

# PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Chesnut 27K-403**

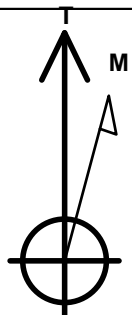
Surface Location: Chesnut 27K-HZ Pad Sec.27-T5N-R64W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
Ground Elevation: 4618.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1378821.98	3267260.11	40.369300	-104.540810	

Ensign 121 RKB - 13.5' WELL @ 4631.5ft (Ensign 121 RKB - 13.5')

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 2277'FSL & 1213'FWL, Sec.27	1.0	0.0	0.0	Point
BHL 500'FSL & 1450'FWL, Sec.34	6769.0	-7053.0	245.3	Point



Azimuths to True North  
Magnetic North: 8.33°

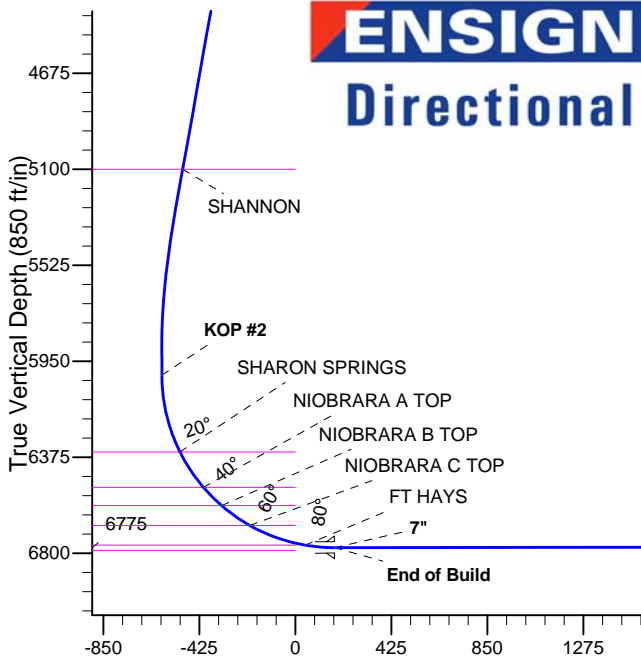
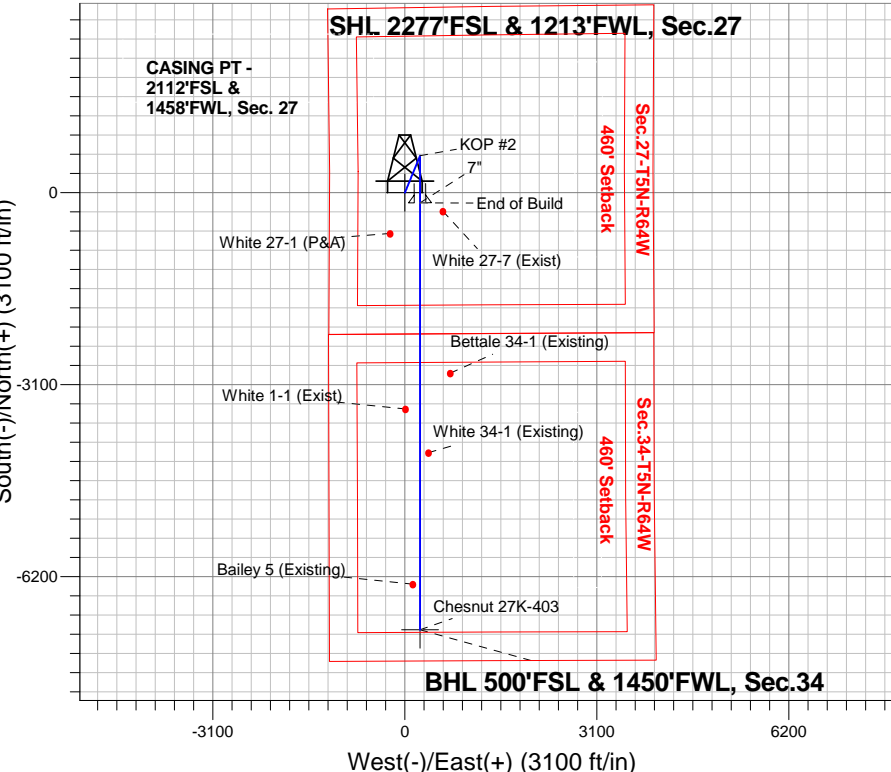
Magnetic Field  
Strength: 52817.5nT  
Dip Angle: 66.96°  
Date: 7/8/2014  
Model: IGRF2010

Chesnut 27K-HZ Pad Sec.27-T5N-R64W  
Chesnut 27K-403  
Plan #2 (7-09-14)

## ANNOTATIONS

TVD	MD	Annotation
2000.0	2000.0	KOP #1
6011.0	6069.8	KOP #2
6775.0	7270.5	End of Build

South(-)/North(+) (3100 ft/in)



## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	2000.0	0.00	0.00	2000.0	0.0	0.0	0.00	0.00	0.0	
3	2547.4	10.95	22.23	2544.1	48.3	19.7	2.00	22.23	-47.5	
4	5411.4	10.95	22.23	5355.9	551.7	225.6	0.00	0.00	-543.6	
5	5958.8	0.00	0.00	5900.0	600.0	245.3	2.00	180.00	-591.1	
6	6069.8	0.00	0.00	6011.1	600.0	245.3	0.00	0.00	-591.1	
7	7270.5	90.05	180.00	6775.0	-164.6	245.3	7.50	180.00	173.0	
8	14158.9	90.05	180.00	6769.0	-7053.0	245.3	0.00	0.00	7057.3	BHL 500'FSL & 1450'FWL, Sec.34

BHL 500'FSL & 1450'FWL, Sec.34

Vertical Section at 178.01° (850 ft/in)



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.27-T5N-R64W**

**Chesnut 27K-HZ Pad Sec.27-T5N-R64W**

**Chesnut 27K-403**

**Wellbore #1**

**Plan: Plan #2 (7-09-14)**

## **Standard Planning Report**

**09 July, 2014**

<b>Database:</b>	landmark	<b>Local Co-ordinate Reference:</b>	Well Chesnut 27K-403
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Project:</b>	SEC.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Chesnut 27K-403	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (7-09-14)		

<b>Project</b>	SEC.27-T5N-R64W, Weld County, Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

<b>Site</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W		
<b>Site Position:</b>		<b>Northing:</b>	1,378,883.95 ft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,267,262.23 ft
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	"
		<b>Latitude:</b>	40.369470
		<b>Longitude:</b>	-104.540800
		<b>Grid Convergence:</b>	0.62 °

<b>Well</b>	Chesnut 27K-403		
<b>Well Position</b>	<b>+N/-S</b>	-61.9 ft	<b>Northing:</b>
	<b>+E/-W</b>	-2.8 ft	<b>Easting:</b>
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>
			ft
			<b>Latitude:</b>
			<b>Longitude:</b>
			<b>Ground Level:</b>

<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	7/8/2014	8.33	66.96	52,817

<b>Design</b>	Plan #2 (7-09-14)			
<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	178.01

<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	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,547.4	10.95	22.23	2,544.1	48.3	19.7	2.00	2.00	0.00	22.23	
5,411.4	10.95	22.23	5,355.9	551.7	225.6	0.00	0.00	0.00	0.00	
5,958.8	0.00	0.00	5,900.0	600.0	245.3	2.00	-2.00	0.00	180.00	
6,069.8	0.00	0.00	6,011.1	600.0	245.3	0.00	0.00	0.00	0.00	
7,270.5	90.05	180.00	6,775.0	-164.6	245.3	7.50	7.50	0.00	180.00	
14,158.9	90.05	180.00	6,769.0	-7,053.0	245.3	0.00	0.00	0.00	0.00	BHL 500'FSL & 145

<b>Database:</b>	landmark	<b>Local Co-ordinate Reference:</b>	Well Chesnut 27K-403
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Project:</b>	SEC.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Chesnut 27K-403	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (7-09-14)		

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
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
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>KOP #1</b>									
2,100.0	2.00	22.23	2,100.0	1.6	0.7	-1.6	2.00	2.00	0.00
2,200.0	4.00	22.23	2,199.8	6.5	2.6	-6.4	2.00	2.00	0.00
2,300.0	6.00	22.23	2,299.5	14.5	5.9	-14.3	2.00	2.00	0.00
2,400.0	8.00	22.23	2,398.7	25.8	10.5	-25.4	2.00	2.00	0.00
2,500.0	10.00	22.23	2,497.5	40.3	16.5	-39.7	2.00	2.00	0.00
2,547.4	10.95	22.23	2,544.1	48.3	19.7	-47.5	2.00	2.00	0.00
2,600.0	10.95	22.23	2,595.7	57.5	23.5	-56.7	0.00	0.00	0.00
2,700.0	10.95	22.23	2,693.9	75.1	30.7	-74.0	0.00	0.00	0.00
2,800.0	10.95	22.23	2,792.1	92.7	37.9	-91.3	0.00	0.00	0.00
2,900.0	10.95	22.23	2,890.3	110.2	45.1	-108.6	0.00	0.00	0.00
3,000.0	10.95	22.23	2,988.4	127.8	52.3	-125.9	0.00	0.00	0.00
3,100.0	10.95	22.23	3,086.6	145.4	59.4	-143.3	0.00	0.00	0.00
3,200.0	10.95	22.23	3,184.8	163.0	66.6	-160.6	0.00	0.00	0.00
3,300.0	10.95	22.23	3,283.0	180.6	73.8	-177.9	0.00	0.00	0.00
3,400.0	10.95	22.23	3,381.2	198.1	81.0	-195.2	0.00	0.00	0.00
3,449.7	10.95	22.23	3,430.0	206.9	84.6	-203.8	0.00	0.00	0.00
<b>PARKMAN</b>									
3,500.0	10.95	22.23	3,479.3	215.7	88.2	-212.5	0.00	0.00	0.00
3,600.0	10.95	22.23	3,577.5	233.3	95.4	-229.8	0.00	0.00	0.00
3,700.0	10.95	22.23	3,675.7	250.9	102.6	-247.2	0.00	0.00	0.00
3,800.0	10.95	22.23	3,773.9	268.5	109.7	-264.5	0.00	0.00	0.00
3,900.0	10.95	22.23	3,872.1	286.0	116.9	-281.8	0.00	0.00	0.00
4,000.0	10.95	22.23	3,970.2	303.6	124.1	-299.1	0.00	0.00	0.00
4,100.0	10.95	22.23	4,068.4	321.2	131.3	-316.4	0.00	0.00	0.00
4,183.1	10.95	22.23	4,150.0	335.8	137.3	-330.8	0.00	0.00	0.00
<b>SUSSEX</b>									
4,200.0	10.95	22.23	4,166.6	338.8	138.5	-333.8	0.00	0.00	0.00
4,300.0	10.95	22.23	4,264.8	356.4	145.7	-351.1	0.00	0.00	0.00
4,400.0	10.95	22.23	4,363.0	373.9	152.9	-368.4	0.00	0.00	0.00
4,500.0	10.95	22.23	4,461.1	391.5	160.1	-385.7	0.00	0.00	0.00
4,600.0	10.95	22.23	4,559.3	409.1	167.2	-403.0	0.00	0.00	0.00

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<b>Project:</b>	SEC.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Chesnut 27K-403	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (7-09-14)		

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)
4,700.0	10.95	22.23	4,657.5	426.7	174.4	-420.4	0.00	0.00	0.00
4,800.0	10.95	22.23	4,755.7	444.3	181.6	-437.7	0.00	0.00	0.00
4,900.0	10.95	22.23	4,853.9	461.8	188.8	-455.0	0.00	0.00	0.00
5,000.0	10.95	22.23	4,952.0	479.4	196.0	-472.3	0.00	0.00	0.00
5,100.0	10.95	22.23	5,050.2	497.0	203.2	-489.6	0.00	0.00	0.00
5,150.7	10.95	22.23	5,100.0	505.9	206.8	-498.4	0.00	0.00	0.00
<b>SHANNON</b>									
5,200.0	10.95	22.23	5,148.4	514.6	210.4	-507.0	0.00	0.00	0.00
5,300.0	10.95	22.23	5,246.6	532.2	217.5	-524.3	0.00	0.00	0.00
5,400.0	10.95	22.23	5,344.8	549.7	224.7	-541.6	0.00	0.00	0.00
5,411.4	10.95	22.23	5,355.9	551.7	225.6	-543.6	0.00	0.00	0.00
5,500.0	9.18	22.23	5,443.2	566.1	231.4	-557.7	2.00	-2.00	0.00
5,600.0	7.18	22.23	5,542.2	579.2	236.8	-570.7	2.00	-2.00	0.00
5,700.0	5.18	22.23	5,641.6	589.2	240.9	-580.5	2.00	-2.00	0.00
5,800.0	3.18	22.23	5,741.3	595.9	243.6	-587.1	2.00	-2.00	0.00
5,900.0	1.18	22.23	5,841.2	599.4	245.1	-590.6	2.00	-2.00	0.00
5,958.8	0.00	0.00	5,900.0	600.0	245.3	-591.1	2.00	-2.00	0.00
6,000.0	0.00	0.00	5,941.2	600.0	245.3	-591.1	0.00	0.00	0.00
6,069.8	0.00	0.00	6,011.0	600.0	245.3	-591.1	0.00	0.00	0.00
<b>KOP #2</b>									
6,100.0	2.26	180.00	6,041.2	599.4	245.3	-590.5	7.49	7.49	0.00
6,200.0	9.76	180.00	6,140.6	588.9	245.3	-580.1	7.50	7.50	0.00
6,300.0	17.26	180.00	6,237.8	565.6	245.3	-556.7	7.50	7.50	0.00
6,400.0	24.76	180.00	6,331.0	529.8	245.3	-520.9	7.50	7.50	0.00
6,423.2	26.51	180.00	6,352.0	519.7	245.3	-510.9	7.50	7.50	0.00
<b>SHARON SPRINGS</b>									
6,500.0	32.26	180.00	6,418.9	482.1	245.3	-473.2	7.50	7.50	0.00
6,600.0	39.76	180.00	6,499.7	423.3	245.3	-414.5	7.50	7.50	0.00
6,610.9	40.58	180.00	6,508.0	416.3	245.3	-407.5	7.50	7.50	0.00
<b>NIORARA A TOP</b>									
6,700.0	47.26	180.00	6,572.2	354.5	245.3	-345.8	7.50	7.50	0.00
6,725.3	49.16	180.00	6,589.0	335.7	245.3	-326.9	7.50	7.50	0.00
<b>NIORARA B TOP</b>									
6,800.0	54.76	180.00	6,635.0	276.8	245.3	-268.1	7.50	7.50	0.00
6,878.6	60.66	180.00	6,677.0	210.4	245.3	-201.8	7.50	7.50	0.00
<b>NIORARA C TOP</b>									
6,900.0	62.26	180.00	6,687.2	191.6	245.3	-183.0	7.50	7.50	0.00
7,000.0	69.76	180.00	6,727.8	100.3	245.3	-91.7	7.50	7.50	0.00
7,100.0	77.26	180.00	6,756.2	4.5	245.3	4.0	7.50	7.50	0.00
7,140.0	80.26	180.00	6,764.0	-34.7	245.3	43.2	7.50	7.50	0.00
<b>FT HAYS</b>									
7,200.0	84.76	180.00	6,771.8	-94.2	245.3	102.7	7.50	7.50	0.00
7,270.5	90.05	180.00	6,775.0	-164.6	245.3	173.0	7.50	7.50	0.00
<b>End of Build - 7"</b>									
7,300.0	90.05	180.00	6,775.0	-194.1	245.3	202.5	0.00	0.00	0.00
7,400.0	90.05	180.00	6,774.9	-294.1	245.3	302.4	0.00	0.00	0.00
7,500.0	90.05	180.00	6,774.8	-394.1	245.3	402.4	0.00	0.00	0.00
7,600.0	90.05	180.00	6,774.7	-494.1	245.3	502.3	0.00	0.00	0.00
7,700.0	90.05	180.00	6,774.6	-594.1	245.3	602.3	0.00	0.00	0.00
7,800.0	90.05	180.00	6,774.5	-694.1	245.3	702.2	0.00	0.00	0.00
7,900.0	90.05	180.00	6,774.5	-794.1	245.3	802.1	0.00	0.00	0.00
8,000.0	90.05	180.00	6,774.4	-894.1	245.3	902.1	0.00	0.00	0.00

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<b>Project:</b>	SEC.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Chesnut 27K-403	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (7-09-14)		

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)
8,100.0	90.05	180.00	6,774.3	-994.1	245.3	1,002.0	0.00	0.00	0.00
8,200.0	90.05	180.00	6,774.2	-1,094.1	245.3	1,102.0	0.00	0.00	0.00
8,300.0	90.05	180.00	6,774.1	-1,194.1	245.3	1,201.9	0.00	0.00	0.00
8,400.0	90.05	180.00	6,774.0	-1,294.1	245.3	1,301.8	0.00	0.00	0.00
8,500.0	90.05	180.00	6,773.9	-1,394.1	245.3	1,401.8	0.00	0.00	0.00
8,600.0	90.05	180.00	6,773.9	-1,494.1	245.3	1,501.7	0.00	0.00	0.00
8,700.0	90.05	180.00	6,773.8	-1,594.1	245.3	1,601.7	0.00	0.00	0.00
8,800.0	90.05	180.00	6,773.7	-1,694.1	245.3	1,701.6	0.00	0.00	0.00
8,900.0	90.05	180.00	6,773.6	-1,794.1	245.3	1,801.5	0.00	0.00	0.00
9,000.0	90.05	180.00	6,773.5	-1,894.1	245.3	1,901.5	0.00	0.00	0.00
9,100.0	90.05	180.00	6,773.4	-1,994.1	245.3	2,001.4	0.00	0.00	0.00
9,200.0	90.05	180.00	6,773.3	-2,094.1	245.3	2,101.4	0.00	0.00	0.00
9,300.0	90.05	180.00	6,773.2	-2,194.1	245.3	2,201.3	0.00	0.00	0.00
9,400.0	90.05	180.00	6,773.2	-2,294.1	245.3	2,301.2	0.00	0.00	0.00
9,500.0	90.05	180.00	6,773.1	-2,394.1	245.3	2,401.2	0.00	0.00	0.00
9,600.0	90.05	180.00	6,773.0	-2,494.1	245.3	2,501.1	0.00	0.00	0.00
9,700.0	90.05	180.00	6,772.9	-2,594.1	245.3	2,601.1	0.00	0.00	0.00
9,800.0	90.05	180.00	6,772.8	-2,694.1	245.3	2,701.0	0.00	0.00	0.00
9,900.0	90.05	180.00	6,772.7	-2,794.1	245.3	2,800.9	0.00	0.00	0.00
10,000.0	90.05	180.00	6,772.6	-2,894.1	245.3	2,900.9	0.00	0.00	0.00
10,100.0	90.05	180.00	6,772.5	-2,994.1	245.3	3,000.8	0.00	0.00	0.00
10,200.0	90.05	180.00	6,772.5	-3,094.1	245.3	3,100.8	0.00	0.00	0.00
10,300.0	90.05	180.00	6,772.4	-3,194.1	245.3	3,200.7	0.00	0.00	0.00
10,400.0	90.05	180.00	6,772.3	-3,294.1	245.3	3,300.6	0.00	0.00	0.00
10,500.0	90.05	180.00	6,772.2	-3,394.1	245.3	3,400.6	0.00	0.00	0.00
10,600.0	90.05	180.00	6,772.1	-3,494.1	245.3	3,500.5	0.00	0.00	0.00
10,700.0	90.05	180.00	6,772.0	-3,594.1	245.3	3,600.5	0.00	0.00	0.00
10,800.0	90.05	180.00	6,771.9	-3,694.1	245.3	3,700.4	0.00	0.00	0.00
10,900.0	90.05	180.00	6,771.8	-3,794.1	245.3	3,800.3	0.00	0.00	0.00
11,000.0	90.05	180.00	6,771.8	-3,894.1	245.3	3,900.3	0.00	0.00	0.00
11,100.0	90.05	180.00	6,771.7	-3,994.1	245.3	4,000.2	0.00	0.00	0.00
11,200.0	90.05	180.00	6,771.6	-4,094.1	245.3	4,100.2	0.00	0.00	0.00
11,300.0	90.05	180.00	6,771.5	-4,194.1	245.3	4,200.1	0.00	0.00	0.00
11,400.0	90.05	180.00	6,771.4	-4,294.1	245.3	4,300.0	0.00	0.00	0.00
11,500.0	90.05	180.00	6,771.3	-4,394.1	245.3	4,400.0	0.00	0.00	0.00
11,600.0	90.05	180.00	6,771.2	-4,494.1	245.3	4,499.9	0.00	0.00	0.00
11,700.0	90.05	180.00	6,771.1	-4,594.1	245.3	4,599.8	0.00	0.00	0.00
11,800.0	90.05	180.00	6,771.1	-4,694.1	245.3	4,699.8	0.00	0.00	0.00
11,900.0	90.05	180.00	6,771.0	-4,794.1	245.3	4,799.7	0.00	0.00	0.00
12,000.0	90.05	180.00	6,770.9	-4,894.1	245.3	4,899.7	0.00	0.00	0.00
12,100.0	90.05	180.00	6,770.8	-4,994.1	245.3	4,999.6	0.00	0.00	0.00
12,200.0	90.05	180.00	6,770.7	-5,094.1	245.3	5,099.5	0.00	0.00	0.00
12,300.0	90.05	180.00	6,770.6	-5,194.1	245.3	5,199.5	0.00	0.00	0.00
12,400.0	90.05	180.00	6,770.5	-5,294.1	245.3	5,299.4	0.00	0.00	0.00
12,500.0	90.05	180.00	6,770.4	-5,394.1	245.3	5,399.4	0.00	0.00	0.00
12,600.0	90.05	180.00	6,770.4	-5,494.1	245.3	5,499.3	0.00	0.00	0.00
12,700.0	90.05	180.00	6,770.3	-5,594.1	245.3	5,599.2	0.00	0.00	0.00
12,800.0	90.05	180.00	6,770.2	-5,694.1	245.3	5,699.2	0.00	0.00	0.00
12,900.0	90.05	180.00	6,770.1	-5,794.1	245.3	5,799.1	0.00	0.00	0.00
13,000.0	90.05	180.00	6,770.0	-5,894.1	245.3	5,899.1	0.00	0.00	0.00
13,100.0	90.05	180.00	6,769.9	-5,994.1	245.3	5,999.0	0.00	0.00	0.00
13,200.0	90.05	180.00	6,769.8	-6,094.1	245.3	6,098.9	0.00	0.00	0.00
13,300.0	90.05	180.00	6,769.7	-6,194.1	245.3	6,198.9	0.00	0.00	0.00

<b>Database:</b>	landmark	<b>Local Co-ordinate Reference:</b>	Well Chesnut 27K-403
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Project:</b>	SEC.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Chesnut 27K-403	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (7-09-14)		

#### 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)
13,400.0	90.05	180.00	6,769.7	-6,294.1	245.3	6,298.8	0.00	0.00	0.00
13,500.0	90.05	180.00	6,769.6	-6,394.1	245.3	6,398.8	0.00	0.00	0.00
13,600.0	90.05	180.00	6,769.5	-6,494.1	245.3	6,498.7	0.00	0.00	0.00
13,700.0	90.05	180.00	6,769.4	-6,594.1	245.3	6,598.6	0.00	0.00	0.00
13,800.0	90.05	180.00	6,769.3	-6,694.1	245.3	6,698.6	0.00	0.00	0.00
13,900.0	90.05	180.00	6,769.2	-6,794.1	245.3	6,798.5	0.00	0.00	0.00
14,000.0	90.05	180.00	6,769.1	-6,894.1	245.3	6,898.5	0.00	0.00	0.00
14,100.0	90.05	180.00	6,769.1	-6,994.1	245.3	6,998.4	0.00	0.00	0.00
14,158.9	90.05	180.00	6,769.0	-7,053.0	245.3	7,057.3	0.00	0.00	0.00

#### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,270.5	6,775.0	7"	7	7-1/2

#### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,449.7	3,430.0	PARKMAN		0.00	
4,183.1	4,150.0	SUSSEX		0.00	
5,150.7	5,100.0	SHANNON		0.00	
6,423.2	6,352.0	SHARON SPRINGS		0.00	
6,610.9	6,508.0	NIOBRARA A TOP		0.00	
6,725.3	6,589.0	NIOBRARA B TOP		0.00	
6,878.6	6,677.0	NIOBRARA C TOP		0.00	
7,140.0	6,764.0	FT HAYS		0.00	
	6,787.0	CODELL		0.00	

#### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,000.0	2,000.0	0.0	0.0	KOP #1
6,069.8	6,011.0	600.0	245.3	KOP #2
7,270.5	6,775.0	-164.6	245.3	End of Build



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.27-T5N-R64W**

**Chesnut 27K-HZ Pad Sec.27-T5N-R64W**

**Chesnut 27K-403**

**Wellbore #1**

**Plan #2 (7-09-14)**

## **Anticollision Report**

**09 July, 2014**





<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #2 (7-09-14)
<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 1,000.0ft
<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	7/9/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	14,158.9	Plan #2 (7-09-14) (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 27G-HZ Pad Sec.27-T5N-R64W						
Chesnut 27K-203 - Wellbore #1 - Plan #2 (7-08-14)	5,369.6	5,410.5	335.0	306.0	11.537	CC
Chesnut 27K-203 - Wellbore #1 - Plan #2 (7-08-14)	14,158.9	13,885.0	378.1	123.4	1.484	Level 3, ES, SF
Chesnut 27GK-HZ Pad Sec.27-T5N-R64W						
Chesnut 27K-201 - Wellbore #1 - Plan #1 (4-23-14)	5,922.0	5,886.9	269.2	239.5	9.049	CC, ES, SF
Chesnut 27K-421 - Wellbore #1 - Plan #1 (4-23-14)	5,985.8	5,978.2	334.1	305.6	11.722	CC, ES
Chesnut 27K-421 - Wellbore #1 - Plan #1 (4-23-14)	6,100.0	6,078.4	336.1	307.3	11.658	SF
Chesnut 27O-201 - Wellbore #1 - Pan #1 (4-23-14)	367.3	366.9	767.1	765.6	542.243	CC
Chesnut 27O-201 - Wellbore #1 - Pan #1 (4-23-14)	600.0	597.6	767.4	764.9	303.084	ES
Chesnut 27O-201 - Wellbore #1 - Pan #1 (4-23-14)	6,100.0	6,131.6	940.7	908.4	29.109	SF
Chesnut 27O-341 - Wellbore #1 - Plan #1 (4-23-14)	5,966.0	5,998.2	621.7	591.4	20.479	CC, ES
Chesnut 27O-341 - Wellbore #1 - Plan #1 (4-23-14)	6,100.0	6,100.0	625.6	594.9	20.379	SF
Chesnut 27K-HZ Pad Sec.27-T5N-R64W						
Chesnut 27K-323 - Wellbore #1 - Plan #1 (4-22-14)	1,000.0	997.5	29.3	25.0	6.865	CC, ES
Chesnut 27K-323 - Wellbore #1 - Plan #1 (4-22-14)	14,158.9	14,122.9	332.8	69.7	1.265	Level 3, SF
Chesnut 27O-243 - Wellbore #1 - Plan #2 (7-08-14)	400.0	399.0	62.0	60.4	39.459	CC, ES
Chesnut 27O-243 - Wellbore #1 - Plan #2 (7-08-14)	14,158.9	14,086.4	688.8	418.6	2.550	SF
Chesnut 27O-303 - Wellbore #1 - Plan #2 (7-08-14)	200.0	199.0	91.1	90.4	135.585	CC, ES
Chesnut 27O-303 - Wellbore #1 - Plan #2 (7-08-14)	14,158.9	14,222.0	997.4	719.7	3.592	SF
Chesnut Existing Pad Sec.27-T5N-R64W						
Bailey 5 (Existing) - Wellbore #1 - Wellbore #1	13,426.7	6,793.1	117.1	-143.8	0.449	Level 1, CC, ES, SF
Bettale 34-1 (Existing) - Wellbore #1 - Wellbore #1	10,020.4	6,789.1	484.9	288.3	2.467	CC, ES, SF
White 1-1 (Exist) - Wellbore #1 - Wellbore #1	10,595.9	6,780.6	236.9	29.8	1.144	Level 2, CC
White 1-1 (Exist) - Wellbore #1 - Wellbore #1	10,600.0	6,780.6	237.0	29.8	1.144	Level 2, ES, SF
White 27-1 (P&A) - Wellbore #1 - Wellbore #1	7,761.7	6,780.1	484.9	327.3	3.076	CC, ES
White 27-1 (P&A) - Wellbore #1 - Wellbore #1	7,800.0	6,780.0	486.4	328.3	3.076	SF
White 27-7 (Exist) - Wellbore #1 - Wellbore #1	7,401.0	6,756.4	367.8	214.7	2.402	CC, ES, SF
White 34-1 (Existing) - Wellbore #1 - Wellbore #1	11,302.7	6,783.0	136.5	-83.9	0.619	Level 1, CC, ES, SF

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 27G-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-203 - Wellbore #1 - Plan #2 (7-08-14)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (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
1,400.0	1,400.0	1,557.3	1,554.0	3.0	3.4	-47.49	665.9	-726.5	997.2	990.9	6.33	157.539	
1,500.0	1,500.0	1,655.9	1,651.1	3.3	3.7	-47.06	661.0	-710.5	981.9	975.2	6.77	145.094	
1,600.0	1,600.0	1,754.4	1,748.2	3.5	4.1	-46.62	656.2	-694.4	966.7	959.5	7.21	134.081	
1,700.0	1,700.0	1,853.0	1,845.3	3.7	4.4	-46.17	651.3	-678.4	951.5	943.8	7.66	124.284	
1,800.0	1,800.0	1,951.5	1,942.4	3.9	4.7	-45.70	646.5	-662.4	936.3	928.2	8.11	115.524	
1,900.0	1,900.0	2,050.1	2,039.6	4.2	5.1	-45.21	641.6	-646.4	921.3	912.7	8.56	107.654	
2,000.0	2,000.0	2,148.6	2,136.7	4.4	5.4	-44.71	636.8	-630.4	906.3	897.3	9.01	100.551	
2,100.0	2,100.0	2,247.2	2,233.8	4.6	5.8	-66.82	631.9	-614.4	890.6	881.0	9.67	92.119	
2,200.0	2,199.8	2,345.7	2,330.9	4.8	6.1	-66.92	627.1	-598.4	873.7	863.6	10.15	86.118	
2,300.0	2,299.5	2,444.0	2,427.7	5.1	6.5	-67.25	622.3	-582.4	855.4	844.8	10.62	80.554	
2,400.0	2,398.7	2,542.0	2,524.3	5.3	6.9	-67.84	617.5	-566.5	835.8	824.7	11.09	75.351	
2,500.0	2,497.5	2,639.6	2,620.5	5.5	7.2	-68.69	612.7	-550.7	814.9	803.4	11.57	70.442	
2,600.0	2,595.7	2,736.7	2,716.2	5.8	7.6	-69.58	607.9	-534.9	793.1	781.0	12.07	65.721	
2,700.0	2,693.9	2,833.7	2,811.9	6.1	8.0	-70.33	603.1	-519.1	771.2	758.6	12.59	61.257	
2,800.0	2,792.1	2,930.8	2,907.5	6.4	8.4	-71.12	598.3	-503.3	749.5	736.4	13.12	57.108	
2,900.0	2,890.3	3,027.9	3,003.2	6.7	8.7	-71.96	593.6	-487.6	727.9	714.2	13.67	53.255	
3,000.0	2,988.4	3,124.9	3,098.8	7.0	9.1	-72.86	588.8	-471.8	706.5	692.3	14.22	49.679	
3,100.0	3,086.6	3,222.0	3,194.5	7.3	9.5	-73.80	584.0	-456.0	685.2	670.4	14.78	46.359	
3,200.0	3,184.8	3,319.0	3,290.1	7.7	9.9	-74.81	579.3	-440.3	664.2	648.8	15.35	43.277	
3,300.0	3,283.0	3,416.1	3,385.8	8.0	10.2	-75.88	574.5	-424.5	643.3	627.4	15.92	40.414	
3,400.0	3,381.2	3,513.2	3,481.4	8.4	10.6	-77.02	569.7	-408.7	622.7	606.2	16.49	37.754	
3,500.0	3,479.3	3,610.2	3,577.1	8.7	11.0	-78.24	564.9	-393.0	602.4	585.3	17.07	35.280	
3,600.0	3,577.5	3,707.3	3,672.7	9.1	11.4	-79.54	560.2	-377.2	582.3	564.6	17.66	32.978	
3,700.0	3,675.7	3,804.3	3,768.4	9.5	11.7	-80.93	555.4	-361.4	562.5	544.3	18.24	30.836	
3,800.0	3,773.9	3,901.4	3,864.0	9.9	12.1	-82.42	550.6	-345.7	543.1	524.3	18.83	28.840	
3,900.0	3,872.1	3,998.5	3,959.7	10.2	12.5	-84.02	545.9	-329.9	524.1	504.7	19.42	26.982	
4,000.0	3,970.2	4,095.5	4,055.3	10.6	12.9	-85.73	541.1	-314.1	505.5	485.5	20.02	25.250	
4,100.0	4,068.4	4,192.6	4,151.0	11.0	13.3	-87.57	536.3	-298.4	487.4	466.8	20.62	23.637	
4,200.0	4,166.6	4,289.6	4,246.6	11.4	13.6	-89.54	531.5	-282.6	469.8	448.6	21.22	22.136	
4,300.0	4,264.8	4,386.7	4,342.3	11.8	14.0	-91.66	526.8	-266.8	452.8	431.0	21.84	20.739	
4,400.0	4,363.0	4,483.7	4,437.9	12.1	14.4	-93.93	522.0	-251.1	436.5	414.1	22.45	19.442	
4,500.0	4,461.1	4,580.8	4,533.6	12.5	14.8	-96.38	517.2	-235.3	421.0	397.9	23.08	18.238	
4,600.0	4,559.3	4,677.9	4,629.2	12.9	15.2	-98.99	512.5	-219.5	406.2	382.5	23.72	17.125	
4,700.0	4,657.5	4,774.9	4,724.9	13.3	15.6	-101.79	507.7	-203.8	392.4	368.1	24.38	16.099	
4,800.0	4,755.7	4,872.0	4,820.5	13.7	15.9	-104.78	502.9	-188.0	379.7	354.6	25.05	15.158	
4,900.0	4,853.9	4,969.0	4,916.2	14.1	16.3	-107.96	498.1	-172.2	368.0	342.3	25.74	14.299	
5,000.0	4,952.0	5,066.1	5,011.8	14.5	16.7	-111.32	493.4	-156.5	357.6	331.2	26.44	13.523	
5,100.0	5,050.2	5,163.2	5,107.5	14.9	17.1	-114.87	488.6	-140.7	348.6	321.4	27.17	12.828	
5,200.0	5,148.4	5,260.2	5,203.1	15.3	17.5	-118.58	483.8	-124.9	341.0	313.1	27.92	12.214	
5,300.0	5,246.6	5,349.0	5,290.8	15.7	17.7	-122.02	479.8	-111.5	336.0	307.4	28.59	11.752	
5,369.6	5,314.9	5,410.5	5,351.7	16.0	17.9	-124.32	477.4	-103.7	335.0	306.0	29.04	11.537 CC	
5,400.0	5,344.8	5,437.5	5,378.5	16.1	18.0	-125.30	476.5	-100.7	335.2	306.0	29.23	11.468	
5,500.0	5,443.2	5,526.6	5,467.3	16.5	18.2	-128.24	474.0	-92.5	337.5	307.7	29.82	11.317	
5,600.0	5,542.2	5,616.6	5,557.1	16.7	18.3	-130.52	472.3	-86.8	341.1	310.8	30.31	11.252	
5,700.0	5,641.6	5,707.2	5,647.6	17.0	18.5	-132.11	471.4	-83.9	345.5	314.7	30.73	11.241	
5,800.0	5,741.3	5,801.9	5,742.3	17.2	18.6	-133.06	471.3	-83.4	350.0	318.9	31.10	11.255	
5,900.0	5,841.2	5,901.8	5,842.2	17.3	18.7	-133.55	471.3	-83.4	352.6	321.2	31.41	11.224	
6,000.0	5,941.2	5,990.7	5,931.0	17.5	18.9	-111.80	468.5	-83.4	354.2	322.5	31.73	11.163	
6,100.0	6,041.2	6,074.6	6,014.1	17.6	19.0	66.40	456.8	-83.4	359.4	327.2	32.14	11.182	
6,200.0	6,140.6	6,157.1	6,094.0	17.7	19.2	64.29	436.5	-83.4	365.4	333.0	32.37	11.287	
6,300.0	6,237.8	6,238.7	6,170.4	17.6	19.5	62.56	408.1	-83.4	370.8	338.4	32.45	11.428	

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 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 27G-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-203 - Wellbore #1 - Plan #2 (7-08-14)													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
6,400.0	6,331.0	6,319.5	6,242.7	17.4	19.7	61.21		372.1	-83.4	375.3	343.0	32.37	11.595	
6,500.0	6,418.9	6,400.0	6,310.5	17.2	20.1	60.24		328.8	-83.4	378.8	346.6	32.17	11.776	
6,600.0	6,499.7	6,479.8	6,372.9	16.9	20.5	59.63		279.1	-83.4	381.0	349.1	31.91	11.942	
6,700.0	6,572.2	6,559.5	6,429.7	16.6	20.9	59.39		223.2	-83.4	381.9	350.3	31.66	12.065	
6,800.0	6,635.0	6,639.2	6,480.4	16.3	21.5	59.51		161.7	-83.4	381.5	350.0	31.52	12.103	
6,900.0	6,687.2	6,719.1	6,524.4	16.1	22.1	59.99		95.1	-83.4	379.7	348.1	31.59	12.018	
7,000.0	6,727.8	6,800.0	6,561.7	16.0	22.8	60.84		23.4	-83.4	376.7	344.7	31.98	11.778	
7,100.0	6,756.2	6,879.9	6,590.9	16.1	23.6	62.05		-51.0	-83.4	372.5	339.8	32.73	11.380	
7,200.0	6,771.8	6,961.2	6,612.5	16.5	24.5	63.64		-129.3	-83.4	367.4	333.5	33.92	10.832	
7,300.0	6,775.0	7,043.4	6,625.7	17.2	25.5	65.44		-210.4	-83.4	361.8	326.1	35.62	10.155	
7,399.4	6,774.9	7,126.5	6,630.2	18.0	26.6	66.09		-293.4	-83.4	359.5	321.9	37.64	9.553	
7,400.0	6,774.9	7,127.0	6,630.2	18.0	26.6	66.09		-293.9	-83.4	359.5	321.9	37.65	9.550	
7,500.0	6,774.8	7,226.2	6,629.5	19.0	27.9	66.00		-393.1	-83.4	359.8	319.9	39.89	9.019	
7,600.0	6,774.7	7,326.2	6,628.8	20.1	29.3	65.91		-493.1	-83.4	360.0	317.7	42.31	8.508	
7,700.0	6,774.6	7,426.2	6,628.1	21.3	30.8	65.83		-593.1	-83.4	360.3	315.4	44.89	8.026	
7,800.0	6,774.5	7,526.2	6,627.4	22.7	32.3	65.74		-693.1	-83.4	360.5	312.9	47.59	7.576	
7,900.0	6,774.5	7,626.2	6,626.7	24.1	33.9	65.65		-793.1	-83.4	360.8	310.4	50.39	7.160	
8,000.0	6,774.4	7,726.2	6,626.0	25.5	35.5	65.56		-893.1	-83.4	361.0	307.8	53.28	6.776	
8,100.0	6,774.3	7,826.2	6,625.3	27.1	37.1	65.47		-993.1	-83.4	361.3	305.0	56.24	6.424	
8,200.0	6,774.2	7,926.2	6,624.6	28.6	38.8	65.38		-1,093.1	-83.4	361.5	302.3	59.26	6.101	
8,300.0	6,774.1	8,026.2	6,623.9	30.2	40.4	65.30		-1,193.0	-83.4	361.8	299.5	62.33	5.804	
8,400.0	6,774.0	8,126.2	6,623.2	31.9	42.1	65.21		-1,293.0	-83.4	362.0	296.6	65.44	5.532	
8,500.0	6,773.9	8,226.2	6,622.5	33.6	43.9	65.12		-1,393.0	-83.4	362.3	293.7	68.59	5.282	
8,600.0	6,773.9	8,326.2	6,621.8	35.3	45.6	65.03		-1,493.0	-83.4	362.6	290.8	71.77	5.052	
8,700.0	6,773.8	8,426.2	6,621.1	37.0	47.3	64.95		-1,593.0	-83.4	362.8	287.8	74.97	4.840	
8,800.0	6,773.7	8,526.2	6,620.4	38.7	49.1	64.86		-1,693.0	-83.4	363.1	284.9	78.19	4.643	
8,900.0	6,773.6	8,626.2	6,619.7	40.5	50.9	64.77		-1,793.0	-83.4	363.3	281.9	81.44	4.462	
9,000.0	6,773.5	8,726.2	6,619.0	42.2	52.6	64.68		-1,893.0	-83.4	363.6	278.9	84.70	4.293	
9,100.0	6,773.4	8,826.2	6,618.3	44.0	54.4	64.60		-1,993.0	-83.4	363.9	275.9	87.97	4.136	
9,200.0	6,773.3	8,926.2	6,617.6	45.8	56.2	64.51		-2,093.0	-83.4	364.1	272.9	91.25	3.990	
9,300.0	6,773.2	9,026.2	6,616.9	47.6	58.0	64.42		-2,193.0	-83.4	364.4	269.8	94.54	3.854	
9,400.0	6,773.2	9,126.2	6,616.2	49.4	59.9	64.34		-2,293.0	-83.4	364.6	266.8	97.84	3.727	
9,500.0	6,773.1	9,226.2	6,615.5	51.3	61.7	64.25		-2,393.0	-83.4	364.9	263.8	101.15	3.608	
9,600.0	6,773.0	9,326.2	6,614.8	53.1	63.5	64.16		-2,493.0	-83.4	365.2	260.7	104.46	3.496	
9,700.0	6,772.9	9,426.2	6,614.1	54.9	65.3	64.08		-2,593.0	-83.4	365.4	257.7	107.78	3.391	
9,800.0	6,772.8	9,526.2	6,613.4	56.8	67.2	63.99		-2,693.0	-83.4	365.7	254.6	111.10	3.292	
9,900.0	6,772.7	9,626.2	6,612.7	58.6	69.0	63.91		-2,793.0	-83.4	366.0	251.6	114.43	3.198	
10,000.0	6,772.6	9,726.2	6,612.0	60.4	70.9	63.82		-2,893.0	-83.4	366.2	248.5	117.76	3.110	
10,100.0	6,772.5	9,826.2	6,611.3	62.3	72.7	63.73		-2,993.0	-83.4	366.5	245.4	121.09	3.027	
10,200.0	6,772.5	9,926.2	6,610.6	64.2	74.6	63.65		-3,093.0	-83.4	366.8	242.4	124.42	2.948	
10,300.0	6,772.4	10,026.2	6,609.9	66.0	76.4	63.56		-3,193.0	-83.4	367.1	239.3	127.75	2.873	
10,400.0	6,772.3	10,126.2	6,609.3	67.9	78.3	63.48		-3,293.0	-83.4	367.3	236.3	131.08	2.802	
10,500.0	6,772.2	10,226.2	6,608.6	69.7	80.1	63.39		-3,393.0	-83.4	367.6	233.2	134.41	2.735	
10,600.0	6,772.1	10,326.2	6,607.9	71.6	82.0	63.31		-3,492.9	-83.4	367.9	230.1	137.74	2.671	
10,700.0	6,772.0	10,426.2	6,607.2	73.5	83.9	63.22		-3,592.9	-83.4	368.2	227.1	141.08	2.610	
10,800.0	6,771.9	10,526.2	6,606.5	75.4	85.7	63.14		-3,692.9	-83.4	368.4	224.0	144.41	2.551	
10,900.0	6,771.8	10,626.2	6,605.8	77.2	87.6	63.05		-3,792.9	-83.4	368.7	221.0	147.74	2.496	
11,000.0	6,771.8	10,726.2	6,605.1	79.1	89.5	62.97		-3,892.9	-83.4	369.0	217.9	151.06	2.443	
11,100.0	6,771.7	10,826.2	6,604.4	81.0	91.4	62.88		-3,992.9	-83.4	369.3	214.9	154.39	2.392	
11,200.0	6,771.6	10,926.2	6,603.7	82.9	93.2	62.80		-4,092.9	-83.4	369.5	211.8	157.72	2.343	
11,300.0	6,771.5	11,026.2	6,603.0	84.8	95.1	62.72		-4,192.9	-83.4	369.8	208.8	161.04	2.296	

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 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 27G-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-203 - Wellbore #1 - Plan #2 (7-08-14)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
11,400.0	6,771.4	11,126.2	6,602.3	86.6	97.0	62.63	-4,292.9	-83.4	370.1	205.7	164.36	2.252	
11,500.0	6,771.3	11,226.2	6,601.6	88.5	98.9	62.55	-4,392.9	-83.4	370.4	202.7	167.68	2.209	
11,600.0	6,771.2	11,326.2	6,600.9	90.4	100.8	62.46	-4,492.9	-83.4	370.7	199.7	170.99	2.168	
11,700.0	6,771.1	11,426.2	6,600.2	92.3	102.7	62.38	-4,592.9	-83.4	370.9	196.6	174.31	2.128	
11,800.0	6,771.1	11,526.2	6,599.5	94.2	104.5	62.30	-4,692.9	-83.4	371.2	193.6	177.62	2.090	
11,900.0	6,771.0	11,626.2	6,598.8	96.1	106.4	62.21	-4,792.9	-83.4	371.5	190.6	180.93	2.053	
12,000.0	6,770.9	11,726.2	6,598.1	98.0	108.3	62.13	-4,892.9	-83.4	371.8	187.6	184.23	2.018	
12,100.0	6,770.8	11,826.2	6,597.4	99.9	110.2	62.05	-4,992.9	-83.4	372.1	184.5	187.54	1.984	
12,200.0	6,770.7	11,926.2	6,596.7	101.8	112.1	61.96	-5,092.9	-83.4	372.4	181.5	190.83	1.951	
12,300.0	6,770.6	12,026.2	6,596.0	103.7	114.0	61.88	-5,192.9	-83.4	372.7	178.5	194.13	1.920	
12,400.0	6,770.5	12,126.2	6,595.3	105.6	115.9	61.80	-5,292.9	-83.4	372.9	175.5	197.42	1.889	
12,500.0	6,770.4	12,226.2	6,594.6	107.5	117.8	61.71	-5,392.9	-83.4	373.2	172.5	200.71	1.860	
12,600.0	6,770.4	12,326.2	6,593.9	109.4	119.7	61.63	-5,492.9	-83.4	373.5	169.5	204.00	1.831	
12,700.0	6,770.3	12,426.1	6,593.2	111.3	121.6	61.55	-5,592.9	-83.4	373.8	166.5	207.28	1.803	
12,800.0	6,770.2	12,526.1	6,592.5	113.2	123.5	61.47	-5,692.9	-83.4	374.1	163.5	210.56	1.777	
12,900.0	6,770.1	12,626.1	6,591.8	115.1	125.4	61.39	-5,792.8	-83.4	374.4	160.6	213.84	1.751	
13,000.0	6,770.0	12,726.1	6,591.1	117.0	127.3	61.30	-5,892.8	-83.4	374.7	157.6	217.11	1.726	
13,100.0	6,769.9	12,826.1	6,590.4	118.9	129.2	61.22	-5,992.8	-83.4	375.0	154.6	220.38	1.701	
13,200.0	6,769.8	12,926.1	6,589.7	120.8	131.1	61.14	-6,092.8	-83.4	375.3	151.6	223.65	1.678	
13,300.0	6,769.7	13,026.1	6,589.0	122.7	133.0	61.06	-6,192.8	-83.4	375.6	148.7	226.91	1.655	
13,400.0	6,769.7	13,126.1	6,588.3	124.6	134.9	60.98	-6,292.8	-83.4	375.9	145.7	230.17	1.633	
13,500.0	6,769.6	13,226.1	6,587.6	126.5	136.8	60.89	-6,392.8	-83.4	376.2	142.7	233.42	1.612	
13,600.0	6,769.5	13,326.1	6,586.9	128.4	138.7	60.81	-6,492.8	-83.4	376.5	139.8	236.67	1.591	
13,700.0	6,769.4	13,426.1	6,586.2	130.3	140.6	60.73	-6,592.8	-83.4	376.8	136.8	239.92	1.570	
13,800.0	6,769.3	13,526.1	6,585.5	132.2	142.5	60.65	-6,692.8	-83.4	377.1	133.9	243.16	1.551	
13,900.0	6,769.2	13,626.1	6,584.8	134.1	144.4	60.57	-6,792.8	-83.4	377.4	131.0	246.40	1.531	
14,000.0	6,769.1	13,726.1	6,584.1	136.0	146.3	60.49	-6,892.8	-83.4	377.7	128.0	249.63	1.513	
14,100.0	6,769.1	13,826.1	6,583.4	137.9	148.2	60.41	-6,992.8	-83.4	378.0	125.1	252.86	1.495 Level 3	
14,158.9	6,769.0	13,885.0	6,583.0	139.1	149.3	60.36	-7,051.7	-83.4	378.1	123.4	254.77	1.484 Level 3, ES, SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 27GK-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-201 - Wellbore #1 - Plan #1 (4-23-14)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.5	0.5	0.0	0.0	-11.15	593.8	-117.0	605.2				
100.0	100.0	100.5	100.5	0.1	0.1	-11.15	593.8	-117.0	605.2	605.0	0.23	2,679.394	
200.0	200.0	200.5	200.5	0.3	0.3	-11.15	593.8	-117.0	605.2	604.6	0.68	896.104	
300.0	300.0	300.5	300.5	0.6	0.6	-11.15	593.8	-117.0	605.2	604.1	1.12	538.020	
400.0	400.0	400.5	400.5	0.8	0.8	-11.15	593.8	-117.0	605.2	603.7	1.57	384.410	
500.0	500.0	500.5	500.5	1.0	1.0	-11.15	593.8	-117.0	605.2	603.2	2.02	299.033	
600.0	600.0	600.5	600.5	1.2	1.2	-11.15	593.8	-117.0	605.2	602.8	2.47	244.688	
700.0	700.0	700.5	700.5	1.5	1.5	-11.15	593.8	-117.0	605.2	602.3	2.92	207.058	
800.0	800.0	800.5	800.5	1.7	1.7	-11.15	593.8	-117.0	605.2	601.9	3.37	179.460	
900.0	900.0	900.5	900.5	1.9	1.9	-11.15	593.8	-117.0	605.2	601.4	3.82	158.353	
1,000.0	1,000.0	1,000.5	1,000.5	2.1	2.1	-11.15	593.8	-117.0	605.2	601.0	4.27	141.689	
1,100.0	1,100.0	1,100.5	1,100.5	2.4	2.4	-11.15	593.8	-117.0	605.2	600.5	4.72	128.198	
1,200.0	1,200.0	1,200.5	1,200.5	2.6	2.6	-11.15	593.8	-117.0	605.2	600.1	5.17	117.052	
1,300.0	1,300.0	1,300.5	1,300.5	2.8	2.8	-11.15	593.8	-117.0	605.2	599.6	5.62	107.690	
1,400.0	1,400.0	1,400.5	1,400.5	3.0	3.0	-11.15	593.8	-117.0	605.2	599.2	6.07	99.715	
1,500.0	1,500.0	1,500.5	1,500.5	3.3	3.3	-11.15	593.8	-117.0	605.2	598.7	6.52	92.839	
1,566.5	1,566.5	1,567.0	1,567.0	3.4	3.4	-11.15	593.8	-117.0	605.2	598.4	6.82	88.769	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	-11.15	593.8	-117.0	605.2	598.3	6.97	86.864	
1,700.0	1,700.0	1,690.2	1,690.2	3.7	3.7	-11.04	594.8	-116.0	606.1	598.7	7.39	82.000	
1,800.0	1,800.0	1,779.8	1,779.7	3.9	3.9	-10.70	597.7	-112.9	608.6	600.8	7.81	77.910	
1,900.0	1,900.0	1,869.1	1,868.7	4.2	4.1	-10.15	602.5	-107.9	612.9	604.7	8.24	74.420	
2,000.0	2,000.0	1,957.8	1,956.9	4.4	4.3	-9.40	609.2	-100.9	619.0	610.4	8.67	71.434	
2,100.0	2,100.0	2,056.2	2,054.5	4.6	4.5	-30.71	617.9	-91.8	624.8	615.7	9.12	68.489	
2,200.0	2,199.8	2,155.8	2,153.3	4.8	4.8	-29.97	626.6	-82.6	627.8	618.2	9.58	65.524	
2,300.0	2,299.5	2,255.7	2,252.3	5.1	5.0	-29.43	635.4	-73.4	627.7	617.7	10.04	62.536	
2,400.0	2,398.7	2,355.5	2,351.3	5.3	5.3	-29.06	644.2	-64.2	624.7	614.2	10.50	59.522	
2,500.0	2,497.5	2,455.3	2,450.3	5.5	5.6	-28.88	652.9	-55.0	618.6	607.7	10.95	56.480	
2,600.0	2,595.7	2,554.9	2,549.1	5.8	5.9	-28.81	661.7	-45.8	610.0	598.5	11.44	53.335	
2,700.0	2,693.9	2,654.5	2,647.9	6.1	6.1	-28.71	670.5	-36.6	601.0	589.0	11.95	50.297	
2,800.0	2,792.1	2,754.1	2,746.7	6.4	6.4	-28.62	679.2	-27.4	591.9	579.5	12.47	47.479	
2,900.0	2,890.3	2,853.7	2,845.4	6.7	6.7	-28.52	688.0	-18.2	582.9	569.9	12.99	44.863	
3,000.0	2,988.4	2,953.3	2,944.2	7.0	7.0	-28.41	696.7	-9.0	573.9	560.4	13.53	42.433	
3,100.0	3,086.6	3,052.8	3,043.0	7.3	7.3	-28.30	705.5	0.2	564.9	550.9	14.06	40.173	
3,200.0	3,184.8	3,152.4	3,141.8	7.7	7.6	-28.19	714.2	9.4	555.9	541.3	14.60	38.067	
3,300.0	3,283.0	3,252.0	3,240.5	8.0	7.9	-28.08	723.0	18.6	546.9	531.8	15.15	36.104	
3,400.0	3,381.2	3,351.6	3,339.3	8.4	8.2	-27.96	731.7	27.8	537.9	522.2	15.70	34.269	
3,500.0	3,479.3	3,451.2	3,438.1	8.7	8.5	-27.84	740.5	37.0	528.9	512.7	16.25	32.554	
3,600.0	3,577.5	3,550.8	3,536.9	9.1	8.8	-27.71	749.3	46.2	519.9	503.1	16.80	30.946	
3,700.0	3,675.7	3,650.4	3,635.6	9.5	9.1	-27.58	758.0	55.4	510.9	493.6	17.36	29.438	
3,800.0	3,773.9	3,750.0	3,734.4	9.9	9.4	-27.44	766.8	64.6	501.9	484.0	17.91	28.021	
3,900.0	3,872.1	3,849.6	3,833.2	10.2	9.7	-27.30	775.5	73.7	493.0	474.5	18.47	26.688	
4,000.0	3,970.2	3,949.1	3,932.0	10.6	10.0	-27.16	784.3	82.9	484.0	464.9	19.03	25.432	
4,100.0	4,068.4	4,048.7	4,030.7	11.0	10.4	-27.00	793.0	92.1	475.0	455.4	19.59	24.247	
4,200.0	4,166.6	4,148.3	4,129.5	11.4	10.7	-26.85	801.8	101.3	466.0	445.9	20.15	23.127	
4,300.0	4,264.8	4,247.9	4,228.3	11.8	11.0	-26.68	810.5	110.5	457.0	436.3	20.71	22.068	
4,400.0	4,363.0	4,347.5	4,327.1	12.1	11.3	-26.51	819.3	119.7	448.1	426.8	21.27	21.065	
4,500.0	4,461.1	4,447.1	4,425.8	12.5	11.6	-26.34	828.0	128.9	439.1	417.3	21.83	20.113	
4,600.0	4,559.3	4,546.7	4,524.6	12.9	11.9	-26.15	836.8	138.1	430.1	407.7	22.39	19.210	
4,700.0	4,657.5	4,655.6	4,632.8	13.3	12.2	-26.12	845.2	146.9	420.2	397.3	22.93	18.329	
4,800.0	4,755.7	4,764.9	4,741.8	13.7	12.4	-26.53	850.8	152.8	407.8	384.4	23.45	17.389	
4,900.0	4,853.9	4,873.2	4,850.1	14.1	12.6	-27.45	853.5	155.7	393.1	369.1	24.00	16.383	

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 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 27GK-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-201 - Wellbore #1 - Plan #1 (4-23-14)													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	4,952.0	4,975.7	4,952.5	14.5	12.8	-28.78		853.8	156.0	376.5	352.0	24.56	15.332	
5,100.0	5,050.2	5,073.8	5,050.7	14.9	13.0	-30.23		853.8	156.0	359.9	334.8	25.15	14.312	
5,200.0	5,148.4	5,172.0	5,148.9	15.3	13.2	-31.81		853.8	156.0	343.6	317.8	25.76	13.336	
5,300.0	5,246.6	5,270.2	5,247.1	15.7	13.3	-33.55		853.8	156.0	327.5	301.1	26.40	12.406	
5,400.0	5,344.8	5,368.4	5,345.3	16.1	13.5	-35.47		853.8	156.0	311.8	284.7	27.06	11.522	
5,500.0	5,443.2	5,466.8	5,443.7	16.5	13.7	-37.28		853.8	156.0	297.5	269.8	27.72	10.733	
5,600.0	5,542.2	5,565.8	5,542.7	16.7	13.9	-38.86		853.8	156.0	286.2	257.9	28.30	10.116	
5,700.0	5,641.6	5,665.2	5,642.1	17.0	14.1	-40.14		853.8	156.0	277.9	249.1	28.82	9.643	
5,800.0	5,741.3	5,764.9	5,741.8	17.2	14.3	-41.05		853.8	156.0	272.4	243.1	29.28	9.303	
5,900.0	5,841.2	5,864.9	5,841.7	17.3	14.5	-41.54		853.8	156.0	269.5	239.9	29.67	9.084	
5,922.0	5,863.2	5,886.9	5,863.7	17.4	14.5	-41.59		853.8	156.0	269.2	239.5	29.75	9.049	CC, ES, SF
6,000.0	5,941.2	5,950.0	5,926.8	17.5	14.7	-19.21		856.4	156.0	271.9	241.9	29.98	9.069	
6,100.0	6,041.2	6,019.2	5,995.4	17.6	14.8	161.29		865.2	156.0	284.2	253.9	30.23	9.402	
6,200.0	6,140.6	6,088.2	6,062.8	17.7	15.1	161.92		880.1	156.0	314.4	284.4	30.02	10.474	
6,300.0	6,237.8	6,150.0	6,121.7	17.6	15.3	162.51		898.5	156.0	363.9	334.5	29.39	12.379	
6,400.0	6,331.0	6,200.0	6,168.2	17.4	15.5	162.49		916.9	156.0	429.6	401.2	28.42	15.116	
6,500.0	6,418.9	6,234.7	6,199.7	17.2	15.6	161.23		931.4	156.0	508.1	480.8	27.24	18.651	
6,600.0	6,499.7	6,261.1	6,223.3	16.9	15.8	158.15		943.4	156.0	596.0	569.9	26.12	22.820	
6,700.0	6,572.2	6,277.8	6,237.9	16.6	15.9	150.72		951.4	156.0	690.2	664.4	25.78	26.772	
6,800.0	6,635.0	6,286.1	6,245.1	16.3	15.9	129.17		955.6	156.0	788.1	759.5	28.52	27.633	
6,900.0	6,687.2	6,300.0	6,257.1	16.1	16.0	75.98		962.6	156.0	887.6	857.8	29.78	29.807	
7,000.0	6,727.8	6,282.8	6,242.3	16.0	15.9	29.05		953.9	156.0	986.3	967.3	19.04	51.812	



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 27GK-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-421 - Wellbore #1 - Plan #1 (4-23-14)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.5	0.5	0.0	0.0	-8.27	652.1	-94.7	659.0				
100.0	100.0	100.5	100.5	0.1	0.1	-8.27	652.1	-94.7	659.0	658.7	0.23	2,917.179	
200.0	200.0	200.5	200.5	0.3	0.3	-8.27	652.1	-94.7	659.0	658.3	0.68	975.629	
300.0	300.0	300.5	300.5	0.6	0.6	-8.27	652.1	-94.7	659.0	657.8	1.12	585.767	
400.0	400.0	400.5	400.5	0.8	0.8	-8.27	652.1	-94.7	659.0	657.4	1.57	418.525	
500.0	500.0	500.5	500.5	1.0	1.0	-8.27	652.1	-94.7	659.0	656.9	2.02	325.571	
600.0	600.0	600.5	600.5	1.2	1.2	-8.27	652.1	-94.7	659.0	656.5	2.47	266.403	
700.0	700.0	700.5	700.5	1.5	1.5	-8.27	652.1	-94.7	659.0	656.0	2.92	225.434	
800.0	800.0	800.5	800.5	1.7	1.7	-8.27	652.1	-94.7	659.0	655.6	3.37	195.386	
900.0	900.0	900.5	900.5	1.9	1.9	-8.27	652.1	-94.7	659.0	655.1	3.82	172.406	
1,000.0	1,000.0	1,000.5	1,000.5	2.1	2.1	-8.27	652.1	-94.7	659.0	654.7	4.27	154.263	
1,100.0	1,100.0	1,100.5	1,100.5	2.4	2.4	-8.27	652.1	-94.7	659.0	654.2	4.72	139.575	
1,166.5	1,166.5	1,167.0	1,167.0	2.5	2.5	-8.27	652.1	-94.7	659.0	653.9	5.02	131.263	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-8.27	652.1	-94.7	659.0	653.8	5.17	127.468	
1,300.0	1,300.0	1,296.1	1,296.1	2.8	2.8	-8.13	652.7	-93.2	659.3	653.7	5.60	117.689	
1,400.0	1,400.0	1,391.5	1,391.4	3.0	3.0	-7.72	654.3	-88.7	660.3	654.3	6.03	109.525	
1,500.0	1,500.0	1,486.5	1,486.0	3.3	3.2	-7.05	656.9	-81.3	662.1	655.6	6.46	102.434	
1,600.0	1,600.0	1,580.8	1,579.7	3.5	3.4	-6.13	660.6	-70.9	664.7	657.8	6.91	96.186	
1,700.0	1,700.0	1,674.4	1,672.2	3.7	3.7	-4.97	665.3	-57.8	668.4	661.0	7.38	90.579	
1,800.0	1,800.0	1,770.5	1,766.8	3.9	4.0	-3.58	671.0	-42.0	673.1	665.2	7.88	85.432	
1,900.0	1,900.0	1,868.9	1,863.6	4.2	4.3	-2.15	676.9	-25.5	678.3	669.9	8.41	80.688	
2,000.0	2,000.0	1,967.3	1,960.5	4.4	4.6	-0.75	682.8	-9.0	684.0	675.0	8.95	76.420	
2,100.0	2,100.0	2,065.9	2,057.5	4.6	4.9	-21.62	688.7	7.6	688.4	678.9	9.48	72.645	
2,200.0	2,199.8	2,164.7	2,154.8	4.8	5.2	-20.40	694.6	24.1	690.0	679.9	10.01	68.897	
2,300.0	2,299.5	2,263.8	2,252.3	5.1	5.6	-19.29	700.5	40.8	688.5	678.0	10.55	65.267	
2,400.0	2,398.7	2,362.9	2,349.8	5.3	6.0	-18.28	706.5	57.4	684.0	673.0	11.08	61.742	
2,500.0	2,497.5	2,462.0	2,447.3	5.5	6.3	-17.37	712.4	74.0	676.5	664.9	11.60	58.307	
2,600.0	2,595.7	2,560.9	2,544.6	5.8	6.7	-16.48	718.3	90.6	666.2	654.1	12.15	54.850	
2,700.0	2,693.9	2,659.7	2,641.9	6.1	7.0	-15.55	724.2	107.1	655.7	643.0	12.72	51.564	
2,800.0	2,792.1	2,758.6	2,739.1	6.4	7.4	-14.59	730.2	123.7	645.5	632.2	13.29	48.569	
2,900.0	2,890.3	2,857.5	2,836.4	6.7	7.8	-13.60	736.1	140.3	635.4	621.5	13.86	45.835	
3,000.0	2,988.4	2,956.3	2,933.7	7.0	8.2	-12.58	742.0	156.9	625.5	611.0	14.43	43.335	
3,100.0	3,086.6	3,055.2	3,031.0	7.3	8.6	-11.52	747.9	173.5	615.8	600.8	15.00	41.045	
3,200.0	3,184.8	3,154.1	3,128.3	7.7	8.9	-10.44	753.8	190.0	606.3	590.7	15.57	38.944	
3,300.0	3,283.0	3,252.9	3,225.6	8.0	9.3	-9.32	759.8	206.6	597.0	580.9	16.13	37.014	
3,400.0	3,381.2	3,351.8	3,322.9	8.4	9.7	-8.16	765.7	223.2	588.0	571.3	16.69	35.238	
3,500.0	3,479.3	3,450.7	3,420.2	8.7	10.1	-6.97	771.6	239.8	579.3	562.0	17.24	33.601	
3,600.0	3,577.5	3,549.5	3,517.5	9.1	10.5	-5.75	777.5	256.3	570.7	553.0	17.79	32.090	
3,700.0	3,675.7	3,648.4	3,614.8	9.5	10.9	-4.48	783.4	272.9	562.5	544.2	18.33	30.695	
3,800.0	3,773.9	3,747.3	3,712.0	9.9	11.3	-3.19	789.4	289.5	554.6	535.7	18.86	29.404	
3,900.0	3,872.1	3,846.2	3,809.3	10.2	11.7	-1.85	795.3	306.1	546.9	527.5	19.39	28.208	
4,000.0	3,970.2	3,945.0	3,906.6	10.6	12.0	-0.48	801.2	322.7	539.6	519.6	19.91	27.100	
4,100.0	4,068.4	4,043.9	4,003.9	11.0	12.4	0.93	807.1	339.2	532.5	512.1	20.43	26.072	
4,200.0	4,166.6	4,142.8	4,101.2	11.4	12.8	2.37	813.1	355.8	525.8	504.9	20.93	25.118	
4,300.0	4,264.8	4,241.6	4,198.5	11.8	13.2	3.85	819.0	372.4	519.5	498.1	21.44	24.232	
4,400.0	4,363.0	4,340.5	4,295.8	12.1	13.6	5.36	824.9	389.0	513.5	491.6	21.94	23.407	
4,500.0	4,461.1	4,439.4	4,393.1	12.5	14.0	6.91	830.8	405.5	507.9	485.5	22.43	22.641	
4,600.0	4,559.3	4,538.3	4,490.4	12.9	14.4	8.49	836.7	422.1	502.7	479.7	22.92	21.927	
4,700.0	4,657.5	4,632.9	4,603.6	13.3	14.8	10.20	842.8	439.2	496.2	472.9	23.38	21.226	
4,800.0	4,755.7	4,767.7	4,717.5	13.7	15.0	11.65	847.4	452.0	487.0	463.2	23.81	20.456	
4,900.0	4,853.9	4,882.1	4,831.6	14.1	15.3	12.83	850.4	460.5	474.7	450.5	24.23	19.595	

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 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 27GK-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-421 - Wellbore #1 - Plan #1 (4-23-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,000.0	4,952.0	4,995.9	4,945.3	14.5	15.5	13.77	851.9	464.7	459.4	434.7	24.64	18.643		
5,100.0	5,050.2	5,101.3	5,050.7	14.9	15.6	14.44	852.1	465.2	441.3	416.3	25.05	17.618		
5,200.0	5,148.4	5,199.5	5,148.9	15.3	15.8	15.08	852.1	465.2	422.9	397.4	25.47	16.607		
5,300.0	5,246.6	5,297.7	5,247.1	15.7	15.9	15.77	852.1	465.2	404.6	378.7	25.89	15.627		
5,400.0	5,344.8	5,395.9	5,345.3	16.1	16.1	16.54	852.1	465.2	386.3	360.0	26.32	14.680		
5,500.0	5,443.2	5,494.3	5,443.7	16.5	16.2	17.23	852.1	465.2	369.4	342.6	26.77	13.797		
5,600.0	5,542.2	5,593.3	5,542.7	16.7	16.4	17.82	852.1	465.2	355.8	328.7	27.18	13.090		
5,700.0	5,641.6	5,692.7	5,642.1	17.0	16.5	18.30	852.1	465.2	345.6	318.0	27.56	12.539		
5,800.0	5,741.3	5,792.4	5,741.8	17.2	16.7	18.64	852.1	465.2	338.7	310.8	27.91	12.135		
5,900.0	5,841.2	5,892.3	5,841.7	17.3	16.9	18.83	852.1	465.2	335.1	306.9	28.23	11.872		
5,985.8	5,927.1	5,978.2	5,927.6	17.5	17.0	18.88	852.1	465.2	334.1	305.6	28.51	11.722 CC, ES		
6,000.0	5,941.2	5,992.3	5,941.7	17.5	17.0	41.09	852.1	465.2	334.5	306.0	28.55	11.716		
6,033.7	5,974.9	6,026.0	5,975.4	17.5	17.1	-138.93	852.1	465.2	334.7	306.0	28.66	11.678		
6,100.0	6,041.2	6,078.4	6,027.7	17.6	17.2	-139.02	853.3	465.2	336.1	307.3	28.83	11.658 SF		
6,200.0	6,140.6	6,150.0	6,099.0	17.7	17.3	-139.84	860.6	465.2	352.0	323.3	28.67	12.277		
6,300.0	6,237.8	6,216.6	6,164.3	17.6	17.5	-141.04	873.3	465.2	385.3	357.2	28.18	13.675		
6,400.0	6,331.0	6,271.8	6,217.5	17.4	17.6	-141.62	888.1	465.2	435.6	408.3	27.37	15.915		
6,500.0	6,418.9	6,315.3	6,258.6	17.2	17.8	-140.81	902.5	465.2	501.0	474.6	26.38	18.993		
6,600.0	6,499.7	6,350.0	6,290.7	16.9	17.9	-138.03	915.6	465.2	578.5	553.0	25.48	22.702		
6,700.0	6,572.2	6,369.0	6,308.0	16.6	17.9	-131.08	923.4	465.2	664.9	639.5	25.40	26.171		
6,800.0	6,635.0	6,381.4	6,319.2	16.3	18.0	-118.18	928.8	465.2	757.2	730.1	27.09	27.949		
6,900.0	6,687.2	6,386.1	6,323.4	16.1	18.0	-95.61	930.8	465.2	852.9	822.6	30.30	28.148		
7,000.0	6,727.8	6,384.4	6,321.8	16.0	18.0	-66.76	930.0	465.2	949.8	919.6	30.18	31.470		



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Chesnut 27GK-HZ Pad Sec.27-T5N-R64W - Chesnut 27O-201 - Wellbore #1 - Pan #1 (4-23-14)											Offset Site Error:		0.0 ft		
Survey Program: 0-MWD															Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis					Distance						Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)						
0.0	0.0	0.0	0.0	0.0	0.0	-4.17	765.1	-55.7	767.1								
100.0	100.0	99.5	99.5	0.1	0.1	-4.17	765.1	-55.7	767.1	766.9	0.22	3,421.325					
200.0	200.0	199.5	199.5	0.3	0.3	-4.17	765.1	-55.7	767.1	766.4	0.67	1,139.495					
300.0	300.0	299.6	299.6	0.6	0.6	-4.04	765.2	-54.0	767.1	766.0	1.11	688.772					
367.3	367.3	366.9	366.8	0.7	0.7	-3.80	765.4	-50.9	767.1	765.6	1.41	542.243	CC				
400.0	400.0	399.5	399.4	0.8	0.8	-3.65	765.5	-48.8	767.1	765.5	1.56	491.434					
500.0	500.0	498.9	498.4	1.0	1.0	-3.00	766.1	-40.2	767.1	765.1	2.03	377.673					
600.0	600.0	597.6	596.3	1.2	1.3	-2.11	766.9	-28.2	767.4	764.9	2.53	303.084	ES				
700.0	700.0	695.4	692.9	1.5	1.6	-0.98	767.9	-13.1	768.0	765.0	3.07	250.080					
800.0	800.0	791.9	787.7	1.7	2.0	0.38	769.1	5.1	769.2	765.5	3.66	210.446					
900.0	900.0	887.2	880.6	1.9	2.4	1.94	770.5	26.1	771.2	766.9	4.29	179.716					
1,000.0	1,000.0	983.6	974.2	2.1	2.9	3.67	772.1	49.5	774.1	769.1	4.97	155.679					
1,100.0	1,100.0	1,080.6	1,068.2	2.4	3.4	5.40	773.6	73.2	777.7	772.0	5.68	136.993					
1,200.0	1,200.0	1,177.6	1,162.2	2.6	3.9	7.12	775.2	96.8	782.1	775.7	6.39	122.325					
1,300.0	1,300.0	1,274.5	1,256.3	2.8	4.4	8.81	776.8	120.4	787.2	780.1	7.12	110.588					
1,400.0	1,400.0	1,371.5	1,350.3	3.0	4.9	10.49	778.3	144.1	793.1	785.2	7.85	101.040					
1,500.0	1,500.0	1,468.5	1,444.3	3.3	5.4	12.13	779.9	167.7	799.6	791.0	8.58	93.160					
1,600.0	1,600.0	1,565.5	1,538.4	3.5	5.9	13.76	781.5	191.3	806.9	797.5	9.32	86.577					
1,700.0	1,700.0	1,662.4	1,632.4	3.7	6.4	15.35	783.0	214.9	814.8	804.7	10.06	81.018					
1,800.0	1,800.0	1,759.4	1,726.5	3.9	6.9	16.91	784.6	238.6	823.3	812.5	10.79	76.281					
1,900.0	1,900.0	1,856.4	1,820.5	4.2	7.4	18.44	786.2	262.2	832.5	821.0	11.53	72.212					
2,000.0	2,000.0	1,953.4	1,914.5	4.4	7.9	19.94	787.8	285.8	842.3	830.0	12.26	68.692					
2,100.0	2,100.0	2,050.5	2,008.7	4.6	8.4	-0.82	789.3	309.5	850.9	838.4	12.55	67.802					
2,200.0	2,199.8	2,147.9	2,103.2	4.8	8.9	0.61	790.9	333.2	856.7	843.5	13.18	64.985					
2,300.0	2,299.5	2,245.4	2,197.8	5.1	9.4	2.04	792.5	357.0	859.5	845.7	13.79	62.318					
2,400.0	2,398.7	2,343.0	2,292.4	5.3	9.9	3.47	794.1	380.7	859.3	845.0	14.37	59.782					
2,500.0	2,497.5	2,440.4	2,386.9	5.5	10.4	4.92	795.6	404.5	856.3	841.4	14.93	57.359					
2,600.0	2,595.7	2,537.7	2,481.2	5.8	10.9	6.40	797.2	428.2	850.8	835.4	15.50	54.908					
2,700.0	2,693.9	2,634.9	2,575.5	6.1	11.5	7.90	798.8	451.9	845.6	829.5	16.09	52.563					
2,800.0	2,792.1	2,732.2	2,669.8	6.4	12.0	9.41	800.4	475.6	841.0	824.3	16.67	50.451					
2,900.0	2,890.3	2,829.4	2,764.1	6.7	12.5	10.94	801.9	499.3	837.0	819.7	17.24	48.547					
3,000.0	2,988.4	2,926.7	2,858.4	7.0	13.0	12.48	803.5	523.0	833.6	815.8	17.80	46.828					
3,100.0	3,086.6	3,023.9	2,952.7	7.3	13.5	14.03	805.1	546.6	830.9	812.5	18.35	45.274					
3,200.0	3,184.8	3,121.2	3,047.0	7.7	14.0	15.59	806.7	570.3	828.8	809.9	18.89	43.868					
3,300.0	3,283.0	3,218.4	3,141.3	8.0	14.5	17.15	808.2	594.0	827.4	807.9	19.42	42.594					
3,400.0	3,381.2	3,315.7	3,235.6	8.4	15.0	18.72	809.8	617.7	826.6	806.6	19.95	41.439					
3,467.6	3,447.6	3,381.4	3,299.4	8.6	15.4	19.79	810.9	633.7	826.4	806.2	20.30	40.718					
3,500.0	3,479.3	3,412.9	3,329.9	8.7	15.5	20.30	811.4	641.4	826.5	806.0	20.46	40.391					
3,600.0	3,577.5	3,510.1	3,424.2	9.1	16.1	21.87	813.0	665.1	827.0	806.1	20.97	39.439					
3,700.0	3,675.7	3,607.4	3,518.5	9.5	16.6	23.44	814.5	688.8	828.2	806.8	21.47	38.575					
3,800.0	3,773.9	3,704.6	3,612.8	9.9	17.1	25.00	816.1	712.5	830.1	808.1	21.97	37.790					
3,900.0	3,872.1	3,801.9	3,707.1	10.2	17.6	26.55	817.7	736.2	832.6	810.1	22.46	37.075					
4,000.0	3,970.2	3,899.1	3,801.4	10.6	18.1	28.10	819.3	759.9	835.7	812.8	22.94	36.425					
4,100.0	4,068.4	3,996.4	3,895.7	11.0	18.6	29.63	820.8	783.6	839.5	816.1	23.43	35.833					
4,200.0	4,166.6	4,093.6	3,990.0	11.4	19.1	31.15	822.4	807.3	843.9	820.0	23.91	35.293					
4,300.0	4,264.8	4,190.8	4,084.3	11.8	19.6	32.65	824.0	831.0	848.9	824.5	24.39	34.801					
4,400.0	4,363.0	4,288.1	4,178.6	12.1	20.2	34.14	825.6	854.7	854.6	829.7	24.88	34.351					
4,500.0	4,461.1	4,385.3	4,272.9	12.5	20.7	35.60	827.1	878.3	860.8	835.4	25.36	33.939					
4,600.0	4,559.3	4,482.6	4,367.2	12.9	21.2	37.05	828.7	902.0	867.6	841.7	25.85	33.562					
4,700.0	4,657.5	4,579.8	4,461.5	13.3	21.7	38.47	830.3	925.7	875.0	848.6	26.34	33.216					
4,800.0	4,755.7	4,677.1	4,555.8	13.7	22.2	39.87	831.9	949.4	882.9	856.1	26.84	32.897					

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 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 27GK-HZ Pad Sec.27-T5N-R64W - Chesnut 27O-201 - Wellbore #1 - Pan #1 (4-23-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
4,900.0	4,853.9	4,774.3	4,650.1	14.1	22.7	41.24	833.4	973.1	891.4	864.0	27.34	32.603		
5,000.0	4,952.0	4,871.6	4,744.4	14.5	23.2	42.59	835.0	996.8	900.4	872.5	27.85	32.332		
5,100.0	5,050.2	4,968.8	4,838.7	14.9	23.7	43.91	836.6	1,020.5	909.9	881.5	28.36	32.080		
5,200.0	5,148.4	5,066.0	4,933.0	15.3	24.3	45.21	838.2	1,044.2	919.9	891.0	28.89	31.846		
5,300.0	5,246.6	5,175.9	5,039.6	15.7	24.8	46.63	839.9	1,070.7	930.2	900.7	29.43	31.609		
5,400.0	5,344.8	5,318.6	5,179.2	16.1	25.3	48.36	841.9	1,100.0	937.4	907.5	29.96	31.287		
5,500.0	5,443.2	5,463.0	5,321.8	16.5	25.7	49.93	843.4	1,122.7	941.2	910.7	30.46	30.903		
5,600.0	5,542.2	5,608.8	5,466.8	16.7	26.0	51.15	844.4	1,138.2	942.6	911.7	30.88	30.522		
5,700.0	5,641.6	5,755.4	5,613.2	17.0	26.3	51.98	845.0	1,146.4	941.3	910.1	31.26	30.111		
5,800.0	5,741.3	5,883.1	5,740.8	17.2	26.4	52.40	845.1	1,147.7	937.8	906.2	31.59	29.687		
5,900.0	5,841.2	5,979.9	5,837.6	17.3	26.5	52.55	845.1	1,147.7	935.4	903.6	31.85	29.371		
5,925.7	5,866.9	6,000.0	5,857.7	17.4	26.5	52.55	845.3	1,147.7	935.3	903.4	31.91	29.310		
6,000.0	5,941.2	6,057.7	5,915.3	17.5	26.6	74.57	849.0	1,147.7	936.5	904.4	32.08	29.188		
6,100.0	6,041.2	6,131.6	5,988.3	17.6	26.7	-105.98	860.1	1,147.7	940.7	908.4	32.32	29.109 SF		
6,200.0	6,140.6	6,200.0	6,054.7	17.7	26.8	-106.60	876.5	1,147.7	951.0	918.7	32.29	29.449		
6,300.0	6,237.8	6,259.4	6,110.9	17.6	26.8	-107.10	895.6	1,147.7	969.1	937.0	32.07	30.215		
6,400.0	6,331.0	6,300.0	6,148.4	17.4	26.9	-106.66	911.1	1,147.7	996.5	964.7	31.71	31.427		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 27GK-HZ Pad Sec.27-T5N-R64W - Chesnut 27O-341 - Wellbore #1 - Plan #1 (4-23-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-6.08		706.8	-75.2	710.8				
100.0	100.0	99.5	99.5	0.1	0.1	-6.08		706.8	-75.2	710.8	710.5	0.22	3,170.110	
200.0	200.0	199.5	199.5	0.3	0.3	-6.08		706.8	-75.2	710.8	710.1	0.67	1,055.826	
300.0	300.0	299.5	299.5	0.6	0.6	-6.08		706.8	-75.2	710.8	709.6	1.12	633.073	
400.0	400.0	399.5	399.5	0.8	0.8	-6.08		706.8	-75.2	710.8	709.2	1.57	452.066	
500.0	500.0	499.5	499.5	1.0	1.0	-6.08		706.8	-75.2	710.8	708.7	2.02	351.551	
600.0	600.0	599.5	599.5	1.2	1.2	-6.08		706.8	-75.2	710.8	708.3	2.47	287.603	
700.0	700.0	699.5	699.5	1.5	1.5	-6.08		706.8	-75.2	710.8	707.8	2.92	243.340	
800.0	800.0	799.5	799.5	1.7	1.7	-6.08		706.8	-75.2	710.8	707.4	3.37	210.884	
900.0	900.0	898.2	898.2	1.9	1.9	-5.94		707.0	-73.6	710.8	707.0	3.81	186.745	
1,000.0	1,000.0	996.8	996.6	2.1	2.1	-5.53		707.8	-68.6	711.1	706.9	4.24	167.790	
1,100.0	1,100.0	1,094.8	1,094.3	2.4	2.3	-4.86		709.1	-60.3	711.7	707.0	4.68	152.003	
1,200.0	1,200.0	1,192.2	1,190.9	2.6	2.6	-3.92		710.9	-48.8	712.6	707.5	5.14	138.514	
1,300.0	1,300.0	1,288.6	1,286.3	2.8	2.8	-2.74		713.2	-34.2	714.2	708.5	5.63	126.739	
1,400.0	1,400.0	1,384.0	1,379.9	3.0	3.1	-1.33		716.0	-16.6	716.4	710.3	6.16	116.275	
1,500.0	1,500.0	1,480.9	1,474.7	3.3	3.5	0.27		719.1	3.4	719.6	712.8	6.73	106.949	
1,600.0	1,600.0	1,578.7	1,570.3	3.5	3.9	1.88		722.3	23.8	723.3	716.0	7.32	98.757	
1,700.0	1,700.0	1,676.4	1,665.9	3.7	4.3	3.48		725.5	44.1	727.6	719.7	7.94	91.665	
1,800.0	1,800.0	1,774.2	1,761.4	3.9	4.7	5.05		728.7	64.4	732.5	724.0	8.57	85.520	
1,900.0	1,900.0	1,872.0	1,857.0	4.2	5.1	6.61		731.9	84.8	738.0	728.8	9.20	80.186	
2,000.0	2,000.0	1,969.7	1,952.6	4.4	5.5	8.14		735.1	105.1	744.0	734.2	9.85	75.539	
2,100.0	2,100.0	2,067.7	2,048.3	4.6	5.9	-12.60		738.3	125.5	748.9	738.5	10.42	71.890	
2,200.0	2,199.8	2,165.8	2,144.3	4.8	6.3	-11.18		741.5	145.9	750.9	739.8	11.03	68.104	
2,300.0	2,299.5	2,264.2	2,240.4	5.1	6.8	-9.82		744.7	166.3	749.9	738.2	11.62	64.525	
2,400.0	2,398.7	2,362.5	2,336.6	5.3	7.2	-8.50		747.9	186.8	745.9	733.6	12.20	61.124	
2,500.0	2,497.5	2,460.8	2,432.6	5.5	7.6	-7.21		751.1	207.2	738.8	726.0	12.77	57.872	
2,600.0	2,595.7	2,558.9	2,528.5	5.8	8.1	-5.91		754.3	227.6	729.2	715.8	13.35	54.633	
2,700.0	2,693.9	2,656.9	2,624.4	6.1	8.5	-4.57		757.5	248.0	719.5	705.6	13.95	51.573	
2,800.0	2,792.1	2,755.0	2,720.2	6.4	9.0	-3.19		760.7	268.4	710.3	695.8	14.55	48.812	
2,900.0	2,890.3	2,853.0	2,816.1	6.7	9.4	-1.78		763.9	288.8	701.5	686.4	15.15	46.316	
3,000.0	2,988.4	2,951.1	2,911.9	7.0	9.8	-0.34		767.1	309.2	693.2	677.5	15.73	44.056	
3,100.0	3,086.6	3,049.1	3,007.8	7.3	10.3	1.14		770.3	329.6	685.3	669.0	16.31	42.007	
3,200.0	3,184.8	3,147.2	3,103.6	7.7	10.7	2.65		773.5	350.0	677.9	661.0	16.89	40.145	
3,300.0	3,283.0	3,245.2	3,199.5	8.0	11.2	4.19		776.7	370.4	671.0	653.6	17.45	38.452	
3,400.0	3,381.2	3,343.2	3,295.3	8.4	11.6	5.76		779.9	390.7	664.6	646.6	18.01	36.911	
3,500.0	3,479.3	3,441.3	3,391.2	8.7	12.1	7.36		783.1	411.1	658.7	640.2	18.55	35.506	
3,600.0	3,577.5	3,539.3	3,487.0	9.1	12.5	8.98		786.4	431.5	653.4	634.3	19.09	34.225	
3,700.0	3,675.7	3,637.4	3,582.9	9.5	13.0	10.63		789.6	451.9	648.6	629.0	19.62	33.055	
3,800.0	3,773.9	3,735.4	3,678.7	9.9	13.4	12.30		792.8	472.3	644.4	624.3	20.15	31.987	
3,900.0	3,872.1	3,833.5	3,774.6	10.2	13.9	13.99		796.0	492.7	640.8	620.1	20.66	31.011	
4,000.0	3,970.2	3,931.5	3,870.4	10.6	14.3	15.70		799.2	513.1	637.7	616.6	21.17	30.119	
4,100.0	4,068.4	4,029.6	3,966.3	11.0	14.8	17.43		802.4	533.5	635.3	613.6	21.68	29.303	
4,200.0	4,166.6	4,127.6	4,062.1	11.4	15.2	19.16		805.6	553.9	633.4	611.3	22.18	28.557	
4,300.0	4,264.8	4,225.7	4,158.0	11.8	15.7	20.90		808.8	574.3	632.2	609.5	22.68	27.874	
4,400.0	4,363.0	4,323.7	4,253.8	12.1	16.1	22.65		812.0	594.7	631.5	608.4	23.18	27.249	
4,454.5	4,416.5	4,377.2	4,306.1	12.4	16.4	23.60		813.7	605.8	631.5	608.0	23.45	26.931	
4,500.0	4,461.1	4,421.8	4,349.7	12.5	16.6	24.40		815.2	615.1	631.5	607.8	23.67	26.677	
4,600.0	4,559.3	4,519.8	4,445.5	12.9	17.0	26.14		818.4	635.4	632.1	607.9	24.17	26.153	
4,700.0	4,657.5	4,617.9	4,541.4	13.3	17.5	27.89		821.6	655.8	633.3	608.6	24.67	25.673	
4,800.0	4,755.7	4,715.9	4,637.2	13.7	17.9	29.62		824.8	676.2	635.1	609.9	25.17	25.233	
4,900.0	4,853.9	4,814.0	4,733.1	14.1	18.4	31.35		828.0	696.6	637.5	611.8	25.68	24.829	

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 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 27GK-HZ Pad Sec.27-T5N-R64W - Chesnut 27O-341 - Wellbore #1 - Plan #1 (4-23-14)													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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,952.0	4,912.0	4,828.9	14.5	18.8	33.06		831.2	717.0	640.5	614.3	26.19	24.459	
5,100.0	5,050.2	5,010.1	4,924.8	14.9	19.3	34.75		834.4	737.4	644.1	617.4	26.70	24.119	
5,200.0	5,148.4	5,114.6	5,027.0	15.3	19.7	36.53		837.8	759.0	648.1	620.9	27.23	23.803	
5,300.0	5,246.6	5,239.5	5,149.9	15.7	20.1	38.51		841.2	781.0	649.8	622.1	27.73	23.434	
5,400.0	5,344.8	5,365.0	5,274.2	16.1	20.5	40.34		843.9	797.8	647.9	619.7	28.24	22.947	
5,500.0	5,443.2	5,490.9	5,399.6	16.5	20.7	41.90		845.7	809.2	643.4	614.6	28.73	22.392	
5,600.0	5,542.2	5,617.2	5,525.8	16.7	20.9	43.06		846.6	815.2	637.4	608.3	29.15	21.864	
5,700.0	5,641.6	5,732.6	5,641.1	17.0	21.1	43.76		846.8	816.2	630.3	600.8	29.53	21.344	
5,800.0	5,741.3	5,832.3	5,740.8	17.2	21.2	44.15		846.8	816.2	625.1	595.2	29.86	20.932	
5,900.0	5,841.2	5,932.2	5,840.7	17.3	21.3	44.36		846.8	816.2	622.4	592.2	30.16	20.635	
5,966.0	5,907.2	5,998.2	5,906.7	17.4	21.4	44.41		846.8	816.2	621.7	591.4	30.36	20.479 CC, ES	
6,000.0	5,941.2	6,024.7	5,933.2	17.5	21.5	66.59		847.1	816.2	622.1	591.7	30.45	20.433	
6,100.0	6,041.2	6,100.0	6,008.2	17.6	21.6	-113.84		853.1	816.2	625.6	594.9	30.70	20.379 SF	
6,200.0	6,140.6	6,170.7	6,077.8	17.7	21.7	-114.65		865.4	816.2	637.4	606.7	30.65	20.793	
6,300.0	6,237.8	6,233.3	6,138.2	17.6	21.8	-115.51		881.7	816.2	660.0	629.6	30.40	21.714	
6,400.0	6,331.0	6,284.9	6,186.9	17.4	21.9	-115.72		898.8	816.2	694.8	664.8	29.97	23.183	
6,500.0	6,418.9	6,324.7	6,223.7	17.2	22.0	-114.61		914.2	816.2	742.0	712.5	29.51	25.144	
6,600.0	6,499.7	6,350.0	6,246.5	16.9	22.1	-111.43		924.9	816.2	800.9	771.6	29.28	27.348	
6,700.0	6,572.2	6,371.8	6,265.9	16.6	22.1	-106.52		934.8	816.2	869.6	840.1	29.50	29.477	
6,800.0	6,635.0	6,381.5	6,274.6	16.3	22.1	-98.79		939.4	816.2	945.8	915.5	30.30	31.217	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 27K-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-323 - Wellbore #1 - Plan #1 (4-22-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis (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	0.0	0.0	0.0	0.0	5.46		29.1	2.8	29.4				
100.0	100.0	97.5	97.5	0.1	0.1	5.46		29.1	2.8	29.3	29.1	0.22	131.905	
200.0	200.0	197.5	197.5	0.3	0.3	5.46		29.1	2.8	29.3	28.6	0.67	43.784	
300.0	300.0	297.5	297.5	0.6	0.6	5.46		29.1	2.8	29.3	28.2	1.12	26.183	
400.0	400.0	397.5	397.5	0.8	0.8	5.46		29.1	2.8	29.3	27.7	1.57	18.675	
500.0	500.0	497.5	497.5	1.0	1.0	5.46		29.1	2.8	29.3	27.3	2.02	14.513	
600.0	600.0	597.5	597.5	1.2	1.2	5.46		29.1	2.8	29.3	26.8	2.47	11.869	
700.0	700.0	697.5	697.5	1.5	1.5	5.46		29.1	2.8	29.3	26.4	2.92	10.039	
800.0	800.0	797.5	797.5	1.7	1.7	5.46		29.1	2.8	29.3	25.9	3.37	8.698	
900.0	900.0	897.5	897.5	1.9	1.9	5.46		29.1	2.8	29.3	25.5	3.82	7.674	
1,000.0	1,000.0	997.5	997.5	2.1	2.1	5.46		29.1	2.8	29.3	25.0	4.26	6.865 CC, ES	
1,100.0	1,100.0	1,096.7	1,096.7	2.4	2.3	7.33		30.3	3.9	30.6	25.9	4.71	6.497	
1,200.0	1,200.0	1,195.6	1,195.5	2.6	2.6	12.19		34.0	7.3	34.9	29.7	5.15	6.764	
1,300.0	1,300.0	1,294.1	1,293.6	2.8	2.8	18.05		40.2	13.1	42.4	36.8	5.60	7.569	
1,400.0	1,400.0	1,391.8	1,390.6	3.0	3.0	23.40		48.7	21.1	53.5	47.4	6.06	8.823	
1,500.0	1,500.0	1,488.7	1,486.3	3.3	3.3	27.66		59.5	31.2	68.1	61.6	6.53	10.434	
1,600.0	1,600.0	1,585.9	1,581.9	3.5	3.6	30.86		72.4	43.3	85.8	78.8	7.00	12.256	
1,700.0	1,700.0	1,684.1	1,678.4	3.7	3.9	33.03		85.8	55.8	104.1	96.6	7.48	13.919	
1,800.0	1,800.0	1,782.4	1,774.9	3.9	4.2	34.55		99.2	68.3	122.5	114.5	7.96	15.390	
1,900.0	1,900.0	1,880.6	1,871.5	4.2	4.6	35.68		112.5	80.8	141.0	132.5	8.44	16.695	
2,000.0	2,000.0	1,978.9	1,968.0	4.4	4.9	36.54		125.9	93.3	159.4	150.5	8.93	17.858	
2,100.0	2,100.0	2,077.4	2,064.8	4.6	5.3	15.05		139.3	105.8	176.3	167.1	9.24	19.074	
2,200.0	2,199.8	2,176.4	2,162.1	4.8	5.7	15.95		152.8	118.4	189.9	180.2	9.70	19.579	
2,300.0	2,299.5	2,275.8	2,259.7	5.1	6.0	17.03		166.3	131.1	200.2	190.0	10.15	19.727	
2,400.0	2,398.7	2,375.4	2,357.6	5.3	6.4	18.31		179.8	143.7	207.3	196.7	10.59	19.567	
2,500.0	2,497.5	2,475.2	2,455.6	5.5	6.8	19.83		193.4	156.4	211.1	200.1	11.03	19.138	
2,600.0	2,595.7	2,575.0	2,553.7	5.8	7.2	21.62		207.0	169.1	212.4	200.9	11.50	18.475	
2,700.0	2,693.9	2,674.7	2,651.7	6.1	7.6	23.42		220.5	181.8	213.5	201.5	11.99	17.807	
2,800.0	2,792.1	2,774.5	2,749.7	6.4	8.0	25.21		234.1	194.5	214.8	202.3	12.49	17.193	
2,900.0	2,890.3	2,874.3	2,847.7	6.7	8.4	26.97		247.7	207.2	216.3	203.3	13.01	16.625	
3,000.0	2,988.4	2,974.0	2,945.8	7.0	8.8	28.71		261.3	219.9	218.0	204.5	13.54	16.099	
3,100.0	3,086.6	3,073.8	3,043.8	7.3	9.2	30.42		274.8	232.6	219.9	205.8	14.09	15.609	
3,200.0	3,184.8	3,173.6	3,141.8	7.7	9.6	32.09		288.4	245.3	222.0	207.4	14.65	15.153	
3,300.0	3,283.0	3,273.3	3,239.8	8.0	10.0	33.74		302.0	258.0	224.3	209.1	15.23	14.728	
3,400.0	3,381.2	3,373.1	3,337.8	8.4	10.4	35.35		315.5	270.7	226.8	211.0	15.83	14.329	
3,500.0	3,479.3	3,472.9	3,435.9	8.7	10.8	36.92		329.1	283.4	229.4	213.0	16.44	13.956	
3,600.0	3,577.5	3,572.6	3,533.9	9.1	11.2	38.46		342.7	296.1	232.2	215.2	17.07	13.607	
3,700.0	3,675.7	3,672.4	3,631.9	9.5	11.6	39.96		356.3	308.8	235.2	217.5	17.71	13.279	
3,800.0	3,773.9	3,772.2	3,729.9	9.9	12.0	41.42		369.8	321.5	238.4	220.0	18.38	12.972	
3,900.0	3,872.1	3,871.9	3,828.0	10.2	12.4	42.85		383.4	334.2	241.6	222.6	19.05	12.684	
4,000.0	3,970.2	3,971.7	3,926.0	10.6	12.8	44.23		397.0	346.9	245.1	225.3	19.74	12.413	
4,100.0	4,068.4	4,071.5	4,024.0	11.0	13.2	45.57		410.5	359.5	248.7	228.2	20.45	12.160	
4,200.0	4,166.6	4,171.2	4,122.0	11.4	13.6	46.88		424.1	372.2	252.4	231.2	21.17	11.922	
4,300.0	4,264.8	4,271.0	4,220.0	11.8	14.0	48.15		437.7	384.9	256.2	234.3	21.90	11.699	
4,400.0	4,363.0	4,370.8	4,318.1	12.1	14.4	49.38		451.2	397.6	260.2	237.5	22.64	11.490	
4,500.0	4,461.1	4,470.6	4,416.1	12.5	14.8	50.57		464.8	410.3	264.2	240.8	23.40	11.294	
4,600.0	4,559.3	4,570.3	4,514.1	12.9	15.3	51.73		478.4	423.0	268.4	244.3	24.16	11.110	
4,700.0	4,657.5	4,670.1	4,612.1	13.3	15.7	52.85		492.0	435.7	272.7	247.8	24.93	10.937	
4,800.0	4,755.7	4,769.9	4,710.1	13.7	16.1	53.94		505.5	448.4	277.1	251.4	25.71	10.776	
4,900.0	4,853.9	4,869.6	4,808.2	14.1	16.5	54.99		519.1	461.1	281.6	255.1	26.50	10.624	
5,000.0	4,952.0	4,969.4	4,906.2	14.5	16.9	56.00		532.7	473.8	286.2	258.9	27.30	10.482	

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 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 27K-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-323 - Wellbore #1 - Plan #1 (4-22-14)													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
5,100.0	5,050.2	5,069.2	5,004.2	14.9	17.3	56.99	56.99	546.2	486.5	290.8	262.7	28.10	10.349	
5,200.0	5,148.4	5,168.9	5,102.2	15.3	17.7	57.94	57.94	559.8	499.2	295.6	266.7	28.91	10.224	
5,300.0	5,246.6	5,268.7	5,200.3	15.7	18.1	58.87	58.87	573.4	511.9	300.4	270.7	29.72	10.107	
5,400.0	5,344.8	5,371.4	5,301.2	16.1	18.5	59.82	59.82	587.2	524.8	305.2	274.6	30.55	9.990	
5,500.0	5,443.2	5,480.1	5,408.6	16.5	18.8	60.97	60.97	599.5	536.3	308.4	277.1	31.31	9.850	
5,600.0	5,542.2	5,588.9	5,516.6	16.7	19.1	61.99	61.99	608.9	545.1	310.6	278.6	31.96	9.719	
5,700.0	5,641.6	5,697.6	5,624.9	17.0	19.3	62.85	62.85	615.2	551.0	311.6	279.1	32.52	9.582	
5,800.0	5,741.3	5,806.2	5,733.5	17.2	19.5	63.58	63.58	618.6	554.2	311.4	278.4	32.99	9.438	
5,900.0	5,841.2	5,911.5	5,838.7	17.3	19.7	64.13	64.13	619.1	554.7	310.3	276.9	33.39	9.293	
5,985.7	5,926.9	5,997.1	5,924.4	17.5	19.8	64.29	64.29	619.1	554.7	309.8	276.2	33.67	9.202	
6,000.0	5,941.2	6,011.5	5,938.7	17.5	19.8	86.46	86.46	619.1	554.7	310.0	276.3	33.70	9.198	
6,100.0	6,041.2	6,113.5	6,040.5	17.6	19.9	-92.50	-92.50	612.9	554.7	309.7	275.6	34.10	9.083	
6,200.0	6,140.6	6,214.3	6,139.3	17.7	19.8	-90.86	-90.86	593.4	554.7	309.4	275.1	34.33	9.013	
6,251.7	6,191.2	6,266.0	6,188.7	17.6	19.8	-90.00	-90.00	578.4	554.7	309.4	275.1	34.35	9.008	
6,300.0	6,237.8	6,313.9	6,233.6	17.6	19.7	-89.20	-89.20	561.6	554.7	309.4	275.1	34.33	9.013	
6,400.0	6,331.0	6,412.4	6,322.0	17.4	19.5	-87.57	-87.57	518.3	554.7	309.7	275.6	34.12	9.077	
6,500.0	6,418.9	6,509.8	6,403.3	17.2	19.2	-86.00	-86.00	464.7	554.7	310.2	276.4	33.74	9.194	
6,600.0	6,499.7	6,606.2	6,476.3	16.9	19.0	-84.50	-84.50	401.9	554.7	310.8	277.6	33.24	9.350	
6,700.0	6,572.2	6,701.7	6,540.3	16.6	18.7	-83.10	-83.10	331.1	554.7	311.7	278.9	32.73	9.522	
6,800.0	6,635.0	6,796.3	6,594.5	16.3	18.4	-81.83	-81.83	253.6	554.7	312.6	280.3	32.30	9.678	
6,900.0	6,687.2	6,890.3	6,638.5	16.1	18.1	-80.70	-80.70	170.7	554.7	313.5	281.5	32.05	9.781	
7,000.0	6,727.8	6,983.6	6,671.7	16.0	17.9	-79.72	-79.72	83.5	554.7	314.5	282.4	32.10	9.795	
7,100.0	6,756.2	7,076.4	6,694.0	16.1	17.7	-78.91	-78.91	-6.5	554.7	315.3	282.8	32.52	9.694	
7,200.0	6,771.8	7,168.8	6,705.2	16.5	17.6	-78.28	-78.28	-98.1	554.7	316.0	282.6	33.36	9.473	
7,300.0	6,775.0	7,264.2	6,706.3	17.2	18.1	-77.92	-77.92	-193.5	554.7	316.4	281.8	34.62	9.141	
7,400.0	6,774.9	7,364.2	6,705.3	18.0	19.0	-77.77	-77.77	-293.5	554.7	316.6	280.3	36.24	8.737	
7,500.0	6,774.8	7,464.2	6,704.4	19.0	20.0	-77.63	-77.63	-393.5	554.7	316.8	278.6	38.15	8.302	
7,600.0	6,774.7	7,564.2	6,703.5	20.1	21.1	-77.48	-77.48	-493.5	554.7	316.9	276.6	40.33	7.859	
7,700.0	6,774.6	7,664.2	6,702.6	21.3	22.4	-77.34	-77.34	-593.5	554.7	317.1	274.4	42.72	7.423	
7,800.0	6,774.5	7,764.2	6,701.7	22.7	23.7	-77.19	-77.19	-693.5	554.7	317.3	272.0	45.30	7.004	
7,900.0	6,774.5	7,864.2	6,700.8	24.1	25.1	-77.05	-77.05	-793.5	554.7	317.5	269.4	48.03	6.610	
8,000.0	6,774.4	7,964.2	6,699.9	25.5	26.6	-76.91	-76.91	-893.4	554.7	317.7	266.8	50.89	6.242	
8,100.0	6,774.3	8,064.2	6,699.0	27.1	28.1	-76.76	-76.76	-993.4	554.7	317.8	264.0	53.85	5.902	
8,200.0	6,774.2	8,164.1	6,698.1	28.6	29.7	-76.62	-76.62	-1,093.4	554.7	318.0	261.1	56.90	5.589	
8,300.0	6,774.1	8,264.1	6,697.2	30.2	31.2	-76.47	-76.47	-1,193.4	554.7	318.2	258.2	60.03	5.301	
8,400.0	6,774.0	8,364.1	6,696.3	31.9	32.9	-76.33	-76.33	-1,293.4	554.7	318.4	255.2	63.22	5.037	
8,500.0	6,773.9	8,464.1	6,695.4	33.6	34.5	-76.19	-76.19	-1,393.4	554.7	318.6	252.2	66.46	4.794	
8,600.0	6,773.9	8,564.1	6,694.5	35.3	36.2	-76.04	-76.04	-1,493.4	554.7	318.8	249.1	69.75	4.571	
8,700.0	6,773.8	8,664.1	6,693.6	37.0	37.9	-75.90	-75.90	-1,593.4	554.7	319.0	245.9	73.08	4.366	
8,800.0	6,773.7	8,764.1	6,692.6	38.7	39.6	-75.76	-75.76	-1,693.4	554.7	319.2	242.8	76.43	4.176	
8,900.0	6,773.6	8,864.1	6,691.7	40.5	41.4	-75.62	-75.62	-1,793.4	554.7	319.4	239.6	79.82	4.002	
9,000.0	6,773.5	8,964.1	6,690.8	42.2	43.1	-75.47	-75.47	-1,893.4	554.7	319.6	236.4	83.23	3.840	
9,100.0	6,773.4	9,064.1	6,689.9	44.0	44.9	-75.33	-75.33	-1,993.4	554.7	319.8	233.2	86.66	3.691	
9,200.0	6,773.3	9,164.1	6,689.0	45.8	46.7	-75.19	-75.19	-2,093.4	554.7	320.0	229.9	90.10	3.552	
9,300.0	6,773.2	9,264.1	6,688.1	47.6	48.4	-75.05	-75.05	-2,193.4	554.7	320.2	226.7	93.56	3.423	
9,400.0	6,773.2	9,364.1	6,687.2	49.4	50.2	-74.90	-74.90	-2,293.3	554.7	320.5	223.4	97.04	3.302	
9,500.0	6,773.1	9,464.1	6,686.3	51.3	52.0	-74.76	-74.76	-2,393.3	554.7	320.7	220.1	100.52	3.190	
9,600.0	6,773.0	9,564.1	6,685.4	53.1	53.9	-74.62	-74.62	-2,493.3	554.7	320.9	216.9	104.02	3.085	
9,700.0	6,772.9	9,664.1	6,684.5	54.9	55.7	-74.48	-74.48	-2,593.3	554.7	321.1	213.6	107.52	2.986	
9,800.0	6,772.8	9,764.1	6,683.6	56.8	57.5	-74.34	-74.34	-2,693.3	554.7	321.3	210.3	111.03	2.894	
9,900.0	6,772.7	9,864.1	6,682.7	58.6	59.3	-74.20	-74.20	-2,793.3	554.7	321.5	207.0	114.54	2.807	

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 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 27K-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-323 - Wellbore #1 - Plan #1 (4-22-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,000.0	6,772.6	9,964.1	6,681.8	60.4	61.2	-74.06	-2,893.3	554.7	321.8	203.7	118.06	2.725		
10,100.0	6,772.5	10,064.1	6,680.8	62.3	63.0	-73.92	-2,993.3	554.7	322.0	200.4	121.58	2.648		
10,200.0	6,772.5	10,164.1	6,679.9	64.2	64.9	-73.78	-3,093.3	554.7	322.2	197.1	125.11	2.576		
10,300.0	6,772.4	10,264.1	6,679.0	66.0	66.7	-73.64	-3,193.3	554.7	322.5	193.8	128.64	2.507		
10,400.0	6,772.3	10,364.1	6,678.1	67.9	68.6	-73.50	-3,293.3	554.7	322.7	190.5	132.17	2.442		
10,500.0	6,772.2	10,464.1	6,677.2	69.7	70.4	-73.36	-3,393.3	554.7	322.9	187.2	135.70	2.380		
10,600.0	6,772.1	10,564.1	6,676.3	71.6	72.3	-73.22	-3,493.3	554.7	323.2	183.9	139.23	2.321		
10,700.0	6,772.0	10,664.1	6,675.4	73.5	74.2	-73.08	-3,593.2	554.7	323.4	180.6	142.76	2.265		
10,800.0	6,771.9	10,764.1	6,674.5	75.4	76.0	-72.94	-3,693.2	554.7	323.6	177.3	146.29	2.212		
10,900.0	6,771.8	10,864.1	6,673.6	77.2	77.9	-72.80	-3,793.2	554.7	323.9	174.1	149.82	2.162		
11,000.0	6,771.8	10,964.1	6,672.7	79.1	79.8	-72.66	-3,893.2	554.7	324.1	170.8	153.35	2.114		
11,100.0	6,771.7	11,064.0	6,671.8	81.0	81.6	-72.53	-3,993.2	554.7	324.4	167.5	156.87	2.068		
11,200.0	6,771.6	11,164.0	6,670.9	82.9	83.5	-72.39	-4,093.2	554.7	324.6	164.2	160.40	2.024		
11,300.0	6,771.5	11,264.0	6,670.0	84.8	85.4	-72.25	-4,193.2	554.7	324.9	160.9	163.92	1.982		
11,400.0	6,771.4	11,364.0	6,669.0	86.6	87.3	-72.11	-4,293.2	554.7	325.1	157.7	167.44	1.942		
11,500.0	6,771.3	11,464.0	6,668.1	88.5	89.1	-71.97	-4,393.2	554.7	325.4	154.4	170.96	1.903		
11,600.0	6,771.2	11,564.0	6,667.2	90.4	91.0	-71.84	-4,493.2	554.7	325.6	151.1	174.47	1.866		
11,700.0	6,771.1	11,664.0	6,666.3	92.3	92.9	-71.70	-4,593.2	554.7	325.9	147.9	177.99	1.831		
11,800.0	6,771.1	11,764.0	6,665.4	94.2	94.8	-71.56	-4,693.2	554.7	326.1	144.6	181.50	1.797		
11,900.0	6,771.0	11,864.0	6,664.5	96.1	96.7	-71.43	-4,793.2	554.7	326.4	141.4	185.00	1.764		
12,000.0	6,770.9	11,964.0	6,663.6	98.0	98.6	-71.29	-4,893.2	554.7	326.7	138.1	188.51	1.733		
12,100.0	6,770.8	12,064.0	6,662.7	99.9	100.5	-71.15	-4,993.1	554.7	326.9	134.9	192.01	1.703		
12,200.0	6,770.7	12,164.0	6,661.8	101.8	102.4	-71.02	-5,093.1	554.7	327.2	131.7	195.50	1.674		
12,300.0	6,770.6	12,264.0	6,660.9	103.7	104.3	-70.88	-5,193.1	554.7	327.5	128.5	198.99	1.646		
12,400.0	6,770.5	12,364.0	6,660.0	105.6	106.1	-70.75	-5,293.1	554.7	327.7	125.2	202.48	1.619		
12,500.0	6,770.4	12,464.0	6,659.1	107.5	108.0	-70.61	-5,393.1	554.7	328.0	122.0	205.96	1.592		
12,600.0	6,770.4	12,564.0	6,658.2	109.4	109.9	-70.48	-5,493.1	554.7	328.3	118.8	209.44	1.567		
12,700.0	6,770.3	12,664.0	6,657.3	111.3	111.8	-70.34	-5,593.1	554.7	328.5	115.6	212.92	1.543		
12,800.0	6,770.2	12,764.0	6,656.3	113.2	113.7	-70.21	-5,693.1	554.7	328.8	112.4	216.39	1.520		
12,900.0	6,770.1	12,864.0	6,655.4	115.1	115.6	-70.07	-5,793.1	554.7	329.1	109.2	219.85	1.497 Level 3		
13,000.0	6,770.0	12,964.0	6,654.5	117.0	117.5	-69.94	-5,893.1	554.7	329.4	106.1	223.31	1.475 Level 3		
13,100.0	6,769.9	13,064.0	6,653.6	118.9	119.4	-69.80	-5,993.1	554.7	329.7	102.9	226.77	1.454 Level 3		
13,200.0	6,769.8	13,164.0	6,652.7	120.8	121.3	-69.67	-6,093.1	554.7	329.9	99.7	230.22	1.433 Level 3		
13,300.0	6,769.7	13,264.0	6,651.8	122.7	123.2	-69.54	-6,193.1	554.7	330.2	96.6	233.67	1.413 Level 3		
13,400.0	6,769.7	13,364.0	6,650.9	124.6	125.1	-69.40	-6,293.0	554.7	330.5	93.4	237.11	1.394 Level 3		
13,500.0	6,769.6	13,464.0	6,650.0	126.5	127.0	-69.27	-6,393.0	554.7	330.8	90.3	240.55	1.375 Level 3		
13,600.0	6,769.5	13,564.0	6,649.1	128.4	128.9	-69.14	-6,493.0	554.7	331.1	87.1	243.98	1.357 Level 3		
13,700.0	6,769.4	13,664.0	6,648.2	130.3	130.8	-69.01	-6,593.0	554.7	331.4	84.0	247.41	1.339 Level 3		
13,800.0	6,769.3	13,764.0	6,647.3	132.2	132.7	-68.87	-6,693.0	554.7	331.7	80.9	250.83	1.322 Level 3		
13,900.0	6,769.2	13,864.0	6,646.4	134.1	134.6	-68.74	-6,793.0	554.7	332.0	77.7	254.24	1.306 Level 3		
14,000.0	6,769.1	13,964.0	6,645.5	136.0	136.5	-68.61	-6,893.0	554.7	332.3	74.6	257.65	1.290 Level 3		
14,100.0	6,769.1	14,063.9	6,644.5	137.9	138.4	-68.48	-6,993.0	554.7	332.6	71.5	261.06	1.274 Level 3		
14,158.9	6,769.0	14,122.9	6,644.0	139.1	139.6	-68.40	-7,051.9	554.7	332.8	69.7	263.06	1.265 Level 3, SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 27K-HZ Pad Sec.27-T5N-R64W - Chesnut 27O-243 - Wellbore #1 - Plan #2 (7-08-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	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	2.58	61.9	2.8	62.0					
100.0	100.0	99.0	99.0	0.1	0.1	2.58	61.9	2.8	62.0	61.8	0.22	277.205		
200.0	200.0	199.0	199.0	0.3	0.3	2.58	61.9	2.8	62.0	61.3	0.67	92.248		
300.0	300.0	299.0	299.0	0.6	0.6	2.58	61.9	2.8	62.0	60.9	1.12	55.275		
400.0	400.0	399.0	399.0	0.8	0.8	2.58	61.9	2.8	62.0	60.4	1.57	39.459 CC, ES		
500.0	500.0	497.8	497.7	1.0	1.0	3.83	62.8	4.2	63.0	61.0	2.01	31.282		
600.0	600.0	596.3	596.1	1.2	1.2	7.40	65.5	8.5	66.1	63.6	2.46	26.894		
700.0	700.0	694.4	693.8	1.5	1.5	12.60	69.9	15.6	71.8	68.9	2.92	24.610		
800.0	800.0	791.7	790.5	1.7	1.7	18.55	76.0	25.5	80.6	77.2	3.40	23.725		
900.0	900.0	888.2	885.8	1.9	2.0	24.42	83.8	38.1	93.0	89.1	3.90	23.838		
1,000.0	1,000.0	983.6	979.5	2.1	2.3	29.70	93.1	53.1	109.0	104.6	4.42	24.667		
1,100.0	1,100.0	1,079.1	1,072.8	2.4	2.7	34.19	104.0	70.7	128.5	123.5	4.95	25.954		
1,200.0	1,200.0	1,176.5	1,167.8	2.6	3.1	37.66	115.5	89.1	149.2	143.7	5.49	27.191		
1,300.0	1,300.0	1,274.0	1,262.9	2.8	3.6	40.28	126.9	107.6	170.2	164.2	6.02	28.292		
1,400.0	1,400.0	1,371.5	1,357.9	3.0	4.0	42.33	138.3	126.0	191.6	185.0	6.55	29.261		
1,500.0	1,500.0	1,469.0	1,453.0	3.3	4.4	43.96	149.8	144.4	213.1	206.0	7.08	30.115		
1,600.0	1,600.0	1,566.5	1,548.0	3.5	4.9	45.30	161.2	162.9	234.8	227.2	7.61	30.872		
1,700.0	1,700.0	1,664.0	1,643.0	3.7	5.3	46.41	172.6	181.3	256.6	248.4	8.13	31.544		
1,800.0	1,800.0	1,761.5	1,738.1	3.9	5.8	47.34	184.1	199.8	278.4	269.7	8.66	32.144		
1,900.0	1,900.0	1,859.0	1,833.1	4.2	6.3	48.14	195.5	218.2	300.3	291.1	9.19	32.683		
2,000.0	2,000.0	1,956.5	1,928.2	4.4	6.7	48.83	207.0	236.7	322.3	312.5	9.72	33.169		
2,100.0	2,100.0	2,054.3	2,023.5	4.6	7.2	27.15	218.4	255.2	342.7	333.2	9.58	35.782		
2,200.0	2,199.8	2,152.6	2,119.3	4.8	7.6	27.90	230.0	273.8	360.2	350.2	10.06	35.812		
2,300.0	2,299.5	2,251.2	2,215.6	5.1	8.1	28.85	241.5	292.4	374.8	364.3	10.53	35.587		
2,400.0	2,398.7	2,350.2	2,312.0	5.3	8.6	30.00	253.1	311.1	386.5	375.5	11.00	35.140		
2,500.0	2,497.5	2,449.3	2,408.6	5.5	9.0	31.36	264.8	329.9	395.4	383.9	11.46	34.493		
2,600.0	2,595.7	2,548.4	2,505.3	5.8	9.5	32.94	276.4	348.6	402.0	390.1	11.94	33.659		
2,700.0	2,693.9	2,647.6	2,601.9	6.1	10.0	34.53	288.0	367.4	408.6	396.2	12.45	32.823		
2,800.0	2,792.1	2,746.7	2,698.6	6.4	10.5	36.07	299.7	386.2	415.6	402.6	12.97	32.039		
2,900.0	2,890.3	2,845.9	2,795.2	6.7	10.9	37.56	311.3	404.9	422.8	409.3	13.51	31.299		
3,000.0	2,988.4	2,945.0	2,891.9	7.0	11.4	39.00	322.9	423.7	430.3	416.2	14.06	30.601		
3,100.0	3,086.6	3,044.1	2,988.6	7.3	11.9	40.39	334.5	442.4	438.0	423.4	14.63	29.940		
3,200.0	3,184.8	3,143.3	3,085.2	7.7	12.3	41.73	346.2	461.2	446.0	430.8	15.22	29.314		
3,300.0	3,283.0	3,242.4	3,181.9	8.0	12.8	43.02	357.8	479.9	454.3	438.4	15.82	28.720		
3,400.0	3,381.2	3,341.6	3,278.5	8.4	13.3	44.27	369.4	498.7	462.7	446.3	16.43	28.156		
3,500.0	3,479.3	3,440.7	3,375.2	8.7	13.8	45.47	381.1	517.4	471.4	454.3	17.07	27.622		
3,600.0	3,577.5	3,539.8	3,471.8	9.1	14.2	46.63	392.7	536.2	480.3	462.6	17.71	27.115		
3,700.0	3,675.7	3,639.0	3,568.5	9.5	14.7	47.74	404.3	554.9	489.4	471.0	18.37	26.634		
3,800.0	3,773.9	3,738.1	3,665.1	9.9	15.2	48.82	415.9	573.7	498.6	479.6	19.05	26.178		
3,900.0	3,872.1	3,837.2	3,761.8	10.2	15.7	49.86	427.6	592.4	508.0	488.3	19.73	25.746		
4,000.0	3,970.2	3,936.4	3,858.4	10.6	16.1	50.86	439.2	611.2	517.6	497.2	20.43	25.336		
4,100.0	4,068.4	4,035.5	3,955.1	11.0	16.6	51.82	450.8	630.0	527.3	506.2	21.14	24.948		
4,200.0	4,166.6	4,134.7	4,051.7	11.4	17.1	52.75	462.5	648.7	537.2	515.3	21.86	24.580		
4,300.0	4,264.8	4,233.8	4,148.4	11.8	17.6	53.64	474.1	667.5	547.2	524.6	22.58	24.231		
4,400.0	4,363.0	4,332.9	4,245.0	12.1	18.0	54.50	485.7	686.2	557.3	534.0	23.32	23.900		
4,500.0	4,461.1	4,432.1	4,341.7	12.5	18.5	55.33	497.3	705.0	567.6	543.5	24.06	23.587		
4,600.0	4,559.3	4,531.2	4,438.3	12.9	19.0	56.14	509.0	723.7	578.0	553.2	24.82	23.290		
4,700.0	4,657.5	4,630.4	4,535.0	13.3	19.5	56.91	520.6	742.5	588.4	562.9	25.58	23.009		
4,800.0	4,755.7	4,729.5	4,631.6	13.7	19.9	57.66	532.2	761.2	599.0	572.7	26.34	22.741		
4,900.0	4,853.9	4,828.6	4,728.3	14.1	20.4	58.38	543.9	780.0	609.7	582.6	27.11	22.488		
5,000.0	4,952.0	4,927.8	4,824.9	14.5	20.9	59.07	555.5	798.7	620.5	592.6	27.89	22.248		

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 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Chesnut 27K-HZ Pad Sec.27-T5N-R64W - Chesnut 27O-243 - Wellbore #1 - Plan #2 (7-08-14)											Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
5,100.0	5,050.2	5,026.9	4,921.6	14.9	21.4	59.75	567.1	817.5	631.3	602.7	28.67	22.019			
5,200.0	5,148.4	5,126.0	5,018.2	15.3	21.8	60.40	578.8	836.2	642.3	612.8	29.46	21.802			
5,300.0	5,246.6	5,239.1	5,128.6	15.7	22.3	61.14	591.6	857.0	652.7	622.5	30.28	21.555			
5,400.0	5,344.8	5,364.1	5,251.6	16.1	22.7	62.12	603.3	875.9	659.8	628.7	31.13	21.192			
5,500.0	5,443.2	5,489.2	5,375.6	16.5	23.0	63.22	612.2	890.2	663.8	631.9	31.92	20.795			
5,600.0	5,542.2	5,614.5	5,500.4	16.7	23.3	64.18	618.3	900.0	665.6	633.0	32.57	20.432			
5,700.0	5,641.6	5,739.8	5,625.4	17.0	23.5	64.97	621.4	905.1	665.2	632.0	33.14	20.074			
5,800.0	5,741.3	5,854.6	5,740.3	17.2	23.6	65.55	621.9	905.9	662.8	629.2	33.59	19.733			
5,900.0	5,841.2	5,954.6	5,840.2	17.3	23.7	65.82	621.9	905.9	661.2	627.3	33.93	19.487			
6,000.0	5,941.2	6,056.5	5,942.1	17.5	23.8	66.44	618.0	905.9	660.9	626.6	34.25	19.296			
6,100.0	6,041.2	6,156.6	6,040.7	17.6	23.8	-90.17	601.3	905.9	660.6	625.9	34.66	19.058			
6,110.3	6,051.5	6,166.8	6,050.5	17.7	23.8	-90.00	598.9	905.9	660.6	625.9	34.69	19.043			
6,200.0	6,140.6	6,253.8	6,133.6	17.7	23.7	-88.55	573.0	905.9	660.8	625.9	34.90	18.937			
6,300.0	6,237.8	6,348.8	6,220.2	17.6	23.6	-86.97	534.1	905.9	661.6	626.7	34.90	18.955			
6,400.0	6,331.0	6,441.8	6,299.6	17.4	23.4	-85.45	485.9	905.9	662.8	628.1	34.70	19.101			
6,500.0	6,418.9	6,533.0	6,371.3	17.2	23.2	-84.02	429.6	905.9	664.3	630.0	34.33	19.351			
6,600.0	6,499.7	6,622.6	6,434.8	16.9	22.9	-82.69	366.3	905.9	666.1	632.3	33.86	19.675			
6,700.0	6,572.2	6,710.9	6,489.6	16.6	22.7	-81.49	297.2	905.9	668.1	634.7	33.36	20.025			
6,800.0	6,635.0	6,800.0	6,536.4	16.3	22.5	-80.41	221.5	905.9	670.1	637.1	32.94	20.340			
6,900.0	6,687.2	6,884.2	6,572.3	16.1	22.3	-79.51	145.4	905.9	671.9	639.2	32.72	20.536			
7,000.0	6,727.8	6,969.5	6,599.9	16.0	22.2	-78.75	64.7	905.9	673.6	640.8	32.78	20.547			
7,100.0	6,756.2	7,054.3	6,618.3	16.1	22.2	-78.16	-18.0	905.9	675.0	641.8	33.22	20.321			
7,200.0	6,771.8	7,138.6	6,627.4	16.5	22.2	-77.74	-101.8	905.9	676.0	642.0	34.06	19.848			
7,300.0	6,775.0	7,229.8	6,628.0	17.2	22.4	-77.54	-192.9	905.9	676.5	641.2	35.34	19.141			
7,400.0	6,774.9	7,329.7	6,627.2	18.0	22.9	-77.48	-292.9	905.9	676.7	639.7	36.97	18.302			
7,500.0	6,774.8	7,429.7	6,626.4	19.0	23.5	-77.42	-392.9	905.9	676.8	637.9	38.90	17.400			
7,600.0	6,774.7	7,529.7	6,625.6	20.1	24.3	-77.37	-492.9	905.9	677.0	635.9	41.08	16.480			
7,700.0	6,774.6	7,629.7	6,624.8	21.3	25.3	-77.31	-592.9	905.9	677.2	633.7	43.48	15.575			
7,800.0	6,774.5	7,729.7	6,624.0	22.7	26.5	-77.25	-692.9	905.9	677.3	631.3	46.05	14.707			
7,900.0	6,774.5	7,829.7	6,623.2	24.1	27.7	-77.19	-792.9	905.9	677.5	628.7	48.79	13.887			
8,000.0	6,774.4	7,929.7	6,622.4	25.5	29.0	-77.13	-892.9	905.9	677.6	626.0	51.65	13.121			
8,100.0	6,774.3	8,029.7	6,621.6	27.1	30.4	-77.07	-992.9	905.9	677.8	623.2	54.61	12.411			
8,200.0	6,774.2	8,129.7	6,620.8	28.6	31.9	-77.01	-1,092.9	905.9	677.9	620.3	57.67	11.756			
8,300.0	6,774.1	8,229.7	6,620.0	30.2	33.4	-76.95	-1,192.9	905.9	678.1	617.3	60.81	11.152			
8,400.0	6,774.0	8,329.7	6,619.2	31.9	34.9	-76.89	-1,292.9	905.9	678.3	614.3	64.00	10.597			
8,500.0	6,773.9	8,429.7	6,618.4	33.6	36.5	-76.83	-1,392.9	905.9	678.4	611.2	67.26	10.087			
8,600.0	6,773.9	8,529.7	6,617.6	35.3	38.1	-76.78	-1,492.9	905.9	678.6	608.0	70.56	9.617			
8,700.0	6,773.8	8,629.7	6,616.8	37.0	39.7	-76.72	-1,592.9	905.9	678.8	604.9	73.91	9.184			
8,800.0	6,773.7	8,729.7	6,616.0	38.7	41.4	-76.66	-1,692.8	905.9	678.9	601.6	77.29	8.785			
8,900.0	6,773.6	8,829.7	6,615.2	40.5	43.1	-76.60	-1,792.8	905.9	679.1	598.4	80.70	8.415			
9,000.0	6,773.5	8,929.7	6,614.4	42.2	44.8	-76.54	-1,892.8	905.9	679.3	595.1	84.13	8.074			
9,100.0	6,773.4	9,029.7	6,613.6	44.0	46.5	-76.48	-1,992.8	905.9	679.4	591.8	87.59	7.756			
9,200.0	6,773.3	9,129.7	6,612.8	45.8	48.2	-76.42	-2,092.8	905.9	679.6	588.5	91.07	7.462			
9,300.0	6,773.2	9,229.7	6,612.0	47.6	49.9	-76.36	-2,192.8	905.9	679.8	585.2	94.57	7.188			
9,400.0	6,773.2	9,329.7	6,611.2	49.4	51.7	-76.31	-2,292.8	905.9	679.9	581.8	98.09	6.932			
9,500.0	6,773.1	9,429.7	6,610.4	51.3	53.5	-76.25	-2,392.8	905.9	680.1	578.5	101.62	6.693			
9,600.0	6,773.0	9,529.7	6,609.6	53.1	55.2	-76.19	-2,492.8	905.9	680.3	575.1	105.16	6.469			
9,700.0	6,772.9	9,629.7	6,608.8	54.9	57.0	-76.13	-2,592.8	905.9	680.4	571.7	108.71	6.259			
9,800.0	6,772.8	9,729.7	6,608.0	56.8	58.8	-76.07	-2,692.8	905.9	680.6	568.3	112.27	6.062			
9,900.0	6,772.7	9,829.7	6,607.2	58.6	60.6	-76.01	-2,792.8	905.9	680.8	564.9	115.85	5.877			
10,000.0	6,772.6	9,929.7	6,606.4	60.4	62.4	-75.95	-2,892.8	905.9	681.0	561.5	119.42	5.702			

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 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Chesnut 27K-HZ Pad Sec.27-T5N-R64W - Chesnut 27O-243 - Wellbore #1 - Plan #2 (7-08-14)											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)					
10,100.0	6,772.5	10,029.7	6,605.6	62.3	64.2	-75.90	-2,992.8	905.9	681.1	558.1	123.01	5.537			
10,200.0	6,772.5	10,129.7	6,604.8	64.2	66.1	-75.84	-3,092.8	905.9	681.3	554.7	126.60	5.381			
10,300.0	6,772.4	10,229.7	6,604.0	66.0	67.9	-75.78	-3,192.8	905.9	681.5	551.3	130.20	5.234			
10,400.0	6,772.3	10,329.7	6,603.2	67.9	69.7	-75.72	-3,292.8	905.9	681.7	547.8	133.80	5.094			
10,500.0	6,772.2	10,429.7	6,602.4	69.7	71.6	-75.66	-3,392.7	905.9	681.8	544.4	137.41	4.962			
10,600.0	6,772.1	10,529.7	6,601.6	71.6	73.4	-75.60	-3,492.7	905.9	682.0	541.0	141.02	4.836			
10,700.0	6,772.0	10,629.7	6,600.8	73.5	75.2	-75.55	-3,592.7	905.9	682.2	537.5	144.64	4.717			
10,800.0	6,771.9	10,729.7	6,599.9	75.4	77.1	-75.49	-3,692.7	905.9	682.4	534.1	148.25	4.603			
10,900.0	6,771.8	10,829.7	6,599.1	77.2	78.9	-75.43	-3,792.7	905.9	682.5	530.7	151.88	4.494			
11,000.0	6,771.8	10,929.7	6,598.3	79.1	80.8	-75.37	-3,892.7	905.9	682.7	527.2	155.50	4.391			
11,100.0	6,771.7	11,029.7	6,597.5	81.0	82.7	-75.31	-3,992.7	905.9	682.9	523.8	159.12	4.292			
11,200.0	6,771.6	11,129.7	6,596.7	82.9	84.5	-75.26	-4,092.7	905.9	683.1	520.3	162.75	4.197			
11,300.0	6,771.5	11,229.6	6,595.9	84.8	86.4	-75.20	-4,192.7	905.9	683.3	516.9	166.38	4.107			
11,400.0	6,771.4	11,329.6	6,595.1	86.6	88.2	-75.14	-4,292.7	905.9	683.5	513.4	170.01	4.020			
11,500.0	6,771.3	11,429.6	6,594.3	88.5	90.1	-75.08	-4,392.7	905.9	683.6	510.0	173.64	3.937			
11,600.0	6,771.2	11,529.6	6,593.5	90.4	92.0	-75.02	-4,492.7	905.9	683.8	506.5	177.27	3.857			
11,700.0	6,771.1	11,629.6	6,592.7	92.3	93.8	-74.97	-4,592.7	905.9	684.0	503.1	180.91	3.781			
11,800.0	6,771.1	11,729.6	6,591.9	94.2	95.7	-74.91	-4,692.7	905.9	684.2	499.7	184.54	3.708			
11,900.0	6,771.0	11,829.6	6,591.1	96.1	97.6	-74.85	-4,792.7	905.9	684.4	496.2	188.17	3.637			
12,000.0	6,770.9	11,929.6	6,590.3	98.0	99.5	-74.79	-4,892.7	905.9	684.6	492.8	191.81	3.569			
12,100.0	6,770.8	12,029.6	6,589.5	99.9	101.3	-74.73	-4,992.7	905.9	684.8	489.3	195.44	3.504			
12,200.0	6,770.7	12,129.6	6,588.7	101.8	103.2	-74.68	-5,092.6	905.9	684.9	485.9	199.08	3.441			
12,300.0	6,770.6	12,229.6	6,587.9	103.7	105.1	-74.62	-5,192.6	905.9	685.1	482.4	202.71	3.380			
12,400.0	6,770.5	12,329.6	6,587.1	105.6	107.0	-74.56	-5,292.6	905.9	685.3	479.0	206.35	3.321			
12,500.0	6,770.4	12,429.6	6,586.3	107.5	108.9	-74.50	-5,392.6	905.9	685.5	475.5	209.98	3.265			
12,600.0	6,770.4	12,529.6	6,585.5	109.4	110.8	-74.45	-5,492.6	905.9	685.7	472.1	213.61	3.210			
12,700.0	6,770.3	12,629.6	6,584.7	111.3	112.6	-74.39	-5,592.6	905.9	685.9	468.6	217.25	3.157			
12,800.0	6,770.2	12,729.6	6,583.9	113.2	114.5	-74.33	-5,692.6	905.9	686.1	465.2	220.88	3.106			
12,900.0	6,770.1	12,829.6	6,583.1	115.1	116.4	-74.27	-5,792.6	905.9	686.3	461.8	224.51	3.057			
13,000.0	6,770.0	12,929.6	6,582.3	117.0	118.3	-74.22	-5,892.6	905.9	686.5	458.3	228.14	3.009			
13,100.0	6,769.9	13,029.6	6,581.5	118.9	120.2	-74.16	-5,992.6	905.9	686.7	454.9	231.78	2.963			
13,200.0	6,769.8	13,129.6	6,580.7	120.8	122.1	-74.10	-6,092.6	905.9	686.9	451.5	235.41	2.918			
13,300.0	6,769.7	13,229.6	6,579.9	122.7	124.0	-74.04	-6,192.6	905.9	687.1	448.0	239.04	2.874			
13,400.0	6,769.7	13,329.6	6,579.1	124.6	125.9	-73.99	-6,292.6	905.9	687.3	444.6	242.66	2.832			
13,500.0	6,769.6	13,429.6	6,578.3	126.5	127.8	-73.93	-6,392.6	905.9	687.5	441.2	246.29	2.791			
13,600.0	6,769.5	13,529.6	6,577.5	128.4	129.7	-73.87	-6,492.6	905.9	687.7	437.7	249.92	2.751			
13,700.0	6,769.4	13,629.6	6,576.7	130.3	131.6	-73.81	-6,592.6	905.9	687.8	434.3	253.54	2.713			
13,800.0	6,769.3	13,729.6	6,575.9	132.2	133.4	-73.76	-6,692.6	905.9	688.0	430.9	257.17	2.675			
13,900.0	6,769.2	13,829.6	6,575.1	134.1	135.3	-73.70	-6,792.6	905.9	688.2	427.5	260.79	2.639			
14,000.0	6,769.1	13,929.6	6,574.3	136.0	137.2	-73.64	-6,892.5	905.9	688.5	424.0	264.41	2.604			
14,100.0	6,769.1	14,029.6	6,573.5	137.9	139.1	-73.59	-6,992.5	905.9	688.7	420.6	268.04	2.569			
14,158.9	6,769.0	14,086.4	6,573.0	139.1	140.2	-73.55	-7,049.4	905.9	688.8	418.6	270.13	2.550 SF			

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 27K-HZ Pad Sec.27-T5N-R64W - Chesnut 27O-303 - Wellbore #1 - Plan #2 (7-08-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	1.75	91.1	2.8	91.1					
100.0	100.0	99.0	99.0	0.1	0.1	1.75	91.1	2.8	91.1	90.9	0.22	407.434		
200.0	200.0	199.0	199.0	0.3	0.3	1.75	91.1	2.8	91.1	90.4	0.67	135.585 CC, ES		
300.0	300.0	297.6	297.6	0.6	0.6	2.69	91.7	4.3	91.8	90.7	1.11	82.528		
400.0	400.0	396.1	395.9	0.8	0.8	5.45	93.7	8.9	94.2	92.6	1.56	60.352		
500.0	500.0	494.0	493.5	1.0	1.0	9.73	97.0	16.6	98.6	96.6	2.03	48.536		
600.0	600.0	591.3	590.0	1.2	1.3	15.03	101.6	27.3	105.6	103.1	2.53	41.720		
700.0	700.0	687.6	685.3	1.5	1.6	20.80	107.4	40.8	115.7	112.7	3.06	37.813		
800.0	800.0	782.9	778.9	1.7	2.0	26.51	114.4	57.1	129.4	125.8	3.62	35.797		
900.0	900.0	876.8	870.6	1.9	2.4	31.77	122.5	75.9	146.9	142.7	4.19	35.067		
1,000.0	1,000.0	969.3	960.1	2.1	2.8	36.41	131.7	97.1	168.2	163.4	4.77	35.244		
1,100.0	1,100.0	1,065.2	1,052.5	2.4	3.3	40.41	141.8	120.7	192.0	186.6	5.37	35.745		
1,200.0	1,200.0	1,161.6	1,145.3	2.6	3.8	43.54	152.0	144.5	216.5	210.5	5.96	36.338		
1,300.0	1,300.0	1,257.9	1,238.1	2.8	4.4	46.03	162.2	168.2	241.5	235.0	6.54	36.939		
1,400.0	1,400.0	1,354.3	1,330.9	3.0	4.9	48.06	172.4	191.9	266.8	259.7	7.11	37.521		
1,500.0	1,500.0	1,450.6	1,423.7	3.3	5.4	49.74	182.7	215.7	292.5	284.8	7.68	38.070		
1,600.0	1,600.0	1,546.9	1,516.6	3.5	6.0	51.14	192.9	239.4	318.3	310.0	8.25	38.581		
1,700.0	1,700.0	1,643.3	1,609.4	3.7	6.5	52.34	203.1	263.1	344.3	335.4	8.82	39.053		
1,800.0	1,800.0	1,739.6	1,702.2	3.9	7.0	53.37	213.3	286.9	370.4	361.0	9.38	39.489		
1,900.0	1,900.0	1,835.9	1,795.0	4.2	7.6	54.26	223.5	310.6	396.5	386.6	9.94	39.890		
2,000.0	2,000.0	1,932.3	1,887.8	4.4	8.1	55.05	233.7	334.3	422.8	412.3	10.50	40.260		
2,100.0	2,100.0	2,028.9	1,980.9	4.6	8.7	33.35	244.0	358.2	447.7	437.8	9.93	45.071		
2,200.0	2,199.8	2,126.1	2,074.5	4.8	9.2	34.07	254.3	382.1	469.9	459.5	10.43	45.049		
2,300.0	2,299.5	2,223.8	2,168.6	5.1	9.8	34.97	264.6	406.2	489.5	478.5	10.92	44.828		
2,400.0	2,398.7	2,321.7	2,262.9	5.3	10.3	36.04	275.0	430.3	506.4	495.0	11.40	44.430		
2,500.0	2,497.5	2,419.8	2,357.5	5.5	10.9	37.28	285.4	454.5	520.8	508.9	11.87	43.864		
2,600.0	2,595.7	2,518.1	2,452.1	5.8	11.4	38.74	295.8	478.7	533.2	520.8	12.36	43.141		
2,700.0	2,693.9	2,616.3	2,546.7	6.1	12.0	40.23	306.2	502.9	545.6	532.8	12.87	42.409		
2,800.0	2,792.1	2,714.5	2,641.3	6.4	12.5	41.66	316.6	527.1	558.5	545.1	13.39	41.705		
2,900.0	2,890.3	2,812.7	2,736.0	6.7	13.1	43.02	327.0	551.3	571.6	557.7	13.93	41.026		
3,000.0	2,988.4	2,910.9	2,830.6	7.0	13.6	44.32	337.4	575.5	585.0	570.6	14.49	40.370		
3,100.0	3,086.6	3,009.1	2,925.2	7.3	14.2	45.57	347.8	599.7	598.8	583.7	15.07	39.737		
3,200.0	3,184.8	3,107.4	3,019.8	7.7	14.7	46.76	358.3	623.9	612.8	597.1	15.66	39.126		
3,300.0	3,283.0	3,205.6	3,114.4	8.0	15.3	47.89	368.7	648.1	627.1	610.8	16.27	38.537		
3,400.0	3,381.2	3,303.8	3,209.0	8.4	15.9	48.98	379.1	672.2	641.6	624.7	16.90	37.970		
3,500.0	3,479.3	3,402.0	3,303.7	8.7	16.4	50.01	389.5	696.4	656.3	638.7	17.54	37.424		
3,600.0	3,577.5	3,500.2	3,398.3	9.1	17.0	51.01	399.9	720.6	671.2	653.0	18.19	36.900		
3,700.0	3,675.7	3,598.4	3,492.9	9.5	17.5	51.96	410.3	744.8	686.3	667.4	18.86	36.396		
3,800.0	3,773.9	3,696.7	3,587.5	9.9	18.1	52.86	420.7	769.0	701.6	682.0	19.53	35.914		
3,900.0	3,872.1	3,794.9	3,682.1	10.2	18.6	53.74	431.1	793.2	717.0	696.8	20.23	35.452		
4,000.0	3,970.2	3,893.1	3,776.8	10.6	19.2	54.57	441.5	817.4	732.6	711.7	20.93	35.010		
4,100.0	4,068.4	3,991.3	3,871.4	11.0	19.7	55.37	451.9	841.6	748.4	726.8	21.64	34.588		
4,200.0	4,166.6	4,089.5	3,966.0	11.4	20.3	56.14	462.4	865.8	764.3	741.9	22.36	34.184		
4,300.0	4,264.8	4,187.7	4,060.6	11.8	20.9	56.87	472.8	890.0	780.3	757.2	23.09	33.798		
4,400.0	4,363.0	4,286.0	4,155.2	12.1	21.4	57.58	483.2	914.2	796.5	772.6	23.82	33.430		
4,500.0	4,461.1	4,384.2	4,249.8	12.5	22.0	58.26	493.6	938.4	812.7	788.1	24.57	33.078		
4,600.0	4,559.3	4,482.4	4,344.5	12.9	22.5	58.91	504.0	962.6	829.1	803.8	25.32	32.742		
4,700.0	4,657.5	4,580.6	4,439.1	13.3	23.1	59.53	514.4	986.8	845.5	819.5	26.08	32.422		
4,800.0	4,755.7	4,678.8	4,533.7	13.7	23.6	60.14	524.8	1,011.0	862.1	835.3	26.84	32.116		
4,900.0	4,853.9	4,777.0	4,628.3	14.1	24.2	60.72	535.2	1,035.2	878.8	851.2	27.61	31.824		
5,000.0	4,952.0	4,875.3	4,722.9	14.5	24.8	61.28	545.6	1,059.4	895.5	867.1	28.39	31.545		

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 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut 27K-HZ Pad Sec.27-T5N-R64W - Chesnut 27O-303 - Wellbore #1 - Plan #2 (7-08-14)													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
5,100.0	5,050.2	4,973.5	4,817.6	14.9	25.3	61.81		556.0	1,083.6	912.3	883.2	29.17	31.278	
5,200.0	5,148.4	5,071.7	4,912.2	15.3	25.9	62.33		566.5	1,107.8	929.2	899.3	29.95	31.023	
5,300.0	5,246.6	5,169.9	5,006.8	15.7	26.4	62.83		576.9	1,132.0	946.2	915.4	30.74	30.780	
5,400.0	5,344.8	5,301.4	5,134.0	16.1	27.0	63.52		590.1	1,162.7	962.0	930.3	31.63	30.417	
5,500.0	5,443.2	5,446.1	5,275.5	16.5	27.5	64.46		601.9	1,190.3	973.9	941.5	32.48	29.987	
5,600.0	5,542.2	5,591.9	5,419.5	16.7	28.0	65.25		611.0	1,211.5	982.8	949.6	33.20	29.605	
5,700.0	5,641.6	5,738.6	5,565.3	17.0	28.3	65.86		617.3	1,225.9	988.4	954.5	33.80	29.239	
5,800.0	5,741.3	5,885.7	5,712.1	17.2	28.5	66.29		620.5	1,233.5	990.6	956.3	34.30	28.882	
5,900.0	5,841.2	6,013.8	5,840.2	17.3	28.6	66.52		621.1	1,234.8	990.0	955.3	34.66	28.561	
5,985.8	5,927.0	6,099.6	5,926.0	17.5	28.7	66.57		621.1	1,234.8	989.6	954.7	34.90	28.352	
6,000.0	5,941.2	6,113.8	5,940.2	17.5	28.7	88.78		621.1	1,234.8	989.7	954.8	34.94	28.329	
6,100.0	6,041.2	6,216.1	6,042.2	17.6	28.8	-90.87		614.4	1,234.8	989.6	954.4	35.25	28.071	
6,200.0	6,140.6	6,317.0	6,141.1	17.7	28.8	-90.34		594.6	1,234.8	989.5	954.1	35.39	27.961	
6,262.7	6,201.8	6,379.7	6,200.8	17.6	28.7	-90.00		575.8	1,234.8	989.5	954.2	35.35	27.990	
6,300.0	6,237.8	6,416.8	6,235.4	17.6	28.7	-89.80		562.4	1,234.8	989.5	954.2	35.31	28.020	
6,400.0	6,331.0	6,515.3	6,323.7	17.4	28.5	-89.27		518.7	1,234.8	989.6	954.5	35.06	28.226	
6,500.0	6,418.9	6,612.7	6,404.7	17.2	28.4	-88.75		464.8	1,234.8	989.7	955.1	34.67	28.544	
6,600.0	6,499.7	6,709.0	6,477.5	16.9	28.2	-88.25		401.7	1,234.8	990.0	955.7	34.23	28.923	
6,700.0	6,572.2	6,804.4	6,541.1	16.6	28.0	-87.79		330.8	1,234.8	990.2	956.4	33.80	29.297	
6,800.0	6,635.0	6,900.0	6,595.5	16.3	27.8	-87.36		252.3	1,234.8	990.6	957.1	33.49	29.581	
6,900.0	6,687.2	6,992.7	6,638.6	16.1	27.7	-86.98		170.2	1,234.8	990.9	957.5	33.38	29.682	
7,000.0	6,727.8	7,085.8	6,671.4	16.0	27.6	-86.65		83.2	1,234.8	991.2	957.6	33.57	29.526	
7,100.0	6,756.2	7,178.4	6,693.4	16.1	27.6	-86.37		-6.7	1,234.8	991.5	957.4	34.11	29.068	
7,200.0	6,771.8	7,270.5	6,704.3	16.5	27.7	-86.15		-98.1	1,234.8	991.7	956.7	35.01	28.327	
7,300.0	6,775.0	7,365.9	6,705.2	17.2	27.9	-86.02		-193.5	1,234.8	991.9	955.6	36.30	27.328	
7,400.0	6,774.9	7,465.9	6,704.3	18.0	28.2	-85.98		-293.5	1,234.8	991.9	954.0	37.92	26.156	
7,500.0	6,774.8	7,565.9	6,703.4	19.0	28.7	-85.93		-393.5	1,234.8	992.0	952.2	39.85	24.893	
7,600.0	6,774.7	7,665.9	6,702.5	20.1	29.3	-85.88		-493.5	1,234.8	992.1	950.0	42.04	23.597	
7,700.0	6,774.6	7,765.9	6,701.6	21.3	30.0	-85.84		-593.5	1,234.8	992.1	947.7	44.45	22.318	
7,800.0	6,774.5	7,865.9	6,700.7	22.7	30.9	-85.79		-693.4	1,234.8	992.2	945.1	47.06	21.085	
7,900.0	6,774.5	7,965.9	6,699.8	24.1	31.9	-85.74		-793.4	1,234.8	992.2	942.4	49.82	19.917	
8,000.0	6,774.4	8,065.9	6,698.9	25.5	33.0	-85.69		-893.4	1,234.8	992.3	939.6	52.72	18.824	
8,100.0	6,774.3	8,165.9	6,698.0	27.1	34.2	-85.65		-993.4	1,234.8	992.4	936.6	55.72	17.808	
8,200.0	6,774.2	8,265.9	6,697.1	28.6	35.4	-85.60		-1,093.4	1,234.8	992.4	933.6	58.83	16.870	
8,300.0	6,774.1	8,365.9	6,696.1	30.2	36.8	-85.55		-1,193.4	1,234.8	992.5	930.5	62.02	16.004	
8,400.0	6,774.0	8,465.9	6,695.2	31.9	38.1	-85.51		-1,293.4	1,234.8	992.6	927.3	65.27	15.207	
8,500.0	6,773.9	8,565.9	6,694.3	33.6	39.6	-85.46		-1,393.4	1,234.8	992.6	924.0	68.58	14.473	
8,600.0	6,773.9	8,665.9	6,693.4	35.3	41.1	-85.41		-1,493.4	1,234.8	992.7	920.7	71.95	13.797	
8,700.0	6,773.8	8,765.9	6,692.5	37.0	42.6	-85.36		-1,593.4	1,234.8	992.7	917.4	75.36	13.174	
8,800.0	6,773.7	8,865.9	6,691.6	38.7	44.1	-85.32		-1,693.4	1,234.8	992.8	914.0	78.81	12.598	
8,900.0	6,773.6	8,965.9	6,690.7	40.5	45.7	-85.27		-1,793.4	1,234.8	992.9	910.6	82.29	12.066	
9,000.0	6,773.5	9,065.8	6,689.8	42.2	47.3	-85.22		-1,893.4	1,234.8	992.9	907.2	85.80	11.573	
9,100.0	6,773.4	9,165.8	6,688.9	44.0	48.9	-85.17		-1,993.3	1,234.8	993.0	903.7	89.33	11.116	
9,200.0	6,773.3	9,265.8	6,688.0	45.8	50.6	-85.13		-2,093.3	1,234.8	993.1	900.2	92.89	10.691	
9,300.0	6,773.2	9,365.8	6,687.1	47.6	52.3	-85.08		-2,193.3	1,234.8	993.2	896.7	96.47	10.295	
9,400.0	6,773.2	9,465.8	6,686.2	49.4	53.9	-85.03		-2,293.3	1,234.8	993.2	893.2	100.07	9.925	
9,500.0	6,773.1	9,565.8	6,685.3	51.3	55.6	-84.99		-2,393.3	1,234.8	993.3	889.6	103.68	9.580	
9,600.0	6,773.0	9,665.8	6,684.4	53.1	57.4	-84.94		-2,493.3	1,234.8	993.4	886.1	107.31	9.257	
9,700.0	6,772.9	9,765.8	6,683.4	54.9	59.1	-84.89		-2,593.3	1,234.8	993.4	882.5	110.95	8.954	
9,800.0	6,772.8	9,865.8	6,682.5	56.8	60.8	-84.84		-2,693.3	1,234.8	993.5	878.9	114.60	8.669	
9,900.0	6,772.7	9,965.8	6,681.6	58.6	62.6	-84.80		-2,793.3	1,234.8	993.6	875.3	118.26	8.402	

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 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Chesnut 27K-HZ Pad Sec.27-T5N-R64W - Chesnut 27O-303 - Wellbore #1 - Plan #2 (7-08-14)											Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
10,000.0	6,772.6	10,065.8	6,680.7	60.4	64.3	-84.75	-2,893.3	1,234.8	993.7	871.7	121.93	8.149		
10,100.0	6,772.5	10,165.8	6,679.8	62.3	66.1	-84.70	-2,993.3	1,234.8	993.7	868.1	125.61	7.911		
10,200.0	6,772.5	10,265.8	6,678.9	64.2	67.9	-84.66	-3,093.3	1,234.8	993.8	864.5	129.30	7.686		
10,300.0	6,772.4	10,365.8	6,678.0	66.0	69.7	-84.61	-3,193.3	1,234.8	993.9	860.9	133.00	7.473		
10,400.0	6,772.3	10,465.8	6,677.1	67.9	71.5	-84.56	-3,293.2	1,234.8	994.0	857.3	136.70	7.271		
10,500.0	6,772.2	10,565.8	6,676.2	69.7	73.3	-84.52	-3,393.2	1,234.8	994.0	853.6	140.40	7.080		
10,600.0	6,772.1	10,665.8	6,675.3	71.6	75.1	-84.47	-3,493.2	1,234.8	994.1	850.0	144.12	6.898		
10,700.0	6,772.0	10,765.8	6,674.4	73.5	76.9	-84.42	-3,593.2	1,234.8	994.2	846.4	147.83	6.725		
10,800.0	6,771.9	10,865.8	6,673.5	75.4	78.7	-84.37	-3,693.2	1,234.8	994.3	842.7	151.56	6.560		
10,900.0	6,771.8	10,965.8	6,672.6	77.2	80.5	-84.33	-3,793.2	1,234.8	994.4	839.1	155.28	6.404		
11,000.0	6,771.8	11,065.8	6,671.6	79.1	82.3	-84.28	-3,893.2	1,234.8	994.4	835.4	159.01	6.254		
11,100.0	6,771.7	11,165.8	6,670.7	81.0	84.2	-84.23	-3,993.2	1,234.8	994.5	831.8	162.75	6.111		
11,200.0	6,771.6	11,265.8	6,669.8	82.9	86.0	-84.19	-4,093.2	1,234.8	994.6	828.1	166.48	5.974		
11,300.0	6,771.5	11,365.8	6,668.9	84.8	87.8	-84.14	-4,193.2	1,234.8	994.7	824.5	170.22	5.843		
11,400.0	6,771.4	11,465.8	6,668.0	86.6	89.7	-84.09	-4,293.2	1,234.8	994.8	820.8	173.96	5.718		
11,500.0	6,771.3	11,565.8	6,667.1	88.5	91.5	-84.05	-4,393.2	1,234.8	994.9	817.2	177.71	5.598		
11,600.0	6,771.2	11,665.8	6,666.2	90.4	93.4	-84.00	-4,493.2	1,234.8	994.9	813.5	181.46	5.483		
11,700.0	6,771.1	11,765.8	6,665.3	92.3	95.2	-83.95	-4,593.2	1,234.8	995.0	809.8	185.21	5.373		
11,800.0	6,771.1	11,865.8	6,664.4	94.2	97.1	-83.90	-4,693.1	1,234.8	995.1	806.2	188.96	5.266		
11,900.0	6,771.0	11,965.7	6,663.5	96.1	98.9	-83.86	-4,793.1	1,234.8	995.2	802.5	192.71	5.164		
12,000.0	6,770.9	12,065.7	6,662.6	98.0	100.8	-83.81	-4,893.1	1,234.8	995.3	798.8	196.46	5.066		
12,100.0	6,770.8	12,165.7	6,661.7	99.9	102.6	-83.76	-4,993.1	1,234.8	995.4	795.2	200.22	4.971		
12,200.0	6,770.7	12,265.7	6,660.8	101.8	104.5	-83.72	-5,093.1	1,234.8	995.5	791.5	203.98	4.880		
12,300.0	6,770.6	12,365.7	6,659.8	103.7	106.4	-83.67	-5,193.1	1,234.8	995.6	787.8	207.74	4.792		
12,400.0	6,770.5	12,465.7	6,658.9	105.6	108.2	-83.62	-5,293.1	1,234.8	995.7	784.2	211.50	4.708		
12,500.0	6,770.4	12,565.7	6,658.0	107.5	110.1	-83.58	-5,393.1	1,234.8	995.7	780.5	215.26	4.626		
12,600.0	6,770.4	12,665.7	6,657.1	109.4	112.0	-83.53	-5,493.1	1,234.8	995.8	776.8	219.02	4.547		
12,700.0	6,770.3	12,765.7	6,656.2	111.3	113.8	-83.48	-5,593.1	1,234.8	995.9	773.1	222.78	4.470		
12,800.0	6,770.2	12,865.7	6,655.3	113.2	115.7	-83.43	-5,693.1	1,234.8	996.0	769.5	226.54	4.397		
12,900.0	6,770.1	12,965.7	6,654.4	115.1	117.6	-83.39	-5,793.1	1,234.8	996.1	765.8	230.31	4.325		
13,000.0	6,770.0	13,065.7	6,653.5	117.0	119.5	-83.34	-5,893.1	1,234.8	996.2	762.1	234.07	4.256		
13,100.0	6,769.9	13,165.7	6,652.6	118.9	121.3	-83.29	-5,993.0	1,234.8	996.3	758.5	237.84	4.189		
13,200.0	6,769.8	13,265.7	6,651.7	120.8	123.2	-83.25	-6,093.0	1,234.8	996.4	754.8	241.60	4.124		
13,300.0	6,769.7	13,365.7	6,650.8	122.7	125.1	-83.20	-6,193.0	1,234.8	996.5	751.1	245.37	4.061		
13,400.0	6,769.7	13,465.7	6,649.9	124.6	127.0	-83.15	-6,293.0	1,234.8	996.6	747.5	249.13	4.000		
13,500.0	6,769.6	13,565.7	6,649.0	126.5	128.8	-83.11	-6,393.0	1,234.8	996.7	743.8	252.90	3.941		
13,600.0	6,769.5	13,665.7	6,648.0	128.4	130.7	-83.06	-6,493.0	1,234.8	996.8	740.1	256.67	3.884		
13,700.0	6,769.4	13,765.7	6,647.1	130.3	132.6	-83.01	-6,593.0	1,234.8	996.9	736.5	260.44	3.828		
13,800.0	6,769.3	13,865.7	6,646.2	132.2	134.5	-82.97	-6,693.0	1,234.8	997.0	732.8	264.20	3.774		
13,900.0	6,769.2	13,965.7	6,645.3	134.1	136.4	-82.92	-6,793.0	1,234.8	997.1	729.1	267.97	3.721		
14,000.0	6,769.1	14,065.7	6,644.4	136.0	138.3	-82.87	-6,893.0	1,234.8	997.2	725.5	271.74	3.670		
14,100.0	6,769.1	14,165.7	6,643.5	137.9	140.2	-82.83	-6,993.0	1,234.8	997.3	721.8	275.50	3.620		
14,158.9	6,769.0	14,222.0	6,643.0	139.1	141.2	-82.80	-7,049.3	1,234.8	997.4	719.7	277.68	3.592 SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut Existing Pad Sec.27-T5N-R64W - Bailey 5 (Existing) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7004-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
12,500.0	6,770.4	6,793.9	6,793.9	107.5	135.9	90.40	90.40	-6,320.8	128.2	934.0	690.7	243.30	3.839	
12,600.0	6,770.4	6,793.9	6,793.9	109.4	135.9	90.35	90.35	-6,320.8	128.2	834.9	589.7	245.20	3.405	
12,700.0	6,770.3	6,793.8	6,793.8	111.3	135.9	90.31	90.31	-6,320.8	128.2	736.0	489.0	247.10	2.979	
12,800.0	6,770.2	6,793.7	6,793.7	113.2	135.9	90.27	90.27	-6,320.8	128.2	637.5	388.5	249.00	2.560	
12,900.0	6,770.1	6,793.6	6,793.6	115.1	135.9	90.22	90.22	-6,320.8	128.2	539.5	288.6	250.90	2.150	
13,000.0	6,770.0	6,793.5	6,793.5	117.0	135.9	90.18	90.18	-6,320.8	128.2	442.4	189.6	252.80	1.750	
13,100.0	6,769.9	6,793.4	6,793.4	118.9	135.9	90.14	90.14	-6,320.8	128.2	347.0	92.3	254.70	1.362 Level 3	
13,200.0	6,769.8	6,793.3	6,793.3	120.8	135.9	90.10	90.10	-6,320.8	128.2	255.1	-1.5	256.60	0.994 Level 1	
13,300.0	6,769.7	6,793.2	6,793.2	122.7	135.9	90.05	90.05	-6,320.8	128.2	172.5	-86.0	258.50	0.667 Level 1	
13,400.0	6,769.7	6,793.2	6,793.2	124.6	135.9	90.01	90.01	-6,320.8	128.2	120.1	-140.3	260.40	0.461 Level 1	
13,426.7	6,769.6	6,793.1	6,793.1	125.1	135.9	90.00	90.00	-6,320.8	128.2	117.1	-143.8	260.91	0.449 Level 1, CC, ES, SF	
13,500.0	6,769.6	6,793.1	6,793.1	126.5	135.9	89.97	89.97	-6,320.8	128.2	138.1	-124.2	262.31	0.527 Level 1	
13,600.0	6,769.5	6,793.0	6,793.0	128.4	135.9	89.93	89.93	-6,320.8	128.2	209.2	-55.1	264.21	0.792 Level 1	
13,700.0	6,769.4	6,792.9	6,792.9	130.3	135.9	89.88	89.88	-6,320.8	128.2	297.3	31.2	266.11	1.117 Level 2	
13,800.0	6,769.3	6,792.8	6,792.8	132.2	135.9	89.84	89.84	-6,320.8	128.2	391.2	123.2	268.02	1.460 Level 3	
13,900.0	6,769.2	6,792.7	6,792.7	134.1	135.9	89.80	89.80	-6,320.8	128.2	487.6	217.7	269.92	1.806	
14,000.0	6,769.1	6,792.6	6,792.6	136.0	135.9	89.76	89.76	-6,320.8	128.2	585.2	313.3	271.82	2.153	
14,100.0	6,769.1	6,792.6	6,792.6	137.9	135.9	89.71	89.71	-6,320.8	128.2	683.4	409.7	273.73	2.497	
14,158.9	6,769.0	6,792.5	6,792.5	139.1	135.9	89.69	89.69	-6,320.8	128.2	741.5	466.7	274.85	2.698	



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Chesnut Existing Pad Sec.27-T5N-R64W - Bettale 34-1 (Existing) - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 ft
<b>Survey Program:</b> 6950-UNKNOWN												<b>Offset Well Error:</b>	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
9,200.0	6,773.3	6,789.8	6,789.8	45.8	135.8	-90.08	-2,914.5	730.1	952.9	771.4	181.51	5.250	
9,300.0	6,773.2	6,789.7	6,789.7	47.6	135.8	-90.07	-2,914.5	730.1	868.3	685.0	183.31	4.737	
9,400.0	6,773.2	6,789.7	6,789.7	49.4	135.8	-90.06	-2,914.5	730.1	787.4	602.2	185.12	4.253	
9,500.0	6,773.1	6,789.6	6,789.6	51.3	135.8	-90.05	-2,914.5	730.1	711.3	524.3	186.94	3.805	
9,600.0	6,773.0	6,789.5	6,789.5	53.1	135.8	-90.04	-2,914.5	730.1	641.7	452.9	188.77	3.399	
9,700.0	6,772.9	6,789.4	6,789.4	54.9	135.8	-90.03	-2,914.5	730.1	581.1	390.5	190.61	3.049	
9,800.0	6,772.8	6,789.3	6,789.3	56.8	135.8	-90.02	-2,914.5	730.1	532.6	340.1	192.44	2.768	
9,900.0	6,772.7	6,789.2	6,789.2	58.6	135.8	-90.01	-2,914.5	730.1	499.6	305.3	194.29	2.571	
10,000.0	6,772.6	6,789.1	6,789.1	60.4	135.8	-90.00	-2,914.5	730.1	485.3	289.2	196.14	2.474	
10,020.4	6,772.6	6,789.1	6,789.1	60.8	135.8	-90.00	-2,914.5	730.1	484.9	288.3	196.52	2.467	CC, ES, SF
10,100.0	6,772.5	6,789.0	6,789.0	62.3	135.8	-89.99	-2,914.5	730.1	491.4	293.4	197.99	2.482	
10,200.0	6,772.5	6,789.0	6,789.0	64.2	135.8	-89.98	-2,914.5	730.1	517.1	317.2	199.85	2.587	
10,300.0	6,772.4	6,788.9	6,788.9	66.0	135.8	-89.97	-2,914.5	730.1	559.7	358.0	201.71	2.775	
10,400.0	6,772.3	6,788.8	6,788.8	67.9	135.8	-89.96	-2,914.5	730.1	615.8	412.2	203.57	3.025	
10,500.0	6,772.2	6,788.7	6,788.7	69.7	135.8	-89.95	-2,914.5	730.1	682.0	476.6	205.44	3.320	
10,600.0	6,772.1	6,788.6	6,788.6	71.6	135.8	-89.94	-2,914.5	730.1	755.7	548.4	207.31	3.645	
10,700.0	6,772.0	6,788.5	6,788.5	73.5	135.8	-89.93	-2,914.5	730.1	834.9	625.7	209.18	3.991	
10,800.0	6,771.9	6,788.4	6,788.4	75.4	135.8	-89.92	-2,914.5	730.1	918.1	707.0	211.06	4.350	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut Existing Pad Sec.27-T5N-R64W - White 1-1 (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 6966-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)			
9,700.0	6,772.9	6,781.4	6,781.4	54.9	135.6	90.19	-3,490.1	8.4	926.8	736.3	190.45	4.866		
9,800.0	6,772.8	6,781.3	6,781.3	56.8	135.6	90.17	-3,490.1	8.4	830.5	638.2	192.29	4.319		
9,900.0	6,772.7	6,781.2	6,781.2	58.6	135.6	90.15	-3,490.1	8.4	735.2	541.1	194.13	3.787		
10,000.0	6,772.6	6,781.1	6,781.1	60.4	135.6	90.13	-3,490.1	8.4	641.4	445.4	195.98	3.273		
10,100.0	6,772.5	6,781.0	6,781.0	62.3	135.6	90.10	-3,490.1	8.4	549.7	351.8	197.83	2.778		
10,200.0	6,772.5	6,781.0	6,781.0	64.2	135.6	90.08	-3,490.1	8.4	461.5	261.8	199.69	2.311		
10,300.0	6,772.4	6,780.9	6,780.9	66.0	135.6	90.06	-3,490.1	8.4	379.1	177.6	201.55	1.881		
10,400.0	6,772.3	6,780.8	6,780.8	67.9	135.6	90.04	-3,490.1	8.4	307.5	104.1	203.41	1.512		
10,500.0	6,772.2	6,780.7	6,780.7	69.7	135.6	90.02	-3,490.1	8.4	255.6	50.3	205.28	1.245	Level 2	
10,595.9	6,772.1	6,780.6	6,780.6	71.5	135.6	90.00	-3,490.1	8.4	236.9	29.8	207.07	1.144	Level 2, CC	
10,600.0	6,772.1	6,780.6	6,780.6	71.6	135.6	90.00	-3,490.1	8.4	237.0	29.8	207.15	1.144	Level 2, ES, SF	
10,700.0	6,772.0	6,780.5	6,780.5	73.5	135.6	89.98	-3,490.1	8.4	258.7	49.7	209.02	1.238	Level 2	
10,800.0	6,771.9	6,780.4	6,780.4	75.4	135.6	89.96	-3,490.1	8.4	312.7	101.8	210.89	1.483	Level 3	
10,900.0	6,771.8	6,780.3	6,780.3	77.2	135.6	89.94	-3,490.1	8.4	385.4	172.7	212.77	1.811		
11,000.0	6,771.8	6,780.3	6,780.3	79.1	135.6	89.91	-3,490.1	8.4	468.4	253.7	214.65	2.182		
11,100.0	6,771.7	6,780.2	6,780.2	81.0	135.6	89.89	-3,490.1	8.4	556.9	340.4	216.53	2.572		
11,200.0	6,771.6	6,780.1	6,780.1	82.9	135.6	89.87	-3,490.1	8.4	648.8	430.4	218.41	2.971		
11,300.0	6,771.5	6,780.0	6,780.0	84.8	135.6	89.85	-3,490.1	8.4	742.8	522.5	220.29	3.372		
11,400.0	6,771.4	6,779.9	6,779.9	86.6	135.6	89.83	-3,490.1	8.4	838.2	616.0	222.18	3.773		
11,500.0	6,771.3	6,779.8	6,779.8	88.5	135.6	89.81	-3,490.1	8.4	934.5	710.5	224.06	4.171		



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut Existing Pad Sec.27-T5N-R64W - White 27-1 (P&A) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 7345-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
0.0	0.0	5.5	5.5	0.0	0.1	-159.93	-655.8	-239.6	698.2	698.1	0.11	6,335.523	
100.0	100.0	105.5	105.5	0.1	2.1	-159.93	-655.8	-239.6	698.2	696.0	2.22	314.128	
200.0	200.0	205.5	205.5	0.3	4.1	-159.93	-655.8	-239.6	698.2	693.7	4.45	156.987	
300.0	300.0	305.5	305.5	0.6	6.1	-159.93	-655.8	-239.6	698.2	691.5	6.67	104.641	
400.0	400.0	405.5	405.5	0.8	8.1	-159.93	-655.8	-239.6	698.2	689.3	8.90	78.474	
500.0	500.0	505.5	505.5	1.0	10.1	-159.93	-655.8	-239.6	698.2	687.1	11.12	62.776	
600.0	600.0	605.5	605.5	1.2	12.1	-159.93	-655.8	-239.6	698.2	684.8	13.35	52.312	
700.0	700.0	705.5	705.5	1.5	14.1	-159.93	-655.8	-239.6	698.2	682.6	15.57	44.838	
800.0	800.0	805.5	805.5	1.7	16.1	-159.93	-655.8	-239.6	698.2	680.4	17.80	39.232	
900.0	900.0	905.5	905.5	1.9	18.1	-159.93	-655.8	-239.6	698.2	678.2	20.02	34.873	
1,000.0	1,000.0	1,005.5	1,005.5	2.1	20.1	-159.93	-655.8	-239.6	698.2	675.9	22.25	31.385	
1,100.0	1,100.0	1,105.5	1,105.5	2.4	22.1	-159.93	-655.8	-239.6	698.2	673.7	24.47	28.532	
1,200.0	1,200.0	1,205.5	1,205.5	2.6	24.1	-159.93	-655.8	-239.6	698.2	671.5	26.69	26.154	
1,300.0	1,300.0	1,305.5	1,305.5	2.8	26.1	-159.93	-655.8	-239.6	698.2	669.3	28.92	24.142	
1,400.0	1,400.0	1,405.5	1,405.5	3.0	28.1	-159.93	-655.8	-239.6	698.2	667.0	31.14	22.417	
1,500.0	1,500.0	1,505.5	1,505.5	3.3	30.1	-159.93	-655.8	-239.6	698.2	664.8	33.37	20.923	
1,600.0	1,600.0	1,605.5	1,605.5	3.5	32.1	-159.93	-655.8	-239.6	698.2	662.6	35.59	19.615	
1,700.0	1,700.0	1,705.5	1,705.5	3.7	34.1	-159.93	-655.8	-239.6	698.2	660.4	37.82	18.461	
1,800.0	1,800.0	1,805.5	1,805.5	3.9	36.1	-159.93	-655.8	-239.6	698.2	658.1	40.04	17.435	
1,900.0	1,900.0	1,905.5	1,905.5	4.2	38.1	-159.93	-655.8	-239.6	698.2	655.9	42.27	16.518	
2,000.0	2,000.0	2,005.5	2,005.5	4.4	40.1	-159.93	-655.8	-239.6	698.2	653.7	44.49	15.692	
2,100.0	2,100.0	2,105.5	2,105.5	4.6	42.1	177.84	-655.8	-239.6	699.9	653.2	46.69	14.991	
2,200.0	2,199.8	2,205.3	2,205.3	4.8	44.1	177.86	-655.8	-239.6	705.1	656.3	48.82	14.444	
2,300.0	2,299.5	2,305.0	2,305.0	5.1	46.1	177.88	-655.8	-239.6	713.9	663.0	50.88	14.031	
2,400.0	2,398.7	2,404.2	2,404.2	5.3	48.1	177.90	-655.8	-239.6	726.0	673.2	52.85	13.737	
2,500.0	2,497.5	2,503.0	2,503.0	5.5	50.1	177.94	-655.8	-239.6	741.7	686.9	54.74	13.549	
2,600.0	2,595.7	2,601.2	2,601.2	5.8	52.0	177.98	-655.8	-239.6	760.3	703.5	56.73	13.401	
2,700.0	2,693.9	2,699.4	2,699.4	6.1	54.0	178.03	-655.8	-239.6	779.2	720.4	58.89	13.232	
2,800.0	2,792.1	2,797.6	2,797.6	6.4	56.0	178.08	-655.8	-239.6	798.2	737.2	61.05	13.074	
2,900.0	2,890.3	2,895.8	2,895.8	6.7	57.9	178.12	-655.8	-239.6	817.2	754.0	63.22	12.927	
3,000.0	2,988.4	2,993.9	2,993.9	7.0	59.9	178.16	-655.8	-239.6	836.2	770.8	65.38	12.789	
3,100.0	3,086.6	3,092.1	3,092.1	7.3	61.8	178.20	-655.8	-239.6	855.2	787.6	67.55	12.660	
3,200.0	3,184.8	3,190.3	3,190.3	7.7	63.8	178.24	-655.8	-239.6	874.2	804.4	69.72	12.538	
3,300.0	3,283.0	3,288.5	3,288.5	8.0	65.8	178.28	-655.8	-239.6	893.1	821.2	71.89	12.423	
3,400.0	3,381.2	3,386.7	3,386.7	8.4	67.7	178.32	-655.8	-239.6	912.1	838.1	74.06	12.315	
3,500.0	3,479.3	3,484.8	3,484.8	8.7	69.7	178.35	-655.8	-239.6	931.1	854.9	76.24	12.213	
3,600.0	3,577.5	3,583.0	3,583.0	9.1	71.7	178.38	-655.8	-239.6	950.1	871.7	78.41	12.117	
3,700.0	3,675.7	3,681.2	3,681.2	9.5	73.6	178.42	-655.8	-239.6	969.1	888.5	80.59	12.025	
3,800.0	3,773.9	3,779.4	3,779.4	9.9	75.6	178.45	-655.8	-239.6	988.1	905.3	82.76	11.938	
6,900.0	6,687.2	6,692.7	6,692.7	16.1	133.9	50.88	-655.8	-239.6	976.3	852.5	123.80	7.886	
7,000.0	6,727.8	6,733.3	6,733.3	16.0	134.7	61.66	-655.8	-239.6	998.2	763.6	134.59	6.674	
7,100.0	6,756.2	6,761.7	6,761.7	16.1	135.2	73.29	-655.8	-239.6	819.2	674.1	145.13	5.645	
7,200.0	6,771.8	6,777.3	6,777.3	16.5	135.5	83.96	-655.8	-239.6	742.0	590.8	151.16	4.909	
7,300.0	6,775.0	6,780.5	6,780.5	17.2	135.6	90.05	-655.8	-239.6	669.5	516.8	152.75	4.383	
7,400.0	6,774.9	6,780.4	6,780.4	18.0	135.6	90.04	-655.8	-239.6	604.9	451.4	153.55	3.940	
7,500.0	6,774.8	6,780.3	6,780.3	19.0	135.6	90.03	-655.8	-239.6	551.0	396.5	154.51	3.566	
7,600.0	6,774.7	6,780.2	6,780.2	20.1	135.6	90.02	-655.8	-239.6	511.2	355.5	155.61	3.285	
7,700.0	6,774.6	6,780.1	6,780.1	21.3	135.6	90.01	-655.8	-239.6	488.8	332.0	156.83	3.117	
7,761.7	6,774.6	6,780.1	6,780.1	22.2	135.6	90.00	-655.8	-239.6	484.9	327.3	157.64	3.076 CC, ES	
7,800.0	6,774.5	6,780.0	6,780.0	22.7	135.6	90.00	-655.8	-239.6	486.4	328.3	158.14	3.076 SF	
7,900.0	6,774.5	6,780.0	6,780.0	24.1	135.6	89.99	-655.8	-239.6	504.3	344.7	159.54	3.161	

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 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Chesnut Existing Pad Sec.27-T5N-R64W - White 27-1 (P&A) - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 7345-UNKNOWN												<b>Offset Well Error:</b>	0.0 ft
Reference	Offset	Semi Major Axis		Distance									Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
8,000.0	6,774.4	6,779.9	6,779.9	25.5	135.6	89.98	-655.8	-239.6	540.3	379.3	161.00	3.356	
8,100.0	6,774.3	6,779.8	6,779.8	27.1	135.6	89.97	-655.8	-239.6	591.3	428.8	162.53	3.638	
8,200.0	6,774.2	6,779.7	6,779.7	28.6	135.6	89.95	-655.8	-239.6	653.7	489.6	164.10	3.984	
8,300.0	6,774.1	6,779.6	6,779.6	30.2	135.6	89.94	-655.8	-239.6	724.5	558.8	165.71	4.372	
8,400.0	6,774.0	6,779.5	6,779.5	31.9	135.6	89.93	-655.8	-239.6	801.6	634.3	167.35	4.790	
8,500.0	6,773.9	6,779.4	6,779.4	33.6	135.6	89.92	-655.8	-239.6	883.3	714.3	169.03	5.226	
8,600.0	6,773.9	6,779.4	6,779.4	35.3	135.6	89.91	-655.8	-239.6	968.5	797.8	170.73	5.673	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chesnut Existing Pad Sec.27-T5N-R64W - White 27-7 (Exist) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 6893-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
0.0	0.0	0.0	0.0	0.0	0.0	115.70	-295.1	613.0	680.6				
100.0	100.0	81.5	81.5	0.1	1.6	115.70	-295.1	613.0	680.4	678.6	1.74	390.429	
200.0	200.0	181.5	181.5	0.3	3.6	115.70	-295.1	613.0	680.4	676.4	3.97	171.489	
300.0	300.0	281.5	281.5	0.6	5.6	115.70	-295.1	613.0	680.4	674.2	6.19	109.875	
400.0	400.0	381.5	381.5	0.8	7.6	115.70	-295.1	613.0	680.4	671.9	8.42	80.832	
500.0	500.0	481.5	481.5	1.0	9.6	115.70	-295.1	613.0	680.4	669.7	10.64	63.933	
600.0	600.0	581.5	581.5	1.2	11.6	115.70	-295.1	613.0	680.4	667.5	12.87	52.878	
700.0	700.0	681.5	681.5	1.5	13.6	115.70	-295.1	613.0	680.4	665.3	15.09	45.083	
800.0	800.0	781.5	781.5	1.7	15.6	115.70	-295.1	613.0	680.4	663.0	17.32	39.291	
900.0	900.0	881.5	881.5	1.9	17.6	115.70	-295.1	613.0	680.4	660.8	19.54	34.817	
1,000.0	1,000.0	981.5	981.5	2.1	19.6	115.70	-295.1	613.0	680.4	658.6	21.77	31.258	
1,100.0	1,100.0	1,081.5	1,081.5	2.4	21.6	115.70	-295.1	613.0	680.4	656.4	23.99	28.360	
1,200.0	1,200.0	1,181.5	1,181.5	2.6	23.6	115.70	-295.1	613.0	680.4	654.1	26.21	25.953	
1,300.0	1,300.0	1,281.5	1,281.5	2.8	25.6	115.70	-295.1	613.0	680.4	651.9	28.44	23.923	
1,400.0	1,400.0	1,381.5	1,381.5	3.0	27.6	115.70	-295.1	613.0	680.4	649.7	30.66	22.187	
1,500.0	1,500.0	1,481.5	1,481.5	3.3	29.6	115.70	-295.1	613.0	680.4	647.5	32.89	20.686	
1,600.0	1,600.0	1,581.5	1,581.5	3.5	31.6	115.70	-295.1	613.0	680.4	645.2	35.11	19.376	
1,700.0	1,700.0	1,681.5	1,681.5	3.7	33.6	115.70	-295.1	613.0	680.4	643.0	37.34	18.221	
1,800.0	1,800.0	1,781.5	1,781.5	3.9	35.6	115.70	-295.1	613.0	680.4	640.8	39.56	17.197	
1,900.0	1,900.0	1,881.5	1,881.5	4.2	37.6	115.70	-295.1	613.0	680.4	638.6	41.79	16.281	
2,000.0	2,000.0	1,981.5	1,981.5	4.4	39.6	115.70	-295.1	613.0	680.4	636.3	44.01	15.458	
2,100.0	2,100.0	2,081.5	2,081.5	4.6	41.6	93.61	-295.1	613.0	680.5	634.2	46.24	14.717	
2,200.0	2,199.8	2,181.3	2,181.3	4.8	43.6	94.05	-295.1	613.0	680.8	632.4	48.45	14.051	
2,300.0	2,299.5	2,281.0	2,281.0	5.1	45.6	94.76	-295.1	613.0	681.5	630.8	50.67	13.450	
2,400.0	2,398.7	2,380.2	2,380.2	5.3	47.6	95.75	-295.1	613.0	682.6	629.7	52.88	12.908	
2,500.0	2,497.5	2,479.0	2,479.0	5.5	49.6	97.00	-295.1	613.0	684.4	629.3	55.10	12.421	
2,600.0	2,595.7	2,577.2	2,577.2	5.8	51.5	98.49	-295.1	613.0	686.9	629.6	57.32	11.984	
2,700.0	2,693.9	2,675.4	2,675.4	6.1	53.5	100.03	-295.1	613.0	690.0	630.5	59.56	11.586	
2,800.0	2,792.1	2,773.6	2,773.6	6.4	55.5	101.54	-295.1	613.0	693.6	631.8	61.81	11.222	
2,900.0	2,890.3	2,871.8	2,871.8	6.7	57.4	103.05	-295.1	613.0	697.8	633.7	64.07	10.891	
3,000.0	2,988.4	2,969.9	2,969.9	7.0	59.4	104.53	-295.1	613.0	702.4	636.0	66.33	10.589	
3,100.0	3,086.6	3,068.1	3,068.1	7.3	61.4	105.99	-295.1	613.0	707.5	638.9	68.60	10.313	
3,200.0	3,184.8	3,166.3	3,166.3	7.7	63.3	107.44	-295.1	613.0	713.0	642.1	70.87	10.060	
3,300.0	3,283.0	3,264.5	3,264.5	8.0	65.3	108.86	-295.1	613.0	719.0	645.9	73.15	9.830	
3,400.0	3,381.2	3,362.7	3,362.7	8.4	67.3	110.25	-295.1	613.0	725.5	650.1	75.42	9.619	
3,500.0	3,479.3	3,460.8	3,460.8	8.7	69.2	111.63	-295.1	613.0	732.4	654.7	77.70	9.426	
3,600.0	3,577.5	3,559.0	3,559.0	9.1	71.2	112.97	-295.1	613.0	739.7	659.7	79.97	9.250	
3,700.0	3,675.7	3,657.2	3,657.2	9.5	73.1	114.29	-295.1	613.0	747.4	665.2	82.24	9.089	
3,800.0	3,773.9	3,755.4	3,755.4	9.9	75.1	115.59	-295.1	613.0	755.6	671.1	84.51	8.941	
3,900.0	3,872.1	3,853.6	3,853.6	10.2	77.1	116.85	-295.1	613.0	764.1	677.3	86.77	8.806	
4,000.0	3,970.2	3,951.7	3,951.7	10.6	79.0	118.09	-295.1	613.0	773.0	683.9	89.03	8.682	
4,100.0	4,068.4	4,049.9	4,049.9	11.0	81.0	119.30	-295.1	613.0	782.2	690.9	91.29	8.568	
4,200.0	4,166.6	4,148.1	4,148.1	11.4	83.0	120.48	-295.1	613.0	791.8	698.3	93.55	8.464	
4,300.0	4,264.8	4,246.3	4,246.3	11.8	84.9	121.64	-295.1	613.0	801.7	705.9	95.80	8.369	
4,400.0	4,363.0	4,344.5	4,344.5	12.1	86.9	122.76	-295.1	613.0	812.0	714.0	98.05	8.282	
4,500.0	4,461.1	4,442.6	4,442.6	12.5	88.9	123.86	-295.1	613.0	822.6	722.3	100.29	8.202	
4,600.0	4,559.3	4,540.8	4,540.8	12.9	90.8	124.93	-295.1	613.0	833.4	730.9	102.53	8.129	
4,700.0	4,657.5	4,639.0	4,639.0	13.3	92.8	125.98	-295.1	613.0	844.6	739.8	104.76	8.062	
4,800.0	4,755.7	4,737.2	4,737.2	13.7	94.7	126.99	-295.1	613.0	856.0	749.0	107.00	8.000	
4,900.0	4,853.9	4,835.4	4,835.4	14.1	96.7	127.98	-295.1	613.0	867.7	758.5	109.22	7.944	
5,000.0	4,952.0	4,933.5	4,933.5	14.5	98.7	128.95	-295.1	613.0	879.6	768.2	111.45	7.893	

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 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

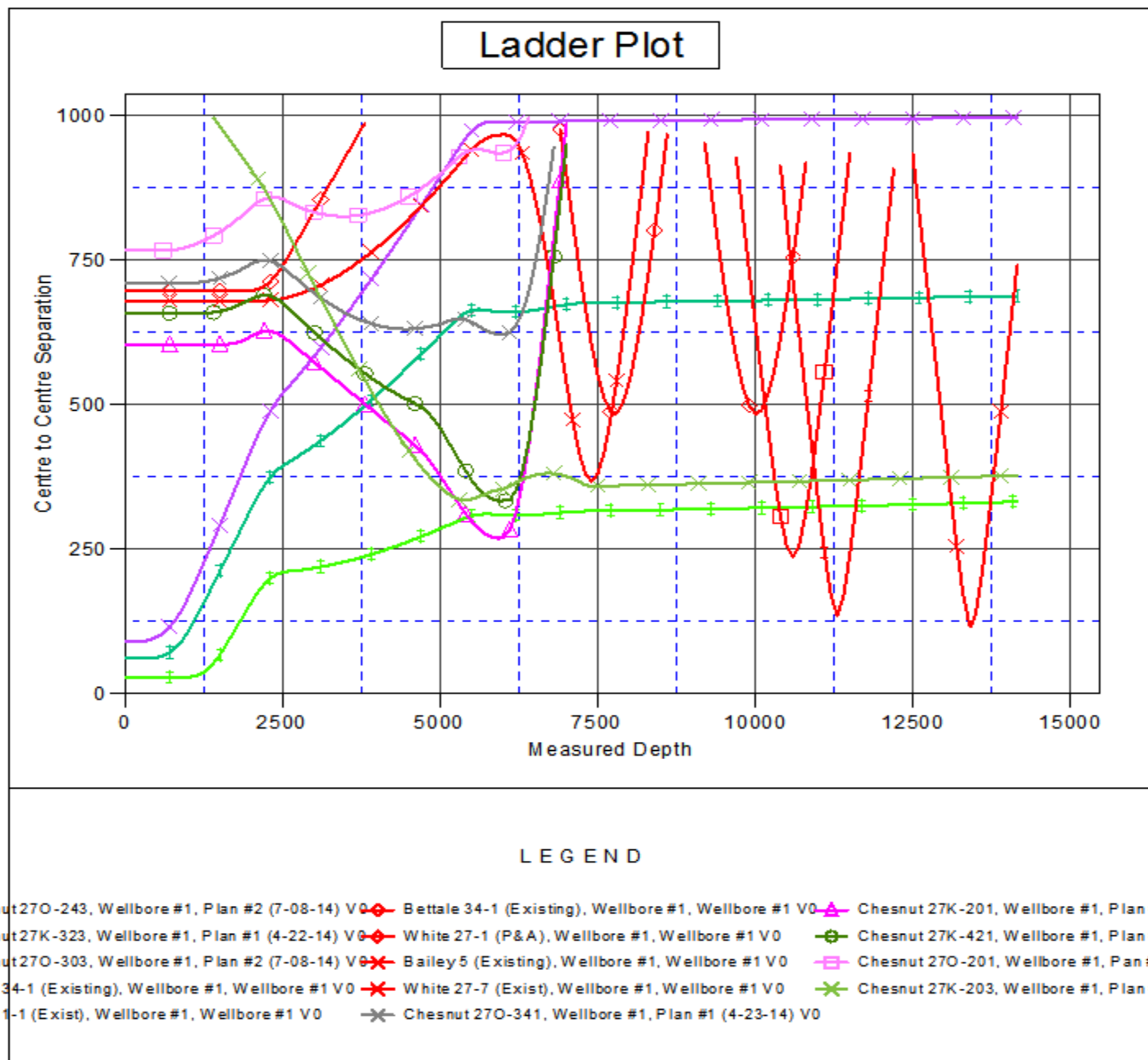
Offset Design Chesnut Existing Pad Sec.27-T5N-R64W - White 27-7 (Exist) - Wellbore #1 - Wellbore #1												Offset Site Error: 0.0 ft	
Survey Program: 6893-UNKNOWN												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance					Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		Separation Factor
5,100.0	5,050.2	5,031.7	5,031.7	14.9	100.6	129.89	-295.1	613.0	891.8	778.2	113.67	7.846	
5,200.0	5,148.4	5,129.9	5,129.9	15.3	102.6	130.80	-295.1	613.0	904.3	788.4	115.89	7.803	
5,300.0	5,246.6	5,228.1	5,228.1	15.7	104.6	131.69	-295.1	613.0	916.9	798.8	118.10	7.764	
5,400.0	5,344.8	5,326.3	5,326.3	16.1	106.5	132.56	-295.1	613.0	929.8	809.5	120.31	7.728	
5,500.0	5,443.2	5,424.7	5,424.7	16.5	108.5	133.50	-295.1	613.0	941.9	819.2	122.76	7.673	
5,600.0	5,542.2	5,523.7	5,523.7	16.7	110.5	134.26	-295.1	613.0	951.8	826.7	125.16	7.605	
5,700.0	5,641.6	5,623.1	5,623.1	17.0	112.5	134.82	-295.1	613.0	959.4	831.9	127.52	7.523	
5,800.0	5,741.3	5,722.8	5,722.8	17.2	114.5	135.20	-295.1	613.0	964.6	834.7	129.81	7.430	
5,900.0	5,841.2	5,822.7	5,822.7	17.3	116.5	135.40	-295.1	613.0	967.3	835.2	132.03	7.326	
6,000.0	5,941.2	5,922.7	5,922.7	17.5	118.5	157.66	-295.1	613.0	967.7	833.5	134.18	7.212	
6,100.0	6,041.2	6,022.7	6,022.7	17.6	120.5	-22.36	-295.1	613.0	967.1	830.9	136.24	7.099	
6,200.0	6,140.6	6,122.1	6,122.1	17.7	122.4	-22.89	-295.1	613.0	957.5	820.8	136.70	7.004	
6,300.0	6,237.8	6,219.3	6,219.3	17.6	124.4	-24.11	-295.1	613.0	935.9	800.7	135.22	6.922	
6,400.0	6,331.0	6,312.5	6,312.5	17.4	126.3	-26.15	-295.1	613.0	903.1	771.0	132.08	6.838	
6,500.0	6,418.9	6,400.4	6,400.4	17.2	128.0	-29.23	-295.1	613.0	859.8	731.9	127.91	6.722	
6,600.0	6,499.7	6,481.2	6,481.2	16.9	129.6	-33.66	-295.1	613.0	807.0	683.1	123.98	6.510	
6,700.0	6,572.2	6,553.7	6,553.7	16.6	131.1	-39.84	-295.1	613.0	746.5	624.2	122.31	6.103	
6,800.0	6,635.0	6,616.5	6,616.5	16.3	132.3	-48.10	-295.1	613.0	679.9	554.8	125.15	5.433	
6,900.0	6,687.2	6,668.7	6,668.7	16.1	133.4	-58.37	-295.1	613.0	610.0	477.1	132.90	4.590	
7,000.0	6,727.8	6,709.3	6,709.3	16.0	134.2	-69.60	-295.1	613.0	540.0	397.7	142.26	3.796	
7,100.0	6,756.2	6,737.7	6,737.7	16.1	134.8	-79.82	-295.1	613.0	474.3	325.6	148.78	3.188	
7,200.0	6,771.8	6,753.3	6,753.3	16.5	135.1	-87.15	-295.1	613.0	419.0	267.6	151.44	2.767	
7,300.0	6,775.0	6,756.5	6,756.5	17.2	135.1	-90.01	-295.1	613.0	381.4	229.1	152.27	2.505	
7,400.0	6,774.9	6,756.4	6,756.4	18.0	135.1	-90.00	-295.1	613.0	367.8	214.7	153.07	2.403	
7,401.0	6,774.9	6,756.4	6,756.4	18.0	135.1	-90.00	-295.1	613.0	367.8	214.7	153.08	2.402 CC, ES, SF	
7,500.0	6,774.8	6,756.3	6,756.3	19.0	135.1	-89.99	-295.1	613.0	380.9	226.8	154.03	2.473	
7,600.0	6,774.7	6,756.2	6,756.2	20.1	135.1	-89.97	-295.1	613.0	418.2	263.0	155.13	2.696	
7,700.0	6,774.6	6,756.1	6,756.1	21.3	135.1	-89.96	-295.1	613.0	474.0	317.6	156.35	3.032	
7,800.0	6,774.5	6,756.0	6,756.0	22.7	135.1	-89.95	-295.1	613.0	542.6	385.0	157.66	3.442	
7,900.0	6,774.5	6,756.0	6,756.0	24.1	135.1	-89.93	-295.1	613.0	619.9	460.8	159.06	3.897	
8,000.0	6,774.4	6,755.9	6,755.9	25.5	135.1	-89.92	-295.1	613.0	702.9	542.4	160.53	4.379	
8,100.0	6,774.3	6,755.8	6,755.8	27.1	135.1	-89.90	-295.1	613.0	789.9	627.8	162.05	4.874	
8,200.0	6,774.2	6,755.7	6,755.7	28.6	135.1	-89.89	-295.1	613.0	879.6	716.0	163.62	5.376	
8,300.0	6,774.1	6,755.6	6,755.6	30.2	135.1	-89.88	-295.1	613.0	971.3	806.1	165.23	5.879	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Chesnut Existing Pad Sec.27-T5N-R64W - White 34-1 (Existing) - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 7400-UNKNOWN												<b>Offset Well Error:</b>	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
10,400.0	6,772.3	6,783.8	6,783.8	67.9	135.7	-90.33	-4,196.8	381.8	913.0	709.6	203.46	4.487	
10,500.0	6,772.2	6,783.7	6,783.7	69.7	135.7	-90.29	-4,196.8	381.8	814.3	608.9	205.33	3.966	
10,600.0	6,772.1	6,783.6	6,783.6	71.6	135.7	-90.26	-4,196.8	381.8	715.9	508.7	207.20	3.455	
10,700.0	6,772.0	6,783.5	6,783.5	73.5	135.7	-90.22	-4,196.8	381.8	618.0	408.9	209.07	2.956	
10,800.0	6,771.9	6,783.4	6,783.4	75.4	135.7	-90.18	-4,196.8	381.8	521.0	310.0	210.95	2.470	
10,900.0	6,771.8	6,783.3	6,783.3	77.2	135.7	-90.15	-4,196.8	381.8	425.3	212.4	212.83	1.998	
11,000.0	6,771.8	6,783.3	6,783.3	79.1	135.7	-90.11	-4,196.8	381.8	332.1	117.4	214.71	1.547	
11,100.0	6,771.7	6,783.2	6,783.2	81.0	135.7	-90.07	-4,196.8	381.8	244.4	27.8	216.59	1.129	Level 2
11,200.0	6,771.6	6,783.1	6,783.1	82.9	135.7	-90.04	-4,196.8	381.8	170.9	-47.6	218.47	0.782	Level 1
11,300.0	6,771.5	6,783.0	6,783.0	84.8	135.7	-90.00	-4,196.8	381.8	136.6	-83.8	220.36	0.620	Level 1
11,302.7	6,771.5	6,783.0	6,783.0	84.8	135.7	-90.00	-4,196.8	381.8	136.5	-83.9	220.41	0.619	Level 1, CC, ES, SF
11,400.0	6,771.4	6,782.9	6,782.9	86.6	135.7	-89.96	-4,196.8	381.8	167.6	-54.6	222.24	0.754	Level 1
11,500.0	6,771.3	6,782.8	6,782.8	88.5	135.7	-89.93	-4,196.8	381.8	239.9	15.8	224.13	1.070	Level 2
11,600.0	6,771.2	6,782.7	6,782.7	90.4	135.7	-89.89	-4,196.8	381.8	327.1	101.1	226.02	1.447	Level 3
11,700.0	6,771.1	6,782.6	6,782.6	92.3	135.7	-89.85	-4,196.8	381.8	420.1	192.2	227.91	1.843	
11,800.0	6,771.1	6,782.6	6,782.6	94.2	135.7	-89.82	-4,196.8	381.8	515.7	285.9	229.80	2.244	
11,900.0	6,771.0	6,782.5	6,782.5	96.1	135.6	-89.78	-4,196.8	381.8	612.7	381.0	231.69	2.644	
12,000.0	6,770.9	6,782.4	6,782.4	98.0	135.6	-89.74	-4,196.8	381.8	710.5	476.9	233.58	3.042	
12,100.0	6,770.8	6,782.3	6,782.3	99.9	135.6	-89.71	-4,196.8	381.8	808.9	573.4	235.48	3.435	
12,200.0	6,770.7	6,782.2	6,782.2	101.8	135.6	-89.67	-4,196.8	381.8	907.6	670.2	237.37	3.823	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4631.5ft (Ensign 121 RKB - Coordinates are relative to: Chesnut 27K-403  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 °  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.62°



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Reference Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chesnut 27K-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 #2 (7-09-14)	<b>Offset TVD Reference:</b>	Offset Datum

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