	6,695.5	18.8	133.9	33.69		-2,932.7	-270.3	3,006.7	2,903.7	103.02	29.185	
7,000.0	6,737.4	6,737.4	6,737.4	18.9	134.7	42.48		-2,932.7	-270.3	2,920.5	2,810.7	109.80	26.597	
7,100.0	6,767.2	6,767.2	6,767.2	19.2	135.3	55.44		-2,932.7	-270.3	2,830.0	2,703.4	126.61	22.353	
7,200.0	6,784.3	6,784.3	6,784.3	19.8	135.7	73.31		-2,932.7	-270.3	2,737.0	2,590.7	146.29	18.710	
7,300.0	6,794.5	6,794.5	6,794.5	20.5	135.9	77.30		-2,932.7	-270.3	2,643.5	2,493.4	150.11	17.610	
7,400.0	6,798.5	6,798.5	6,798.5	21.5	136.0	90.49		-2,932.7	-270.3	2,550.0	2,394.6	155.37	16.413	
7,500.0	6,798.1	6,798.1	6,798.1	22.6	136.0	90.47		-2,932.7	-270.3	2,456.9	2,300.3	156.57	15.692	
7,600.0	6,797.8	6,797.8	6,797.8	23.8	136.0	90.45		-2,932.7	-270.3	2,364.4	2,206.5	157.88	14.976	
7,700.0	6,797.5	6,797.5	6,797.5	25.1	135.9	90.43		-2,932.7	-270.3	2,272.5	2,113.2	159.27	14.268	
7,800.0	6,797.1	6,797.1	6,797.1	26.5	135.9	90.41		-2,932.7	-270.3	2,181.3	2,020.5	160.73	13.571	
7,900.0	6,796.8	6,796.8	6,796.8	27.9	135.9	90.39		-2,932.7	-270.3	2,090.9	1,928.7	162.26	12.887	
8,000.0	6,796.5	6,796.5	6,796.5	29.4	135.9	90.37		-2,932.7	-270.3	2,001.4	1,837.6	163.82	12.217	
8,100.0	6,796.1	6,796.1	6,796.1	31.0	135.9	90.35		-2,932.7	-270.3	1,913.0	1,747.6	165.43	11.564	
8,200.0	6,795.8	6,795.8	6,795.8	32.5	135.9	90.33		-2,932.7	-270.3	1,825.8	1,658.7	167.08	10.928	
8,300.0	6,795.5	6,795.5	6,795.5	34.2	135.9	90.31		-2,932.7	-270.3	1,740.0	1,571.2	168.75	10.311	
8,400.0	6,795.1	6,795.1	6,795.1	35.8	135.9	90.29		-2,932.7	-270.3	1,655.7	1,485.3	170.45	9.714	
8,500.0	6,794.8	6,794.8	6,794.8	37.5	135.9	90.27		-2,932.7	-270.3	1,573.3	1,401.1	172.17	9.138	
8,600.0	6,794.5	6,794.5	6,794.5	39.2	135.9	90.25		-2,932.7	-270.3	1,493.0	1,319.1	173.91	8.585	
8,700.0	6,794.2	6,794.2	6,794.2	40.9	135.9	90.22		-2,932.7	-270.3	1,415.3	1,239.6	175.66	8.057	
8,800.0	6,793.8	6,793.8	6,793.8	42.6	135.9	90.20		-2,932.7	-270.3	1,340.5	1,163.1	177.43	7.555	
8,900.0	6,793.5	6,793.5	6,793.5	44.4	135.9	90.18		-2,932.7	-270.3	1,269.2	1,090.0	179.22	7.082	
9,000.0	6,793.2	6,793.2	6,793.2	46.1	135.9	90.16		-2,932.7	-270.3	1,202.0	1,021.0	181.01	6.641	
9,100.0	6,792.8	6,792.8	6,792.8	47.9	135.9	90.14		-2,932.7	-270.3	1,139.6	956.8	182.81	6.234	
9,200.0	6,792.5	6,792.5	6,792.5	49.7	135.8	90.12		-2,932.7	-270.3	1,082.8	898.2	184.62	5.865	
9,300.0	6,792.2	6,792.2	6,792.2	51.5	135.8	90.10		-2,932.7	-270.3	1,032.7	846.3	186.44	5.539	
9,400.0	6,791.8	6,791.8	6,791.8	53.3	135.8	90.08		-2,932.7	-270.3	990.1	801.9	188.26	5.259	
9,500.0	6,791.5	6,791.5	6,791.5	55.1	135.8	90.06		-2,932.7	-270.3	956.2	766.1	190.09	5.030	
9,600.0	6,791.2	6,791.2	6,791.2	56.9	135.8	90.04		-2,932.7	-270.3	931.7	739.8	191.93	4.855	
9,700.0	6,790.8	6,790.8	6,790.8	58.8	135.8	90.02		-2,932.7	-270.3	917.6	723.9	193.77	4.736	
9,780.5	6,790.6	6,790.6	6,790.6	60.2	135.8	90.00		-2,932.7	-270.3	914.1	718.8	195.26	4.681 CC	
9,800.0	6,790.5	6,790.5	6,790.5	60.6	135.8	90.00		-2,932.7	-270.3	914.3	718.7	195.62	4.674 ES	
9,900.0	6,790.2	6,790.2	6,790.2	62.4	135.8	89.98		-2,932.7	-270.3	921.9	724.4	197.47	4.668 SF	
10,000.0	6,789.8	6,789.8	6,789.8	64.3	135.8	89.95		-2,932.7	-270.3	940.1	740.7	199.32	4.716	

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 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - P & A Farms 28-2 (Exist) - Wellbore #1 - Wellbore													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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	6,789.5	6,789.5	6,789.5	66.1	135.8	89.93	89.93	-2,932.7	-270.3	968.3	767.1	201.18	4.813	
10,200.0	6,789.2	6,789.2	6,789.2	68.0	135.8	89.91	89.91	-2,932.7	-270.3	1,005.7	802.7	203.04	4.953	
10,300.0	6,788.8	6,788.8	6,788.8	69.8	135.8	89.89	89.89	-2,932.7	-270.3	1,051.4	846.5	204.90	5.131	
10,400.0	6,788.5	6,788.5	6,788.5	71.7	135.8	89.87	89.87	-2,932.7	-270.3	1,104.2	897.5	206.77	5.340	
10,500.0	6,788.2	6,788.2	6,788.2	73.5	135.8	89.85	89.85	-2,932.7	-270.3	1,163.3	954.6	208.64	5.576	
10,600.0	6,787.8	6,787.8	6,787.8	75.4	135.8	89.83	89.83	-2,932.7	-270.3	1,227.6	1,017.1	210.51	5.832	
10,700.0	6,787.5	6,787.5	6,787.5	77.3	135.8	89.81	89.81	-2,932.7	-270.3	1,296.5	1,084.1	212.38	6.105	
10,800.0	6,787.2	6,787.2	6,787.2	79.1	135.7	89.79	89.79	-2,932.7	-270.3	1,369.3	1,155.0	214.25	6.391	
10,900.0	6,786.9	6,786.9	6,786.9	81.0	135.7	89.77	89.77	-2,932.7	-270.3	1,445.3	1,229.1	216.13	6.687	
11,000.0	6,786.5	6,786.5	6,786.5	82.9	135.7	89.75	89.75	-2,932.7	-270.3	1,524.0	1,306.0	218.01	6.991	
11,100.0	6,786.2	6,786.2	6,786.2	84.7	135.7	89.73	89.73	-2,932.7	-270.3	1,605.2	1,385.3	219.89	7.300	
11,200.0	6,785.9	6,785.9	6,785.9	86.6	135.7	89.70	89.70	-2,932.7	-270.3	1,688.3	1,466.6	221.77	7.613	
11,300.0	6,785.5	6,785.5	6,785.5	88.5	135.7	89.68	89.68	-2,932.7	-270.3	1,773.2	1,549.6	223.65	7.929	
11,400.0	6,785.2	6,785.2	6,785.2	90.4	135.7	89.66	89.66	-2,932.7	-270.3	1,859.6	1,634.1	225.54	8.245	
11,500.0	6,784.9	6,784.9	6,784.9	92.3	135.7	89.64	89.64	-2,932.7	-270.3	1,947.3	1,719.9	227.42	8.563	
11,600.0	6,784.5	6,784.5	6,784.5	94.1	135.7	89.62	89.62	-2,932.7	-270.3	2,036.2	1,806.9	229.31	8.880	
11,700.0	6,784.2	6,784.2	6,784.2	96.0	135.7	89.60	89.60	-2,932.7	-270.3	2,126.0	1,894.8	231.19	9.196	
11,800.0	6,783.9	6,783.9	6,783.9	97.9	135.7	89.58	89.58	-2,932.7	-270.3	2,216.7	1,983.6	233.08	9.510	
11,900.0	6,783.5	6,783.5	6,783.5	99.8	135.7	89.56	89.56	-2,932.7	-270.3	2,308.2	2,073.2	234.97	9.823	
12,000.0	6,783.2	6,783.2	6,783.2	101.7	135.7	89.54	89.54	-2,932.7	-270.3	2,400.3	2,163.5	236.86	10.134	
12,100.0	6,782.9	6,782.9	6,782.9	103.6	135.7	89.52	89.52	-2,932.7	-270.3	2,493.1	2,254.3	238.75	10.442	
12,200.0	6,782.5	6,782.5	6,782.5	105.5	135.7	89.50	89.50	-2,932.7	-270.3	2,586.4	2,345.7	240.64	10.748	
12,300.0	6,782.2	6,782.2	6,782.2	107.4	135.6	89.48	89.48	-2,932.7	-270.3	2,680.2	2,437.6	242.53	11.051	
12,400.0	6,781.9	6,781.9	6,781.9	109.3	135.6	89.46	89.46	-2,932.7	-270.3	2,774.4	2,529.9	244.43	11.351	
12,500.0	6,781.5	6,781.5	6,781.5	111.2	135.6	89.43	89.43	-2,932.7	-270.3	2,869.0	2,622.7	246.32	11.647	
12,600.0	6,781.2	6,781.2	6,781.2	113.1	135.6	89.41	89.41	-2,932.7	-270.3	2,963.9	2,715.7	248.21	11.941	
12,700.0	6,780.9	6,780.9	6,780.9	115.0	135.6	89.39	89.39	-2,932.7	-270.3	3,059.2	2,809.1	250.11	12.232	
12,800.0	6,780.6	6,780.6	6,780.6	116.8	135.6	89.37	89.37	-2,932.7	-270.3	3,154.8	2,902.8	252.00	12.519	
12,900.0	6,780.2	6,780.2	6,780.2	118.7	135.6	89.35	89.35	-2,932.7	-270.3	3,250.6	2,996.7	253.90	12.803	
13,000.0	6,779.9	6,779.9	6,779.9	120.6	135.6	89.33	89.33	-2,932.7	-270.3	3,346.7	3,090.9	255.80	13.083	
13,100.0	6,779.6	6,779.6	6,779.6	122.5	135.6	89.31	89.31	-2,932.7	-270.3	3,443.0	3,185.3	257.69	13.361	
13,200.0	6,779.2	6,779.2	6,779.2	124.4	135.6	89.29	89.29	-2,932.7	-270.3	3,539.5	3,279.9	259.59	13.635	
13,300.0	6,778.9	6,778.9	6,778.9	126.3	135.6	89.27	89.27	-2,932.7	-270.3	3,636.2	3,374.7	261.49	13.906	
13,400.0	6,778.6	6,778.6	6,778.6	128.2	135.6	89.25	89.25	-2,932.7	-270.3	3,733.1	3,469.7	263.39	14.174	
13,500.0	6,778.2	6,778.2	6,778.2	130.1	135.6	89.23	89.23	-2,932.7	-270.3	3,830.1	3,564.8	265.28	14.438	
13,600.0	6,777.9	6,777.9	6,777.9	132.0	135.6	89.21	89.21	-2,932.7	-270.3	3,927.3	3,660.1	267.18	14.699	
13,700.0	6,777.6	6,777.6	6,777.6	134.0	135.6	89.19	89.19	-2,932.7	-270.3	4,024.6	3,755.6	269.08	14.957	
13,800.0	6,777.2	6,777.2	6,777.2	135.9	135.5	89.16	89.16	-2,932.7	-270.3	4,122.1	3,851.1	270.98	15.212	
13,871.7	6,777.0	6,777.0	6,777.0	137.2	135.5	89.15	89.15	-2,932.7	-270.3	4,192.1	3,919.7	272.34	15.393	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 28U-403
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Reference Site:</b>	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4634.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 28U-403	<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 #1 (2-13-14)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4634.0ft (RKB - 15')

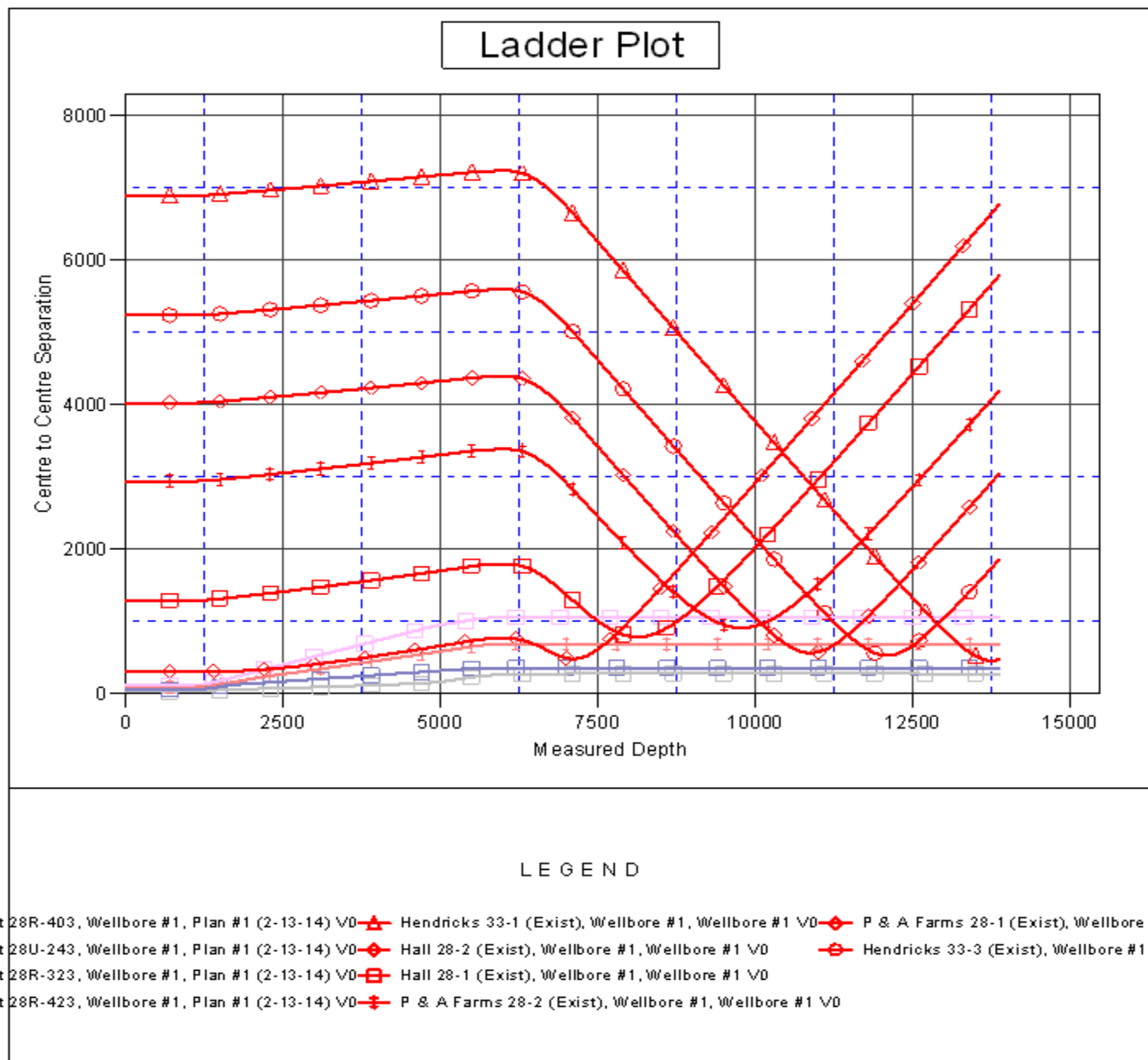
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Chesnut 28U-403

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.61°





Coordinates are relative to: Chesnut 28U-403  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.61°

