PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Chesnut 28U-243**

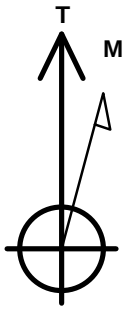
Surface Location: Chesnut 28U-HZ Pad Sec.28-T5N-R64W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4620.0

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1381411.34	3265145.21	40.376470	-104.548300	

RKB - 15' WELL @ 4635.0ft (RKB - 15')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 380'FNL & 850'FEL, SEC. 28		0.0	0.0	Point
BHL 2130'FNL & 465'FEL, SEC.33	6691.0	-7023.9	409.7	Point



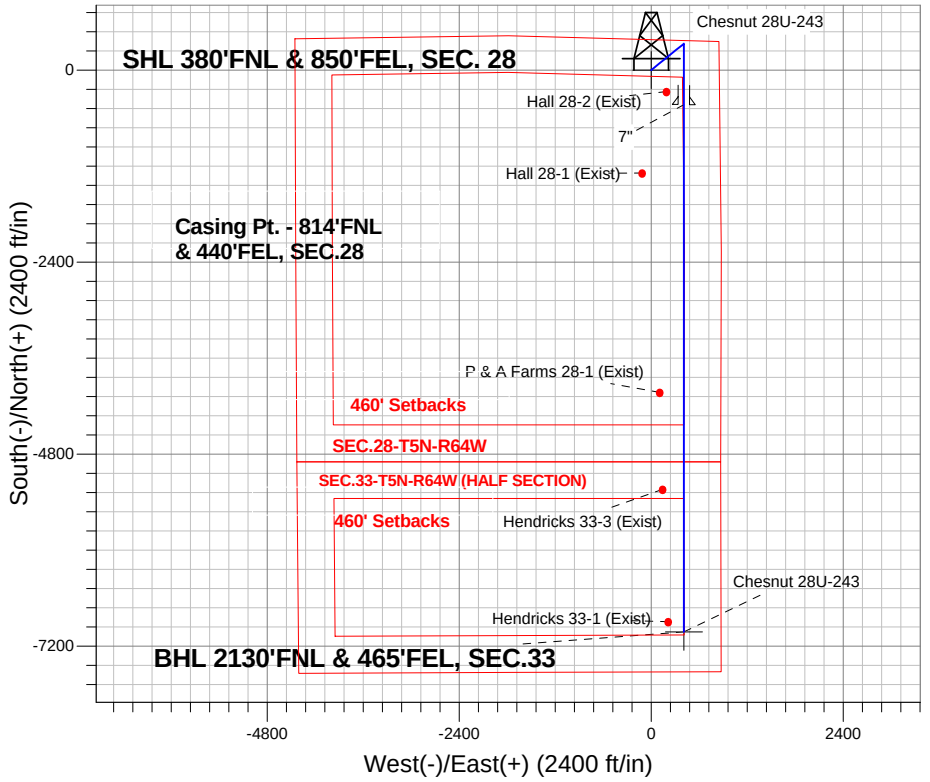
Azimuths to True North
Magnetic North: 8.39°

Magnetic Field
Strength: 52862.4snT
Dip Angle: 66.97°
Date: 2/13/2014
Model: IGRF2010

ANNOTATIONS

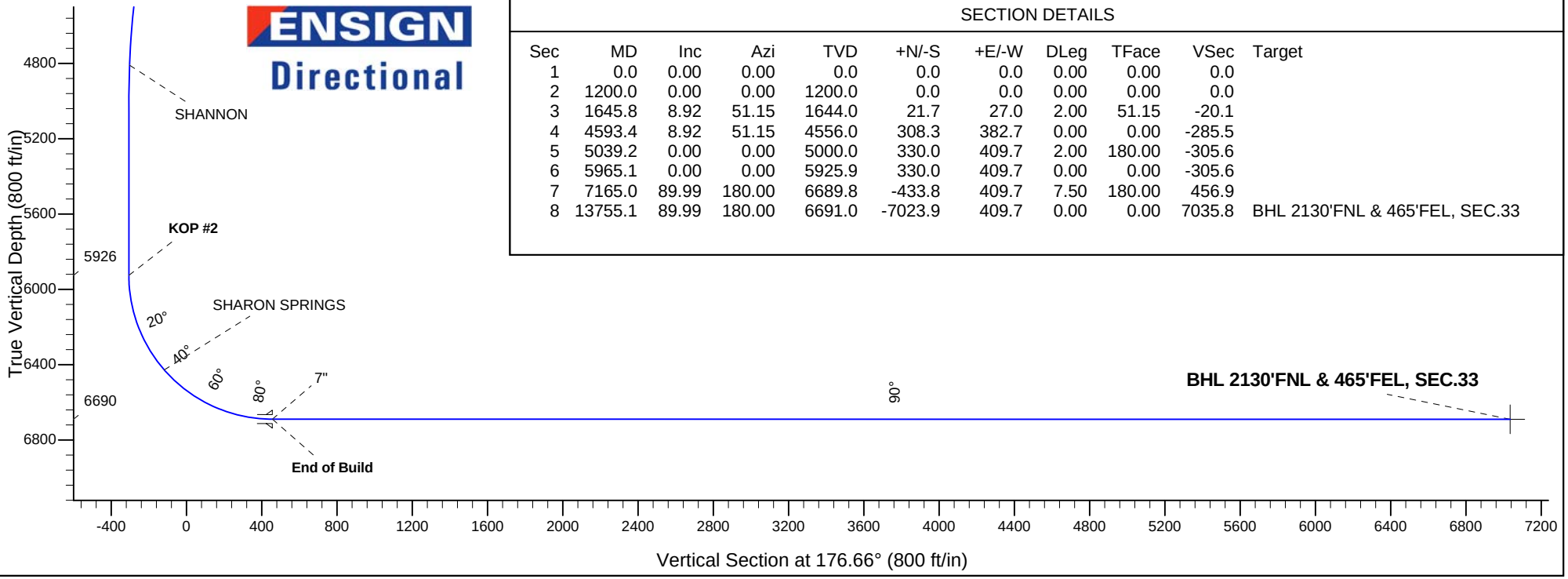
TVD	MD	Annotation
1200.0	1200.0	KOP #1
5925.9	5965.1	KOP #2
6689.8	7165.0	End of Build

Chesnut 28U-HZ Pad Sec.28-T5N-R64W
Chesnut 28U-243
Plan #1 (2-13-14)
7:28, February 14 2014



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	1200.0	0.00	0.00	1200.0	0.0	0.0	0.00	0.00	0.0	
3	1645.8	8.92	51.15	1644.0	21.7	27.0	2.00	51.15	-20.1	
4	4593.4	8.92	51.15	4556.0	308.3	382.7	0.00	0.00	-285.5	
5	5039.2	0.00	0.00	5000.0	330.0	409.7	2.00	180.00	-305.6	
6	5965.1	0.00	0.00	5925.9	330.0	409.7	0.00	0.00	-305.6	
7	7165.0	89.99	180.00	6689.8	-433.8	409.7	7.50	180.00	456.9	
8	13755.1	89.99	180.00	6691.0	-7023.9	409.7	0.00	0.00	7035.8	BHL 2130'FNL & 465'FEL, SEC.33



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.28-T5N-R64W
Chesnut 28U-HZ Pad Sec.28-T5N-R64W
Chesnut 28U-243

Wellbore #1

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

Standard Planning Report

14 February, 2014

Database:	Landmark	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Project:	SEC.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**North Reference:**	True
Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-13-14)		

Project SEC.28-T5N-R64W, Weld County, Colorado

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

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

Site Position:		**Northing:**	1,381,414.04 ft	**Latitude:**	40.376480
From:	Lat/Long	**Easting:**	3,265,056.03 ft	**Longitude:**	-104.548620
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.61 °

Well Chesnut 28U-243

Well Position	**+N/-S**	-3.7 ft	**Northing:**	1,381,411.34 ft	**Latitude:**	40.376470
	+E/-W	89.2 ft	**Easting:**	3,265,145.21 ft	**Longitude:**	-104.548300
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,620.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/13/2014	8.39	66.97	52,862

Design Plan #1 (2-13-14)

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	176.66

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,645.8	8.92	51.15	1,644.0	21.7	27.0	2.00	2.00	0.00	51.15	
4,593.4	8.92	51.15	4,556.0	308.3	382.7	0.00	0.00	0.00	0.00	
5,039.2	0.00	0.00	5,000.0	330.0	409.7	2.00	-2.00	0.00	180.00	
5,965.1	0.00	0.00	5,925.9	330.0	409.7	0.00	0.00	0.00	0.00	
7,165.0	89.99	180.00	6,689.8	-433.8	409.7	7.50	7.50	0.00	180.00	
13,755.1	89.99	180.00	6,691.0	-7,023.9	409.7	0.00	0.00	0.00	0.00	BHL 2130'FNL & 46

Database:	Landmark	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
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Project:	SEC.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**North Reference:**	True
Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-13-14)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
SHL 380'FNL & 850'FEL, SEC. 28									
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
KOP #1									
1,300.0	2.00	51.15	1,300.0	1.1	1.4	-1.0	2.00	2.00	0.00
1,400.0	4.00	51.15	1,399.8	4.4	5.4	-4.1	2.00	2.00	0.00
1,500.0	6.00	51.15	1,499.5	9.8	12.2	-9.1	2.00	2.00	0.00
1,600.0	8.00	51.15	1,598.7	17.5	21.7	-16.2	2.00	2.00	0.00
1,645.8	8.92	51.15	1,644.0	21.7	27.0	-20.1	2.00	2.00	0.00
1,700.0	8.92	51.15	1,697.5	27.0	33.5	-25.0	0.00	0.00	0.00
1,800.0	8.92	51.15	1,796.3	36.7	45.6	-34.0	0.00	0.00	0.00
1,900.0	8.92	51.15	1,895.1	46.4	57.6	-43.0	0.00	0.00	0.00
2,000.0	8.92	51.15	1,993.9	56.2	69.7	-52.0	0.00	0.00	0.00
2,100.0	8.92	51.15	2,092.7	65.9	81.8	-61.0	0.00	0.00	0.00
2,200.0	8.92	51.15	2,191.5	75.6	93.9	-70.0	0.00	0.00	0.00
2,300.0	8.92	51.15	2,290.3	85.3	105.9	-79.0	0.00	0.00	0.00
2,400.0	8.92	51.15	2,389.1	95.0	118.0	-88.0	0.00	0.00	0.00
2,500.0	8.92	51.15	2,487.9	104.8	130.1	-97.0	0.00	0.00	0.00
2,600.0	8.92	51.15	2,586.7	114.5	142.1	-106.0	0.00	0.00	0.00
2,700.0	8.92	51.15	2,685.5	124.2	154.2	-115.0	0.00	0.00	0.00
2,800.0	8.92	51.15	2,784.3	133.9	166.3	-124.0	0.00	0.00	0.00
2,900.0	8.92	51.15	2,883.0	143.6	178.3	-133.0	0.00	0.00	0.00
3,000.0	8.92	51.15	2,981.8	153.4	190.4	-142.0	0.00	0.00	0.00
3,100.0	8.92	51.15	3,080.6	163.1	202.5	-151.0	0.00	0.00	0.00
3,200.0	8.92	51.15	3,179.4	172.8	214.6	-160.0	0.00	0.00	0.00
3,300.0	8.92	51.15	3,278.2	182.5	226.6	-169.0	0.00	0.00	0.00
3,400.0	8.92	51.15	3,377.0	192.3	238.7	-178.0	0.00	0.00	0.00
3,440.5	8.92	51.15	3,417.0	196.2	243.6	-181.7	0.00	0.00	0.00
PARKMAN									
3,500.0	8.92	51.15	3,475.8	202.0	250.8	-187.0	0.00	0.00	0.00
3,600.0	8.92	51.15	3,574.6	211.7	262.8	-196.0	0.00	0.00	0.00
3,700.0	8.92	51.15	3,673.4	221.4	274.9	-205.0	0.00	0.00	0.00
3,800.0	8.92	51.15	3,772.2	231.1	287.0	-214.0	0.00	0.00	0.00
3,900.0	8.92	51.15	3,871.0	240.9	299.0	-223.0	0.00	0.00	0.00
4,000.0	8.92	51.15	3,969.8	250.6	311.1	-232.1	0.00	0.00	0.00
4,100.0	8.92	51.15	4,068.5	260.3	323.2	-241.1	0.00	0.00	0.00
4,156.1	8.92	51.15	4,124.0	265.8	330.0	-246.1	0.00	0.00	0.00
SUSSEX									
4,200.0	8.92	51.15	4,167.3	270.0	335.3	-250.1	0.00	0.00	0.00
4,300.0	8.92	51.15	4,266.1	279.8	347.3	-259.1	0.00	0.00	0.00
4,400.0	8.92	51.15	4,364.9	289.5	359.4	-268.1	0.00	0.00	0.00

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Project:	SEC.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**North Reference:**	True
Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-13-14)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,500.0	8.92	51.15	4,463.7	299.2	371.5	-277.1	0.00	0.00	0.00
4,593.4	8.92	51.15	4,556.0	308.3	382.7	-285.5	0.00	0.00	0.00
4,600.0	8.78	51.15	4,562.5	308.9	383.5	-286.1	2.00	-2.00	0.00
4,700.0	6.78	51.15	4,661.6	317.4	394.1	-293.9	2.00	-2.00	0.00
4,800.0	4.78	51.15	4,761.1	323.7	401.9	-299.8	2.00	-2.00	0.00
4,849.1	3.80	51.15	4,810.0	326.0	404.8	-301.9	2.00	-2.00	0.00
SHANNON									
4,900.0	2.78	51.15	4,860.8	327.9	407.1	-303.6	2.00	-2.00	0.00
5,000.0	0.78	51.15	4,960.8	329.8	409.5	-305.4	2.00	-2.00	0.00
5,039.2	0.00	0.00	5,000.0	330.0	409.7	-305.6	2.00	-2.00	0.00
5,100.0	0.00	0.00	5,060.8	330.0	409.7	-305.6	0.00	0.00	0.00
5,200.0	0.00	0.00	5,160.8	330.0	409.7	-305.6	0.00	0.00	0.00
5,300.0	0.00	0.00	5,260.8	330.0	409.7	-305.6	0.00	0.00	0.00
5,400.0	0.00	0.00	5,360.8	330.0	409.7	-305.6	0.00	0.00	0.00
5,500.0	0.00	0.00	5,460.8	330.0	409.7	-305.6	0.00	0.00	0.00
5,600.0	0.00	0.00	5,560.8	330.0	409.7	-305.6	0.00	0.00	0.00
5,700.0	0.00	0.00	5,660.8	330.0	409.7	-305.6	0.00	0.00	0.00
5,800.0	0.00	0.00	5,760.8	330.0	409.7	-305.6	0.00	0.00	0.00
5,900.0	0.00	0.00	5,860.8	330.0	409.7	-305.6	0.00	0.00	0.00
5,965.1	0.00	0.00	5,925.9	330.0	409.7	-305.6	0.00	0.00	0.00
KOP #2									
6,000.0	2.62	180.00	5,960.8	329.2	409.7	-304.8	7.50	7.50	0.00
6,100.0	10.12	180.00	6,060.1	318.1	409.7	-293.7	7.50	7.50	0.00
6,200.0	17.62	180.00	6,157.1	294.2	409.7	-269.8	7.50	7.50	0.00
6,300.0	25.12	180.00	6,250.2	257.8	409.7	-233.5	7.50	7.50	0.00
6,400.0	32.62	180.00	6,337.7	209.5	409.7	-185.3	7.50	7.50	0.00
6,500.0	40.12	180.00	6,418.1	150.3	409.7	-126.2	7.50	7.50	0.00
6,513.0	41.09	180.00	6,428.0	141.8	409.7	-117.7	7.50	7.50	0.00
SHARON SPRINGS									
6,600.0	47.62	180.00	6,490.2	81.0	409.7	-57.0	7.50	7.50	0.00
6,700.0	55.12	180.00	6,552.6	3.0	409.7	20.9	7.50	7.50	0.00
6,800.0	62.62	180.00	6,604.2	-82.6	409.7	106.3	7.50	7.50	0.00
6,900.0	70.12	180.00	6,644.3	-174.1	409.7	197.7	7.50	7.50	0.00
7,000.0	77.62	180.00	6,672.1	-270.1	409.7	293.5	7.50	7.50	0.00
7,100.0	85.12	180.00	6,687.1	-368.9	409.7	392.1	7.50	7.50	0.00
7,165.0	89.99	180.00	6,689.8	-433.8	409.7	456.9	7.50	7.50	0.00
End of Build - 7"									
7,200.0	89.99	180.00	6,689.9	-468.8	409.7	491.9	0.00	0.00	0.00
7,300.0	89.99	180.00	6,689.9	-568.8	409.7	591.7	0.00	0.00	0.00
7,400.0	89.99	180.00	6,689.9	-668.8	409.7	691.5	0.00	0.00	0.00
7,500.0	89.99	180.00	6,689.9	-768.8	409.7	791.4	0.00	0.00	0.00
7,600.0	89.99	180.00	6,689.9	-868.8	409.7	891.2	0.00	0.00	0.00
7,700.0	89.99	180.00	6,689.9	-968.8	409.7	991.0	0.00	0.00	0.00
7,800.0	89.99	180.00	6,690.0	-1,068.8	409.7	1,090.9	0.00	0.00	0.00
7,900.0	89.99	180.00	6,690.0	-1,168.8	409.7	1,190.7	0.00	0.00	0.00
8,000.0	89.99	180.00	6,690.0	-1,268.8	409.7	1,290.5	0.00	0.00	0.00
8,100.0	89.99	180.00	6,690.0	-1,368.8	409.7	1,390.4	0.00	0.00	0.00
8,200.0	89.99	180.00	6,690.0	-1,468.8	409.7	1,490.2	0.00	0.00	0.00
8,300.0	89.99	180.00	6,690.0	-1,568.8	409.7	1,590.0	0.00	0.00	0.00
8,400.0	89.99	180.00	6,690.1	-1,668.8	409.7	1,689.9	0.00	0.00	0.00
8,500.0	89.99	180.00	6,690.1	-1,768.8	409.7	1,789.7	0.00	0.00	0.00
8,600.0	89.99	180.00	6,690.1	-1,868.8	409.7	1,889.5	0.00	0.00	0.00

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Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-13-14)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,700.0	89.99	180.00	6,690.1	-1,968.8	409.7	1,989.3	0.00	0.00	0.00
8,800.0	89.99	180.00	6,690.1	-2,068.8	409.7	2,089.2	0.00	0.00	0.00
8,900.0	89.99	180.00	6,690.2	-2,168.8	409.7	2,189.0	0.00	0.00	0.00
9,000.0	89.99	180.00	6,690.2	-2,268.8	409.7	2,288.8	0.00	0.00	0.00
9,100.0	89.99	180.00	6,690.2	-2,368.8	409.7	2,388.7	0.00	0.00	0.00
9,200.0	89.99	180.00	6,690.2	-2,468.8	409.7	2,488.5	0.00	0.00	0.00
9,300.0	89.99	180.00	6,690.2	-2,568.8	409.7	2,588.3	0.00	0.00	0.00
9,400.0	89.99	180.00	6,690.2	-2,668.8	409.7	2,688.2	0.00	0.00	0.00
9,500.0	89.99	180.00	6,690.3	-2,768.8	409.7	2,788.0	0.00	0.00	0.00
9,600.0	89.99	180.00	6,690.3	-2,868.8	409.7	2,887.8	0.00	0.00	0.00
9,700.0	89.99	180.00	6,690.3	-2,968.8	409.7	2,987.6	0.00	0.00	0.00
9,800.0	89.99	180.00	6,690.3	-3,068.8	409.7	3,087.5	0.00	0.00	0.00
9,900.0	89.99	180.00	6,690.3	-3,168.8	409.7	3,187.3	0.00	0.00	0.00
10,000.0	89.99	180.00	6,690.3	-3,268.8	409.7	3,287.1	0.00	0.00	0.00
10,100.0	89.99	180.00	6,690.4	-3,368.8	409.7	3,387.0	0.00	0.00	0.00
10,200.0	89.99	180.00	6,690.4	-3,468.8	409.7	3,486.8	0.00	0.00	0.00
10,300.0	89.99	180.00	6,690.4	-3,568.8	409.7	3,586.6	0.00	0.00	0.00
10,400.0	89.99	180.00	6,690.4	-3,668.8	409.7	3,686.5	0.00	0.00	0.00
10,500.0	89.99	180.00	6,690.4	-3,768.8	409.7	3,786.3	0.00	0.00	0.00
10,600.0	89.99	180.00	6,690.4	-3,868.8	409.7	3,886.1	0.00	0.00	0.00
10,700.0	89.99	180.00	6,690.5	-3,968.8	409.7	3,985.9	0.00	0.00	0.00
10,800.0	89.99	180.00	6,690.5	-4,068.8	409.7	4,085.8	0.00	0.00	0.00
10,900.0	89.99	180.00	6,690.5	-4,168.8	409.7	4,185.6	0.00	0.00	0.00
11,000.0	89.99	180.00	6,690.5	-4,268.8	409.7	4,285.4	0.00	0.00	0.00
11,100.0	89.99	180.00	6,690.5	-4,368.8	409.7	4,385.3	0.00	0.00	0.00
11,200.0	89.99	180.00	6,690.6	-4,468.8	409.7	4,485.1	0.00	0.00	0.00
11,300.0	89.99	180.00	6,690.6	-4,568.8	409.7	4,584.9	0.00	0.00	0.00
11,400.0	89.99	180.00	6,690.6	-4,668.8	409.7	4,684.8	0.00	0.00	0.00
11,500.0	89.99	180.00	6,690.6	-4,768.8	409.7	4,784.6	0.00	0.00	0.00
11,600.0	89.99	180.00	6,690.6	-4,868.8	409.7	4,884.4	0.00	0.00	0.00
11,700.0	89.99	180.00	6,690.6	-4,968.8	409.7	4,984.3	0.00	0.00	0.00
11,800.0	89.99	180.00	6,690.7	-5,068.8	409.7	5,084.1	0.00	0.00	0.00
11,900.0	89.99	180.00	6,690.7	-5,168.8	409.7	5,183.9	0.00	0.00	0.00
12,000.0	89.99	180.00	6,690.7	-5,268.8	409.7	5,283.7	0.00	0.00	0.00
12,100.0	89.99	180.00	6,690.7	-5,368.8	409.7	5,383.6	0.00	0.00	0.00
12,200.0	89.99	180.00	6,690.7	-5,468.8	409.7	5,483.4	0.00	0.00	0.00
12,300.0	89.99	180.00	6,690.7	-5,568.8	409.7	5,583.2	0.00	0.00	0.00
12,400.0	89.99	180.00	6,690.8	-5,668.8	409.7	5,683.1	0.00	0.00	0.00
12,500.0	89.99	180.00	6,690.8	-5,768.8	409.7	5,782.9	0.00	0.00	0.00
12,600.0	89.99	180.00	6,690.8	-5,868.8	409.7	5,882.7	0.00	0.00	0.00
12,700.0	89.99	180.00	6,690.8	-5,968.8	409.7	5,982.6	0.00	0.00	0.00
12,800.0	89.99	180.00	6,690.8	-6,068.8	409.7	6,082.4	0.00	0.00	0.00
12,900.0	89.99	180.00	6,690.9	-6,168.8	409.7	6,182.2	0.00	0.00	0.00
13,000.0	89.99	180.00	6,690.9	-6,268.8	409.7	6,282.0	0.00	0.00	0.00
13,100.0	89.99	180.00	6,690.9	-6,368.8	409.7	6,381.9	0.00	0.00	0.00
13,200.0	89.99	180.00	6,690.9	-6,468.8	409.7	6,481.7	0.00	0.00	0.00
13,300.0	89.99	180.00	6,690.9	-6,568.8	409.7	6,581.5	0.00	0.00	0.00
13,400.0	89.99	180.00	6,690.9	-6,668.8	409.7	6,681.4	0.00	0.00	0.00
13,500.0	89.99	180.00	6,691.0	-6,768.8	409.7	6,781.2	0.00	0.00	0.00
13,600.0	89.99	180.00	6,691.0	-6,868.8	409.7	6,881.0	0.00	0.00	0.00
13,700.0	89.99	180.00	6,691.0	-6,968.8	409.7	6,980.9	0.00	0.00	0.00
13,755.1	89.99	180.00	6,691.0	-7,023.9	409.7	7,035.8	0.00	0.00	0.00

BHL 2130'FNL & 465'FEL, SEC.33

Database:	Landmark	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Project:	SEC.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**North Reference:**	True
Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-13-14)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,165.0	6,689.8	7"	7	7-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,440.5	3,417.0	PARKMAN		0.00	
4,156.1	4,124.0	SUSSEX		0.00	
4,849.1	4,810.0	SHANNON		0.00	
6,513.0	6,428.0	SHARON SPRINGS		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
1,200.0	1,200.0	0.0	0.0	KOP #1
5,965.1	5,925.9	330.0	409.7	KOP #2
7,165.0	6,689.8	-433.8	409.7	End of Build

ENSIGN Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.28-T5N-R64W
Chesnut 28U-HZ Pad Sec.28-T5N-R64W
Chesnut 28U-243

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

Anticollision Report

14 February, 2014

PDC ENERGY
Growing E&P Value

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Reference Plan #1 (2-13-14)

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0ft	**Error Surface:**	Elliptical Conic

Warning Levels Evaluated at: 2.00 **Sigma**

Survey Tool Program **Date** 2/13/2014

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	13,755.1	Plan #1 (2-13-14) (Wellbore #1)	MWD	MWD - Standard

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Chesnut 28U-HZ Pad Sec.28-T5N-R64W						
Chesnut 28R-323 - Wellbore #1 - Plan #1 (2-13-14)	1,200.0	1,200.0	61.3	56.1	11.857	CC, ES
Chesnut 28R-323 - Wellbore #1 - Plan #1 (2-13-14)	13,755.1	13,815.7	423.5	149.7	1.547	SF
Chesnut 28R-403 - Wellbore #1 - Plan #1 (2-13-14)	1,000.0	1,000.0	89.2	85.0	20.895	CC, ES
Chesnut 28R-403 - Wellbore #1 - Plan #1 (2-13-14)	13,755.1	13,841.4	798.2	525.4	2.926	SF
Chesnut 28R-423 - Wellbore #1 - Plan #1 (2-13-14)	1,200.0	1,200.0	30.6	25.5	5.928	CC
Chesnut 28R-423 - Wellbore #1 - Plan #1 (2-13-14)	13,755.1	13,842.4	130.2	-88.7	0.595	Level 1, ES, SF
Chesnut 28U-403 - Wellbore #1 - Plan #1 (2-13-14)	1,000.0	999.0	30.6	26.4	7.180	CC
Chesnut 28U-403 - Wellbore #1 - Plan #1 (2-13-14)	13,755.1	13,871.7	278.7	17.5	1.067	Level 2, ES, SF
Existing Wells - Chesnut Pads - Sec.28-T5N-R64W						
Hall 28-1 (Exist) - Wellbore #1 - Wellbore #1	8,017.2	6,670.0	523.9	360.8	3.211	CC, ES, SF
Hall 28-2 (Exist) - Wellbore #1 - Wellbore #1	6,999.5	6,652.0	220.2	71.1	1.477	Level 3, CC
Hall 28-2 (Exist) - Wellbore #1 - Wellbore #1	7,000.0	6,652.1	220.2	71.1	1.477	Level 3, ES, SF
Hendricks 33-1 (Exist) - Wellbore #1 - Wellbore #1	13,627.6	6,714.0	197.9	-70.8	0.736	Level 1, CC, ES, SF
Hendricks 33-3 (Exist) - Wellbore #1 - Wellbore #1	11,973.6	6,698.7	267.6	30.7	1.130	Level 2, CC, ES, SF
P & A Farms 28-1 (Exist) - Wellbore #1 - Wellbore #1	10,760.4	6,708.5	303.8	89.7	1.419	Level 3, CC, ES, SF
P & A Farms 28-2 (Exist) - Wellbore #1 - Wellbore #1	9,663.9	6,689.3	649.3	456.2	3.363	CC, ES
P & A Farms 28-2 (Exist) - Wellbore #1 - Wellbore #1	9,700.0	6,689.3	650.3	456.6	3.356	SF

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-323 - Wellbore #1 - Plan #1 (2-13-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-90.00	0.0	-61.3	61.3				
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-61.3	61.3	61.1	0.22	272.711	
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-61.3	61.3	60.6	0.67	90.904	
300.0	300.0	300.0	300.0	0.6	0.6	-90.00	0.0	-61.3	61.3	60.2	1.12	54.542	
400.0	400.0	400.0	400.0	0.8	0.8	-90.00	0.0	-61.3	61.3	59.7	1.57	38.959	
500.0	500.0	500.0	500.0	1.0	1.0	-90.00	0.0	-61.3	61.3	59.3	2.02	30.301	
600.0	600.0	600.0	600.0	1.2	1.2	-90.00	0.0	-61.3	61.3	58.8	2.47	24.792	
700.0	700.0	700.0	700.0	1.5	1.5	-90.00	0.0	-61.3	61.3	58.4	2.92	20.978	
800.0	800.0	800.0	800.0	1.7	1.7	-90.00	0.0	-61.3	61.3	57.9	3.37	18.181	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-323 - Wellbore #1 - Plan #1 (2-13-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
900.0	900.0	900.0	900.0	1.9	1.9	-90.00	0.0	-61.3	61.3	57.5	3.82	16.042	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-90.00	0.0	-61.3	61.3	57.0	4.27	14.353	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-90.00	0.0	-61.3	61.3	56.6	4.72	12.986	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-90.00	0.0	-61.3	61.3	56.1	5.17	11.857	CC, ES
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-142.14	0.0	-61.3	62.7	57.1	5.61	11.166	
1,400.0	1,399.8	1,399.8	1,399.8	3.0	3.0	-144.84	0.0	-61.3	66.9	60.8	6.05	11.059	
1,500.0	1,499.5	1,499.5	1,499.5	3.3	3.3	-148.64	0.0	-61.3	74.2	67.7	6.48	11.449	
1,600.0	1,598.7	1,598.7	1,598.7	3.5	3.5	-152.82	0.0	-61.3	84.8	77.9	6.91	12.285	
1,700.0	1,697.5	1,697.5	1,697.5	3.8	3.7	-156.79	0.0	-61.3	98.6	91.2	7.34	13.430	
1,800.0	1,796.3	1,796.3	1,796.3	4.0	3.9	-159.88	0.0	-61.3	113.0	105.2	7.78	14.515	
1,900.0	1,895.1	1,895.1	1,895.1	4.3	4.1	-162.27	0.0	-61.3	127.7	119.4	8.23	15.508	
2,000.0	1,993.9	1,993.9	1,993.9	4.6	4.4	-164.17	0.0	-61.3	142.5	133.9	8.68	16.414	
2,100.0	2,092.7	2,095.5	2,095.5	4.9	4.6	-165.25	1.6	-61.1	156.7	147.5	9.14	17.139	
2,200.0	2,191.5	2,197.9	2,197.7	5.3	4.8	-165.12	6.8	-60.3	169.0	159.4	9.60	17.591	
2,300.0	2,290.3	2,300.5	2,299.9	5.6	5.1	-164.01	15.6	-59.1	179.4	169.3	10.08	17.801	
2,400.0	2,389.1	2,399.9	2,398.8	5.9	5.3	-162.62	25.8	-57.6	189.0	178.4	10.55	17.908	
2,500.0	2,487.9	2,499.4	2,497.7	6.3	5.5	-161.36	36.0	-56.1	198.7	187.7	11.04	18.001	
2,600.0	2,586.7	2,598.8	2,596.6	6.6	5.8	-160.22	46.2	-54.7	208.5	197.0	11.53	18.080	
2,700.0	2,685.5	2,698.2	2,695.5	6.9	6.0	-159.18	56.3	-53.2	218.4	206.4	12.04	18.149	
2,800.0	2,784.3	2,797.7	2,794.4	7.3	6.3	-158.24	66.5	-51.7	228.4	215.9	12.54	18.207	
2,900.0	2,883.0	2,897.1	2,893.3	7.6	6.5	-157.37	76.7	-50.3	238.4	225.4	13.06	18.257	
3,000.0	2,981.8	2,996.5	2,992.2	8.0	6.8	-156.57	86.9	-48.8	248.5	234.9	13.58	18.299	
3,100.0	3,080.6	3,096.0	3,091.1	8.3	7.0	-155.84	97.1	-47.3	258.6	244.5	14.10	18.334	
3,200.0	3,179.4	3,195.4	3,190.0	8.7	7.3	-155.16	107.3	-45.9	268.7	254.1	14.63	18.364	
3,300.0	3,278.2	3,294.8	3,288.9	9.0	7.5	-154.53	117.5	-44.4	278.9	263.7	15.17	18.388	
3,400.0	3,377.0	3,394.3	3,387.8	9.4	7.8	-153.94	127.7	-42.9	289.1	273.4	15.71	18.409	
3,500.0	3,475.8	3,493.7	3,486.7	9.7	8.1	-153.39	137.9	-41.5	299.4	283.1	16.25	18.426	
3,600.0	3,574.6	3,593.1	3,585.6	10.1	8.3	-152.88	148.1	-40.0	309.6	292.8	16.79	18.439	
3,700.0	3,673.4	3,692.6	3,684.5	10.4	8.6	-152.40	158.3	-38.5	319.9	302.6	17.34	18.450	
3,800.0	3,772.2	3,792.0	3,783.4	10.8	8.9	-151.96	168.4	-37.1	330.2	312.3	17.89	18.459	
3,900.0	3,871.0	3,891.4	3,882.3	11.1	9.1	-151.54	178.6	-35.6	340.6	322.1	18.44	18.465	
4,000.0	3,969.8	3,990.9	3,981.2	11.5	9.4	-151.14	188.8	-34.1	350.9	331.9	19.00	18.470	
4,100.0	4,068.5	4,090.3	4,080.1	11.9	9.7	-150.77	199.0	-32.6	361.3	341.7	19.56	18.473	
4,200.0	4,167.3	4,189.7	4,179.0	12.2	10.0	-150.42	209.2	-31.2	371.6	351.5	20.12	18.476	
4,300.0	4,266.1	4,289.2	4,277.9	12.6	10.2	-150.08	219.4	-29.7	382.0	361.3	20.68	18.477	
4,400.0	4,364.9	4,388.6	4,376.8	12.9	10.5	-149.77	229.6	-28.2	392.4	371.2	21.24	18.477	
4,500.0	4,463.7	4,488.1	4,475.7	13.3	10.8	-149.47	239.8	-26.8	402.8	381.0	21.80	18.476	
4,600.0	4,562.5	4,587.5	4,574.6	13.7	11.1	-149.19	250.0	-25.3	413.3	390.9	22.37	18.473	
4,700.0	4,661.6	4,687.1	4,673.7	13.9	11.4	-148.87	260.2	-23.8	422.0	399.1	22.92	18.414	
4,800.0	4,761.1	4,786.8	4,772.9	14.2	11.6	-148.30	270.4	-22.4	427.8	404.4	23.45	18.242	
4,900.0	4,860.8	4,886.5	4,872.1	14.4	11.9	-147.46	280.6	-20.9	430.7	406.7	23.97	17.969	
5,000.0	4,960.8	4,986.2	4,971.2	14.5	12.2	-146.35	290.8	-19.4	430.8	406.3	24.47	17.604	
5,100.0	5,060.8	5,085.6	5,070.1	14.7	12.5	-93.88	301.0	-18.0	428.7	403.8	24.99	17.156	
5,200.0	5,160.8	5,185.1	5,169.0	14.8	12.8	-92.52	311.2	-16.5	426.7	401.2	25.54	16.708	
5,300.0	5,260.8	5,283.0	5,266.5	15.0	13.0	-91.27	320.6	-15.2	425.0	398.9	26.05	16.314	
5,400.0	5,360.8	5,380.5	5,363.8	15.2	13.2	-90.43	326.8	-14.3	424.0	397.5	26.49	16.008	
5,500.0	5,460.8	5,478.4	5,461.6	15.3	13.4	-90.04	329.7	-13.8	423.5	396.7	26.87	15.762	
5,554.8	5,515.5	5,532.3	5,515.5	15.4	13.5	-90.00	330.0	-13.8	423.5	396.4	27.07	15.646	
5,600.0	5,560.8	5,577.6	5,560.8	15.5	13.6	-90.00	330.0	-13.8	423.5	396.3	27.23	15.550	
5,700.0	5,660.8	5,677.6	5,660.8	15.7	13.8	-90.00	330.0	-13.8	423.5	395.9	27.62	15.333	
5,800.0	5,760.8	5,777.6	5,760.8	15.8	14.0	-90.00	330.0	-13.8	423.5	395.5	28.01	15.118	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-323 - Wellbore #1 - Plan #1 (2-13-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,900.0	5,860.8	5,877.6	5,860.8	16.0	14.2	-90.00	330.0	-13.8	423.5	395.1	28.41	14.909	
5,954.1	5,914.9	5,931.7	5,914.9	16.1	14.3	90.09	330.0	-13.8	423.5	394.9	28.62	14.798	
6,000.0	5,960.8	5,977.6	5,960.8	16.2	14.4	90.11	330.0	-13.8	423.5	394.7	28.80	14.707	
6,100.0	6,060.1	6,077.6	6,060.8	16.3	14.5	91.36	328.2	-13.8	423.6	394.5	29.12	14.546	
6,200.0	6,157.1	6,179.1	6,161.3	16.3	14.6	92.80	314.6	-13.8	424.0	394.7	29.28	14.481	
6,300.0	6,250.2	6,282.0	6,260.5	16.3	14.6	94.19	287.2	-13.8	424.6	395.4	29.29	14.498	
6,400.0	6,337.7	6,386.5	6,356.4	16.2	14.6	95.52	246.1	-13.8	425.5	396.3	29.20	14.572	
6,500.0	6,418.1	6,492.4	6,447.1	16.1	14.5	96.76	191.5	-13.8	426.5	397.4	29.09	14.663	
6,600.0	6,490.2	6,599.8	6,530.3	16.0	14.5	97.88	123.9	-13.8	427.6	398.5	29.05	14.718	
6,700.0	6,552.6	6,708.4	6,604.1	16.0	14.6	98.85	44.4	-13.8	428.6	399.4	29.22	14.670	
6,800.0	6,604.2	6,818.2	6,666.5	16.0	14.9	99.67	-45.9	-13.8	429.6	399.9	29.70	14.464	
6,900.0	6,644.3	6,928.9	6,715.6	16.3	15.4	100.30	-145.0	-13.8	430.4	399.8	30.60	14.068	
7,000.0	6,672.1	7,040.3	6,750.1	16.8	16.1	100.75	-250.8	-13.8	431.1	399.1	31.95	13.491	
7,100.0	6,687.1	7,152.2	6,768.9	17.7	17.0	100.99	-361.1	-13.8	431.4	397.6	33.76	12.780	
7,200.0	6,689.9	7,261.2	6,772.0	18.7	18.2	100.98	-469.9	-13.8	431.4	395.5	35.90	12.016	
7,300.0	6,689.9	7,361.2	6,770.7	19.8	19.3	100.80	-569.9	-13.8	431.1	392.9	38.20	11.286	
7,400.0	6,689.9	7,461.2	6,769.3	21.0	20.6	100.62	-669.9	-13.8	430.9	390.2	40.72	10.582	
7,500.0	6,689.9	7,561.2	6,768.0	22.4	22.0	100.45	-769.9	-13.8	430.6	387.2	43.42	9.917	
7,600.0	6,689.9	7,661.2	6,766.7	23.8	23.4	100.27	-869.8	-13.8	430.4	384.1	46.28	9.299	
7,700.0	6,689.9	7,761.2	6,765.4	25.3	24.9	100.10	-969.8	-13.8	430.2	380.9	49.28	8.730	
7,800.0	6,690.0	7,861.1	6,764.0	26.8	26.5	99.92	-1,069.8	-13.8	429.9	377.5	52.38	8.209	
7,900.0	6,690.0	7,961.1	6,762.7	28.4	28.1	99.74	-1,169.8	-13.8	429.7	374.1	55.56	7.733	
8,000.0	6,690.0	8,061.1	6,761.4	30.0	29.8	99.57	-1,269.8	-13.8	429.5	370.6	58.83	7.300	
8,100.0	6,690.0	8,161.1	6,760.1	31.7	31.4	99.39	-1,369.8	-13.8	429.2	367.1	62.16	6.905	
8,200.0	6,690.0	8,261.1	6,758.7	33.4	33.1	99.21	-1,469.7	-13.8	429.0	363.5	65.55	6.545	
8,300.0	6,690.0	8,361.1	6,757.4	35.1	34.9	99.04	-1,569.7	-13.8	428.8	359.8	68.98	6.216	
8,400.0	6,690.1	8,461.1	6,756.1	36.8	36.6	98.86	-1,669.7	-13.8	428.6	356.1	72.46	5.915	
8,500.0	6,690.1	8,561.1	6,754.7	38.5	38.4	98.68	-1,769.7	-13.8	428.4	352.4	75.97	5.639	
8,600.0	6,690.1	8,661.1	6,753.4	40.3	40.1	98.50	-1,869.7	-13.8	428.2	348.7	79.51	5.385	
8,700.0	6,690.1	8,761.1	6,752.1	42.1	41.9	98.33	-1,969.6	-13.8	428.0	344.9	83.08	5.152	
8,800.0	6,690.1	8,861.1	6,750.8	43.8	43.7	98.15	-2,069.6	-13.8	427.8	341.1	86.67	4.936	
8,900.0	6,690.2	8,961.0	6,749.4	45.6	45.5	97.97	-2,169.6	-13.8	427.6	337.3	90.29	4.736	
9,000.0	6,690.2	9,061.0	6,748.1	47.4	47.4	97.79	-2,269.6	-13.8	427.4	333.5	93.93	4.551	
9,100.0	6,690.2	9,161.0	6,746.8	49.3	49.2	97.61	-2,369.6	-13.8	427.3	329.7	97.58	4.379	
9,200.0	6,690.2	9,261.0	6,745.5	51.1	51.0	97.43	-2,469.6	-13.8	427.1	325.8	101.25	4.218	
9,300.0	6,690.2	9,361.0	6,744.1	52.9	52.9	97.26	-2,569.5	-13.8	426.9	322.0	104.93	4.069	
9,400.0	6,690.2	9,461.0	6,742.8	54.8	54.7	97.08	-2,669.5	-13.8	426.7	318.1	108.63	3.929	
9,500.0	6,690.3	9,561.0	6,741.5	56.6	56.6	96.90	-2,769.5	-13.8	426.6	314.2	112.33	3.797	
9,600.0	6,690.3	9,661.0	6,740.2	58.4	58.4	96.72	-2,869.5	-13.8	426.4	310.4	116.05	3.674	
9,700.0	6,690.3	9,761.0	6,738.8	60.3	60.3	96.54	-2,969.5	-13.8	426.3	306.5	119.78	3.559	
9,800.0	6,690.3	9,861.0	6,737.5	62.1	62.1	96.36	-3,069.5	-13.8	426.1	302.6	123.51	3.450	
9,900.0	6,690.3	9,961.0	6,736.2	64.0	64.0	96.18	-3,169.4	-13.8	426.0	298.7	127.26	3.347	
10,000.0	6,690.3	10,060.9	6,734.9	65.9	65.9	96.00	-3,269.4	-13.8	425.8	294.8	131.01	3.250	
10,100.0	6,690.4	10,160.9	6,733.5	67.7	67.7	95.82	-3,369.4	-13.8	425.7	290.9	134.77	3.159	
10,200.0	6,690.4	10,260.9	6,732.2	69.6	69.6	95.64	-3,469.4	-13.8	425.5	287.0	138.53	3.072	
10,300.0	6,690.4	10,360.9	6,730.9	71.5	71.5	95.46	-3,569.4	-13.8	425.4	283.1	142.30	2.989	
10,400.0	6,690.4	10,460.9	6,729.5	73.3	73.4	95.28	-3,669.3	-13.8	425.3	279.2	146.08	2.911	
10,500.0	6,690.4	10,560.9	6,728.2	75.2	75.2	95.10	-3,769.3	-13.8	425.2	275.3	149.86	2.837	
10,600.0	6,690.4	10,660.9	6,726.9	77.1	77.1	94.92	-3,869.3	-13.8	425.1	271.4	153.65	2.766	
10,700.0	6,690.5	10,760.9	6,725.6	79.0	79.0	94.74	-3,969.3	-13.8	424.9	267.5	157.44	2.699	
10,800.0	6,690.5	10,860.9	6,724.2	80.9	80.9	94.56	-4,069.3	-13.8	424.8	263.6	161.23	2.635	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-323 - Wellbore #1 - Plan #1 (2-13-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,900.0	6,690.5	10,960.9	6,722.9	82.7	82.8	94.38	-4,169.3	-13.8	424.7	259.7	165.02	2.574	
11,000.0	6,690.5	11,060.9	6,721.6	84.6	84.7	94.20	-4,269.2	-13.8	424.6	255.8	168.82	2.515	
11,100.0	6,690.5	11,160.8	6,720.3	86.5	86.6	94.02	-4,369.2	-13.8	424.5	251.9	172.63	2.459	
11,200.0	6,690.6	11,260.8	6,718.9	88.4	88.5	93.83	-4,469.2	-13.8	424.4	248.0	176.43	2.406	
11,300.0	6,690.6	11,360.8	6,717.6	90.3	90.4	93.65	-4,569.2	-13.8	424.3	244.1	180.24	2.354	
11,400.0	6,690.6	11,460.8	6,716.3	92.2	92.3	93.47	-4,669.2	-13.8	424.3	240.2	184.05	2.305	
11,500.0	6,690.6	11,560.8	6,715.0	94.1	94.1	93.29	-4,769.1	-13.8	424.2	236.3	187.86	2.258	
11,600.0	6,690.6	11,660.8	6,713.6	96.0	96.0	93.11	-4,869.1	-13.8	424.1	232.4	191.67	2.213	
11,700.0	6,690.6	11,760.8	6,712.3	97.9	97.9	92.93	-4,969.1	-13.8	424.0	228.6	195.48	2.169	
11,800.0	6,690.7	11,860.8	6,711.0	99.8	99.8	92.75	-5,069.1	-13.8	424.0	224.7	199.30	2.127	
11,900.0	6,690.7	11,960.8	6,709.7	101.7	101.7	92.57	-5,169.1	-13.8	423.9	220.8	203.11	2.087	
12,000.0	6,690.7	12,060.8	6,708.3	103.6	103.6	92.38	-5,269.1	-13.8	423.9	216.9	206.93	2.048	
12,100.0	6,690.7	12,160.8	6,707.0	105.5	105.5	92.20	-5,369.0	-13.8	423.8	213.1	210.75	2.011	
12,200.0	6,690.7	12,260.7	6,705.7	107.4	107.4	92.02	-5,469.0	-13.8	423.7	209.2	214.57	1.975	
12,300.0	6,690.7	12,360.7	6,704.3	109.3	109.3	91.84	-5,569.0	-13.8	423.7	205.3	218.38	1.940	
12,400.0	6,690.8	12,460.7	6,703.0	111.2	111.2	91.66	-5,669.0	-13.8	423.7	201.5	222.20	1.907	
12,500.0	6,690.8	12,560.7	6,701.7	113.1	113.2	91.48	-5,769.0	-13.8	423.6	197.6	226.02	1.874	
12,600.0	6,690.8	12,660.7	6,700.4	115.0	115.1	91.29	-5,869.0	-13.8	423.6	193.8	229.84	1.843	
12,700.0	6,690.8	12,760.7	6,699.0	116.9	117.0	91.11	-5,968.9	-13.8	423.6	189.9	233.65	1.813	
12,800.0	6,690.8	12,860.7	6,697.7	118.8	118.9	90.93	-6,068.9	-13.8	423.5	186.1	237.47	1.784	
12,900.0	6,690.9	12,960.7	6,696.4	120.7	120.8	90.75	-6,168.9	-13.8	423.5	182.2	241.29	1.755	
13,000.0	6,690.9	13,060.7	6,695.1	122.6	122.7	90.57	-6,268.9	-13.8	423.5	178.4	245.10	1.728	
13,100.0	6,690.9	13,160.7	6,693.7	124.5	124.6	90.39	-6,368.9	-13.8	423.5	174.6	248.92	1.701	
13,200.0	6,690.9	13,260.7	6,692.4	126.4	126.5	90.20	-6,468.8	-13.8	423.5	170.8	252.73	1.676	
13,300.0	6,690.9	13,360.6	6,691.1	128.3	128.4	90.02	-6,568.8	-13.8	423.5	166.9	256.54	1.651	
13,316.6	6,690.9	13,377.2	6,690.9	128.6	128.7	89.99	-6,585.4	-13.8	423.5	166.3	257.17	1.647	
13,400.0	6,690.9	13,460.6	6,689.8	130.2	130.3	89.84	-6,668.8	-13.8	423.5	163.1	260.35	1.627	
13,500.0	6,691.0	13,560.6	6,688.4	132.1	132.2	89.66	-6,768.8	-13.8	423.5	159.3	264.16	1.603	
13,600.0	6,691.0	13,660.6	6,687.1	134.0	134.1	89.48	-6,868.8	-13.8	423.5	155.5	267.97	1.580	
13,700.0	6,691.0	13,760.6	6,685.8	135.9	136.0	89.30	-6,968.8	-13.8	423.5	151.7	271.77	1.558	
13,755.1	6,691.0	13,815.7	6,685.0	137.0	137.0	89.19	-7,023.8	-13.8	423.5	149.7	273.81	1.547 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-403 - Wellbore #1 - Plan #1 (2-13-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-87.66	3.6	-89.2	89.2				
100.0	100.0	100.0	100.0	0.1	0.1	-87.66	3.6	-89.2	89.2	89.0	0.22	397.002	
200.0	200.0	200.0	200.0	0.3	0.3	-87.66	3.6	-89.2	89.2	88.6	0.67	132.334	
300.0	300.0	300.0	300.0	0.6	0.6	-87.66	3.6	-89.2	89.2	88.1	1.12	79.400	
400.0	400.0	400.0	400.0	0.8	0.8	-87.66	3.6	-89.2	89.2	87.7	1.57	56.715	
500.0	500.0	500.0	500.0	1.0	1.0	-87.66	3.6	-89.2	89.2	87.2	2.02	44.111	
600.0	600.0	600.0	600.0	1.2	1.2	-87.66	3.6	-89.2	89.2	86.8	2.47	36.091	
700.0	700.0	700.0	700.0	1.5	1.5	-87.66	3.6	-89.2	89.2	86.3	2.92	30.539	
800.0	800.0	800.0	800.0	1.7	1.7	-87.66	3.6	-89.2	89.2	85.9	3.37	26.467	
900.0	900.0	900.0	900.0	1.9	1.9	-87.66	3.6	-89.2	89.2	85.4	3.82	23.353	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-87.66	3.6	-89.2	89.2	85.0	4.27	20.895	CC, ES
1,100.0	1,100.0	1,097.8	1,097.8	2.4	2.4	-86.90	4.9	-90.3	90.4	85.7	4.71	19.192	
1,200.0	1,200.0	1,195.4	1,195.3	2.6	2.6	-84.75	8.6	-93.6	94.1	89.0	5.15	18.265	
1,300.0	1,300.0	1,292.6	1,292.1	2.8	2.8	-133.27	14.8	-99.1	101.7	96.1	5.59	18.196	
1,400.0	1,399.8	1,390.2	1,389.1	3.0	3.0	-131.28	23.2	-106.6	114.1	108.1	6.03	18.927	
1,500.0	1,499.5	1,489.1	1,487.2	3.3	3.3	-130.64	32.0	-114.6	129.3	122.8	6.48	19.967	
1,600.0	1,598.7	1,587.5	1,584.9	3.5	3.6	-131.10	40.8	-122.5	146.7	139.8	6.93	21.175	
1,700.0	1,697.5	1,685.6	1,682.3	3.8	3.8	-132.32	49.6	-130.3	166.1	158.7	7.40	22.450	
1,800.0	1,796.3	1,783.5	1,779.5	4.0	4.1	-133.47	58.4	-138.2	185.8	177.9	7.89	23.559	
1,900.0	1,895.1	1,881.5	1,876.8	4.3	4.4	-134.41	67.2	-146.1	205.6	197.2	8.39	24.510	
2,000.0	1,993.9	1,979.5	1,974.1	4.6	4.7	-135.17	76.0	-153.9	225.4	216.5	8.90	25.337	
2,100.0	2,092.7	2,077.5	2,071.3	4.9	4.9	-135.82	84.8	-161.8	245.2	235.8	9.41	26.056	
2,200.0	2,191.5	2,175.4	2,168.6	5.3	5.2	-136.37	93.6	-169.6	265.1	255.2	9.93	26.686	
2,300.0	2,290.3	2,273.4	2,265.8	5.6	5.5	-136.84	102.3	-177.5	285.0	274.5	10.46	27.241	
2,400.0	2,389.1	2,371.4	2,363.1	5.9	5.8	-137.25	111.1	-185.4	304.9	293.9	10.99	27.733	
2,500.0	2,487.9	2,469.4	2,460.4	6.3	6.1	-137.61	119.9	-193.2	324.8	313.3	11.53	28.172	
2,600.0	2,586.7	2,567.4	2,557.6	6.6	6.4	-137.93	128.7	-201.1	344.7	332.7	12.07	28.566	
2,700.0	2,685.5	2,665.3	2,654.9	6.9	6.7	-138.21	137.5	-209.0	364.7	352.1	12.61	28.920	
2,800.0	2,784.3	2,763.3	2,752.2	7.3	7.0	-138.46	146.3	-216.8	384.6	371.5	13.15	29.239	
2,900.0	2,883.0	2,861.3	2,849.4	7.6	7.3	-138.69	155.0	-224.7	404.6	390.9	13.70	29.530	
3,000.0	2,981.8	2,959.3	2,946.7	8.0	7.6	-138.90	163.8	-232.5	424.5	410.3	14.25	29.794	
3,100.0	3,080.6	3,057.2	3,044.0	8.3	7.9	-139.09	172.6	-240.4	444.5	429.7	14.80	30.036	
3,200.0	3,179.4	3,155.2	3,141.2	8.7	8.2	-139.26	181.4	-248.3	464.5	449.1	15.35	30.258	
3,300.0	3,278.2	3,253.2	3,238.5	9.0	8.5	-139.42	190.2	-256.1	484.5	468.6	15.90	30.462	
3,400.0	3,377.0	3,351.2	3,335.8	9.4	8.8	-139.57	199.0	-264.0	504.4	488.0	16.46	30.650	
3,500.0	3,475.8	3,449.1	3,433.0	9.7	9.1	-139.70	207.8	-271.9	524.4	507.4	17.01	30.824	
3,600.0	3,574.6	3,547.1	3,530.3	10.1	9.4	-139.83	216.5	-279.7	544.4	526.8	17.57	30.986	
3,700.0	3,673.4	3,645.1	3,627.6	10.4	9.7	-139.94	225.3	-287.6	564.4	546.2	18.13	31.136	
3,800.0	3,772.2	3,743.1	3,724.8	10.8	10.0	-140.05	234.1	-295.5	584.4	565.7	18.68	31.276	
3,900.0	3,871.0	3,841.1	3,822.1	11.1	10.3	-140.15	242.9	-303.3	604.3	585.1	19.24	31.407	
4,000.0	3,969.8	3,939.0	3,919.4	11.5	10.7	-140.25	251.7	-311.2	624.3	604.5	19.80	31.529	
4,100.0	4,068.5	4,037.0	4,016.6	11.9	11.0	-140.33	260.5	-319.0	644.3	624.0	20.36	31.644	
4,200.0	4,167.3	4,135.0	4,113.9	12.2	11.3	-140.42	269.2	-326.9	664.3	643.4	20.92	31.752	
4,300.0	4,266.1	4,233.0	4,211.1	12.6	11.6	-140.50	278.0	-334.8	684.3	662.8	21.48	31.853	
4,400.0	4,364.9	4,330.9	4,308.4	12.9	11.9	-140.57	286.8	-342.6	704.3	682.3	22.04	31.949	
4,500.0	4,463.7	4,428.9	4,405.7	13.3	12.2	-140.64	295.6	-350.5	724.3	701.7	22.61	32.039	
4,600.0	4,562.5	4,526.9	4,502.9	13.7	12.5	-140.72	304.4	-358.4	744.3	721.1	23.17	32.121	
4,700.0	4,661.6	4,625.2	4,600.5	13.9	12.8	-140.93	313.2	-366.2	762.8	739.1	23.72	32.156	
4,800.0	4,761.1	4,733.5	4,708.1	14.2	13.1	-140.94	322.5	-374.6	778.3	754.1	24.24	32.107	
4,900.0	4,860.8	4,855.2	4,829.4	14.4	13.4	-140.90	329.9	-381.2	788.9	764.2	24.70	31.935	
5,000.0	4,960.8	4,977.7	4,951.8	14.5	13.6	-140.89	333.3	-384.3	793.8	768.7	25.10	31.626	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-403 - Wellbore #1 - Plan #1 (2-13-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,060.8	5,086.7	5,060.8	14.7	13.7	-89.74	333.6	-384.6	794.3	768.8	25.45	31.209	
5,200.0	5,160.8	5,186.7	5,160.8	14.8	13.9	-89.74	333.6	-384.6	794.3	768.4	25.82	30.760	
5,300.0	5,260.8	5,286.7	5,260.8	15.0	14.1	-89.74	333.6	-384.6	794.3	768.1	26.20	30.317	
5,400.0	5,360.8	5,386.7	5,360.8	15.2	14.3	-89.74	333.6	-384.6	794.3	767.7	26.58	29.885	
5,500.0	5,460.8	5,486.7	5,460.8	15.3	14.5	-89.74	333.6	-384.6	794.3	767.3	26.96	29.463	
5,600.0	5,560.8	5,586.7	5,560.8	15.5	14.6	-89.74	333.6	-384.6	794.3	766.9	27.34	29.050	
5,700.0	5,660.8	5,686.7	5,660.8	15.7	14.8	-89.74	333.6	-384.6	794.3	766.5	27.73	28.647	
5,800.0	5,760.8	5,786.7	5,760.8	15.8	15.0	-89.74	333.6	-384.6	794.3	766.2	28.11	28.253	
5,900.0	5,860.8	5,886.7	5,860.8	16.0	15.2	-89.74	333.6	-384.6	794.3	765.8	28.50	27.867	
5,945.6	5,906.4	5,932.3	5,906.4	16.1	15.3	90.30	333.6	-384.6	794.3	765.6	28.68	27.699	
6,000.0	5,960.8	5,986.7	5,960.8	16.2	15.4	90.32	333.6	-384.6	794.3	765.4	28.88	27.500	
6,100.0	6,060.1	6,086.8	6,060.8	16.3	15.6	91.04	332.6	-384.6	794.4	765.2	29.16	27.247	
6,200.0	6,157.1	6,188.8	6,162.1	16.3	15.6	91.92	320.5	-384.6	794.7	765.4	29.26	27.157	
6,300.0	6,250.2	6,292.5	6,262.4	16.3	15.7	92.77	294.5	-384.6	795.2	766.0	29.24	27.199	
6,400.0	6,337.7	6,398.0	6,359.9	16.2	15.6	93.59	254.4	-384.6	795.8	766.7	29.13	27.321	
6,500.0	6,418.1	6,505.2	6,452.3	16.1	15.6	94.34	200.3	-384.6	796.6	767.5	29.02	27.449	
6,600.0	6,490.2	6,614.1	6,537.5	16.0	15.5	95.02	132.6	-384.6	797.3	768.3	29.01	27.482	
6,700.0	6,552.6	6,724.5	6,613.2	16.0	15.4	95.61	52.4	-384.6	798.1	768.9	29.22	27.313	
6,800.0	6,604.2	6,836.2	6,677.3	16.0	15.4	96.10	-39.0	-384.6	798.8	769.0	29.75	26.850	
6,900.0	6,644.3	6,949.1	6,727.7	16.3	15.6	96.47	-139.8	-384.6	799.4	768.7	30.68	26.053	
7,000.0	6,672.1	7,062.7	6,762.9	16.8	16.3	96.72	-247.7	-384.6	799.8	767.7	32.07	24.941	
7,100.0	6,687.1	7,175.6	6,781.8	17.7	17.3	96.83	-359.0	-384.6	799.9	766.1	33.86	23.626	
7,200.0	6,689.9	7,278.6	6,791.9	18.7	18.4	97.32	-461.5	-384.6	800.8	764.9	35.89	22.315	
7,300.0	6,689.9	7,386.4	6,794.8	19.8	19.6	97.53	-569.2	-384.6	801.2	762.9	38.24	20.949	
7,400.0	6,689.9	7,486.4	6,794.4	21.0	20.9	97.50	-669.2	-384.6	801.1	760.3	40.76	19.653	
7,500.0	6,689.9	7,586.4	6,794.0	22.4	22.3	97.47	-769.2	-384.6	801.1	757.6	43.47	18.429	
7,600.0	6,689.9	7,686.4	6,793.6	23.8	23.7	97.44	-869.2	-384.6	801.0	754.7	46.33	17.290	
7,700.0	6,689.9	7,786.4	6,793.3	25.3	25.2	97.41	-969.2	-384.6	801.0	751.6	49.32	16.240	
7,800.0	6,690.0	7,886.4	6,792.9	26.8	26.8	97.38	-1,069.2	-384.6	800.9	748.5	52.42	15.279	
7,900.0	6,690.0	7,986.4	6,792.5	28.4	28.3	97.35	-1,169.2	-384.6	800.8	745.2	55.61	14.402	
8,000.0	6,690.0	8,086.4	6,792.1	30.0	30.0	97.33	-1,269.2	-384.6	800.8	741.9	58.87	13.603	
8,100.0	6,690.0	8,186.4	6,791.7	31.7	31.6	97.30	-1,369.2	-384.6	800.7	738.5	62.20	12.874	
8,200.0	6,690.0	8,286.4	6,791.3	33.4	33.3	97.27	-1,469.2	-384.6	800.7	735.1	65.58	12.210	
8,300.0	6,690.0	8,386.4	6,791.0	35.1	35.0	97.24	-1,569.2	-384.6	800.6	731.6	69.01	11.603	
8,400.0	6,690.1	8,486.4	6,790.6	36.8	36.8	97.21	-1,669.2	-384.6	800.6	728.1	72.47	11.047	
8,500.0	6,690.1	8,586.4	6,790.2	38.5	38.5	97.18	-1,769.2	-384.6	800.5	724.6	75.97	10.537	
8,600.0	6,690.1	8,686.4	6,789.8	40.3	40.3	97.16	-1,869.2	-384.6	800.5	721.0	79.50	10.069	
8,700.0	6,690.1	8,786.4	6,789.4	42.1	42.1	97.13	-1,969.2	-384.6	800.4	717.4	83.06	9.637	
8,800.0	6,690.1	8,886.4	6,789.0	43.8	43.9	97.10	-2,069.2	-384.6	800.4	713.8	86.64	9.238	
8,900.0	6,690.2	8,986.4	6,788.7	45.6	45.7	97.07	-2,169.2	-384.6	800.3	710.1	90.24	8.869	
9,000.0	6,690.2	9,086.4	6,788.3	47.4	47.5	97.04	-2,269.2	-384.6	800.3	706.4	93.86	8.527	
9,100.0	6,690.2	9,186.4	6,787.9	49.3	49.3	97.01	-2,369.2	-384.6	800.2	702.8	97.49	8.208	
9,200.0	6,690.2	9,286.4	6,787.5	51.1	51.1	96.98	-2,469.2	-384.6	800.2	699.1	101.14	7.912	
9,300.0	6,690.2	9,386.4	6,787.1	52.9	53.0	96.96	-2,569.2	-384.6	800.1	695.4	104.80	7.635	
9,400.0	6,690.2	9,486.4	6,786.7	54.8	54.8	96.93	-2,669.2	-384.6	800.1	691.6	108.47	7.376	
9,500.0	6,690.3	9,586.4	6,786.4	56.6	56.7	96.90	-2,769.2	-384.6	800.1	687.9	112.15	7.134	
9,600.0	6,690.3	9,686.4	6,786.0	58.4	58.5	96.87	-2,869.2	-384.6	800.0	684.2	115.84	6.906	
9,700.0	6,690.3	9,786.4	6,785.6	60.3	60.4	96.84	-2,969.2	-384.6	800.0	680.4	119.55	6.692	
9,800.0	6,690.3	9,886.4	6,785.2	62.1	62.2	96.81	-3,069.2	-384.6	799.9	676.7	123.25	6.490	
9,900.0	6,690.3	9,986.4	6,784.8	64.0	64.1	96.78	-3,169.2	-384.6	799.9	672.9	126.97	6.300	
10,000.0	6,690.3	10,086.4	6,784.4	65.9	65.9	96.76	-3,269.2	-384.6	799.8	669.1	130.69	6.120	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-403 - Wellbore #1 - Plan #1 (2-13-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	6,690.4	10,186.4	6,784.0	67.7	67.8	96.73	-3,369.2	-384.6	799.8	665.3	134.42	5.950	
10,200.0	6,690.4	10,286.4	6,783.7	69.6	69.7	96.70	-3,469.2	-384.6	799.7	661.6	138.15	5.789	
10,300.0	6,690.4	10,386.4	6,783.3	71.5	71.6	96.67	-3,569.2	-384.6	799.7	657.8	141.89	5.636	
10,400.0	6,690.4	10,486.4	6,782.9	73.3	73.4	96.64	-3,669.2	-384.6	799.6	654.0	145.64	5.491	
10,500.0	6,690.4	10,586.4	6,782.5	75.2	75.3	96.61	-3,769.2	-384.6	799.6	650.2	149.39	5.352	
10,600.0	6,690.4	10,686.4	6,782.1	77.1	77.2	96.58	-3,869.2	-384.6	799.5	646.4	153.14	5.221	
10,700.0	6,690.5	10,786.4	6,781.7	79.0	79.1	96.56	-3,969.2	-384.6	799.5	642.6	156.90	5.096	
10,800.0	6,690.5	10,886.4	6,781.4	80.9	81.0	96.53	-4,069.2	-384.6	799.4	638.8	160.66	4.976	
10,900.0	6,690.5	10,986.4	6,781.0	82.7	82.8	96.50	-4,169.2	-384.6	799.4	635.0	164.42	4.862	
11,000.0	6,690.5	11,086.4	6,780.6	84.6	84.7	96.47	-4,269.2	-384.6	799.4	631.2	168.19	4.753	
11,100.0	6,690.5	11,186.4	6,780.2	86.5	86.6	96.44	-4,369.2	-384.6	799.3	627.3	171.96	4.648	
11,200.0	6,690.6	11,286.4	6,779.8	88.4	88.5	96.41	-4,469.2	-384.6	799.3	623.5	175.73	4.548	
11,300.0	6,690.6	11,386.4	6,779.4	90.3	90.4	96.38	-4,569.2	-384.6	799.2	619.7	179.51	4.452	
11,400.0	6,690.6	11,486.4	6,779.1	92.2	92.3	96.36	-4,669.2	-384.6	799.2	615.9	183.29	4.360	
11,500.0	6,690.6	11,586.4	6,778.7	94.1	94.2	96.33	-4,769.2	-384.6	799.1	612.1	187.07	4.272	
11,600.0	6,690.6	11,686.4	6,778.3	96.0	96.1	96.30	-4,869.2	-384.6	799.1	608.2	190.85	4.187	
11,700.0	6,690.6	11,786.4	6,777.9	97.9	98.0	96.27	-4,969.2	-384.6	799.0	604.4	194.64	4.105	
11,800.0	6,690.7	11,886.4	6,777.5	99.8	99.9	96.24	-5,069.2	-384.6	799.0	600.6	198.42	4.027	
11,900.0	6,690.7	11,986.4	6,777.1	101.7	101.8	96.21	-5,169.2	-384.6	799.0	596.7	202.21	3.951	
12,000.0	6,690.7	12,086.4	6,776.8	103.6	103.7	96.18	-5,269.2	-384.6	798.9	592.9	206.00	3.878	
12,100.0	6,690.7	12,186.4	6,776.4	105.5	105.6	96.16	-5,369.2	-384.6	798.9	589.1	209.80	3.808	
12,200.0	6,690.7	12,286.4	6,776.0	107.4	107.5	96.13	-5,469.2	-384.6	798.8	585.2	213.59	3.740	
12,300.0	6,690.7	12,386.4	6,775.6	109.3	109.4	96.10	-5,569.2	-384.6	798.8	581.4	217.39	3.674	
12,400.0	6,690.8	12,486.4	6,775.2	111.2	111.3	96.07	-5,669.1	-384.6	798.7	577.6	221.18	3.611	
12,500.0	6,690.8	12,586.4	6,774.8	113.1	113.2	96.04	-5,769.1	-384.6	798.7	573.7	224.98	3.550	
12,600.0	6,690.8	12,686.4	6,774.4	115.0	115.1	96.01	-5,869.1	-384.6	798.7	569.9	228.78	3.491	
12,700.0	6,690.8	12,786.4	6,774.1	116.9	117.0	95.98	-5,969.1	-384.6	798.6	566.0	232.59	3.434	
12,800.0	6,690.8	12,886.4	6,773.7	118.8	118.9	95.95	-6,069.1	-384.6	798.6	562.2	236.39	3.378	
12,900.0	6,690.9	12,986.4	6,773.3	120.7	120.8	95.93	-6,169.1	-384.6	798.5	558.3	240.20	3.325	
13,000.0	6,690.9	13,086.4	6,772.9	122.6	122.7	95.90	-6,269.1	-384.6	798.5	554.5	244.00	3.272	
13,100.0	6,690.9	13,186.4	6,772.5	124.5	124.6	95.87	-6,369.1	-384.6	798.4	550.6	247.81	3.222	
13,200.0	6,690.9	13,286.4	6,772.1	126.4	126.5	95.84	-6,469.1	-384.6	798.4	546.8	251.62	3.173	
13,300.0	6,690.9	13,386.4	6,771.8	128.3	128.4	95.81	-6,569.1	-384.6	798.4	542.9	255.43	3.126	
13,400.0	6,690.9	13,486.4	6,771.4	130.2	130.3	95.78	-6,669.1	-384.6	798.3	539.1	259.24	3.080	
13,500.0	6,691.0	13,586.4	6,771.0	132.1	132.2	95.75	-6,769.1	-384.6	798.3	535.2	263.05	3.035	
13,600.0	6,691.0	13,686.4	6,770.6	134.0	134.1	95.73	-6,869.1	-384.6	798.2	531.4	266.86	2.991	
13,700.0	6,691.0	13,786.4	6,770.2	135.9	136.0	95.70	-6,969.1	-384.6	798.2	527.5	270.67	2.949	
13,755.1	6,691.0	13,841.4	6,770.0	137.0	137.1	95.68	-7,024.2	-384.6	798.2	525.4	272.77	2.926 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-423 - Wellbore #1 - Plan #1 (2-13-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-90.00	0.0	-30.6	30.6				
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-30.6	30.6	30.4	0.22	136.355	
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-30.6	30.6	30.0	0.67	45.452	
300.0	300.0	300.0	300.0	0.6	0.6	-90.00	0.0	-30.6	30.6	29.5	1.12	27.271	
400.0	400.0	400.0	400.0	0.8	0.8	-90.00	0.0	-30.6	30.6	29.1	1.57	19.479	
500.0	500.0	500.0	500.0	1.0	1.0	-90.00	0.0	-30.6	30.6	28.6	2.02	15.151	
600.0	600.0	600.0	600.0	1.2	1.2	-90.00	0.0	-30.6	30.6	28.2	2.47	12.396	
700.0	700.0	700.0	700.0	1.5	1.5	-90.00	0.0	-30.6	30.6	27.7	2.92	10.489	
800.0	800.0	800.0	800.0	1.7	1.7	-90.00	0.0	-30.6	30.6	27.3	3.37	9.090	
900.0	900.0	900.0	900.0	1.9	1.9	-90.00	0.0	-30.6	30.6	26.8	3.82	8.021	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-90.00	0.0	-30.6	30.6	26.4	4.27	7.177	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-90.00	0.0	-30.6	30.6	25.9	4.72	6.493	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-90.00	0.0	-30.6	30.6	25.5	5.17	5.928 CC	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-143.09	0.0	-30.6	32.0	26.4	5.61	5.706	
1,400.0	1,399.8	1,399.8	1,399.8	3.0	3.0	-148.00	0.0	-30.6	36.3	30.3	6.05	6.011	
1,500.0	1,499.5	1,499.5	1,499.5	3.3	3.3	-153.96	0.0	-30.6	44.0	37.5	6.48	6.791	
1,600.0	1,598.7	1,600.4	1,600.4	3.5	3.5	-158.71	1.2	-29.4	53.6	46.7	6.90	7.778	
1,700.0	1,697.5	1,701.8	1,701.6	3.8	3.7	-161.61	4.9	-25.5	63.1	55.8	7.32	8.623	
1,800.0	1,796.3	1,803.7	1,803.2	4.0	3.9	-162.78	11.2	-19.1	69.8	62.1	7.77	8.989	
1,900.0	1,895.1	1,904.3	1,903.1	4.3	4.2	-162.97	19.2	-10.8	74.1	65.8	8.22	9.009	
2,000.0	1,993.9	2,004.3	2,002.3	4.6	4.4	-163.10	27.2	-2.4	78.1	69.5	8.68	9.005	
2,100.0	2,092.7	2,104.2	2,101.6	4.9	4.7	-163.22	35.3	6.0	82.2	73.1	9.14	8.996	
2,200.0	2,191.5	2,204.1	2,200.8	5.3	4.9	-163.32	43.3	14.3	86.3	76.7	9.61	8.983	
2,300.0	2,290.3	2,304.0	2,300.1	5.6	5.2	-163.42	51.4	22.7	90.4	80.3	10.08	8.969	
2,400.0	2,389.1	2,403.9	2,399.3	5.9	5.5	-163.51	59.4	31.1	94.5	83.9	10.56	8.953	
2,500.0	2,487.9	2,503.8	2,498.5	6.3	5.7	-163.59	67.5	39.4	98.6	87.6	11.03	8.936	
2,600.0	2,586.7	2,603.8	2,597.8	6.6	6.0	-163.66	75.5	47.8	102.7	91.2	11.51	8.919	
2,700.0	2,685.5	2,703.7	2,697.0	6.9	6.3	-163.73	83.6	56.1	106.8	94.8	11.99	8.902	
2,800.0	2,784.3	2,803.6	2,796.3	7.3	6.6	-163.79	91.7	64.5	110.9	98.4	12.48	8.884	
2,900.0	2,883.0	2,903.5	2,895.5	7.6	6.9	-163.85	99.7	72.9	114.9	102.0	12.96	8.867	
3,000.0	2,981.8	3,003.4	2,994.7	8.0	7.2	-163.91	107.8	81.2	119.0	105.6	13.45	8.850	
3,100.0	3,080.6	3,103.3	3,094.0	8.3	7.4	-163.96	115.8	89.6	123.1	109.2	13.94	8.834	
3,200.0	3,179.4	3,203.3	3,193.2	8.7	7.7	-164.00	123.9	98.0	127.2	112.8	14.43	8.817	
3,300.0	3,278.2	3,303.2	3,292.5	9.0	8.0	-164.05	131.9	106.3	131.3	116.4	14.92	8.802	
3,400.0	3,377.0	3,403.1	3,391.7	9.4	8.3	-164.09	140.0	114.7	135.4	120.0	15.41	8.787	
3,500.0	3,475.8	3,503.0	3,490.9	9.7	8.6	-164.13	148.0	123.0	139.5	123.6	15.90	8.772	
3,600.0	3,574.6	3,602.9	3,590.2	10.1	8.9	-164.17	156.1	131.4	143.6	127.2	16.39	8.758	
3,700.0	3,673.4	3,702.8	3,689.4	10.4	9.2	-164.20	164.1	139.8	147.7	130.8	16.89	8.744	
3,800.0	3,772.2	3,802.7	3,788.7	10.8	9.5	-164.24	172.2	148.1	151.7	134.4	17.38	8.730	
3,900.0	3,871.0	3,902.7	3,887.9	11.1	9.8	-164.27	180.2	156.5	155.8	138.0	17.88	8.718	
4,000.0	3,969.8	4,002.6	3,987.1	11.5	10.1	-164.30	188.3	164.8	159.9	141.6	18.37	8.705	
4,100.0	4,068.5	4,102.5	4,086.4	11.9	10.4	-164.33	196.4	173.2	164.0	145.1	18.87	8.693	
4,200.0	4,167.3	4,202.4	4,185.6	12.2	10.7	-164.35	204.4	181.6	168.1	148.7	19.36	8.682	
4,300.0	4,266.1	4,302.3	4,284.9	12.6	11.0	-164.38	212.5	189.9	172.2	152.3	19.86	8.670	
4,400.0	4,364.9	4,402.2	4,384.1	12.9	11.3	-164.41	220.5	198.3	176.3	155.9	20.36	8.660	
4,500.0	4,463.7	4,502.2	4,483.3	13.3	11.6	-164.43	228.6	206.7	180.4	159.5	20.85	8.649	
4,600.0	4,562.5	4,602.1	4,582.6	13.7	11.9	-164.45	236.6	215.0	184.5	163.1	21.35	8.639	
4,700.0	4,661.6	4,702.1	4,681.9	13.9	12.2	-164.32	244.7	223.4	186.6	164.8	21.83	8.549	
4,800.0	4,761.1	4,802.0	4,781.2	14.2	12.5	-163.88	252.7	231.8	185.5	163.2	22.30	8.319	
4,900.0	4,860.8	4,901.9	4,880.4	14.4	12.8	-163.11	260.8	240.1	181.0	158.2	22.75	7.956	
5,000.0	4,960.8	5,001.5	4,979.3	14.5	13.1	-161.92	268.8	248.4	173.2	150.0	23.20	7.467	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-423 - Wellbore #1 - Plan #1 (2-13-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,060.8	5,100.9	5,078.0	14.7	13.4	-109.17	276.8	256.8	162.8	139.1	23.69	6.873	
5,200.0	5,160.8	5,200.2	5,176.6	14.8	13.7	-107.34	284.8	265.1	152.3	128.1	24.25	6.282	
5,300.0	5,260.8	5,299.5	5,275.3	15.0	14.0	-105.24	292.9	273.4	142.0	117.2	24.83	5.719	
5,400.0	5,360.8	5,398.8	5,373.9	15.2	14.3	-102.83	300.9	281.7	131.9	106.5	25.46	5.183	
5,500.0	5,460.8	5,498.2	5,472.6	15.3	14.6	-100.01	308.9	290.0	122.1	96.0	26.12	4.675	
5,600.0	5,560.8	5,597.4	5,571.1	15.5	14.9	-96.73	316.9	298.3	112.6	85.8	26.84	4.196	
5,700.0	5,660.8	5,694.0	5,667.3	15.7	15.2	-93.59	323.4	305.1	105.0	77.5	27.50	3.817	
5,800.0	5,760.8	5,791.2	5,764.3	15.8	15.3	-91.28	327.8	309.6	100.2	72.1	28.09	3.566	
5,900.0	5,860.8	5,888.7	5,861.7	16.0	15.5	-90.10	329.8	311.8	97.9	69.4	28.55	3.430	
5,949.5	5,910.3	5,937.3	5,910.3	16.1	15.6	90.33	330.0	312.0	97.7	69.0	28.76	3.398	
6,000.0	5,960.8	5,987.8	5,960.8	16.2	15.7	90.47	330.0	312.0	97.8	68.8	28.96	3.376	
6,100.0	6,060.1	6,087.6	6,060.6	16.3	15.8	96.39	329.2	312.0	98.4	68.6	29.74	3.307	
6,200.0	6,157.1	6,189.1	6,161.4	16.3	15.9	103.62	317.7	312.0	100.6	70.3	30.36	3.314	
6,300.0	6,250.2	6,292.4	6,261.5	16.3	16.0	110.29	292.4	312.0	104.3	73.8	30.53	3.417	
6,400.0	6,337.7	6,397.5	6,358.8	16.2	15.9	116.19	253.1	312.0	109.1	78.9	30.20	3.612	
6,500.0	6,418.1	6,504.5	6,451.4	16.1	15.8	121.22	199.7	312.0	114.5	85.0	29.45	3.887	
6,600.0	6,490.2	6,613.2	6,537.0	16.0	15.8	125.40	132.8	312.0	120.1	91.7	28.45	4.222	
6,700.0	6,552.6	6,723.5	6,613.2	16.0	15.7	128.75	53.2	312.0	125.5	98.1	27.42	4.577	
6,800.0	6,604.2	6,835.3	6,678.0	16.0	15.7	131.35	-37.9	312.0	130.3	103.7	26.63	4.895	
6,900.0	6,644.3	6,948.3	6,729.2	16.3	15.9	133.25	-138.5	312.0	134.3	107.9	26.36	5.094	
7,000.0	6,672.1	7,062.3	6,765.3	16.8	16.5	134.52	-246.5	312.0	137.1	110.3	26.79	5.118	
7,100.0	6,687.1	7,176.2	6,784.9	17.7	17.5	135.19	-358.6	312.0	138.7	110.7	28.03	4.949	
7,200.0	6,689.9	7,279.0	6,795.2	18.7	18.5	137.14	-460.8	312.0	143.9	114.7	29.23	4.924	
7,300.0	6,689.9	7,387.4	6,798.4	19.8	19.8	138.00	-569.2	312.0	146.1	115.3	30.75	4.750	
7,400.0	6,689.9	7,487.4	6,798.1	21.0	21.0	137.90	-669.2	312.0	145.8	113.2	32.65	4.466	
7,500.0	6,689.9	7,587.4	6,797.8	22.4	22.4	137.81	-769.2	312.0	145.6	110.9	34.68	4.197	
7,600.0	6,689.9	7,687.4	6,797.4	23.8	23.8	137.72	-869.2	312.0	145.3	108.5	36.81	3.947	
7,700.0	6,689.9	7,787.4	6,797.1	25.3	25.3	137.63	-969.2	312.0	145.0	106.0	39.04	3.715	
7,800.0	6,690.0	7,887.4	6,796.8	26.8	26.8	137.53	-1,069.2	312.0	144.8	103.4	41.35	3.501	
7,900.0	6,690.0	7,987.4	6,796.4	28.4	28.4	137.44	-1,169.2	312.0	144.5	100.8	43.73	3.304	
8,000.0	6,690.0	8,087.4	6,796.1	30.0	30.0	137.35	-1,269.2	312.0	144.3	98.1	46.18	3.124	
8,100.0	6,690.0	8,187.4	6,795.8	31.7	31.7	137.25	-1,369.2	312.0	144.0	95.3	48.67	2.959	
8,200.0	6,690.0	8,287.4	6,795.4	33.4	33.4	137.16	-1,469.2	312.0	143.7	92.5	51.21	2.807	
8,300.0	6,690.0	8,387.4	6,795.1	35.1	35.1	137.06	-1,569.2	312.0	143.5	89.7	53.79	2.668	
8,400.0	6,690.1	8,487.4	6,794.8	36.8	36.8	136.97	-1,669.2	312.0	143.2	86.8	56.40	2.540	
8,500.0	6,690.1	8,587.4	6,794.4	38.5	38.6	136.87	-1,769.2	312.0	143.0	83.9	59.05	2.421	
8,600.0	6,690.1	8,687.4	6,794.1	40.3	40.3	136.78	-1,869.2	312.0	142.7	81.0	61.72	2.312	
8,700.0	6,690.1	8,787.4	6,793.8	42.1	42.1	136.68	-1,969.2	312.0	142.5	78.0	64.43	2.211	
8,800.0	6,690.1	8,887.4	6,793.4	43.8	43.9	136.59	-2,069.2	312.0	142.2	75.1	67.16	2.118	
8,900.0	6,690.2	8,987.4	6,793.1	45.6	45.7	136.49	-2,169.2	312.0	142.0	72.1	69.91	2.031	
9,000.0	6,690.2	9,087.4	6,792.8	47.4	47.5	136.39	-2,269.2	312.0	141.7	69.0	72.68	1.950	
9,100.0	6,690.2	9,187.4	6,792.4	49.3	49.3	136.29	-2,369.2	312.0	141.5	66.0	75.47	1.874	
9,200.0	6,690.2	9,287.4	6,792.1	51.1	51.1	136.20	-2,469.2	312.0	141.2	62.9	78.28	1.804	
9,300.0	6,690.2	9,387.4	6,791.8	52.9	53.0	136.10	-2,569.2	312.0	141.0	59.8	81.11	1.738	
9,400.0	6,690.2	9,487.4	6,791.5	54.8	54.8	136.00	-2,669.2	312.0	140.7	56.8	83.95	1.676	
9,500.0	6,690.3	9,587.4	6,791.1	56.6	56.7	135.90	-2,769.2	312.0	140.5	53.6	86.81	1.618	
9,600.0	6,690.3	9,687.4	6,790.8	58.4	58.5	135.80	-2,869.2	312.0	140.2	50.5	89.69	1.563	
9,700.0	6,690.3	9,787.4	6,790.5	60.3	60.4	135.70	-2,969.2	312.0	140.0	47.4	92.58	1.512	
9,800.0	6,690.3	9,887.4	6,790.1	62.1	62.2	135.60	-3,069.2	312.0	139.7	44.2	95.48	1.463	Level 3
9,900.0	6,690.3	9,987.4	6,789.8	64.0	64.1	135.50	-3,169.2	312.0	139.5	41.1	98.40	1.417	Level 3
10,000.0	6,690.3	10,087.4	6,789.5	65.9	65.9	135.40	-3,269.2	312.0	139.2	37.9	101.32	1.374	Level 3

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-423 - Wellbore #1 - Plan #1 (2-13-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	6,690.4	10,187.4	6,789.1	67.7	67.8	135.30	-3,369.2	312.0	139.0	34.7	104.27	1.333	Level 3
10,200.0	6,690.4	10,287.4	6,788.8	69.6	69.7	135.20	-3,469.2	312.0	138.7	31.5	107.22	1.294	Level 3
10,300.0	6,690.4	10,387.4	6,788.5	71.5	71.5	135.10	-3,569.2	312.0	138.5	28.3	110.18	1.257	Level 3
10,400.0	6,690.4	10,487.4	6,788.1	73.3	73.4	134.99	-3,669.2	312.0	138.2	25.1	113.16	1.221	Level 2
10,500.0	6,690.4	10,587.4	6,787.8	75.2	75.3	134.89	-3,769.1	312.0	138.0	21.8	116.15	1.188	Level 2
10,600.0	6,690.4	10,687.4	6,787.5	77.1	77.2	134.79	-3,869.1	312.0	137.7	18.6	119.15	1.156	Level 2
10,700.0	6,690.5	10,787.4	6,787.1	79.0	79.0	134.69	-3,969.1	312.0	137.5	15.3	122.16	1.125	Level 2
10,800.0	6,690.5	10,887.4	6,786.8	80.9	80.9	134.58	-4,069.1	312.0	137.2	12.0	125.18	1.096	Level 2
10,900.0	6,690.5	10,987.4	6,786.5	82.7	82.8	134.48	-4,169.1	312.0	137.0	8.8	128.21	1.068	Level 2
11,000.0	6,690.5	11,087.4	6,786.1	84.6	84.7	134.37	-4,269.1	312.0	136.7	5.5	131.26	1.042	Level 2
11,100.0	6,690.5	11,187.4	6,785.8	86.5	86.6	134.27	-4,369.1	312.0	136.5	2.2	134.31	1.016	Level 2
11,200.0	6,690.6	11,287.4	6,785.5	88.4	88.5	134.16	-4,469.1	312.0	136.3	-1.1	137.37	0.992	Level 1
11,300.0	6,690.6	11,387.4	6,785.2	90.3	90.4	134.06	-4,569.1	312.0	136.0	-4.4	140.45	0.968	Level 1
11,400.0	6,690.6	11,487.4	6,784.8	92.2	92.3	133.95	-4,669.1	312.0	135.8	-7.8	143.53	0.946	Level 1
11,500.0	6,690.6	11,587.4	6,784.5	94.1	94.2	133.85	-4,769.1	312.0	135.5	-11.1	146.62	0.924	Level 1
11,600.0	6,690.6	11,687.4	6,784.2	96.0	96.0	133.74	-4,869.1	312.0	135.3	-14.4	149.73	0.904	Level 1
11,700.0	6,690.6	11,787.4	6,783.8	97.9	97.9	133.63	-4,969.1	312.0	135.0	-17.8	152.84	0.884	Level 1
11,800.0	6,690.7	11,887.4	6,783.5	99.8	99.8	133.53	-5,069.1	312.0	134.8	-21.2	155.96	0.864	Level 1
11,900.0	6,690.7	11,987.4	6,783.2	101.7	101.7	133.42	-5,169.1	312.0	134.6	-24.5	159.10	0.846	Level 1
12,000.0	6,690.7	12,087.4	6,782.8	103.6	103.6	133.31	-5,269.1	312.0	134.3	-27.9	162.24	0.828	Level 1
12,100.0	6,690.7	12,187.4	6,782.5	105.5	105.5	133.20	-5,369.1	312.0	134.1	-31.3	165.39	0.811	Level 1
12,200.0	6,690.7	12,287.4	6,782.2	107.4	107.4	133.09	-5,469.1	312.0	133.8	-34.7	168.55	0.794	Level 1
12,300.0	6,690.7	12,387.4	6,781.8	109.3	109.3	132.98	-5,569.1	312.0	133.6	-38.1	171.72	0.778	Level 1
12,400.0	6,690.8	12,487.4	6,781.5	111.2	111.2	132.87	-5,669.1	312.0	133.4	-41.5	174.90	0.763	Level 1
12,500.0	6,690.8	12,587.4	6,781.2	113.1	113.1	132.76	-5,769.1	312.0	133.1	-45.0	178.09	0.748	Level 1
12,600.0	6,690.8	12,687.4	6,780.8	115.0	115.0	132.65	-5,869.1	312.0	132.9	-48.4	181.29	0.733	Level 1
12,700.0	6,690.8	12,787.4	6,780.5	116.9	116.9	132.54	-5,969.1	312.0	132.7	-51.8	184.50	0.719	Level 1
12,800.0	6,690.8	12,887.4	6,780.2	118.8	118.8	132.43	-6,069.1	312.0	132.4	-55.3	187.72	0.705	Level 1
12,900.0	6,690.9	12,987.4	6,779.8	120.7	120.7	132.32	-6,169.1	312.0	132.2	-58.8	190.95	0.692	Level 1
13,000.0	6,690.9	13,087.4	6,779.5	122.6	122.7	132.21	-6,269.1	312.0	131.9	-62.2	194.19	0.679	Level 1
13,100.0	6,690.9	13,187.4	6,779.2	124.5	124.6	132.10	-6,369.1	312.0	131.7	-65.7	197.43	0.667	Level 1
13,200.0	6,690.9	13,287.4	6,778.9	126.4	126.5	131.98	-6,469.1	312.0	131.5	-69.2	200.69	0.655	Level 1
13,300.0	6,690.9	13,387.4	6,778.5	128.3	128.4	131.87	-6,569.1	312.0	131.2	-72.7	203.95	0.644	Level 1
13,400.0	6,690.9	13,487.4	6,778.2	130.2	130.3	131.76	-6,669.1	312.0	131.0	-76.2	207.23	0.632	Level 1
13,500.0	6,691.0	13,587.4	6,777.9	132.1	132.2	131.64	-6,769.1	312.0	130.8	-79.7	210.51	0.621	Level 1
13,600.0	6,691.0	13,687.4	6,777.5	134.0	134.1	131.53	-6,869.1	312.0	130.6	-83.3	213.81	0.611	Level 1
13,700.0	6,691.0	13,787.4	6,777.2	135.9	136.0	131.41	-6,969.1	312.0	130.3	-86.8	217.11	0.600	Level 1
13,755.1	6,691.0	13,842.4	6,777.0	137.0	137.0	131.35	-7,024.2	312.0	130.2	-88.7	218.93	0.595	Level 1, ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28U-403 - Wellbore #1 - Plan #1 (2-13-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	30.6	30.7				
100.0	100.0	99.0	99.0	0.1	0.1	90.00	0.0	30.6	30.6	30.4	0.22	137.039	
200.0	200.0	199.0	199.0	0.3	0.3	90.00	0.0	30.6	30.6	30.0	0.67	45.604	
300.0	300.0	299.0	299.0	0.6	0.6	90.00	0.0	30.6	30.6	29.5	1.12	27.326	
400.0	400.0	399.0	399.0	0.8	0.8	90.00	0.0	30.6	30.6	29.1	1.57	19.507	
500.0	500.0	499.0	499.0	1.0	1.0	90.00	0.0	30.6	30.6	28.6	2.02	15.167	
600.0	600.0	599.0	599.0	1.2	1.2	90.00	0.0	30.6	30.6	28.2	2.47	12.407	
700.0	700.0	699.0	699.0	1.5	1.5	90.00	0.0	30.6	30.6	27.7	2.92	10.497	
800.0	800.0	799.0	799.0	1.7	1.7	90.00	0.0	30.6	30.6	27.3	3.37	9.096	
900.0	900.0	899.0	899.0	1.9	1.9	90.00	0.0	30.6	30.6	26.8	3.82	8.026	
1,000.0	1,000.0	999.0	999.0	2.1	2.1	90.00	0.0	30.6	30.6	26.4	4.27	7.180	CC
1,100.0	1,100.0	1,098.0	1,098.0	2.4	2.3	88.64	0.8	32.1	32.2	27.5	4.71	6.830	
1,200.0	1,200.0	1,196.8	1,196.7	2.6	2.6	85.19	3.1	36.7	36.9	31.7	5.15	7.162	
1,300.0	1,300.0	1,295.3	1,294.8	2.8	2.8	31.00	6.9	44.2	43.4	37.8	5.57	7.791	
1,400.0	1,399.8	1,393.5	1,392.3	3.0	3.0	29.50	12.3	54.7	50.3	44.3	6.00	8.386	
1,500.0	1,499.5	1,492.1	1,489.7	3.3	3.3	29.05	19.2	68.0	57.3	50.8	6.43	8.912	
1,600.0	1,598.7	1,591.9	1,588.2	3.5	3.6	30.02	26.5	82.3	62.0	55.2	6.86	9.040	
1,700.0	1,697.5	1,691.9	1,686.9	3.8	3.9	32.25	33.8	96.7	64.3	56.9	7.32	8.774	
1,800.0	1,796.3	1,791.8	1,785.5	4.0	4.2	34.51	41.2	111.0	66.3	58.5	7.82	8.480	
1,900.0	1,895.1	1,891.8	1,884.2	4.3	4.5	36.64	48.5	125.3	68.4	60.1	8.33	8.216	
2,000.0	1,993.9	1,991.7	1,982.8	4.6	4.9	38.63	55.8	139.6	70.6	61.8	8.86	7.974	
2,100.0	2,092.7	2,091.7	2,081.4	4.9	5.2	40.50	63.2	153.9	72.9	63.5	9.40	7.754	
2,200.0	2,191.5	2,191.6	2,180.1	5.3	5.6	42.26	70.5	168.2	75.3	65.3	9.97	7.553	
2,300.0	2,290.3	2,291.5	2,278.7	5.6	5.9	43.90	77.9	182.6	77.7	67.2	10.55	7.369	
2,400.0	2,389.1	2,391.5	2,377.4	5.9	6.3	45.45	85.2	196.9	80.2	69.1	11.14	7.200	
2,500.0	2,487.9	2,491.4	2,476.0	6.3	6.6	46.90	92.5	211.2	82.8	71.0	11.75	7.045	
2,600.0	2,586.7	2,591.4	2,574.7	6.6	7.0	48.26	99.9	225.5	85.4	73.0	12.37	6.903	
2,700.0	2,685.5	2,691.3	2,673.3	6.9	7.3	49.55	107.2	239.8	88.0	75.0	12.99	6.772	
2,800.0	2,784.3	2,791.3	2,771.9	7.3	7.7	50.75	114.6	254.1	90.7	77.0	13.63	6.651	
2,900.0	2,883.0	2,891.2	2,870.6	7.6	8.1	51.89	121.9	268.5	93.4	79.1	14.28	6.540	
3,000.0	2,981.8	2,991.2	2,969.2	8.0	8.4	52.96	129.2	282.8	96.2	81.2	14.94	6.437	
3,100.0	3,080.6	3,091.1	3,067.9	8.3	8.8	53.98	136.6	297.1	99.0	83.4	15.60	6.342	
3,200.0	3,179.4	3,191.1	3,166.5	8.7	9.1	54.93	143.9	311.4	101.8	85.5	16.27	6.254	
3,300.0	3,278.2	3,291.0	3,265.2	9.0	9.5	55.84	151.2	325.7	104.6	87.7	16.95	6.173	
3,400.0	3,377.0	3,391.0	3,363.8	9.4	9.9	56.70	158.6	340.0	107.5	89.9	17.63	6.098	
3,500.0	3,475.8	3,490.9	3,462.4	9.7	10.2	57.51	165.9	354.4	110.4	92.1	18.31	6.027	
3,600.0	3,574.6	3,590.8	3,561.1	10.1	10.6	58.28	173.3	368.7	113.3	94.3	19.00	5.962	
3,700.0	3,673.4	3,690.8	3,659.7	10.4	11.0	59.01	180.6	383.0	116.2	96.5	19.70	5.901	
3,800.0	3,772.2	3,790.7	3,758.4	10.8	11.4	59.71	187.9	397.3	119.2	98.8	20.39	5.844	
3,900.0	3,871.0	3,890.7	3,857.0	11.1	11.7	60.37	195.3	411.6	122.1	101.1	21.09	5.791	
4,000.0	3,969.8	3,990.6	3,955.7	11.5	12.1	61.00	202.6	425.9	125.1	103.3	21.79	5.741	
4,100.0	4,068.5	4,090.6	4,054.3	11.9	12.5	61.60	210.0	440.3	128.1	105.6	22.50	5.695	
4,200.0	4,167.3	4,190.5	4,152.9	12.2	12.8	62.17	217.3	454.6	131.1	107.9	23.21	5.651	
4,300.0	4,266.1	4,290.5	4,251.6	12.6	13.2	62.72	224.6	468.9	134.2	110.2	23.92	5.610	
4,400.0	4,364.9	4,390.4	4,350.2	12.9	13.6	63.24	232.0	483.2	137.2	112.6	24.63	5.571	
4,500.0	4,463.7	4,490.4	4,448.9	13.3	14.0	63.74	239.3	497.5	140.2	114.9	25.34	5.535	
4,600.0	4,562.5	4,590.3	4,547.5	13.7	14.3	64.22	246.6	511.8	143.3	117.3	26.05	5.501	
4,700.0	4,661.6	4,690.2	4,646.1	13.9	14.7	64.06	254.0	526.1	147.2	120.6	26.62	5.531	
4,800.0	4,761.1	4,790.0	4,744.6	14.2	15.1	62.76	261.3	540.4	152.7	125.7	27.03	5.649	
4,900.0	4,860.8	4,889.5	4,842.8	14.4	15.4	60.49	268.6	554.7	160.0	132.7	27.29	5.862	
5,000.0	4,960.8	4,988.7	4,940.7	14.5	15.8	57.47	275.9	568.9	169.4	142.0	27.41	6.180	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28U-403 - Wellbore #1 - Plan #1 (2-13-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,060.8	5,087.4	5,038.1	14.7	16.2	105.13	283.1	583.0	180.9	153.4	27.43	6.593	
5,200.0	5,160.8	5,186.1	5,135.5	14.8	16.6	101.93	290.4	597.2	193.1	165.6	27.50	7.023	
5,300.0	5,260.8	5,284.8	5,232.9	15.0	16.9	99.12	297.6	611.3	206.0	178.3	27.61	7.460	
5,400.0	5,360.8	5,383.5	5,330.3	15.2	17.3	96.64	304.9	625.5	219.2	191.4	27.76	7.897	
5,500.0	5,460.8	5,482.2	5,427.8	15.3	17.7	94.44	312.1	639.6	232.8	204.9	27.94	8.332	
5,600.0	5,560.8	5,587.9	5,532.4	15.5	18.0	92.54	319.2	653.4	245.4	217.3	28.13	8.725	
5,700.0	5,660.8	5,695.6	5,639.3	15.7	18.2	91.22	324.6	663.9	255.1	226.7	28.38	8.988	
5,800.0	5,760.8	5,804.0	5,747.4	15.8	18.4	90.41	328.1	670.8	261.4	232.8	28.67	9.118	
5,900.0	5,860.8	5,912.8	5,856.2	16.0	18.6	90.03	329.8	674.1	264.5	235.5	29.00	9.118	
6,000.0	5,960.8	6,016.4	5,959.8	16.2	18.8	-90.17	330.0	674.4	264.7	235.4	29.34	9.024	
6,100.0	6,060.1	6,116.2	6,059.6	16.3	18.9	-92.38	329.2	674.4	265.0	235.6	29.34	9.033	
6,200.0	6,157.1	6,217.7	6,160.4	16.3	19.0	-95.15	317.9	674.4	265.8	236.7	29.14	9.123	
6,300.0	6,250.2	6,321.0	6,260.5	16.3	19.0	-97.84	292.7	674.4	267.3	238.4	28.87	9.257	
6,400.0	6,337.7	6,426.2	6,358.0	16.2	19.0	-100.38	253.5	674.4	269.2	240.6	28.60	9.415	
6,500.0	6,418.1	6,533.2	6,450.7	16.1	18.9	-102.73	200.2	674.4	271.5	243.1	28.37	9.570	
6,600.0	6,490.2	6,641.9	6,536.4	16.0	18.8	-104.83	133.3	674.4	274.0	245.7	28.25	9.696	
6,700.0	6,552.6	6,752.4	6,612.8	16.0	18.8	-106.65	53.7	674.4	276.4	248.1	28.32	9.760	
6,800.0	6,604.2	6,864.3	6,677.7	16.0	18.8	-108.16	-37.4	674.4	278.7	250.0	28.64	9.729	
6,900.0	6,644.3	6,977.5	6,729.0	16.3	18.9	-109.33	-138.1	674.4	280.6	251.3	29.26	9.589	
7,000.0	6,672.1	7,091.6	6,765.2	16.8	19.2	-110.14	-246.2	674.4	282.0	251.8	30.23	9.328	
7,100.0	6,687.1	7,205.7	6,784.9	17.7	19.8	-110.57	-358.5	674.4	282.8	251.2	31.55	8.962	
7,200.0	6,689.9	7,308.5	6,795.2	18.7	20.6	-111.88	-460.8	674.4	285.4	252.5	32.93	8.666	
7,300.0	6,689.9	7,417.0	6,798.4	19.8	21.7	-112.48	-569.2	674.4	286.5	251.5	34.97	8.192	
7,400.0	6,689.9	7,517.0	6,798.1	21.0	22.8	-112.41	-669.2	674.4	286.4	249.1	37.31	7.675	
7,500.0	6,689.9	7,617.0	6,797.7	22.4	24.0	-112.35	-769.2	674.4	286.2	246.4	39.84	7.185	
7,600.0	6,689.9	7,717.0	6,797.4	23.8	25.3	-112.28	-869.2	674.4	286.1	243.6	42.53	6.728	
7,700.0	6,689.9	7,817.0	6,797.1	25.3	26.7	-112.22	-969.2	674.4	286.0	240.6	45.35	6.307	
7,800.0	6,690.0	7,917.0	6,796.7	26.8	28.2	-112.15	-1,069.2	674.4	285.8	237.6	48.27	5.922	
7,900.0	6,690.0	8,017.0	6,796.4	28.4	29.7	-112.09	-1,169.2	674.4	285.7	234.4	51.29	5.571	
8,000.0	6,690.0	8,117.0	6,796.1	30.0	31.2	-112.02	-1,269.2	674.4	285.6	231.2	54.38	5.251	
8,100.0	6,690.0	8,217.0	6,795.8	31.7	32.8	-111.96	-1,369.2	674.4	285.5	227.9	57.54	4.961	
8,200.0	6,690.0	8,317.0	6,795.4	33.4	34.4	-111.89	-1,469.2	674.4	285.3	224.6	60.75	4.697	
8,300.0	6,690.0	8,417.0	6,795.1	35.1	36.1	-111.83	-1,569.2	674.4	285.2	221.2	64.01	4.456	
8,400.0	6,690.1	8,517.0	6,794.8	36.8	37.8	-111.76	-1,669.2	674.4	285.1	217.8	67.31	4.235	
8,500.0	6,690.1	8,617.0	6,794.4	38.5	39.5	-111.70	-1,769.2	674.4	284.9	214.3	70.64	4.033	
8,600.0	6,690.1	8,717.0	6,794.1	40.3	41.2	-111.63	-1,869.2	674.4	284.8	210.8	74.01	3.848	
8,700.0	6,690.1	8,817.0	6,793.8	42.1	42.9	-111.57	-1,969.2	674.4	284.7	207.3	77.40	3.678	
8,800.0	6,690.1	8,917.0	6,793.4	43.8	44.7	-111.50	-2,069.2	674.4	284.6	203.7	80.82	3.521	
8,900.0	6,690.2	9,017.0	6,793.1	45.6	46.4	-111.44	-2,169.2	674.4	284.4	200.2	84.26	3.376	
9,000.0	6,690.2	9,117.0	6,792.8	47.4	48.2	-111.37	-2,269.2	674.4	284.3	196.6	87.71	3.241	
9,100.0	6,690.2	9,217.0	6,792.4	49.3	50.0	-111.30	-2,369.2	674.4	284.2	193.0	91.19	3.116	
9,200.0	6,690.2	9,317.0	6,792.1	51.1	51.8	-111.24	-2,469.2	674.4	284.0	189.4	94.68	3.000	
9,300.0	6,690.2	9,417.0	6,791.8	52.9	53.6	-111.17	-2,569.2	674.4	283.9	185.7	98.18	2.892	
9,400.0	6,690.2	9,517.0	6,791.4	54.8	55.4	-111.11	-2,669.2	674.4	283.8	182.1	101.70	2.790	
9,500.0	6,690.3	9,617.0	6,791.1	56.6	57.2	-111.04	-2,769.2	674.4	283.7	178.4	105.23	2.696	
9,600.0	6,690.3	9,717.0	6,790.8	58.4	59.1	-110.98	-2,869.2	674.4	283.5	174.8	108.77	2.607	
9,700.0	6,690.3	9,817.0	6,790.4	60.3	60.9	-110.91	-2,969.2	674.4	283.4	171.1	112.33	2.523	
9,800.0	6,690.3	9,917.0	6,790.1	62.1	62.7	-110.84	-3,069.2	674.4	283.3	167.4	115.89	2.445	
9,900.0	6,690.3	10,017.0	6,789.8	64.0	64.6	-110.78	-3,169.2	674.4	283.2	163.7	119.46	2.370	
10,000.0	6,690.3	10,117.0	6,789.5	65.9	66.4	-110.71	-3,269.2	674.4	283.0	160.0	123.04	2.300	
10,100.0	6,690.4	10,217.0	6,789.1	67.7	68.3	-110.65	-3,369.2	674.4	282.9	156.3	126.62	2.234	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28U-403 - Wellbore #1 - Plan #1 (2-13-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,200.0	6,690.4	10,317.0	6,788.8	69.6	70.1	-110.58	-3,469.2	674.4	282.8	152.6	130.22	2.172	
10,300.0	6,690.4	10,417.0	6,788.5	71.5	72.0	-110.51	-3,569.2	674.4	282.7	148.9	133.82	2.112	
10,400.0	6,690.4	10,517.0	6,788.1	73.3	73.8	-110.45	-3,669.2	674.4	282.6	145.1	137.43	2.056	
10,500.0	6,690.4	10,617.0	6,787.8	75.2	75.7	-110.38	-3,769.2	674.4	282.4	141.4	141.04	2.002	
10,600.0	6,690.4	10,717.0	6,787.5	77.1	77.6	-110.31	-3,869.2	674.4	282.3	137.6	144.67	1.951	
10,700.0	6,690.5	10,817.0	6,787.1	79.0	79.4	-110.25	-3,969.2	674.4	282.2	133.9	148.29	1.903	
10,800.0	6,690.5	10,917.0	6,786.8	80.9	81.3	-110.18	-4,069.1	674.4	282.1	130.1	151.93	1.857	
10,900.0	6,690.5	11,017.0	6,786.5	82.7	83.2	-110.12	-4,169.1	674.4	282.0	126.4	155.56	1.812	
11,000.0	6,690.5	11,117.0	6,786.1	84.6	85.1	-110.05	-4,269.1	674.4	281.8	122.6	159.21	1.770	
11,100.0	6,690.5	11,217.0	6,785.8	86.5	86.9	-109.98	-4,369.1	674.4	281.7	118.9	162.86	1.730	
11,200.0	6,690.6	11,317.0	6,785.5	88.4	88.8	-109.92	-4,469.1	674.4	281.6	115.1	166.51	1.691	
11,300.0	6,690.6	11,417.0	6,785.1	90.3	90.7	-109.85	-4,569.1	674.4	281.5	111.3	170.17	1.654	
11,400.0	6,690.6	11,517.0	6,784.8	92.2	92.6	-109.78	-4,669.1	674.4	281.4	107.5	173.83	1.619	
11,500.0	6,690.6	11,617.0	6,784.5	94.1	94.5	-109.71	-4,769.1	674.4	281.2	103.7	177.50	1.584	
11,600.0	6,690.6	11,717.0	6,784.1	96.0	96.4	-109.65	-4,869.1	674.4	281.1	100.0	181.17	1.552	
11,700.0	6,690.6	11,817.0	6,783.8	97.9	98.2	-109.58	-4,969.1	674.4	281.0	96.2	184.84	1.520	
11,800.0	6,690.7	11,917.0	6,783.5	99.8	100.1	-109.51	-5,069.1	674.4	280.9	92.4	188.52	1.490	Level 3
11,900.0	6,690.7	12,017.0	6,783.2	101.7	102.0	-109.45	-5,169.1	674.4	280.8	88.6	192.20	1.461	Level 3
12,000.0	6,690.7	12,117.0	6,782.8	103.6	103.9	-109.38	-5,269.1	674.4	280.7	84.8	195.89	1.433	Level 3
12,100.0	6,690.7	12,217.0	6,782.5	105.5	105.8	-109.31	-5,369.1	674.4	280.5	81.0	199.58	1.406	Level 3
12,200.0	6,690.7	12,317.0	6,782.2	107.4	107.7	-109.24	-5,469.1	674.4	280.4	77.1	203.28	1.380	Level 3
12,300.0	6,690.7	12,417.0	6,781.8	109.3	109.6	-109.18	-5,569.1	674.4	280.3	73.3	206.97	1.354	Level 3
12,400.0	6,690.8	12,517.0	6,781.5	111.2	111.5	-109.11	-5,669.1	674.4	280.2	69.5	210.68	1.330	Level 3
12,500.0	6,690.8	12,617.0	6,781.2	113.1	113.4	-109.04	-5,769.1	674.4	280.1	65.7	214.38	1.306	Level 3
12,600.0	6,690.8	12,717.0	6,780.8	115.0	115.3	-108.97	-5,869.1	674.4	280.0	61.9	218.09	1.284	Level 3
12,700.0	6,690.8	12,817.0	6,780.5	116.9	117.2	-108.91	-5,969.1	674.4	279.9	58.1	221.80	1.262	Level 3
12,800.0	6,690.8	12,917.0	6,780.2	118.8	119.1	-108.84	-6,069.1	674.4	279.7	54.2	225.51	1.240	Level 2
12,900.0	6,690.9	13,017.0	6,779.8	120.7	121.0	-108.77	-6,169.1	674.4	279.6	50.4	229.23	1.220	Level 2
13,000.0	6,690.9	13,117.0	6,779.5	122.6	122.9	-108.70	-6,269.1	674.4	279.5	46.6	232.95	1.200	Level 2
13,100.0	6,690.9	13,217.0	6,779.2	124.5	124.8	-108.64	-6,369.1	674.4	279.4	42.7	236.68	1.181	Level 2
13,200.0	6,690.9	13,317.0	6,778.8	126.4	126.7	-108.57	-6,469.1	674.4	279.3	38.9	240.41	1.162	Level 2
13,300.0	6,690.9	13,417.0	6,778.5	128.3	128.6	-108.50	-6,569.1	674.4	279.2	35.0	244.14	1.144	Level 2
13,400.0	6,690.9	13,517.0	6,778.2	130.2	130.5	-108.43	-6,669.1	674.4	279.1	31.2	247.87	1.126	Level 2
13,500.0	6,691.0	13,617.0	6,777.8	132.1	132.4	-108.36	-6,769.1	674.4	279.0	27.4	251.61	1.109	Level 2
13,600.0	6,691.0	13,717.0	6,777.5	134.0	134.3	-108.30	-6,869.1	674.4	278.9	23.5	255.34	1.092	Level 2
13,700.0	6,691.0	13,817.0	6,777.2	135.9	136.2	-108.23	-6,969.1	674.4	278.7	19.7	259.09	1.076	Level 2
13,755.1	6,691.0	13,871.7	6,777.0	137.0	137.2	-108.19	-7,023.9	674.4	278.7	17.5	261.14	1.067	Level 2, ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hall 28-1 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7600-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-174.92	-1,286.0	-114.2	1,291.2				
100.0	100.0	80.0	80.0	0.1	1.6	-174.92	-1,286.0	-114.2	1,291.1	1,289.4	1.71	753.877	
200.0	200.0	180.0	180.0	0.3	3.6	-174.92	-1,286.0	-114.2	1,291.1	1,287.1	3.94	327.905	
300.0	300.0	280.0	280.0	0.6	5.6	-174.92	-1,286.0	-114.2	1,291.1	1,284.9	6.16	209.519	
400.0	400.0	380.0	380.0	0.8	7.6	-174.92	-1,286.0	-114.2	1,291.1	1,282.7	8.39	153.940	
500.0	500.0	480.0	480.0	1.0	9.6	-174.92	-1,286.0	-114.2	1,291.1	1,280.5	10.61	121.666	
600.0	600.0	580.0	580.0	1.2	11.6	-174.92	-1,286.0	-114.2	1,291.1	1,278.2	12.84	100.579	
700.0	700.0	680.0	680.0	1.5	13.6	-174.92	-1,286.0	-114.2	1,291.1	1,276.0	15.06	85.722	
800.0	800.0	780.0	780.0	1.7	15.6	-174.92	-1,286.0	-114.2	1,291.1	1,273.8	17.29	74.689	
900.0	900.0	880.0	880.0	1.9	17.6	-174.92	-1,286.0	-114.2	1,291.1	1,271.6	19.51	66.173	
1,000.0	1,000.0	980.0	980.0	2.1	19.6	-174.92	-1,286.0	-114.2	1,291.1	1,269.3	21.74	59.400	
1,100.0	1,100.0	1,080.0	1,080.0	2.4	21.6	-174.92	-1,286.0	-114.2	1,291.1	1,267.1	23.96	53.884	
1,200.0	1,200.0	1,180.0	1,180.0	2.6	23.6	-174.92	-1,286.0	-114.2	1,291.1	1,264.9	26.18	49.306	
1,300.0	1,300.0	1,280.0	1,280.0	2.8	25.6	133.96	-1,286.0	-114.2	1,292.3	1,263.9	28.40	45.508	
1,400.0	1,399.8	1,379.8	1,379.8	3.0	27.6	134.08	-1,286.0	-114.2	1,295.9	1,265.3	30.59	42.371	
1,500.0	1,499.5	1,479.5	1,479.5	3.3	29.6	134.27	-1,286.0	-114.2	1,302.0	1,269.3	32.75	39.753	
1,600.0	1,598.7	1,578.7	1,578.7	3.5	31.6	134.52	-1,286.0	-114.2	1,310.6	1,275.7	34.89	37.558	
1,700.0	1,697.5	1,677.5	1,677.5	3.8	33.6	134.92	-1,286.0	-114.2	1,321.3	1,284.2	37.07	35.646	
1,800.0	1,796.3	1,776.3	1,776.3	4.0	35.5	135.39	-1,286.0	-114.2	1,332.3	1,293.1	39.28	33.915	
1,900.0	1,895.1	1,875.1	1,875.1	4.3	37.5	135.85	-1,286.0	-114.2	1,343.5	1,302.0	41.51	32.366	
2,000.0	1,993.9	1,973.9	1,973.9	4.6	39.5	136.31	-1,286.0	-114.2	1,354.7	1,311.0	43.74	30.973	
2,100.0	2,092.7	2,072.7	2,072.7	4.9	41.5	136.75	-1,286.0	-114.2	1,366.0	1,320.0	45.97	29.714	
2,200.0	2,191.5	2,171.5	2,171.5	5.3	43.4	137.19	-1,286.0	-114.2	1,377.4	1,329.2	48.21	28.573	
2,300.0	2,290.3	2,270.3	2,270.3	5.6	45.4	137.62	-1,286.0	-114.2	1,388.9	1,338.4	50.45	27.532	
2,400.0	2,389.1	2,369.1	2,369.1	5.9	47.4	138.05	-1,286.0	-114.2	1,400.4	1,347.8	52.69	26.581	
2,500.0	2,487.9	2,467.9	2,467.9	6.3	49.4	138.47	-1,286.0	-114.2	1,412.1	1,357.1	54.93	25.709	
2,600.0	2,586.7	2,566.7	2,566.7	6.6	51.3	138.88	-1,286.0	-114.2	1,423.8	1,366.6	57.17	24.905	
2,700.0	2,685.5	2,665.5	2,665.5	6.9	53.3	139.28	-1,286.0	-114.2	1,435.5	1,376.1	59.41	24.164	
2,800.0	2,784.3	2,764.3	2,764.3	7.3	55.3	139.68	-1,286.0	-114.2	1,447.4	1,385.7	61.65	23.477	
2,900.0	2,883.0	2,863.0	2,863.0	7.6	57.3	140.07	-1,286.0	-114.2	1,459.3	1,395.4	63.89	22.840	
3,000.0	2,981.8	2,961.8	2,961.8	8.0	59.2	140.46	-1,286.0	-114.2	1,471.3	1,405.1	66.13	22.247	
3,100.0	3,080.6	3,060.6	3,060.6	8.3	61.2	140.84	-1,286.0	-114.2	1,483.3	1,414.9	68.37	21.694	
3,200.0	3,179.4	3,159.4	3,159.4	8.7	63.2	141.21	-1,286.0	-114.2	1,495.4	1,424.8	70.61	21.177	
3,300.0	3,278.2	3,258.2	3,258.2	9.0	65.2	141.58	-1,286.0	-114.2	1,507.6	1,434.7	72.85	20.693	
3,400.0	3,377.0	3,357.0	3,357.0	9.4	67.1	141.94	-1,286.0	-114.2	1,519.8	1,444.7	75.09	20.239	
3,500.0	3,475.8	3,455.8	3,455.8	9.7	69.1	142.30	-1,286.0	-114.2	1,532.1	1,454.8	77.33	19.812	
3,600.0	3,574.6	3,554.6	3,554.6	10.1	71.1	142.65	-1,286.0	-114.2	1,544.5	1,464.9	79.57	19.410	
3,700.0	3,673.4	3,653.4	3,653.4	10.4	73.1	142.99	-1,286.0	-114.2	1,556.9	1,475.1	81.81	19.031	
3,800.0	3,772.2	3,752.2	3,752.2	10.8	75.0	143.33	-1,286.0	-114.2	1,569.3	1,485.3	84.04	18.673	
3,900.0	3,871.0	3,851.0	3,851.0	11.1	77.0	143.66	-1,286.0	-114.2	1,581.8	1,495.5	86.28	18.334	
4,000.0	3,969.8	3,949.8	3,949.8	11.5	79.0	143.99	-1,286.0	-114.2	1,594.4	1,505.9	88.51	18.013	
4,100.0	4,068.5	4,048.5	4,048.5	11.9	81.0	144.32	-1,286.0	-114.2	1,607.0	1,516.3	90.74	17.709	
4,200.0	4,167.3	4,147.3	4,147.3	12.2	82.9	144.63	-1,286.0	-114.2	1,619.7	1,526.7	92.98	17.420	
4,300.0	4,266.1	4,246.1	4,246.1	12.6	84.9	144.95	-1,286.0	-114.2	1,632.4	1,537.2	95.21	17.145	
4,400.0	4,364.9	4,344.9	4,344.9	12.9	86.9	145.26	-1,286.0	-114.2	1,645.1	1,547.7	97.44	16.884	
4,500.0	4,463.7	4,443.7	4,443.7	13.3	88.9	145.56	-1,286.0	-114.2	1,658.0	1,558.3	99.67	16.634	
4,600.0	4,562.5	4,542.5	4,542.5	13.7	90.9	145.87	-1,286.0	-114.2	1,670.8	1,568.9	101.92	16.393	
4,700.0	4,661.6	4,641.6	4,641.6	13.9	92.8	146.25	-1,286.0	-114.2	1,682.1	1,577.7	104.38	16.115	
4,800.0	4,761.1	4,741.1	4,741.1	14.2	94.8	146.54	-1,286.0	-114.2	1,690.5	1,583.7	106.77	15.833	
4,900.0	4,860.8	4,840.8	4,840.8	14.4	96.8	146.72	-1,286.0	-114.2	1,696.0	1,586.9	109.07	15.549	
5,000.0	4,960.8	4,940.8	4,940.8	14.5	98.8	146.81	-1,286.0	-114.2	1,698.6	1,587.3	111.29	15.263	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hall 28-1 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7600-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,060.8	5,040.8	5,040.8	14.7	100.8	-162.04	-1,286.0	-114.2	1,698.8	1,585.4	113.45	14.974	
5,200.0	5,160.8	5,140.8	5,140.8	14.8	102.8	-162.04	-1,286.0	-114.2	1,698.8	1,583.2	115.64	14.690	
5,300.0	5,260.8	5,240.8	5,240.8	15.0	104.8	-162.04	-1,286.0	-114.2	1,698.8	1,581.0	117.84	14.417	
5,400.0	5,360.8	5,340.8	5,340.8	15.2	106.8	-162.04	-1,286.0	-114.2	1,698.8	1,578.8	120.03	14.153	
5,500.0	5,460.8	5,440.8	5,440.8	15.3	108.8	-162.04	-1,286.0	-114.2	1,698.8	1,576.6	122.23	13.899	
5,600.0	5,560.8	5,540.8	5,540.8	15.5	110.8	-162.04	-1,286.0	-114.2	1,698.8	1,574.4	124.42	13.654	
5,700.0	5,660.8	5,640.8	5,640.8	15.7	112.8	-162.04	-1,286.0	-114.2	1,698.8	1,572.2	126.62	13.417	
5,800.0	5,760.8	5,740.8	5,740.8	15.8	114.8	-162.04	-1,286.0	-114.2	1,698.8	1,570.0	128.82	13.188	
5,900.0	5,860.8	5,840.8	5,840.8	16.0	116.8	-162.04	-1,286.0	-114.2	1,698.8	1,567.8	131.01	12.967	
6,000.0	5,960.8	5,940.8	5,940.8	16.2	118.8	17.99	-1,286.0	-114.2	1,698.1	1,565.0	133.04	12.763	
6,100.0	6,060.1	6,040.1	6,040.1	16.3	120.8	18.35	-1,286.0	-114.2	1,687.5	1,554.2	133.32	12.657	
6,200.0	6,157.1	6,137.1	6,137.1	16.3	122.7	19.18	-1,286.0	-114.2	1,664.8	1,533.3	131.50	12.660	
6,300.0	6,250.2	6,230.2	6,230.2	16.3	124.6	20.55	-1,286.0	-114.2	1,630.3	1,502.6	127.71	12.766	
6,400.0	6,337.7	6,317.7	6,317.7	16.2	126.4	22.58	-1,286.0	-114.2	1,584.7	1,462.3	122.33	12.954	
6,500.0	6,418.1	6,398.1	6,398.1	16.1	128.0	25.50	-1,286.0	-114.2	1,528.9	1,412.7	116.17	13.161	
6,600.0	6,490.2	6,470.2	6,470.2	16.0	129.4	29.62	-1,286.0	-114.2	1,464.0	1,353.3	110.73	13.222	
6,700.0	6,552.6	6,532.6	6,532.6	16.0	130.7	35.40	-1,286.0	-114.2	1,391.4	1,282.9	108.47	12.827	
6,800.0	6,604.2	6,584.2	6,584.2	16.0	131.7	43.43	-1,286.0	-114.2	1,312.5	1,200.2	112.40	11.678	
6,900.0	6,644.3	6,624.3	6,624.3	16.3	132.5	54.18	-1,286.0	-114.2	1,229.2	1,105.6	123.60	9.945	
7,000.0	6,672.1	6,652.1	6,652.1	16.8	133.0	67.42	-1,286.0	-114.2	1,143.1	1,004.9	138.13	8.275	
7,100.0	6,687.1	6,667.1	6,667.1	17.7	133.3	81.52	-1,286.0	-114.2	1,056.2	907.7	148.51	7.112	
7,200.0	6,689.9	6,669.9	6,669.9	18.7	133.4	89.98	-1,286.0	-114.2	970.7	819.4	151.34	6.414	
7,300.0	6,689.9	6,669.9	6,669.9	19.8	133.4	89.99	-1,286.0	-114.2	888.2	735.7	152.49	5.825	
7,400.0	6,689.9	6,669.9	6,669.9	21.0	133.4	89.99	-1,286.0	-114.2	809.6	655.8	153.76	5.265	
7,500.0	6,689.9	6,669.9	6,669.9	22.4	133.4	89.99	-1,286.0	-114.2	736.2	581.1	155.12	4.746	
7,600.0	6,689.9	6,669.9	6,669.9	23.8	133.4	89.99	-1,286.0	-114.2	669.7	513.2	156.56	4.278	
7,700.0	6,689.9	6,669.9	6,669.9	25.3	133.4	89.99	-1,286.0	-114.2	612.5	454.4	158.06	3.875	
7,800.0	6,690.0	6,670.0	6,670.0	26.8	133.4	90.00	-1,286.0	-114.2	567.2	407.5	159.63	3.553	
7,900.0	6,690.0	6,670.0	6,670.0	28.4	133.4	90.00	-1,286.0	-114.2	536.9	375.7	161.23	3.330	
8,000.0	6,690.0	6,670.0	6,670.0	30.0	133.4	90.00	-1,286.0	-114.2	524.2	361.3	162.88	3.219	
8,017.2	6,690.0	6,670.0	6,670.0	30.3	133.4	90.00	-1,286.0	-114.2	523.9	360.8	163.16	3.211	CC, ES, SF
8,100.0	6,690.0	6,670.0	6,670.0	31.7	133.4	90.00	-1,286.0	-114.2	530.4	365.9	164.55	3.224	
8,200.0	6,690.0	6,670.0	6,670.0	33.4	133.4	90.00	-1,286.0	-114.2	554.9	388.7	166.25	3.338	
8,300.0	6,690.0	6,670.0	6,670.0	35.1	133.4	90.01	-1,286.0	-114.2	595.4	427.4	167.98	3.544	
8,400.0	6,690.1	6,670.1	6,670.1	36.8	133.4	90.01	-1,286.0	-114.2	648.9	479.2	169.72	3.823	
8,500.0	6,690.1	6,670.1	6,670.1	38.5	133.4	90.01	-1,286.0	-114.2	712.5	541.0	171.49	4.155	
8,600.0	6,690.1	6,670.1	6,670.1	40.3	133.4	90.01	-1,286.0	-114.2	783.7	610.4	173.26	4.523	
8,700.0	6,690.1	6,670.1	6,670.1	42.1	133.4	90.01	-1,286.0	-114.2	860.7	685.6	175.05	4.917	
8,800.0	6,690.1	6,670.1	6,670.1	43.8	133.4	90.01	-1,286.0	-114.2	942.0	765.1	176.85	5.326	
8,900.0	6,690.2	6,670.2	6,670.2	45.6	133.4	90.02	-1,286.0	-114.2	1,026.6	847.9	178.66	5.746	
9,000.0	6,690.2	6,670.2	6,670.2	47.4	133.4	90.02	-1,286.0	-114.2	1,113.7	933.3	180.48	6.171	
9,100.0	6,690.2	6,670.2	6,670.2	49.3	133.4	90.02	-1,286.0	-114.2	1,202.9	1,020.6	182.31	6.598	
9,200.0	6,690.2	6,670.2	6,670.2	51.1	133.4	90.02	-1,286.0	-114.2	1,293.7	1,109.5	184.15	7.025	
9,300.0	6,690.2	6,670.2	6,670.2	52.9	133.4	90.02	-1,286.0	-114.2	1,385.7	1,199.7	185.99	7.450	
9,400.0	6,690.2	6,670.2	6,670.2	54.8	133.4	90.03	-1,286.0	-114.2	1,478.7	1,290.9	187.83	7.873	
9,500.0	6,690.3	6,670.3	6,670.3	56.6	133.4	90.03	-1,286.0	-114.2	1,572.7	1,383.0	189.68	8.291	
9,600.0	6,690.3	6,670.3	6,670.3	58.4	133.4	90.03	-1,286.0	-114.2	1,667.3	1,475.7	191.54	8.705	
9,700.0	6,690.3	6,670.3	6,670.3	60.3	133.4	90.03	-1,286.0	-114.2	1,762.5	1,569.1	193.40	9.113	
9,800.0	6,690.3	6,670.3	6,670.3	62.1	133.4	90.03	-1,286.0	-114.2	1,858.2	1,662.9	195.26	9.516	
9,900.0	6,690.3	6,670.3	6,670.3	64.0	133.4	90.04	-1,286.0	-114.2	1,954.4	1,757.2	197.13	9.914	
10,000.0	6,690.3	6,670.3	6,670.3	65.9	133.4	90.04	-1,286.0	-114.2	2,050.9	1,851.9	199.00	10.306	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hall 28-1 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7600-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	6,690.4	6,670.4	6,670.4	67.7	133.4	90.04	-1,286.0	-114.2	2,147.7	1,946.8	200.87	10.692	
10,200.0	6,690.4	6,670.4	6,670.4	69.6	133.4	90.04	-1,286.0	-114.2	2,244.8	2,042.1	202.75	11.072	
10,300.0	6,690.4	6,670.4	6,670.4	71.5	133.4	90.04	-1,286.0	-114.2	2,342.2	2,137.5	204.63	11.446	
10,400.0	6,690.4	6,670.4	6,670.4	73.3	133.4	90.05	-1,286.0	-114.2	2,439.7	2,233.2	206.51	11.814	
10,500.0	6,690.4	6,670.4	6,670.4	75.2	133.4	90.05	-1,286.0	-114.2	2,537.5	2,329.1	208.39	12.177	
10,600.0	6,690.4	6,670.4	6,670.4	77.1	133.4	90.05	-1,286.0	-114.2	2,635.4	2,425.1	210.27	12.533	
10,700.0	6,690.5	6,670.5	6,670.5	79.0	133.4	90.05	-1,286.0	-114.2	2,733.5	2,521.3	212.16	12.884	
10,800.0	6,690.5	6,670.5	6,670.5	80.9	133.4	90.05	-1,286.0	-114.2	2,831.7	2,617.7	214.05	13.229	
10,900.0	6,690.5	6,670.5	6,670.5	82.7	133.4	90.06	-1,286.0	-114.2	2,930.0	2,714.1	215.94	13.569	
11,000.0	6,690.5	6,670.5	6,670.5	84.6	133.4	90.06	-1,286.0	-114.2	3,028.5	2,810.7	217.83	13.903	
11,100.0	6,690.5	6,670.5	6,670.5	86.5	133.4	90.06	-1,286.0	-114.2	3,127.0	2,907.3	219.72	14.232	
11,200.0	6,690.6	6,670.6	6,670.6	88.4	133.4	90.06	-1,286.0	-114.2	3,225.6	3,004.0	221.61	14.555	
11,300.0	6,690.6	6,670.6	6,670.6	90.3	133.4	90.06	-1,286.0	-114.2	3,324.4	3,100.9	223.51	14.874	
11,400.0	6,690.6	6,670.6	6,670.6	92.2	133.4	90.06	-1,286.0	-114.2	3,423.1	3,197.7	225.40	15.187	
11,500.0	6,690.6	6,670.6	6,670.6	94.1	133.4	90.07	-1,286.0	-114.2	3,522.0	3,294.7	227.30	15.495	
11,600.0	6,690.6	6,670.6	6,670.6	96.0	133.4	90.07	-1,286.0	-114.2	3,620.9	3,391.7	229.20	15.798	
11,700.0	6,690.6	6,670.6	6,670.6	97.9	133.4	90.07	-1,286.0	-114.2	3,719.9	3,488.8	231.09	16.097	
11,800.0	6,690.7	6,670.7	6,670.7	99.8	133.4	90.07	-1,286.0	-114.2	3,818.9	3,585.9	232.99	16.391	
11,900.0	6,690.7	6,670.7	6,670.7	101.7	133.4	90.07	-1,286.0	-114.2	3,918.0	3,683.1	234.89	16.680	
12,000.0	6,690.7	6,670.7	6,670.7	103.6	133.4	90.08	-1,286.0	-114.2	4,017.1	3,780.3	236.80	16.965	
12,100.0	6,690.7	6,670.7	6,670.7	105.5	133.4	90.08	-1,286.0	-114.2	4,116.3	3,877.6	238.70	17.245	
12,200.0	6,690.7	6,670.7	6,670.7	107.4	133.4	90.08	-1,286.0	-114.2	4,215.5	3,974.9	240.60	17.521	
12,300.0	6,690.7	6,670.7	6,670.7	109.3	133.4	90.08	-1,286.0	-114.2	4,314.7	4,072.2	242.50	17.793	
12,400.0	6,690.8	6,670.8	6,670.8	111.2	133.4	90.08	-1,286.0	-114.2	4,414.0	4,169.6	244.41	18.060	
12,500.0	6,690.8	6,670.8	6,670.8	113.1	133.4	90.09	-1,286.0	-114.2	4,513.3	4,267.0	246.31	18.324	
12,600.0	6,690.8	6,670.8	6,670.8	115.0	133.4	90.09	-1,286.0	-114.2	4,612.7	4,364.5	248.22	18.583	
12,700.0	6,690.8	6,670.8	6,670.8	116.9	133.4	90.09	-1,286.0	-114.2	4,712.0	4,461.9	250.12	18.839	
12,800.0	6,690.8	6,670.8	6,670.8	118.8	133.4	90.09	-1,286.0	-114.2	4,811.4	4,559.4	252.03	19.091	
12,900.0	6,690.9	6,670.9	6,670.9	120.7	133.4	90.09	-1,286.0	-114.2	4,910.8	4,656.9	253.93	19.339	
13,000.0	6,690.9	6,670.9	6,670.9	122.6	133.4	90.10	-1,286.0	-114.2	5,010.3	4,754.4	255.84	19.584	
13,100.0	6,690.9	6,670.9	6,670.9	124.5	133.4	90.10	-1,286.0	-114.2	5,109.7	4,852.0	257.75	19.825	
13,200.0	6,690.9	6,670.9	6,670.9	126.4	133.4	90.10	-1,286.0	-114.2	5,209.2	4,949.6	259.66	20.062	
13,300.0	6,690.9	6,670.9	6,670.9	128.3	133.4	90.10	-1,286.0	-114.2	5,308.7	5,047.2	261.56	20.296	
13,400.0	6,690.9	6,670.9	6,670.9	130.2	133.4	90.10	-1,286.0	-114.2	5,408.3	5,144.8	263.47	20.527	
13,500.0	6,691.0	6,671.0	6,671.0	132.1	133.4	90.10	-1,286.0	-114.2	5,507.8	5,242.4	265.38	20.754	
13,600.0	6,691.0	6,671.0	6,671.0	134.0	133.4	90.11	-1,286.0	-114.2	5,607.3	5,340.1	267.29	20.978	
13,700.0	6,691.0	6,671.0	6,671.0	135.9	133.4	90.11	-1,286.0	-114.2	5,706.9	5,437.7	269.20	21.199	
13,755.1	6,691.0	6,671.0	6,671.0	137.0	133.4	90.11	-1,286.0	-114.2	5,761.7	5,491.5	270.25	21.320	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hall 28-2 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7600-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	144.90	-269.6	189.5	330.1				
100.0	100.0	80.0	80.0	0.1	1.6	144.90	-269.6	189.5	329.5	327.8	1.71	192.401	
200.0	200.0	180.0	180.0	0.3	3.6	144.90	-269.6	189.5	329.5	325.6	3.94	83.687	
300.0	300.0	280.0	280.0	0.6	5.6	144.90	-269.6	189.5	329.5	323.3	6.16	53.472	
400.0	400.0	380.0	380.0	0.8	7.6	144.90	-269.6	189.5	329.5	321.1	8.39	39.288	
500.0	500.0	480.0	480.0	1.0	9.6	144.90	-269.6	189.5	329.5	318.9	10.61	31.051	
600.0	600.0	580.0	580.0	1.2	11.6	144.90	-269.6	189.5	329.5	316.7	12.84	25.669	
700.0	700.0	680.0	680.0	1.5	13.6	144.90	-269.6	189.5	329.5	314.4	15.06	21.878	
800.0	800.0	780.0	780.0	1.7	15.6	144.90	-269.6	189.5	329.5	312.2	17.29	19.062	
900.0	900.0	880.0	880.0	1.9	17.6	144.90	-269.6	189.5	329.5	310.0	19.51	16.888	
1,000.0	1,000.0	980.0	980.0	2.1	19.6	144.90	-269.6	189.5	329.5	307.8	21.74	15.160	
1,100.0	1,100.0	1,080.0	1,080.0	2.4	21.6	144.90	-269.6	189.5	329.5	305.5	23.96	13.752	
1,200.0	1,200.0	1,180.0	1,180.0	2.6	23.6	144.90	-269.6	189.5	329.5	303.3	26.18	12.584	
1,300.0	1,300.0	1,280.0	1,280.0	2.8	25.6	94.05	-269.6	189.5	329.6	301.2	28.40	11.605	
1,400.0	1,399.8	1,379.8	1,379.8	3.0	27.6	94.95	-269.6	189.5	330.0	299.4	30.62	10.779	
1,500.0	1,499.5	1,479.5	1,479.5	3.3	29.6	96.43	-269.6	189.5	330.9	298.1	32.84	10.077	
1,600.0	1,598.7	1,578.7	1,578.7	3.5	31.6	98.47	-269.6	189.5	332.5	297.4	35.06	9.484	
1,700.0	1,697.5	1,677.5	1,677.5	3.8	33.6	100.98	-269.6	189.5	335.1	297.8	37.29	8.985	
1,800.0	1,796.3	1,776.3	1,776.3	4.0	35.5	103.53	-269.6	189.5	338.4	298.9	39.54	8.559	
1,900.0	1,895.1	1,875.1	1,875.1	4.3	37.5	106.02	-269.6	189.5	342.4	300.6	41.79	8.193	
2,000.0	1,993.9	1,973.9	1,973.9	4.6	39.5	108.45	-269.6	189.5	347.1	303.0	44.05	7.878	
2,100.0	2,092.7	2,072.7	2,072.7	4.9	41.5	110.82	-269.6	189.5	352.3	306.0	46.31	7.608	
2,200.0	2,191.5	2,171.5	2,171.5	5.3	43.4	113.12	-269.6	189.5	358.2	309.6	48.57	7.374	
2,300.0	2,290.3	2,270.3	2,270.3	5.6	45.4	115.33	-269.6	189.5	364.6	313.8	50.83	7.173	
2,400.0	2,389.1	2,369.1	2,369.1	5.9	47.4	117.47	-269.6	189.5	371.6	318.5	53.08	7.000	
2,500.0	2,487.9	2,467.9	2,467.9	6.3	49.4	119.53	-269.6	189.5	379.0	323.7	55.34	6.850	
2,600.0	2,586.7	2,566.7	2,566.7	6.6	51.3	121.51	-269.6	189.5	387.0	329.4	57.58	6.720	
2,700.0	2,685.5	2,665.5	2,665.5	6.9	53.3	123.41	-269.6	189.5	395.4	335.5	59.83	6.609	
2,800.0	2,784.3	2,764.3	2,764.3	7.3	55.3	125.23	-269.6	189.5	404.2	342.1	62.06	6.512	
2,900.0	2,883.0	2,863.0	2,863.0	7.6	57.3	126.97	-269.6	189.5	413.4	349.1	64.30	6.429	
3,000.0	2,981.8	2,961.8	2,961.8	8.0	59.2	128.64	-269.6	189.5	423.0	356.4	66.53	6.358	
3,100.0	3,080.6	3,060.6	3,060.6	8.3	61.2	130.23	-269.6	189.5	432.9	364.1	68.75	6.296	
3,200.0	3,179.4	3,159.4	3,159.4	8.7	63.2	131.75	-269.6	189.5	443.1	372.1	70.98	6.243	
3,300.0	3,278.2	3,258.2	3,258.2	9.0	65.2	133.20	-269.6	189.5	453.6	380.5	73.19	6.198	
3,400.0	3,377.0	3,357.0	3,357.0	9.4	67.1	134.59	-269.6	189.5	464.5	389.1	75.41	6.159	
3,500.0	3,475.8	3,455.8	3,455.8	9.7	69.1	135.91	-269.6	189.5	475.5	397.9	77.62	6.126	
3,600.0	3,574.6	3,554.6	3,554.6	10.1	71.1	137.17	-269.6	189.5	486.9	407.0	79.83	6.099	
3,700.0	3,673.4	3,653.4	3,653.4	10.4	73.1	138.38	-269.6	189.5	498.4	416.4	82.04	6.075	
3,800.0	3,772.2	3,752.2	3,752.2	10.8	75.0	139.53	-269.6	189.5	510.1	425.9	84.24	6.056	
3,900.0	3,871.0	3,851.0	3,851.0	11.1	77.0	140.63	-269.6	189.5	522.1	435.6	86.44	6.040	
4,000.0	3,969.8	3,949.8	3,949.8	11.5	79.0	141.67	-269.6	189.5	534.2	445.6	88.64	6.027	
4,100.0	4,068.5	4,048.5	4,048.5	11.9	81.0	142.68	-269.6	189.5	546.5	455.7	90.84	6.016	
4,200.0	4,167.3	4,147.3	4,147.3	12.2	82.9	143.64	-269.6	189.5	559.0	465.9	93.04	6.008	
4,300.0	4,266.1	4,246.1	4,246.1	12.6	84.9	144.55	-269.6	189.5	571.6	476.3	95.23	6.002	
4,400.0	4,364.9	4,344.9	4,344.9	12.9	86.9	145.43	-269.6	189.5	584.3	486.9	97.43	5.997	
4,500.0	4,463.7	4,443.7	4,443.7	13.3	88.9	146.27	-269.6	189.5	597.2	497.6	99.62	5.995	
4,600.0	4,562.5	4,542.5	4,542.5	13.7	90.9	147.09	-269.6	189.5	610.2	508.4	101.84	5.992	
4,700.0	4,661.6	4,641.6	4,641.6	13.9	92.8	147.89	-269.6	189.5	621.6	517.4	104.28	5.961	
4,800.0	4,761.1	4,741.1	4,741.1	14.2	94.8	148.46	-269.6	189.5	630.2	523.6	106.66	5.909	
4,900.0	4,860.8	4,840.8	4,840.8	14.4	96.8	148.83	-269.6	189.5	635.9	526.9	108.96	5.836	
5,000.0	4,960.8	4,940.8	4,940.8	14.5	98.8	149.00	-269.6	189.5	638.5	527.4	111.17	5.744	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hall 28-2 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7600-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,060.8	5,040.8	5,040.8	14.7	100.8	-159.83	-269.6	189.5	638.8	525.4	113.34	5.636	
5,200.0	5,160.8	5,140.8	5,140.8	14.8	102.8	-159.83	-269.6	189.5	638.8	523.2	115.53	5.529	
5,300.0	5,260.8	5,240.8	5,240.8	15.0	104.8	-159.83	-269.6	189.5	638.8	521.0	117.72	5.426	
5,400.0	5,360.8	5,340.8	5,340.8	15.2	106.8	-159.83	-269.6	189.5	638.8	518.8	119.92	5.326	
5,500.0	5,460.8	5,440.8	5,440.8	15.3	108.8	-159.83	-269.6	189.5	638.8	516.6	122.12	5.231	
5,600.0	5,560.8	5,540.8	5,540.8	15.5	110.8	-159.83	-269.6	189.5	638.8	514.4	124.31	5.138	
5,700.0	5,660.8	5,640.8	5,640.8	15.7	112.8	-159.83	-269.6	189.5	638.8	512.2	126.51	5.049	
5,800.0	5,760.8	5,740.8	5,740.8	15.8	114.8	-159.83	-269.6	189.5	638.8	510.0	128.71	4.963	
5,900.0	5,860.8	5,840.8	5,840.8	16.0	116.8	-159.83	-269.6	189.5	638.8	507.8	130.91	4.879	
6,000.0	5,960.8	5,940.8	5,940.8	16.2	118.8	20.21	-269.6	189.5	638.0	505.1	132.94	4.799	
6,100.0	6,060.1	6,040.1	6,040.1	16.3	120.8	20.84	-269.6	189.5	627.6	494.4	133.26	4.710	
6,200.0	6,157.1	6,137.1	6,137.1	16.3	122.7	22.29	-269.6	189.5	605.3	473.7	131.59	4.599	
6,300.0	6,250.2	6,230.2	6,230.2	16.3	124.6	24.76	-269.6	189.5	571.5	443.3	128.23	4.457	
6,400.0	6,337.7	6,317.7	6,317.7	16.2	126.4	28.62	-269.6	189.5	527.3	403.3	124.00	4.253	
6,500.0	6,418.1	6,398.1	6,398.1	16.1	128.0	34.45	-269.6	189.5	474.1	353.5	120.61	3.931	
6,600.0	6,490.2	6,470.2	6,470.2	16.0	129.4	42.98	-269.6	189.5	414.0	293.0	121.01	3.421	
6,700.0	6,552.6	6,532.6	6,532.6	16.0	130.7	54.71	-269.6	189.5	350.4	222.6	127.81	2.742	
6,800.0	6,604.2	6,584.2	6,584.2	16.0	131.7	68.67	-269.6	189.5	288.9	150.3	138.59	2.085	
6,900.0	6,644.3	6,624.3	6,624.3	16.3	132.5	81.61	-269.6	189.5	240.0	93.6	146.39	1.640	
6,999.5	6,672.0	6,652.0	6,652.0	16.8	133.0	90.00	-269.6	189.5	220.2	71.1	149.11	1.477	Level 3, CC
7,000.0	6,672.1	6,652.1	6,652.1	16.8	133.0	90.03	-269.6	189.5	220.2	71.1	149.12	1.477	Level 3, ES, SF
7,100.0	6,687.1	6,667.1	6,667.1	17.7	133.3	92.20	-269.6	189.5	241.6	91.4	150.22	1.608	
7,200.0	6,689.9	6,669.9	6,669.9	18.7	133.4	90.01	-269.6	189.5	297.0	145.6	151.34	1.962	
7,300.0	6,689.9	6,669.9	6,669.9	19.8	133.4	90.01	-269.6	189.5	371.5	219.1	152.49	2.437	
7,400.0	6,689.9	6,669.9	6,669.9	21.0	133.4	90.02	-269.6	189.5	456.0	302.2	153.76	2.965	
7,500.0	6,689.9	6,669.9	6,669.9	22.4	133.4	90.02	-269.6	189.5	545.7	390.5	155.12	3.518	
7,600.0	6,689.9	6,669.9	6,669.9	23.8	133.4	90.03	-269.6	189.5	638.4	481.9	156.56	4.078	
7,700.0	6,689.9	6,669.9	6,669.9	25.3	133.4	90.03	-269.6	189.5	733.1	575.0	158.07	4.638	
7,800.0	6,690.0	6,670.0	6,670.0	26.8	133.4	90.04	-269.6	189.5	829.0	669.4	159.63	5.194	
7,900.0	6,690.0	6,670.0	6,670.0	28.4	133.4	90.04	-269.6	189.5	925.8	764.6	161.23	5.742	
8,000.0	6,690.0	6,670.0	6,670.0	30.0	133.4	90.05	-269.6	189.5	1,023.2	860.3	162.88	6.282	
8,100.0	6,690.0	6,670.0	6,670.0	31.7	133.4	90.05	-269.6	189.5	1,121.1	956.5	164.55	6.813	
8,200.0	6,690.0	6,670.0	6,670.0	33.4	133.4	90.05	-269.6	189.5	1,219.3	1,053.0	166.25	7.334	
8,300.0	6,690.0	6,670.0	6,670.0	35.1	133.4	90.06	-269.6	189.5	1,317.8	1,149.8	167.98	7.845	
8,400.0	6,690.1	6,670.1	6,670.1	36.8	133.4	90.06	-269.6	189.5	1,416.5	1,246.7	169.73	8.346	
8,500.0	6,690.1	6,670.1	6,670.1	38.5	133.4	90.07	-269.6	189.5	1,515.3	1,343.8	171.49	8.836	
8,600.0	6,690.1	6,670.1	6,670.1	40.3	133.4	90.07	-269.6	189.5	1,614.3	1,441.1	173.26	9.317	
8,700.0	6,690.1	6,670.1	6,670.1	42.1	133.4	90.08	-269.6	189.5	1,713.5	1,538.4	175.05	9.788	
8,800.0	6,690.1	6,670.1	6,670.1	43.8	133.4	90.08	-269.6	189.5	1,812.7	1,635.8	176.85	10.249	
8,900.0	6,690.2	6,670.2	6,670.2	45.6	133.4	90.09	-269.6	189.5	1,912.0	1,733.3	178.67	10.701	
9,000.0	6,690.2	6,670.2	6,670.2	47.4	133.4	90.09	-269.6	189.5	2,011.3	1,830.9	180.49	11.144	
9,100.0	6,690.2	6,670.2	6,670.2	49.3	133.4	90.10	-269.6	189.5	2,110.8	1,928.4	182.31	11.578	
9,200.0	6,690.2	6,670.2	6,670.2	51.1	133.4	90.10	-269.6	189.5	2,210.2	2,026.1	184.15	12.003	
9,300.0	6,690.2	6,670.2	6,670.2	52.9	133.4	90.10	-269.6	189.5	2,309.8	2,123.8	185.99	12.419	
9,400.0	6,690.2	6,670.2	6,670.2	54.8	133.4	90.11	-269.6	189.5	2,409.3	2,221.5	187.83	12.827	
9,500.0	6,690.3	6,670.3	6,670.3	56.6	133.4	90.11	-269.6	189.5	2,508.9	2,319.2	189.68	13.227	
9,600.0	6,690.3	6,670.3	6,670.3	58.4	133.4	90.12	-269.6	189.5	2,608.6	2,417.0	191.54	13.619	
9,700.0	6,690.3	6,670.3	6,670.3	60.3	133.4	90.12	-269.6	189.5	2,708.2	2,514.8	193.40	14.003	
9,800.0	6,690.3	6,670.3	6,670.3	62.1	133.4	90.13	-269.6	189.5	2,807.9	2,612.6	195.26	14.380	
9,900.0	6,690.3	6,670.3	6,670.3	64.0	133.4	90.13	-269.6	189.5	2,907.6	2,710.5	197.13	14.750	
10,000.0	6,690.3	6,670.3	6,670.3	65.9	133.4	90.14	-269.6	189.5	3,007.3	2,808.3	199.00	15.112	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hall 28-2 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7600-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	6,690.4	6,670.4	6,670.4	67.7	133.4	90.14	-269.6	189.5	3,107.1	2,906.2	200.87	15.468	
10,200.0	6,690.4	6,670.4	6,670.4	69.6	133.4	90.15	-269.6	189.5	3,206.8	3,004.1	202.75	15.817	
10,300.0	6,690.4	6,670.4	6,670.4	71.5	133.4	90.15	-269.6	189.5	3,306.6	3,102.0	204.63	16.159	
10,400.0	6,690.4	6,670.4	6,670.4	73.3	133.4	90.15	-269.6	189.5	3,406.4	3,199.9	206.51	16.495	
10,500.0	6,690.4	6,670.4	6,670.4	75.2	133.4	90.16	-269.6	189.5	3,506.2	3,297.8	208.39	16.825	
10,600.0	6,690.4	6,670.4	6,670.4	77.1	133.4	90.16	-269.6	189.5	3,606.0	3,395.7	210.27	17.149	
10,700.0	6,690.5	6,670.5	6,670.5	79.0	133.4	90.17	-269.6	189.5	3,705.8	3,493.6	212.16	17.467	
10,800.0	6,690.5	6,670.5	6,670.5	80.9	133.4	90.17	-269.6	189.5	3,805.6	3,591.6	214.05	17.779	
10,900.0	6,690.5	6,670.5	6,670.5	82.7	133.4	90.18	-269.6	189.5	3,905.5	3,689.5	215.94	18.086	
11,000.0	6,690.5	6,670.5	6,670.5	84.6	133.4	90.18	-269.6	189.5	4,005.3	3,787.5	217.83	18.387	
11,100.0	6,690.5	6,670.5	6,670.5	86.5	133.4	90.19	-269.6	189.5	4,105.2	3,885.4	219.72	18.684	
11,200.0	6,690.6	6,670.6	6,670.6	88.4	133.4	90.19	-269.6	189.5	4,205.0	3,983.4	221.61	18.975	
11,300.0	6,690.6	6,670.6	6,670.6	90.3	133.4	90.20	-269.6	189.5	4,304.9	4,081.4	223.51	19.260	
11,400.0	6,690.6	6,670.6	6,670.6	92.2	133.4	90.20	-269.6	189.5	4,404.8	4,179.3	225.40	19.542	
11,500.0	6,690.6	6,670.6	6,670.6	94.1	133.4	90.20	-269.6	189.5	4,504.6	4,277.3	227.30	19.818	
11,600.0	6,690.6	6,670.6	6,670.6	96.0	133.4	90.21	-269.6	189.5	4,604.5	4,375.3	229.20	20.090	
11,700.0	6,690.6	6,670.6	6,670.6	97.9	133.4	90.21	-269.6	189.5	4,704.4	4,473.3	231.10	20.357	
11,800.0	6,690.7	6,670.7	6,670.7	99.8	133.4	90.22	-269.6	189.5	4,804.3	4,571.3	233.00	20.620	
11,900.0	6,690.7	6,670.7	6,670.7	101.7	133.4	90.22	-269.6	189.5	4,904.2	4,669.3	234.90	20.878	
12,000.0	6,690.7	6,670.7	6,670.7	103.6	133.4	90.23	-269.6	189.5	5,004.1	4,767.3	236.80	21.132	
12,100.0	6,690.7	6,670.7	6,670.7	105.5	133.4	90.23	-269.6	189.5	5,104.0	4,865.3	238.70	21.383	
12,200.0	6,690.7	6,670.7	6,670.7	107.4	133.4	90.24	-269.6	189.5	5,203.9	4,963.3	240.60	21.629	
12,300.0	6,690.7	6,670.7	6,670.7	109.3	133.4	90.24	-269.6	189.5	5,303.8	5,061.3	242.51	21.871	
12,400.0	6,690.8	6,670.8	6,670.8	111.2	133.4	90.25	-269.6	189.5	5,403.7	5,159.3	244.41	22.109	
12,500.0	6,690.8	6,670.8	6,670.8	113.1	133.4	90.25	-269.6	189.5	5,503.6	5,257.3	246.31	22.344	
12,600.0	6,690.8	6,670.8	6,670.8	115.0	133.4	90.25	-269.6	189.5	5,603.6	5,355.4	248.22	22.575	
12,700.0	6,690.8	6,670.8	6,670.8	116.9	133.4	90.26	-269.6	189.5	5,703.5	5,453.4	250.12	22.803	
12,800.0	6,690.8	6,670.8	6,670.8	118.8	133.4	90.26	-269.6	189.5	5,803.4	5,551.4	252.03	23.027	
12,900.0	6,690.9	6,670.9	6,670.9	120.7	133.4	90.27	-269.6	189.5	5,903.4	5,649.4	253.94	23.247	
13,000.0	6,690.9	6,670.9	6,670.9	122.6	133.4	90.27	-269.6	189.5	6,003.3	5,747.4	255.84	23.465	
13,100.0	6,690.9	6,670.9	6,670.9	124.5	133.4	90.28	-269.6	189.5	6,103.2	5,845.5	257.75	23.679	
13,200.0	6,690.9	6,670.9	6,670.9	126.4	133.4	90.28	-269.6	189.5	6,203.2	5,943.5	259.66	23.890	
13,300.0	6,690.9	6,670.9	6,670.9	128.3	133.4	90.29	-269.6	189.5	6,303.1	6,041.5	261.57	24.098	
13,400.0	6,690.9	6,670.9	6,670.9	130.2	133.4	90.29	-269.6	189.5	6,403.0	6,139.6	263.47	24.302	
13,500.0	6,691.0	6,671.0	6,671.0	132.1	133.4	90.30	-269.6	189.5	6,503.0	6,237.6	265.38	24.504	
13,600.0	6,691.0	6,671.0	6,671.0	134.0	133.4	90.30	-269.6	189.5	6,602.9	6,335.6	267.29	24.703	
13,700.0	6,691.0	6,671.0	6,671.0	135.9	133.4	90.30	-269.6	189.5	6,702.9	6,433.7	269.20	24.899	
13,755.1	6,691.0	6,671.0	6,671.0	137.0	133.4	90.31	-269.6	189.5	6,757.9	6,487.6	270.25	25.006	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hendricks 33-1 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7600-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	23.0	23.0	0.0	0.5	178.24	-6,896.4	211.8	6,899.6	6,899.2	0.46	N/A	
100.0	100.0	123.0	123.0	0.1	2.5	178.24	-6,896.4	211.8	6,899.6	6,897.1	2.57	2,681.990	
200.0	200.0	223.0	223.0	0.3	4.5	178.24	-6,896.4	211.8	6,899.6	6,894.8	4.80	1,438.220	
300.0	300.0	323.0	323.0	0.6	6.5	178.24	-6,896.4	211.8	6,899.6	6,892.6	7.02	982.559	
400.0	400.0	423.0	423.0	0.8	8.5	178.24	-6,896.4	211.8	6,899.6	6,890.4	9.25	746.159	
500.0	500.0	523.0	523.0	1.0	10.5	178.24	-6,896.4	211.8	6,899.6	6,888.2	11.47	601.452	
600.0	600.0	623.0	623.0	1.2	12.5	178.24	-6,896.4	211.8	6,899.6	6,885.9	13.70	503.755	
700.0	700.0	723.0	723.0	1.5	14.5	178.24	-6,896.4	211.8	6,899.6	6,883.7	15.92	433.362	
800.0	800.0	823.0	823.0	1.7	16.5	178.24	-6,896.4	211.8	6,899.6	6,881.5	18.15	380.230	
900.0	900.0	923.0	923.0	1.9	18.5	178.24	-6,896.4	211.8	6,899.6	6,879.3	20.37	338.704	
1,000.0	1,000.0	1,023.0	1,023.0	2.1	20.5	178.24	-6,896.4	211.8	6,899.6	6,877.0	22.60	305.355	
1,100.0	1,100.0	1,123.0	1,123.0	2.4	22.5	178.24	-6,896.4	211.8	6,899.6	6,874.8	24.82	277.984	
1,200.0	1,200.0	1,223.0	1,223.0	2.6	24.5	178.24	-6,896.4	211.8	6,899.6	6,872.6	27.04	255.117	
1,300.0	1,300.0	1,323.0	1,323.0	2.8	26.5	127.09	-6,896.4	211.8	6,900.7	6,871.4	29.26	235.852	
1,400.0	1,399.8	1,422.8	1,422.8	3.0	28.5	127.07	-6,896.4	211.8	6,903.8	6,872.4	31.45	219.494	
1,500.0	1,499.5	1,522.5	1,522.5	3.3	30.4	127.04	-6,896.4	211.8	6,909.1	6,875.5	33.63	205.424	
1,600.0	1,598.7	1,621.7	1,621.7	3.5	32.4	127.01	-6,896.4	211.8	6,916.5	6,880.7	35.80	193.206	
1,700.0	1,697.5	1,720.5	1,720.5	3.8	34.4	127.04	-6,896.4	211.8	6,925.7	6,887.7	37.99	182.298	
1,800.0	1,796.3	1,819.3	1,819.3	4.0	36.4	127.14	-6,896.4	211.8	6,935.1	6,894.9	40.22	172.416	
1,900.0	1,895.1	1,918.1	1,918.1	4.3	38.4	127.24	-6,896.4	211.8	6,944.5	6,902.1	42.46	163.539	
2,000.0	1,993.9	2,016.9	2,016.9	4.6	40.3	127.34	-6,896.4	211.8	6,954.0	6,909.3	44.71	155.527	
2,100.0	2,092.7	2,115.7	2,115.7	4.9	42.3	127.44	-6,896.4	211.8	6,963.5	6,916.5	46.97	148.265	
2,200.0	2,191.5	2,214.5	2,214.5	5.3	44.3	127.54	-6,896.4	211.8	6,973.0	6,923.7	49.23	141.654	
2,300.0	2,290.3	2,313.3	2,313.3	5.6	46.3	127.64	-6,896.4	211.8	6,982.5	6,931.0	51.49	135.614	
2,400.0	2,389.1	2,412.1	2,412.1	5.9	48.2	127.74	-6,896.4	211.8	6,992.0	6,938.3	53.75	130.074	
2,500.0	2,487.9	2,510.9	2,510.9	6.3	50.2	127.84	-6,896.4	211.8	7,001.6	6,945.6	56.02	124.977	
2,600.0	2,586.7	2,609.7	2,609.7	6.6	52.2	127.94	-6,896.4	211.8	7,011.2	6,952.9	58.29	120.273	
2,700.0	2,685.5	2,708.5	2,708.5	6.9	54.2	128.04	-6,896.4	211.8	7,020.8	6,960.3	60.57	115.918	
2,800.0	2,784.3	2,807.3	2,807.3	7.3	56.1	128.14	-6,896.4	211.8	7,030.5	6,967.6	62.84	111.876	
2,900.0	2,883.0	2,906.0	2,906.0	7.6	58.1	128.24	-6,896.4	211.8	7,040.1	6,975.0	65.12	108.114	
3,000.0	2,981.8	3,004.8	3,004.8	8.0	60.1	128.34	-6,896.4	211.8	7,049.8	6,982.4	67.39	104.605	
3,100.0	3,080.6	3,103.6	3,103.6	8.3	62.1	128.43	-6,896.4	211.8	7,059.5	6,989.8	69.67	101.325	
3,200.0	3,179.4	3,202.4	3,202.4	8.7	64.0	128.53	-6,896.4	211.8	7,069.2	6,997.2	71.95	98.251	
3,300.0	3,278.2	3,301.2	3,301.2	9.0	66.0	128.63	-6,896.4	211.8	7,078.9	7,004.7	74.23	95.365	
3,400.0	3,377.0	3,400.0	3,400.0	9.4	68.0	128.73	-6,896.4	211.8	7,088.7	7,012.2	76.51	92.651	
3,500.0	3,475.8	3,498.8	3,498.8	9.7	70.0	128.82	-6,896.4	211.8	7,098.5	7,019.7	78.79	90.094	
3,600.0	3,574.6	3,597.6	3,597.6	10.1	72.0	128.92	-6,896.4	211.8	7,108.3	7,027.2	81.07	87.681	
3,700.0	3,673.4	3,696.4	3,696.4	10.4	73.9	129.02	-6,896.4	211.8	7,118.1	7,034.7	83.35	85.400	
3,800.0	3,772.2	3,795.2	3,795.2	10.8	75.9	129.11	-6,896.4	211.8	7,127.9	7,042.3	85.63	83.240	
3,900.0	3,871.0	3,894.0	3,894.0	11.1	77.9	129.21	-6,896.4	211.8	7,137.8	7,049.9	87.91	81.192	
4,000.0	3,969.8	3,992.8	3,992.8	11.5	79.9	129.30	-6,896.4	211.8	7,147.7	7,057.5	90.19	79.248	
4,100.0	4,068.5	4,091.5	4,091.5	11.9	81.8	129.40	-6,896.4	211.8	7,157.6	7,065.1	92.47	77.400	
4,200.0	4,167.3	4,190.3	4,190.3	12.2	83.8	129.49	-6,896.4	211.8	7,167.5	7,072.7	94.76	75.642	
4,300.0	4,266.1	4,289.1	4,289.1	12.6	85.8	129.59	-6,896.4	211.8	7,177.4	7,080.4	97.04	73.966	
4,400.0	4,364.9	4,387.9	4,387.9	12.9	87.8	129.68	-6,896.4	211.8	7,187.4	7,088.1	99.32	72.368	
4,500.0	4,463.7	4,486.7	4,486.7	13.3	89.7	129.78	-6,896.4	211.8	7,197.4	7,095.8	101.60	70.841	
4,600.0	4,562.5	4,585.5	4,585.5	13.7	91.7	129.88	-6,896.4	211.8	7,207.3	7,103.5	103.89	69.375	
4,700.0	4,661.6	4,684.6	4,684.6	13.9	93.7	130.10	-6,896.4	211.8	7,216.1	7,109.8	106.26	67.907	
4,800.0	4,761.1	4,784.1	4,784.1	14.2	95.7	130.26	-6,896.4	211.8	7,222.6	7,114.0	108.59	66.515	
4,900.0	4,860.8	4,883.8	4,883.8	14.4	97.7	130.37	-6,896.4	211.8	7,226.9	7,116.1	110.85	65.197	
5,000.0	4,960.8	4,983.8	4,983.8	14.5	99.7	130.41	-6,896.4	211.8	7,228.9	7,115.9	113.04	63.949	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hendricks 33-1 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7600-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,060.8	5,083.8	5,083.8	14.7	101.7	-178.43	-6,896.4	211.8	7,229.1	7,113.9	115.20	62.754	
5,200.0	5,160.8	5,183.8	5,183.8	14.8	103.7	-178.43	-6,896.4	211.8	7,229.1	7,111.7	117.38	61.589	
5,300.0	5,260.8	5,283.8	5,283.8	15.0	105.7	-178.43	-6,896.4	211.8	7,229.1	7,109.5	119.56	60.465	
5,400.0	5,360.8	5,383.8	5,383.8	15.2	107.7	-178.43	-6,896.4	211.8	7,229.1	7,107.3	121.74	59.381	
5,500.0	5,460.8	5,483.8	5,483.8	15.3	109.7	-178.43	-6,896.4	211.8	7,229.1	7,105.2	123.93	58.334	
5,600.0	5,560.8	5,583.8	5,583.8	15.5	111.7	-178.43	-6,896.4	211.8	7,229.1	7,103.0	126.11	57.324	
5,700.0	5,660.8	5,683.8	5,683.8	15.7	113.7	-178.43	-6,896.4	211.8	7,229.1	7,100.8	128.30	56.347	
5,800.0	5,760.8	5,783.8	5,783.8	15.8	115.7	-178.43	-6,896.4	211.8	7,229.1	7,098.6	130.48	55.402	
5,900.0	5,860.8	5,883.8	5,883.8	16.0	117.7	-178.43	-6,896.4	211.8	7,229.1	7,096.4	132.67	54.489	
6,000.0	5,960.8	5,983.8	5,983.8	16.2	119.7	1.57	-6,896.4	211.8	7,228.3	7,093.6	134.69	53.668	
6,100.0	6,060.1	6,083.1	6,083.1	16.3	121.7	1.60	-6,896.4	211.8	7,217.2	7,082.4	134.77	53.551	
6,200.0	6,157.1	6,180.1	6,180.1	16.3	123.6	1.65	-6,896.4	211.8	7,193.3	7,060.8	132.45	54.309	
6,300.0	6,250.2	6,273.2	6,273.2	16.3	125.5	1.75	-6,896.4	211.8	7,156.9	7,029.2	127.68	56.054	
6,400.0	6,337.7	6,360.7	6,360.7	16.2	127.2	1.89	-6,896.4	211.8	7,108.7	6,988.2	120.48	59.002	
6,500.0	6,418.1	6,441.1	6,441.1	16.1	128.8	2.10	-6,896.4	211.8	7,049.4	6,938.5	110.96	63.533	
6,600.0	6,490.2	6,513.2	6,513.2	16.0	130.3	2.41	-6,896.4	211.8	6,980.2	6,880.9	99.29	70.301	
6,700.0	6,552.6	6,575.6	6,575.6	16.0	131.5	2.87	-6,896.4	211.8	6,902.2	6,816.4	85.76	80.483	
6,800.0	6,604.2	6,627.2	6,627.2	16.0	132.5	3.61	-6,896.4	211.8	6,816.7	6,745.9	70.80	96.281	
6,900.0	6,644.3	6,667.3	6,667.3	16.3	133.3	4.95	-6,896.4	211.8	6,725.2	6,669.9	55.23	121.759	
7,000.0	6,672.1	6,695.1	6,695.1	16.8	133.9	7.93	-6,896.4	211.8	6,629.2	6,587.1	42.09	157.486	
7,100.0	6,687.1	6,710.1	6,710.1	17.7	134.2	19.60	-6,896.4	211.8	6,530.5	6,475.3	55.17	118.373	
7,200.0	6,689.9	6,712.9	6,712.9	18.7	134.3	89.68	-6,896.4	211.8	6,430.6	6,278.4	152.19	42.253	
7,300.0	6,689.9	6,712.9	6,712.9	19.8	134.3	89.68	-6,896.4	211.8	6,330.6	6,177.3	153.34	41.285	
7,400.0	6,689.9	6,712.9	6,712.9	21.0	134.3	89.69	-6,896.4	211.8	6,230.7	6,076.1	154.61	40.301	
7,500.0	6,689.9	6,712.9	6,712.9	22.4	134.3	89.69	-6,896.4	211.8	6,130.7	5,974.8	155.97	39.308	
7,600.0	6,689.9	6,712.9	6,712.9	23.8	134.3	89.70	-6,896.4	211.8	6,030.8	5,873.4	157.41	38.313	
7,700.0	6,689.9	6,712.9	6,712.9	25.3	134.3	89.70	-6,896.4	211.8	5,930.9	5,771.9	158.92	37.321	
7,800.0	6,690.0	6,713.0	6,713.0	26.8	134.3	89.71	-6,896.4	211.8	5,830.9	5,670.4	160.48	36.335	
7,900.0	6,690.0	6,713.0	6,713.0	28.4	134.3	89.71	-6,896.4	211.8	5,731.0	5,568.9	162.08	35.358	
8,000.0	6,690.0	6,713.0	6,713.0	30.0	134.3	89.72	-6,896.4	211.8	5,631.0	5,467.3	163.73	34.393	
8,100.0	6,690.0	6,713.0	6,713.0	31.7	134.3	89.72	-6,896.4	211.8	5,531.1	5,365.7	165.40	33.440	
8,200.0	6,690.0	6,713.0	6,713.0	33.4	134.3	89.73	-6,896.4	211.8	5,431.2	5,264.1	167.10	32.502	
8,300.0	6,690.0	6,713.0	6,713.0	35.1	134.3	89.73	-6,896.4	211.8	5,331.2	5,162.4	168.83	31.577	
8,400.0	6,690.1	6,713.1	6,713.1	36.8	134.3	89.74	-6,896.4	211.8	5,231.3	5,060.7	170.58	30.669	
8,500.0	6,690.1	6,713.1	6,713.1	38.5	134.3	89.74	-6,896.4	211.8	5,131.4	4,959.0	172.34	29.775	
8,600.0	6,690.1	6,713.1	6,713.1	40.3	134.3	89.75	-6,896.4	211.8	5,031.4	4,857.3	174.11	28.897	
8,700.0	6,690.1	6,713.1	6,713.1	42.1	134.3	89.75	-6,896.4	211.8	4,931.5	4,755.6	175.90	28.035	
8,800.0	6,690.1	6,713.1	6,713.1	43.8	134.3	89.76	-6,896.4	211.8	4,831.6	4,653.9	177.71	27.189	
8,900.0	6,690.2	6,713.2	6,713.2	45.6	134.3	89.76	-6,896.4	211.8	4,731.7	4,552.2	179.52	26.358	
9,000.0	6,690.2	6,713.2	6,713.2	47.4	134.3	89.77	-6,896.4	211.8	4,631.8	4,450.4	181.34	25.543	
9,100.0	6,690.2	6,713.2	6,713.2	49.3	134.3	89.77	-6,896.4	211.8	4,531.9	4,348.7	183.16	24.742	
9,200.0	6,690.2	6,713.2	6,713.2	51.1	134.3	89.78	-6,896.4	211.8	4,432.0	4,247.0	185.00	23.957	
9,300.0	6,690.2	6,713.2	6,713.2	52.9	134.3	89.78	-6,896.4	211.8	4,332.1	4,145.2	186.84	23.186	
9,400.0	6,690.2	6,713.2	6,713.2	54.8	134.3	89.79	-6,896.4	211.8	4,232.2	4,043.5	188.68	22.430	
9,500.0	6,690.3	6,713.3	6,713.3	56.6	134.3	89.79	-6,896.4	211.8	4,132.3	3,941.8	190.54	21.688	
9,600.0	6,690.3	6,713.3	6,713.3	58.4	134.3	89.80	-6,896.4	211.8	4,032.4	3,840.0	192.39	20.959	
9,700.0	6,690.3	6,713.3	6,713.3	60.3	134.3	89.80	-6,896.4	211.8	3,932.5	3,738.3	194.25	20.245	
9,800.0	6,690.3	6,713.3	6,713.3	62.1	134.3	89.81	-6,896.4	211.8	3,832.7	3,636.6	196.12	19.543	
9,900.0	6,690.3	6,713.3	6,713.3	64.0	134.3	89.81	-6,896.4	211.8	3,732.8	3,534.8	197.98	18.854	
10,000.0	6,690.3	6,713.3	6,713.3	65.9	134.3	89.82	-6,896.4	211.8	3,632.9	3,433.1	199.85	18.178	
10,100.0	6,690.4	6,713.4	6,713.4	67.7	134.3	89.82	-6,896.4	211.8	3,533.1	3,331.4	201.73	17.514	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hendricks 33-1 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7600-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,200.0	6,690.4	6,713.4	6,713.4	69.6	134.3	89.83	-6,896.4	211.8	3,433.3	3,229.7	203.60	16.863	
10,300.0	6,690.4	6,713.4	6,713.4	71.5	134.3	89.83	-6,896.4	211.8	3,333.4	3,128.0	205.48	16.223	
10,400.0	6,690.4	6,713.4	6,713.4	73.3	134.3	89.84	-6,896.4	211.8	3,233.6	3,026.3	207.36	15.594	
10,500.0	6,690.4	6,713.4	6,713.4	75.2	134.3	89.84	-6,896.4	211.8	3,133.8	2,924.6	209.24	14.977	
10,600.0	6,690.4	6,713.4	6,713.4	77.1	134.3	89.85	-6,896.4	211.8	3,034.0	2,822.9	211.13	14.371	
10,700.0	6,690.5	6,713.5	6,713.5	79.0	134.3	89.85	-6,896.4	211.8	2,934.2	2,721.2	213.01	13.775	
10,800.0	6,690.5	6,713.5	6,713.5	80.9	134.3	89.86	-6,896.4	211.8	2,834.5	2,619.6	214.90	13.190	
10,900.0	6,690.5	6,713.5	6,713.5	82.7	134.3	89.86	-6,896.4	211.8	2,734.7	2,517.9	216.79	12.615	
11,000.0	6,690.5	6,713.5	6,713.5	84.6	134.3	89.87	-6,896.4	211.8	2,635.0	2,416.3	218.68	12.049	
11,100.0	6,690.5	6,713.5	6,713.5	86.5	134.3	89.87	-6,896.4	211.8	2,535.3	2,314.7	220.57	11.494	
11,200.0	6,690.6	6,713.6	6,713.6	88.4	134.3	89.88	-6,896.4	211.8	2,435.6	2,213.1	222.47	10.948	
11,300.0	6,690.6	6,713.6	6,713.6	90.3	134.3	89.88	-6,896.4	211.8	2,336.0	2,111.6	224.36	10.412	
11,400.0	6,690.6	6,713.6	6,713.6	92.2	134.3	89.89	-6,896.4	211.8	2,236.3	2,010.1	226.26	9.884	
11,500.0	6,690.6	6,713.6	6,713.6	94.1	134.3	89.89	-6,896.4	211.8	2,136.7	1,908.6	228.15	9.365	
11,600.0	6,690.6	6,713.6	6,713.6	96.0	134.3	89.90	-6,896.4	211.8	2,037.2	1,807.1	230.05	8.855	
11,700.0	6,690.6	6,713.6	6,713.6	97.9	134.3	89.90	-6,896.4	211.8	1,937.7	1,705.7	231.95	8.354	
11,800.0	6,690.7	6,713.7	6,713.7	99.8	134.3	89.91	-6,896.4	211.8	1,838.2	1,604.4	233.85	7.861	
11,900.0	6,690.7	6,713.7	6,713.7	101.7	134.3	89.91	-6,896.4	211.8	1,738.9	1,503.1	235.75	7.376	
12,000.0	6,690.7	6,713.7	6,713.7	103.6	134.3	89.92	-6,896.4	211.8	1,639.5	1,401.9	237.65	6.899	
12,100.0	6,690.7	6,713.7	6,713.7	105.5	134.3	89.92	-6,896.4	211.8	1,540.3	1,300.8	239.55	6.430	
12,200.0	6,690.7	6,713.7	6,713.7	107.4	134.3	89.93	-6,896.4	211.8	1,441.2	1,199.7	241.46	5.969	
12,300.0	6,690.7	6,713.7	6,713.7	109.3	134.3	89.93	-6,896.4	211.8	1,342.2	1,098.9	243.36	5.515	
12,400.0	6,690.8	6,713.8	6,713.8	111.2	134.3	89.94	-6,896.4	211.8	1,243.4	998.1	245.26	5.070	
12,500.0	6,690.8	6,713.8	6,713.8	113.1	134.3	89.94	-6,896.4	211.8	1,144.8	897.6	247.17	4.632	
12,600.0	6,690.8	6,713.8	6,713.8	115.0	134.3	89.95	-6,896.4	211.8	1,046.4	797.4	249.07	4.201	
12,700.0	6,690.8	6,713.8	6,713.8	116.9	134.3	89.95	-6,896.4	211.8	948.4	697.4	250.98	3.779	
12,800.0	6,690.8	6,713.8	6,713.8	118.8	134.3	89.96	-6,896.4	211.8	850.9	598.0	252.88	3.365	
12,900.0	6,690.9	6,713.9	6,713.9	120.7	134.3	89.96	-6,896.4	211.8	754.0	499.2	254.79	2.959	
13,000.0	6,690.9	6,713.9	6,713.9	122.6	134.3	89.97	-6,896.4	211.8	658.0	401.3	256.70	2.563	
13,100.0	6,690.9	6,713.9	6,713.9	124.5	134.3	89.97	-6,896.4	211.8	563.4	304.8	258.61	2.179	
13,200.0	6,690.9	6,713.9	6,713.9	126.4	134.3	89.98	-6,896.4	211.8	471.1	210.6	260.51	1.808	
13,300.0	6,690.9	6,713.9	6,713.9	128.3	134.3	89.98	-6,896.4	211.8	382.7	120.3	262.42	1.458	Level 3
13,400.0	6,690.9	6,713.9	6,713.9	130.2	134.3	89.99	-6,896.4	211.8	301.6	37.2	264.33	1.141	Level 2
13,500.0	6,691.0	6,714.0	6,714.0	132.1	134.3	89.99	-6,896.4	211.8	235.4	-30.8	266.24	0.884	Level 1
13,600.0	6,691.0	6,714.0	6,714.0	134.0	134.3	90.00	-6,896.4	211.8	199.8	-68.4	268.15	0.745	Level 1
13,627.6	6,691.0	6,714.0	6,714.0	134.5	134.3	90.00	-6,896.4	211.8	197.9	-70.8	268.68	0.736	Level 1, CC, ES, SF
13,700.0	6,691.0	6,714.0	6,714.0	135.9	134.3	90.00	-6,896.4	211.8	210.7	-59.3	270.06	0.780	Level 1
13,755.1	6,691.0	6,714.0	6,714.0	137.0	134.3	90.01	-6,896.4	211.8	235.4	-35.7	271.11	0.868	Level 1

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hendricks 33-3 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7600-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	8.0	8.0	0.0	0.2	178.45	-5,242.4	142.1	5,244.3	5,244.2	0.16	N/A	
100.0	100.0	108.0	108.0	0.1	2.2	178.45	-5,242.4	142.1	5,244.3	5,242.1	2.27	2,307.661	
200.0	200.0	208.0	208.0	0.3	4.2	178.45	-5,242.4	142.1	5,244.3	5,239.8	4.50	1,166.098	
300.0	300.0	308.0	308.0	0.6	6.2	178.45	-5,242.4	142.1	5,244.3	5,237.6	6.72	780.164	
400.0	400.0	408.0	408.0	0.8	8.2	178.45	-5,242.4	142.1	5,244.3	5,235.4	8.95	586.165	
500.0	500.0	508.0	508.0	1.0	10.2	178.45	-5,242.4	142.1	5,244.3	5,233.2	11.17	469.434	
600.0	600.0	608.0	608.0	1.2	12.2	178.45	-5,242.4	142.1	5,244.3	5,230.9	13.40	391.474	
700.0	700.0	708.0	708.0	1.5	14.2	178.45	-5,242.4	142.1	5,244.3	5,228.7	15.62	335.720	
800.0	800.0	808.0	808.0	1.7	16.2	178.45	-5,242.4	142.1	5,244.3	5,226.5	17.85	293.868	
900.0	900.0	908.0	908.0	1.9	18.2	178.45	-5,242.4	142.1	5,244.3	5,224.3	20.07	261.294	
1,000.0	1,000.0	1,008.0	1,008.0	2.1	20.2	178.45	-5,242.4	142.1	5,244.3	5,222.0	22.30	235.220	
1,100.0	1,100.0	1,108.0	1,108.0	2.4	22.2	178.45	-5,242.4	142.1	5,244.3	5,219.8	24.52	213.878	
1,200.0	1,200.0	1,208.0	1,208.0	2.6	24.2	178.45	-5,242.4	142.1	5,244.3	5,217.6	26.74	196.087	
1,300.0	1,300.0	1,308.0	1,308.0	2.8	26.2	127.30	-5,242.4	142.1	5,245.4	5,216.4	28.96	181.135	
1,400.0	1,399.8	1,407.8	1,407.8	3.0	28.2	127.29	-5,242.4	142.1	5,248.6	5,217.4	31.15	168.475	
1,500.0	1,499.5	1,507.5	1,507.5	3.3	30.1	127.28	-5,242.4	142.1	5,253.9	5,220.5	33.33	157.616	
1,600.0	1,598.7	1,606.7	1,606.7	3.5	32.1	127.27	-5,242.4	142.1	5,261.3	5,225.8	35.50	148.214	
1,700.0	1,697.5	1,705.5	1,705.5	3.8	34.1	127.33	-5,242.4	142.1	5,270.5	5,232.8	37.69	139.840	
1,800.0	1,796.3	1,804.3	1,804.3	4.0	36.1	127.47	-5,242.4	142.1	5,280.0	5,240.1	39.92	132.261	
1,900.0	1,895.1	1,903.1	1,903.1	4.3	38.1	127.60	-5,242.4	142.1	5,289.5	5,247.4	42.16	125.459	
2,000.0	1,993.9	2,001.9	2,001.9	4.6	40.0	127.73	-5,242.4	142.1	5,299.1	5,254.7	44.41	119.325	
2,100.0	2,092.7	2,100.7	2,100.7	4.9	42.0	127.86	-5,242.4	142.1	5,308.6	5,262.0	46.66	113.768	
2,200.0	2,191.5	2,199.5	2,199.5	5.3	44.0	127.99	-5,242.4	142.1	5,318.2	5,269.3	48.92	108.714	
2,300.0	2,290.3	2,298.3	2,298.3	5.6	46.0	128.12	-5,242.4	142.1	5,327.9	5,276.7	51.18	104.098	
2,400.0	2,389.1	2,397.1	2,397.1	5.9	47.9	128.25	-5,242.4	142.1	5,337.5	5,284.1	53.45	99.868	
2,500.0	2,487.9	2,495.9	2,495.9	6.3	49.9	128.38	-5,242.4	142.1	5,347.2	5,291.5	55.71	95.978	
2,600.0	2,586.7	2,594.7	2,594.7	6.6	51.9	128.51	-5,242.4	142.1	5,356.9	5,298.9	57.98	92.389	
2,700.0	2,685.5	2,693.5	2,693.5	6.9	53.9	128.64	-5,242.4	142.1	5,366.6	5,306.4	60.25	89.068	
2,800.0	2,784.3	2,792.3	2,792.3	7.3	55.8	128.77	-5,242.4	142.1	5,376.4	5,313.9	62.53	85.988	
2,900.0	2,883.0	2,891.0	2,891.0	7.6	57.8	128.89	-5,242.4	142.1	5,386.2	5,321.4	64.80	83.122	
3,000.0	2,981.8	2,989.8	2,989.8	8.0	59.8	129.02	-5,242.4	142.1	5,396.0	5,328.9	67.07	80.449	
3,100.0	3,080.6	3,088.6	3,088.6	8.3	61.8	129.15	-5,242.4	142.1	5,405.8	5,336.5	69.35	77.952	
3,200.0	3,179.4	3,187.4	3,187.4	8.7	63.7	129.27	-5,242.4	142.1	5,415.7	5,344.1	71.62	75.612	
3,300.0	3,278.2	3,286.2	3,286.2	9.0	65.7	129.40	-5,242.4	142.1	5,425.6	5,351.7	73.90	73.417	
3,400.0	3,377.0	3,385.0	3,385.0	9.4	67.7	129.53	-5,242.4	142.1	5,435.5	5,359.4	76.18	71.353	
3,500.0	3,475.8	3,483.8	3,483.8	9.7	69.7	129.65	-5,242.4	142.1	5,445.5	5,367.0	78.46	69.409	
3,600.0	3,574.6	3,582.6	3,582.6	10.1	71.7	129.78	-5,242.4	142.1	5,455.5	5,374.7	80.73	67.575	
3,700.0	3,673.4	3,681.4	3,681.4	10.4	73.6	129.90	-5,242.4	142.1	5,465.5	5,382.4	83.01	65.841	
3,800.0	3,772.2	3,780.2	3,780.2	10.8	75.6	130.02	-5,242.4	142.1	5,475.5	5,390.2	85.29	64.200	
3,900.0	3,871.0	3,879.0	3,879.0	11.1	77.6	130.15	-5,242.4	142.1	5,485.5	5,398.0	87.56	62.645	
4,000.0	3,969.8	3,977.8	3,977.8	11.5	79.6	130.27	-5,242.4	142.1	5,495.6	5,405.8	89.84	61.169	
4,100.0	4,068.5	4,076.5	4,076.5	11.9	81.5	130.39	-5,242.4	142.1	5,505.7	5,413.6	92.12	59.767	
4,200.0	4,167.3	4,175.3	4,175.3	12.2	83.5	130.51	-5,242.4	142.1	5,515.8	5,421.4	94.40	58.432	
4,300.0	4,266.1	4,274.1	4,274.1	12.6	85.5	130.63	-5,242.4	142.1	5,526.0	5,429.3	96.67	57.161	
4,400.0	4,364.9	4,372.9	4,372.9	12.9	87.5	130.75	-5,242.4	142.1	5,536.2	5,437.2	98.95	55.948	
4,500.0	4,463.7	4,471.7	4,471.7	13.3	89.4	130.88	-5,242.4	142.1	5,546.4	5,445.1	101.23	54.791	
4,600.0	4,562.5	4,570.5	4,570.5	13.7	91.4	131.01	-5,242.4	142.1	5,556.6	5,453.1	103.52	53.679	
4,700.0	4,661.6	4,669.6	4,669.6	13.9	93.4	131.25	-5,242.4	142.1	5,565.5	5,459.6	105.89	52.558	
4,800.0	4,761.1	4,769.1	4,769.1	14.2	95.4	131.42	-5,242.4	142.1	5,572.2	5,464.0	108.22	51.490	
4,900.0	4,860.8	4,868.8	4,868.8	14.4	97.4	131.54	-5,242.4	142.1	5,576.6	5,466.1	110.48	50.474	
5,000.0	4,960.8	4,968.8	4,968.8	14.5	99.4	131.59	-5,242.4	142.1	5,578.7	5,466.0	112.68	49.509	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hendricks 33-3 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7600-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,060.8	5,068.8	5,068.8	14.7	101.4	-177.25	-5,242.4	142.1	5,578.8	5,464.0	114.84	48.581	
5,200.0	5,160.8	5,168.8	5,168.8	14.8	103.4	-177.25	-5,242.4	142.1	5,578.8	5,461.8	117.02	47.676	
5,300.0	5,260.8	5,268.8	5,268.8	15.0	105.4	-177.25	-5,242.4	142.1	5,578.8	5,459.6	119.20	46.803	
5,400.0	5,360.8	5,368.8	5,368.8	15.2	107.4	-177.25	-5,242.4	142.1	5,578.8	5,457.5	121.38	45.961	
5,500.0	5,460.8	5,468.8	5,468.8	15.3	109.4	-177.25	-5,242.4	142.1	5,578.8	5,455.3	123.57	45.148	
5,600.0	5,560.8	5,568.8	5,568.8	15.5	111.4	-177.25	-5,242.4	142.1	5,578.8	5,453.1	125.75	44.364	
5,700.0	5,660.8	5,668.8	5,668.8	15.7	113.4	-177.25	-5,242.4	142.1	5,578.8	5,450.9	127.94	43.605	
5,800.0	5,760.8	5,768.8	5,768.8	15.8	115.4	-177.25	-5,242.4	142.1	5,578.8	5,448.7	130.13	42.872	
5,900.0	5,860.8	5,868.8	5,868.8	16.0	117.4	-177.25	-5,242.4	142.1	5,578.8	5,446.5	132.32	42.163	
6,000.0	5,960.8	5,968.8	5,968.8	16.2	119.4	2.75	-5,242.4	142.1	5,578.0	5,443.7	134.33	41.525	
6,100.0	6,060.1	6,068.1	6,068.1	16.3	121.4	2.80	-5,242.4	142.1	5,567.0	5,432.5	134.43	41.413	
6,200.0	6,157.1	6,165.1	6,165.1	16.3	123.3	2.90	-5,242.4	142.1	5,543.1	5,410.9	132.12	41.955	
6,300.0	6,250.2	6,258.2	6,258.2	16.3	125.2	3.08	-5,242.4	142.1	5,506.7	5,379.3	127.38	43.232	
6,400.0	6,337.7	6,345.7	6,345.7	16.2	126.9	3.33	-5,242.4	142.1	5,458.5	5,338.3	120.22	45.403	
6,500.0	6,418.1	6,426.1	6,426.1	16.1	128.5	3.71	-5,242.4	142.1	5,399.3	5,288.5	110.78	48.741	
6,600.0	6,490.2	6,498.2	6,498.2	16.0	130.0	4.26	-5,242.4	142.1	5,330.2	5,230.9	99.24	53.710	
6,700.0	6,552.6	6,560.6	6,560.6	16.0	131.2	5.10	-5,242.4	142.1	5,252.2	5,166.2	85.97	61.095	
6,800.0	6,604.2	6,612.2	6,612.2	16.0	132.2	6.43	-5,242.4	142.1	5,166.8	5,095.2	71.61	72.155	
6,900.0	6,644.3	6,652.3	6,652.3	16.3	133.0	8.82	-5,242.4	142.1	5,075.4	5,017.6	57.81	87.798	
7,000.0	6,672.1	6,680.1	6,680.1	16.8	133.6	14.09	-5,242.4	142.1	4,979.5	4,928.3	51.23	97.206	
7,100.0	6,687.1	6,695.1	6,695.1	17.7	133.9	32.82	-5,242.4	142.1	4,880.9	4,797.0	83.82	58.228	
7,200.0	6,689.9	6,697.9	6,697.9	18.7	134.0	89.82	-5,242.4	142.1	4,781.1	4,629.2	151.90	31.476	
7,300.0	6,689.9	6,697.9	6,697.9	19.8	134.0	89.83	-5,242.4	142.1	4,681.2	4,528.2	153.05	30.587	
7,400.0	6,689.9	6,697.9	6,697.9	21.0	134.0	89.83	-5,242.4	142.1	4,581.4	4,427.1	154.31	29.690	
7,500.0	6,689.9	6,697.9	6,697.9	22.4	134.0	89.83	-5,242.4	142.1	4,481.6	4,325.9	155.67	28.789	
7,600.0	6,689.9	6,697.9	6,697.9	23.8	134.0	89.84	-5,242.4	142.1	4,381.8	4,224.7	157.11	27.889	
7,700.0	6,689.9	6,697.9	6,697.9	25.3	134.0	89.84	-5,242.4	142.1	4,282.0	4,123.3	158.62	26.995	
7,800.0	6,690.0	6,698.0	6,698.0	26.8	134.0	89.84	-5,242.4	142.1	4,182.2	4,022.0	160.18	26.109	
7,900.0	6,690.0	6,698.0	6,698.0	28.4	134.0	89.85	-5,242.4	142.1	4,082.4	3,920.6	161.79	25.233	
8,000.0	6,690.0	6,698.0	6,698.0	30.0	134.0	89.85	-5,242.4	142.1	3,982.6	3,819.2	163.43	24.369	
8,100.0	6,690.0	6,698.0	6,698.0	31.7	134.0	89.86	-5,242.4	142.1	3,882.8	3,717.7	165.11	23.517	
8,200.0	6,690.0	6,698.0	6,698.0	33.4	134.0	89.86	-5,242.4	142.1	3,783.1	3,616.3	166.81	22.679	
8,300.0	6,690.0	6,698.0	6,698.0	35.1	134.0	89.86	-5,242.4	142.1	3,683.3	3,514.8	168.53	21.855	
8,400.0	6,690.1	6,698.1	6,698.1	36.8	134.0	89.87	-5,242.4	142.1	3,583.6	3,413.3	170.28	21.045	
8,500.0	6,690.1	6,698.1	6,698.1	38.5	134.0	89.87	-5,242.4	142.1	3,483.9	3,311.8	172.04	20.250	
8,600.0	6,690.1	6,698.1	6,698.1	40.3	134.0	89.87	-5,242.4	142.1	3,384.2	3,210.4	173.82	19.470	
8,700.0	6,690.1	6,698.1	6,698.1	42.1	134.0	89.88	-5,242.4	142.1	3,284.5	3,108.9	175.61	18.704	
8,800.0	6,690.1	6,698.1	6,698.1	43.8	134.0	89.88	-5,242.4	142.1	3,184.9	3,007.4	177.41	17.952	
8,900.0	6,690.2	6,698.2	6,698.2	45.6	134.0	89.89	-5,242.4	142.1	3,085.2	2,906.0	179.22	17.215	
9,000.0	6,690.2	6,698.2	6,698.2	47.4	134.0	89.89	-5,242.4	142.1	2,985.6	2,804.6	181.04	16.491	
9,100.0	6,690.2	6,698.2	6,698.2	49.3	134.0	89.89	-5,242.4	142.1	2,886.0	2,703.2	182.87	15.782	
9,200.0	6,690.2	6,698.2	6,698.2	51.1	134.0	89.90	-5,242.4	142.1	2,786.5	2,601.8	184.70	15.086	
9,300.0	6,690.2	6,698.2	6,698.2	52.9	134.0	89.90	-5,242.4	142.1	2,686.9	2,500.4	186.54	14.404	
9,400.0	6,690.2	6,698.2	6,698.2	54.8	134.0	89.90	-5,242.4	142.1	2,587.5	2,399.1	188.39	13.735	
9,500.0	6,690.3	6,698.3	6,698.3	56.6	134.0	89.91	-5,242.4	142.1	2,488.0	2,297.8	190.24	13.078	
9,600.0	6,690.3	6,698.3	6,698.3	58.4	134.0	89.91	-5,242.4	142.1	2,388.6	2,196.5	192.10	12.435	
9,700.0	6,690.3	6,698.3	6,698.3	60.3	134.0	89.92	-5,242.4	142.1	2,289.3	2,095.3	193.96	11.803	
9,800.0	6,690.3	6,698.3	6,698.3	62.1	134.0	89.92	-5,242.4	142.1	2,190.0	1,994.2	195.82	11.184	
9,900.0	6,690.3	6,698.3	6,698.3	64.0	134.0	89.92	-5,242.4	142.1	2,090.8	1,893.1	197.69	10.576	
10,000.0	6,690.3	6,698.3	6,698.3	65.9	134.0	89.93	-5,242.4	142.1	1,991.6	1,792.1	199.56	9.980	
10,100.0	6,690.4	6,698.4	6,698.4	67.7	134.0	89.93	-5,242.4	142.1	1,892.6	1,691.2	201.43	9.396	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hendricks 33-3 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7600-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,200.0	6,690.4	6,698.4	6,698.4	69.6	134.0	89.93	-5,242.4	142.1	1,793.7	1,590.4	203.30	8.823	
10,300.0	6,690.4	6,698.4	6,698.4	71.5	134.0	89.94	-5,242.4	142.1	1,694.8	1,489.7	205.18	8.260	
10,400.0	6,690.4	6,698.4	6,698.4	73.3	134.0	89.94	-5,242.4	142.1	1,596.2	1,389.1	207.06	7.709	
10,500.0	6,690.4	6,698.4	6,698.4	75.2	134.0	89.94	-5,242.4	142.1	1,497.7	1,288.7	208.95	7.168	
10,600.0	6,690.4	6,698.4	6,698.4	77.1	134.0	89.95	-5,242.4	142.1	1,399.4	1,188.6	210.83	6.638	
10,700.0	6,690.5	6,698.5	6,698.5	79.0	134.0	89.95	-5,242.4	142.1	1,301.4	1,088.7	212.72	6.118	
10,800.0	6,690.5	6,698.5	6,698.5	80.9	134.0	89.96	-5,242.4	142.1	1,203.7	989.1	214.60	5.609	
10,900.0	6,690.5	6,698.5	6,698.5	82.7	134.0	89.96	-5,242.4	142.1	1,106.4	889.9	216.49	5.111	
11,000.0	6,690.5	6,698.5	6,698.5	84.6	134.0	89.96	-5,242.4	142.1	1,009.7	791.3	218.38	4.623	
11,100.0	6,690.5	6,698.5	6,698.5	86.5	134.0	89.97	-5,242.4	142.1	913.6	693.4	220.28	4.148	
11,200.0	6,690.6	6,698.6	6,698.6	88.4	134.0	89.97	-5,242.4	142.1	818.6	596.4	222.17	3.684	
11,300.0	6,690.6	6,698.6	6,698.6	90.3	134.0	89.97	-5,242.4	142.1	724.8	500.7	224.06	3.235	
11,400.0	6,690.6	6,698.6	6,698.6	92.2	134.0	89.98	-5,242.4	142.1	632.9	407.0	225.96	2.801	
11,500.0	6,690.6	6,698.6	6,698.6	94.1	134.0	89.98	-5,242.4	142.1	543.9	316.1	227.86	2.387	
11,600.0	6,690.6	6,698.6	6,698.6	96.0	134.0	89.99	-5,242.4	142.1	459.5	229.8	229.75	2.000	
11,700.0	6,690.6	6,698.6	6,698.6	97.9	134.0	89.99	-5,242.4	142.1	382.7	151.0	231.65	1.652	
11,800.0	6,690.7	6,698.7	6,698.7	99.8	134.0	89.99	-5,242.4	142.1	318.9	85.4	233.55	1.366	Level 3
11,900.0	6,690.7	6,698.7	6,698.7	101.7	134.0	90.00	-5,242.4	142.1	277.5	42.0	235.45	1.179	Level 2
11,973.6	6,690.7	6,698.7	6,698.7	103.1	134.0	90.00	-5,242.4	142.1	267.6	30.7	236.85	1.130	Level 2, CC, ES, SF
12,000.0	6,690.7	6,698.7	6,698.7	103.6	134.0	90.00	-5,242.4	142.1	268.9	31.5	237.35	1.133	Level 2
12,100.0	6,690.7	6,698.7	6,698.7	105.5	134.0	90.00	-5,242.4	142.1	295.9	56.7	239.26	1.237	Level 2
12,200.0	6,690.7	6,698.7	6,698.7	107.4	134.0	90.01	-5,242.4	142.1	350.5	109.3	241.16	1.453	Level 3
12,300.0	6,690.7	6,698.7	6,698.7	109.3	134.0	90.01	-5,242.4	142.1	422.1	179.0	243.06	1.736	
12,400.0	6,690.8	6,698.8	6,698.8	111.2	134.0	90.02	-5,242.4	142.1	503.4	258.4	244.97	2.055	
12,500.0	6,690.8	6,698.8	6,698.8	113.1	134.0	90.02	-5,242.4	142.1	590.5	343.6	246.87	2.392	
12,600.0	6,690.8	6,698.8	6,698.8	115.0	134.0	90.02	-5,242.4	142.1	681.2	432.4	248.77	2.738	
12,700.0	6,690.8	6,698.8	6,698.8	116.9	134.0	90.03	-5,242.4	142.1	774.1	523.4	250.68	3.088	
12,800.0	6,690.8	6,698.8	6,698.8	118.8	134.0	90.03	-5,242.4	142.1	868.6	616.1	252.59	3.439	
12,900.0	6,690.9	6,698.9	6,698.9	120.7	134.0	90.03	-5,242.4	142.1	964.3	709.8	254.49	3.789	
13,000.0	6,690.9	6,698.9	6,698.9	122.6	134.0	90.04	-5,242.4	142.1	1,060.7	804.3	256.40	4.137	
13,100.0	6,690.9	6,698.9	6,698.9	124.5	134.0	90.04	-5,242.4	142.1	1,157.8	899.4	258.31	4.482	
13,200.0	6,690.9	6,698.9	6,698.9	126.4	134.0	90.05	-5,242.4	142.1	1,255.3	995.0	260.22	4.824	
13,300.0	6,690.9	6,698.9	6,698.9	128.3	134.0	90.05	-5,242.4	142.1	1,353.1	1,091.0	262.12	5.162	
13,400.0	6,690.9	6,698.9	6,698.9	130.2	134.0	90.05	-5,242.4	142.1	1,451.3	1,187.3	264.03	5.497	
13,500.0	6,691.0	6,699.0	6,699.0	132.1	134.0	90.06	-5,242.4	142.1	1,549.7	1,283.7	265.94	5.827	
13,600.0	6,691.0	6,699.0	6,699.0	134.0	134.0	90.06	-5,242.4	142.1	1,648.3	1,380.4	267.85	6.154	
13,700.0	6,691.0	6,699.0	6,699.0	135.9	134.0	90.06	-5,242.4	142.1	1,747.0	1,477.3	269.76	6.476	
13,755.1	6,691.0	6,699.0	6,699.0	137.0	134.0	90.07	-5,242.4	142.1	1,801.4	1,530.6	270.81	6.652	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - P & A Farms 28-1 (Exist) - Wellbore #1 - Wellbore

Offset Site Error: 0.0 ft

Survey Program: 7600-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	18.0	18.0	0.0	0.4	178.49	-4,029.3	105.9	4,030.7	4,030.3	0.36	N/A	
100.0	100.0	118.0	118.0	0.1	2.4	178.49	-4,029.3	105.9	4,030.7	4,028.2	2.47	1,630.143	
200.0	200.0	218.0	218.0	0.3	4.4	178.49	-4,029.3	105.9	4,030.7	4,026.0	4.70	858.072	
300.0	300.0	318.0	318.0	0.6	6.4	178.49	-4,029.3	105.9	4,030.7	4,023.7	6.92	582.288	
400.0	400.0	418.0	418.0	0.8	8.4	178.49	-4,029.3	105.9	4,030.7	4,021.5	9.15	440.660	
500.0	500.0	518.0	518.0	1.0	10.4	178.49	-4,029.3	105.9	4,030.7	4,019.3	11.37	354.448	
600.0	600.0	618.0	618.0	1.2	12.4	178.49	-4,029.3	105.9	4,030.7	4,017.1	13.60	296.450	
700.0	700.0	718.0	718.0	1.5	14.4	178.49	-4,029.3	105.9	4,030.7	4,014.8	15.82	254.764	
800.0	800.0	818.0	818.0	1.7	16.4	178.49	-4,029.3	105.9	4,030.7	4,012.6	18.05	223.356	
900.0	900.0	918.0	918.0	1.9	18.4	178.49	-4,029.3	105.9	4,030.7	4,010.4	20.27	198.842	
1,000.0	1,000.0	1,018.0	1,018.0	2.1	20.4	178.49	-4,029.3	105.9	4,030.7	4,008.2	22.50	179.177	
1,100.0	1,100.0	1,118.0	1,118.0	2.4	22.4	178.49	-4,029.3	105.9	4,030.7	4,005.9	24.72	163.051	
1,200.0	1,200.0	1,218.0	1,218.0	2.6	24.4	178.49	-4,029.3	105.9	4,030.7	4,003.7	26.94	149.588	
1,300.0	1,300.0	1,318.0	1,318.0	2.8	26.4	127.35	-4,029.3	105.9	4,031.7	4,002.6	29.16	138.269	
1,400.0	1,399.8	1,417.8	1,417.8	3.0	28.4	127.36	-4,029.3	105.9	4,034.9	4,003.5	31.35	128.692	
1,500.0	1,499.5	1,517.5	1,517.5	3.3	30.3	127.37	-4,029.3	105.9	4,040.2	4,006.7	33.53	120.485	
1,600.0	1,598.7	1,616.7	1,616.7	3.5	32.3	127.39	-4,029.3	105.9	4,047.6	4,011.9	35.70	113.390	
1,700.0	1,697.5	1,715.5	1,715.5	3.8	34.3	127.49	-4,029.3	105.9	4,056.9	4,019.0	37.89	107.078	
1,800.0	1,796.3	1,814.3	1,814.3	4.0	36.3	127.66	-4,029.3	105.9	4,066.4	4,026.3	40.12	101.361	
1,900.0	1,895.1	1,913.1	1,913.1	4.3	38.3	127.83	-4,029.3	105.9	4,076.0	4,033.6	42.36	96.227	
2,000.0	1,993.9	2,011.9	2,011.9	4.6	40.2	128.00	-4,029.3	105.9	4,085.6	4,041.0	44.60	91.596	
2,100.0	2,092.7	2,110.7	2,110.7	4.9	42.2	128.17	-4,029.3	105.9	4,095.2	4,048.4	46.86	87.399	
2,200.0	2,191.5	2,209.5	2,209.5	5.3	44.2	128.34	-4,029.3	105.9	4,104.9	4,055.8	49.11	83.581	
2,300.0	2,290.3	2,308.3	2,308.3	5.6	46.2	128.51	-4,029.3	105.9	4,114.6	4,063.2	51.37	80.092	
2,400.0	2,389.1	2,407.1	2,407.1	5.9	48.1	128.68	-4,029.3	105.9	4,124.3	4,070.7	53.64	76.895	
2,500.0	2,487.9	2,505.9	2,505.9	6.3	50.1	128.84	-4,029.3	105.9	4,134.1	4,078.2	55.90	73.953	
2,600.0	2,586.7	2,604.7	2,604.7	6.6	52.1	129.01	-4,029.3	105.9	4,143.9	4,085.7	58.17	71.239	
2,700.0	2,685.5	2,703.5	2,703.5	6.9	54.1	129.18	-4,029.3	105.9	4,153.8	4,093.3	60.44	68.728	
2,800.0	2,784.3	2,802.3	2,802.3	7.3	56.0	129.34	-4,029.3	105.9	4,163.6	4,100.9	62.71	66.397	
2,900.0	2,883.0	2,901.0	2,901.0	7.6	58.0	129.50	-4,029.3	105.9	4,173.5	4,108.6	64.98	64.229	
3,000.0	2,981.8	2,999.8	2,999.8	8.0	60.0	129.67	-4,029.3	105.9	4,183.5	4,116.2	67.25	62.207	
3,100.0	3,080.6	3,098.6	3,098.6	8.3	62.0	129.83	-4,029.3	105.9	4,193.5	4,123.9	69.52	60.317	
3,200.0	3,179.4	3,197.4	3,197.4	8.7	63.9	129.99	-4,029.3	105.9	4,203.5	4,131.7	71.80	58.546	
3,300.0	3,278.2	3,296.2	3,296.2	9.0	65.9	130.15	-4,029.3	105.9	4,213.5	4,139.5	74.07	56.885	
3,400.0	3,377.0	3,395.0	3,395.0	9.4	67.9	130.31	-4,029.3	105.9	4,223.6	4,147.3	76.34	55.323	
3,500.0	3,475.8	3,493.8	3,493.8	9.7	69.9	130.47	-4,029.3	105.9	4,233.7	4,155.1	78.62	53.851	
3,600.0	3,574.6	3,592.6	3,592.6	10.1	71.9	130.63	-4,029.3	105.9	4,243.9	4,163.0	80.89	52.463	
3,700.0	3,673.4	3,691.4	3,691.4	10.4	73.8	130.78	-4,029.3	105.9	4,254.1	4,170.9	83.17	51.151	
3,800.0	3,772.2	3,790.2	3,790.2	10.8	75.8	130.94	-4,029.3	105.9	4,264.3	4,178.8	85.44	49.909	
3,900.0	3,871.0	3,889.0	3,889.0	11.1	77.8	131.09	-4,029.3	105.9	4,274.5	4,186.8	87.71	48.732	
4,000.0	3,969.8	3,987.8	3,987.8	11.5	79.8	131.25	-4,029.3	105.9	4,284.8	4,194.8	89.99	47.615	
4,100.0	4,068.5	4,086.5	4,086.5	11.9	81.7	131.40	-4,029.3	105.9	4,295.1	4,202.8	92.26	46.554	
4,200.0	4,167.3	4,185.3	4,185.3	12.2	83.7	131.56	-4,029.3	105.9	4,305.4	4,210.9	94.53	45.544	
4,300.0	4,266.1	4,284.1	4,284.1	12.6	85.7	131.71	-4,029.3	105.9	4,315.8	4,219.0	96.81	44.582	
4,400.0	4,364.9	4,382.9	4,382.9	12.9	87.7	131.86	-4,029.3	105.9	4,326.2	4,227.1	99.08	43.664	
4,500.0	4,463.7	4,481.7	4,481.7	13.3	89.6	132.01	-4,029.3	105.9	4,336.6	4,235.3	101.35	42.788	
4,600.0	4,562.5	4,580.5	4,580.5	13.7	91.6	132.18	-4,029.3	105.9	4,347.1	4,243.4	103.63	41.946	
4,700.0	4,661.6	4,679.6	4,679.6	13.9	93.6	132.44	-4,029.3	105.9	4,356.2	4,250.2	106.02	41.089	
4,800.0	4,761.1	4,779.1	4,779.1	14.2	95.6	132.64	-4,029.3	105.9	4,363.1	4,254.7	108.35	40.268	
4,900.0	4,860.8	4,878.8	4,878.8	14.4	97.6	132.77	-4,029.3	105.9	4,367.5	4,256.9	110.62	39.483	
5,000.0	4,960.8	4,978.8	4,978.8	14.5	99.6	132.83	-4,029.3	105.9	4,369.7	4,256.8	112.81	38.733	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - P & A Farms 28-1 (Exist) - Wellbore #1 - Wellbore

Offset Site Error: 0.0 ft

Survey Program: 7600-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,060.8	5,078.8	5,078.8	14.7	101.6	-176.01	-4,029.3	105.9	4,369.8	4,254.9	114.97	38.008	
5,200.0	5,160.8	5,178.8	5,178.8	14.8	103.6	-176.01	-4,029.3	105.9	4,369.8	4,252.7	117.15	37.301	
5,300.0	5,260.8	5,278.8	5,278.8	15.0	105.6	-176.01	-4,029.3	105.9	4,369.8	4,250.5	119.34	36.618	
5,400.0	5,360.8	5,378.8	5,378.8	15.2	107.6	-176.01	-4,029.3	105.9	4,369.8	4,248.3	121.52	35.960	
5,500.0	5,460.8	5,478.8	5,478.8	15.3	109.6	-176.01	-4,029.3	105.9	4,369.8	4,246.1	123.70	35.325	
5,600.0	5,560.8	5,578.8	5,578.8	15.5	111.6	-176.01	-4,029.3	105.9	4,369.8	4,243.9	125.89	34.711	
5,700.0	5,660.8	5,678.8	5,678.8	15.7	113.6	-176.01	-4,029.3	105.9	4,369.8	4,241.8	128.08	34.118	
5,800.0	5,760.8	5,778.8	5,778.8	15.8	115.6	-176.01	-4,029.3	105.9	4,369.8	4,239.6	130.27	33.545	
5,900.0	5,860.8	5,878.8	5,878.8	16.0	117.6	-176.01	-4,029.3	105.9	4,369.8	4,237.4	132.46	32.991	
6,000.0	5,960.8	5,978.8	5,978.8	16.2	119.6	3.99	-4,029.3	105.9	4,369.0	4,234.6	134.47	32.490	
6,100.0	6,060.1	6,078.1	6,078.1	16.3	121.6	4.06	-4,029.3	105.9	4,358.0	4,223.4	134.57	32.385	
6,200.0	6,157.1	6,175.1	6,175.1	16.3	123.5	4.22	-4,029.3	105.9	4,334.1	4,201.8	132.27	32.768	
6,300.0	6,250.2	6,268.2	6,268.2	16.3	125.4	4.48	-4,029.3	105.9	4,297.8	4,170.2	127.54	33.698	
6,400.0	6,337.7	6,355.7	6,355.7	16.2	127.1	4.86	-4,029.3	105.9	4,249.7	4,129.2	120.42	35.290	
6,500.0	6,418.1	6,436.1	6,436.1	16.1	128.7	5.43	-4,029.3	105.9	4,190.6	4,079.5	111.05	37.737	
6,600.0	6,490.2	6,508.2	6,508.2	16.0	130.2	6.26	-4,029.3	105.9	4,121.5	4,021.8	99.67	41.352	
6,700.0	6,552.6	6,570.6	6,570.6	16.0	131.4	7.50	-4,029.3	105.9	4,043.7	3,956.9	86.76	46.606	
6,800.0	6,604.2	6,622.2	6,622.2	16.0	132.4	9.50	-4,029.3	105.9	3,958.4	3,885.0	73.34	53.975	
6,900.0	6,644.3	6,662.3	6,662.3	16.3	133.2	13.05	-4,029.3	105.9	3,867.1	3,804.9	62.22	62.150	
7,000.0	6,672.1	6,690.1	6,690.1	16.8	133.8	20.65	-4,029.3	105.9	3,771.4	3,708.1	63.28	59.597	
7,100.0	6,687.1	6,705.1	6,705.1	17.7	134.1	44.27	-4,029.3	105.9	3,672.9	3,566.6	106.36	34.534	
7,200.0	6,689.9	6,707.9	6,707.9	18.7	134.2	89.88	-4,029.3	105.9	3,573.4	3,421.3	152.10	23.494	
7,300.0	6,689.9	6,707.9	6,707.9	19.8	134.2	89.89	-4,029.3	105.9	3,473.8	3,320.5	153.25	22.668	
7,400.0	6,689.9	6,707.9	6,707.9	21.0	134.2	89.89	-4,029.3	105.9	3,374.1	3,219.6	154.51	21.837	
7,500.0	6,689.9	6,707.9	6,707.9	22.4	134.2	89.89	-4,029.3	105.9	3,274.6	3,118.7	155.87	21.008	
7,600.0	6,689.9	6,707.9	6,707.9	23.8	134.2	89.90	-4,029.3	105.9	3,175.0	3,017.7	157.32	20.182	
7,700.0	6,689.9	6,707.9	6,707.9	25.3	134.2	89.90	-4,029.3	105.9	3,075.5	2,916.7	158.82	19.364	
7,800.0	6,690.0	6,708.0	6,708.0	26.8	134.2	89.90	-4,029.3	105.9	2,976.0	2,815.6	160.38	18.555	
7,900.0	6,690.0	6,708.0	6,708.0	28.4	134.2	89.91	-4,029.3	105.9	2,876.5	2,714.5	161.99	17.758	
8,000.0	6,690.0	6,708.0	6,708.0	30.0	134.2	89.91	-4,029.3	105.9	2,777.1	2,613.5	163.63	16.972	
8,100.0	6,690.0	6,708.0	6,708.0	31.7	134.2	89.91	-4,029.3	105.9	2,677.7	2,512.4	165.31	16.198	
8,200.0	6,690.0	6,708.0	6,708.0	33.4	134.2	89.92	-4,029.3	105.9	2,578.4	2,411.4	167.01	15.438	
8,300.0	6,690.0	6,708.0	6,708.0	35.1	134.2	89.92	-4,029.3	105.9	2,479.1	2,310.4	168.74	14.692	
8,400.0	6,690.1	6,708.1	6,708.1	36.8	134.2	89.92	-4,029.3	105.9	2,379.9	2,209.4	170.48	13.960	
8,500.0	6,690.1	6,708.1	6,708.1	38.5	134.2	89.93	-4,029.3	105.9	2,280.8	2,108.5	172.24	13.241	
8,600.0	6,690.1	6,708.1	6,708.1	40.3	134.2	89.93	-4,029.3	105.9	2,181.7	2,007.7	174.02	12.537	
8,700.0	6,690.1	6,708.1	6,708.1	42.1	134.2	89.93	-4,029.3	105.9	2,082.7	1,906.9	175.81	11.846	
8,800.0	6,690.1	6,708.1	6,708.1	43.8	134.2	89.94	-4,029.3	105.9	1,983.8	1,806.2	177.61	11.170	
8,900.0	6,690.2	6,708.2	6,708.2	45.6	134.2	89.94	-4,029.3	105.9	1,885.1	1,705.7	179.42	10.506	
9,000.0	6,690.2	6,708.2	6,708.2	47.4	134.2	89.94	-4,029.3	105.9	1,786.5	1,605.2	181.24	9.857	
9,100.0	6,690.2	6,708.2	6,708.2	49.3	134.2	89.95	-4,029.3	105.9	1,688.0	1,504.9	183.07	9.221	
9,200.0	6,690.2	6,708.2	6,708.2	51.1	134.2	89.95	-4,029.3	105.9	1,589.7	1,404.8	184.90	8.598	
9,300.0	6,690.2	6,708.2	6,708.2	52.9	134.2	89.95	-4,029.3	105.9	1,491.7	1,305.0	186.74	7.988	
9,400.0	6,690.2	6,708.2	6,708.2	54.8	134.2	89.96	-4,029.3	105.9	1,393.9	1,205.4	188.59	7.391	
9,500.0	6,690.3	6,708.3	6,708.3	56.6	134.2	89.96	-4,029.3	105.9	1,296.5	1,106.1	190.44	6.808	
9,600.0	6,690.3	6,708.3	6,708.3	58.4	134.2	89.96	-4,029.3	105.9	1,199.5	1,007.3	192.30	6.238	
9,700.0	6,690.3	6,708.3	6,708.3	60.3	134.2	89.97	-4,029.3	105.9	1,103.1	908.9	194.16	5.681	
9,800.0	6,690.3	6,708.3	6,708.3	62.1	134.2	89.97	-4,029.3	105.9	1,007.3	811.3	196.02	5.139	
9,900.0	6,690.3	6,708.3	6,708.3	64.0	134.2	89.97	-4,029.3	105.9	912.5	714.6	197.89	4.611	
10,000.0	6,690.3	6,708.3	6,708.3	65.9	134.2	89.97	-4,029.3	105.9	818.9	619.1	199.76	4.099	
10,100.0	6,690.4	6,708.4	6,708.4	67.7	134.2	89.98	-4,029.3	105.9	727.0	525.3	201.63	3.605	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - P & A Farms 28-1 (Exist) - Wellbore #1 - Wellbore

Offset Site Error: 0.0 ft

Survey Program: 7600-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,200.0	6,690.4	6,708.4	6,708.4	69.6	134.2	89.98	-4,029.3	105.9	637.5	434.0	203.51	3.133	
10,300.0	6,690.4	6,708.4	6,708.4	71.5	134.2	89.98	-4,029.3	105.9	551.6	346.2	205.38	2.686	
10,400.0	6,690.4	6,708.4	6,708.4	73.3	134.2	89.99	-4,029.3	105.9	471.4	264.1	207.26	2.274	
10,500.0	6,690.4	6,708.4	6,708.4	75.2	134.2	89.99	-4,029.3	105.9	400.2	191.0	209.15	1.913	
10,600.0	6,690.4	6,708.4	6,708.4	77.1	134.2	89.99	-4,029.3	105.9	343.6	132.5	211.03	1.628	
10,700.0	6,690.5	6,708.5	6,708.5	79.0	134.2	90.00	-4,029.3	105.9	309.8	96.8	212.92	1.455	Level 3
10,760.4	6,690.5	6,708.5	6,708.5	80.1	134.2	90.00	-4,029.3	105.9	303.8	89.7	214.06	1.419	Level 3, CC, ES, SF
10,800.0	6,690.5	6,708.5	6,708.5	80.9	134.2	90.00	-4,029.3	105.9	306.4	91.6	214.81	1.426	Level 3
10,900.0	6,690.5	6,708.5	6,708.5	82.7	134.2	90.00	-4,029.3	105.9	334.3	117.6	216.69	1.543	
11,000.0	6,690.5	6,708.5	6,708.5	84.6	134.2	90.01	-4,029.3	105.9	386.9	168.3	218.59	1.770	
11,100.0	6,690.5	6,708.5	6,708.5	86.5	134.2	90.01	-4,029.3	105.9	455.6	235.1	220.48	2.067	
11,200.0	6,690.6	6,708.6	6,708.6	88.4	134.2	90.01	-4,029.3	105.9	534.3	312.0	222.37	2.403	
11,300.0	6,690.6	6,708.6	6,708.6	90.3	134.2	90.02	-4,029.3	105.9	619.2	394.9	224.27	2.761	
11,400.0	6,690.6	6,708.6	6,708.6	92.2	134.2	90.02	-4,029.3	105.9	708.0	481.9	226.16	3.131	
11,500.0	6,690.6	6,708.6	6,708.6	94.1	134.2	90.02	-4,029.3	105.9	799.5	571.5	228.06	3.506	
11,600.0	6,690.6	6,708.6	6,708.6	96.0	134.2	90.03	-4,029.3	105.9	892.8	662.9	229.96	3.883	
11,700.0	6,690.6	6,708.6	6,708.6	97.9	134.2	90.03	-4,029.3	105.9	987.5	755.6	231.85	4.259	
11,800.0	6,690.7	6,708.7	6,708.7	99.8	134.2	90.03	-4,029.3	105.9	1,083.0	849.3	233.75	4.633	
11,900.0	6,690.7	6,708.7	6,708.7	101.7	134.2	90.04	-4,029.3	105.9	1,179.4	943.7	235.65	5.005	
12,000.0	6,690.7	6,708.7	6,708.7	103.6	134.2	90.04	-4,029.3	105.9	1,276.2	1,038.7	237.55	5.372	
12,100.0	6,690.7	6,708.7	6,708.7	105.5	134.2	90.04	-4,029.3	105.9	1,373.6	1,134.1	239.46	5.736	
12,200.0	6,690.7	6,708.7	6,708.7	107.4	134.2	90.05	-4,029.3	105.9	1,471.3	1,229.9	241.36	6.096	
12,300.0	6,690.7	6,708.7	6,708.7	109.3	134.2	90.05	-4,029.3	105.9	1,569.2	1,326.0	243.26	6.451	
12,400.0	6,690.8	6,708.8	6,708.8	111.2	134.2	90.05	-4,029.3	105.9	1,667.5	1,422.3	245.17	6.801	
12,500.0	6,690.8	6,708.8	6,708.8	113.1	134.2	90.06	-4,029.3	105.9	1,765.9	1,518.8	247.07	7.147	
12,600.0	6,690.8	6,708.8	6,708.8	115.0	134.2	90.06	-4,029.3	105.9	1,864.5	1,615.5	248.98	7.489	
12,700.0	6,690.8	6,708.8	6,708.8	116.9	134.2	90.06	-4,029.3	105.9	1,963.2	1,712.3	250.88	7.825	
12,800.0	6,690.8	6,708.8	6,708.8	118.8	134.2	90.07	-4,029.3	105.9	2,062.1	1,809.3	252.79	8.157	
12,900.0	6,690.9	6,708.9	6,708.9	120.7	134.2	90.07	-4,029.3	105.9	2,161.0	1,906.3	254.69	8.485	
13,000.0	6,690.9	6,708.9	6,708.9	122.6	134.2	90.07	-4,029.3	105.9	2,260.1	2,003.5	256.60	8.808	
13,100.0	6,690.9	6,708.9	6,708.9	124.5	134.2	90.08	-4,029.3	105.9	2,359.2	2,100.7	258.51	9.126	
13,200.0	6,690.9	6,708.9	6,708.9	126.4	134.2	90.08	-4,029.3	105.9	2,458.4	2,198.0	260.42	9.440	
13,300.0	6,690.9	6,708.9	6,708.9	128.3	134.2	90.08	-4,029.3	105.9	2,557.7	2,295.3	262.32	9.750	
13,400.0	6,690.9	6,708.9	6,708.9	130.2	134.2	90.09	-4,029.3	105.9	2,657.0	2,392.8	264.23	10.055	
13,500.0	6,691.0	6,709.0	6,709.0	132.1	134.2	90.09	-4,029.3	105.9	2,756.4	2,490.2	266.14	10.357	
13,600.0	6,691.0	6,709.0	6,709.0	134.0	134.2	90.09	-4,029.3	105.9	2,855.8	2,587.7	268.05	10.654	
13,700.0	6,691.0	6,709.0	6,709.0	135.9	134.2	90.10	-4,029.3	105.9	2,955.2	2,685.3	269.96	10.947	
13,755.1	6,691.0	6,709.0	6,709.0	137.0	134.2	90.10	-4,029.3	105.9	3,010.0	2,739.0	271.01	11.106	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - P & A Farms 28-2 (Exist) - Wellbore #1 - Wellbore

Offset Site Error: 0.0 ft

Survey Program: 7600-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-175.33	-2,932.7	-239.6	2,942.5				
100.0	100.0	99.0	99.0	0.1	2.0	-175.33	-2,932.7	-239.6	2,942.5	2,940.4	2.09	1,406.143	
200.0	200.0	199.0	199.0	0.3	4.0	-175.33	-2,932.7	-239.6	2,942.5	2,938.2	4.32	681.546	
300.0	300.0	299.0	299.0	0.6	6.0	-175.33	-2,932.7	-239.6	2,942.5	2,935.9	6.54	449.774	
400.0	400.0	399.0	399.0	0.8	8.0	-175.33	-2,932.7	-239.6	2,942.5	2,933.7	8.77	335.635	
500.0	500.0	499.0	499.0	1.0	10.0	-175.33	-2,932.7	-239.6	2,942.5	2,931.5	10.99	267.701	
600.0	600.0	599.0	599.0	1.2	12.0	-175.33	-2,932.7	-239.6	2,942.5	2,929.3	13.22	222.638	
700.0	700.0	699.0	699.0	1.5	14.0	-175.33	-2,932.7	-239.6	2,942.5	2,927.0	15.44	190.560	
800.0	800.0	799.0	799.0	1.7	16.0	-175.33	-2,932.7	-239.6	2,942.5	2,924.8	17.67	166.562	
900.0	900.0	899.0	899.0	1.9	18.0	-175.33	-2,932.7	-239.6	2,942.5	2,922.6	19.89	147.932	
1,000.0	1,000.0	999.0	999.0	2.1	20.0	-175.33	-2,932.7	-239.6	2,942.5	2,920.4	22.12	133.050	
1,100.0	1,100.0	1,099.0	1,099.0	2.4	22.0	-175.33	-2,932.7	-239.6	2,942.5	2,918.1	24.34	120.889	
1,200.0	1,200.0	1,199.0	1,199.0	2.6	24.0	-175.33	-2,932.7	-239.6	2,942.5	2,915.9	26.56	110.765	
1,300.0	1,300.0	1,299.0	1,299.0	2.8	26.0	133.53	-2,932.7	-239.6	2,943.7	2,914.9	28.78	102.293	
1,400.0	1,399.8	1,398.8	1,398.8	3.0	28.0	133.55	-2,932.7	-239.6	2,947.3	2,916.3	30.97	95.179	
1,500.0	1,499.5	1,498.5	1,498.5	3.3	30.0	133.59	-2,932.7	-239.6	2,953.3	2,920.2	33.13	89.133	
1,600.0	1,598.7	1,597.7	1,597.7	3.5	32.0	133.63	-2,932.7	-239.6	2,961.7	2,926.5	35.28	83.952	
1,700.0	1,697.5	1,696.5	1,696.5	3.8	33.9	133.78	-2,932.7	-239.6	2,972.3	2,934.8	37.45	79.357	
1,800.0	1,796.3	1,795.3	1,795.3	4.0	35.9	133.99	-2,932.7	-239.6	2,983.1	2,943.4	39.68	75.185	
1,900.0	1,895.1	1,894.1	1,894.1	4.3	37.9	134.20	-2,932.7	-239.6	2,993.9	2,952.0	41.91	71.444	
2,000.0	1,993.9	1,992.9	1,992.9	4.6	39.9	134.41	-2,932.7	-239.6	3,004.8	2,960.7	44.14	68.072	
2,100.0	2,092.7	2,091.7	2,091.7	4.9	41.8	134.62	-2,932.7	-239.6	3,015.7	2,969.4	46.38	65.020	
2,200.0	2,191.5	2,190.5	2,190.5	5.3	43.8	134.83	-2,932.7	-239.6	3,026.7	2,978.1	48.63	62.245	
2,300.0	2,290.3	2,289.3	2,289.3	5.6	45.8	135.03	-2,932.7	-239.6	3,037.7	2,986.9	50.87	59.712	
2,400.0	2,389.1	2,388.1	2,388.1	5.9	47.8	135.24	-2,932.7	-239.6	3,048.8	2,995.7	53.12	57.392	
2,500.0	2,487.9	2,486.9	2,486.9	6.3	49.7	135.44	-2,932.7	-239.6	3,059.9	3,004.5	55.37	55.259	
2,600.0	2,586.7	2,585.7	2,585.7	6.6	51.7	135.64	-2,932.7	-239.6	3,071.0	3,013.4	57.63	53.292	
2,700.0	2,685.5	2,684.5	2,684.5	6.9	53.7	135.84	-2,932.7	-239.6	3,082.2	3,022.3	59.88	51.472	
2,800.0	2,784.3	2,783.3	2,783.3	7.3	55.7	136.04	-2,932.7	-239.6	3,093.4	3,031.2	62.14	49.784	
2,900.0	2,883.0	2,882.0	2,882.0	7.6	57.6	136.24	-2,932.7	-239.6	3,104.6	3,040.2	64.39	48.215	
3,000.0	2,981.8	2,980.8	2,980.8	8.0	59.6	136.44	-2,932.7	-239.6	3,115.9	3,049.2	66.65	46.752	
3,100.0	3,080.6	3,079.6	3,079.6	8.3	61.6	136.63	-2,932.7	-239.6	3,127.2	3,058.3	68.90	45.385	
3,200.0	3,179.4	3,178.4	3,178.4	8.7	63.6	136.82	-2,932.7	-239.6	3,138.5	3,067.4	71.16	44.105	
3,300.0	3,278.2	3,277.2	3,277.2	9.0	65.5	137.02	-2,932.7	-239.6	3,149.9	3,076.5	73.42	42.905	
3,400.0	3,377.0	3,376.0	3,376.0	9.4	67.5	137.21	-2,932.7	-239.6	3,161.4	3,085.7	75.67	41.776	
3,500.0	3,475.8	3,474.8	3,474.8	9.7	69.5	137.40	-2,932.7	-239.6	3,172.8	3,094.9	77.93	40.713	
3,600.0	3,574.6	3,573.6	3,573.6	10.1	71.5	137.58	-2,932.7	-239.6	3,184.3	3,104.1	80.19	39.711	
3,700.0	3,673.4	3,672.4	3,672.4	10.4	73.4	137.77	-2,932.7	-239.6	3,195.8	3,113.4	82.44	38.764	
3,800.0	3,772.2	3,771.2	3,771.2	10.8	75.4	137.95	-2,932.7	-239.6	3,207.4	3,122.7	84.70	37.868	
3,900.0	3,871.0	3,870.0	3,870.0	11.1	77.4	138.14	-2,932.7	-239.6	3,219.0	3,132.0	86.96	37.019	
4,000.0	3,969.8	3,968.8	3,968.8	11.5	79.4	138.32	-2,932.7	-239.6	3,230.6	3,141.4	89.21	36.213	
4,100.0	4,068.5	4,067.5	4,067.5	11.9	81.4	138.50	-2,932.7	-239.6	3,242.2	3,150.8	91.47	35.447	
4,200.0	4,167.3	4,166.3	4,166.3	12.2	83.3	138.68	-2,932.7	-239.6	3,253.9	3,160.2	93.72	34.719	
4,300.0	4,266.1	4,265.1	4,265.1	12.6	85.3	138.86	-2,932.7	-239.6	3,265.6	3,169.7	95.97	34.026	
4,400.0	4,364.9	4,363.9	4,363.9	12.9	87.3	139.04	-2,932.7	-239.6	3,277.4	3,179.2	98.23	33.365	
4,500.0	4,463.7	4,462.7	4,462.7	13.3	89.3	139.21	-2,932.7	-239.6	3,289.2	3,188.7	100.48	32.734	
4,600.0	4,562.5	4,561.5	4,561.5	13.7	91.2	139.40	-2,932.7	-239.6	3,301.0	3,198.2	102.75	32.126	
4,700.0	4,661.6	4,660.6	4,660.6	13.9	93.2	139.69	-2,932.7	-239.6	3,311.3	3,206.1	105.18	31.483	
4,800.0	4,761.1	4,760.1	4,760.1	14.2	95.2	139.90	-2,932.7	-239.6	3,319.0	3,211.5	107.54	30.863	
4,900.0	4,860.8	4,859.8	4,859.8	14.4	97.2	140.04	-2,932.7	-239.6	3,324.1	3,214.3	109.83	30.266	
5,000.0	4,960.8	4,959.8	4,959.8	14.5	99.2	140.10	-2,932.7	-239.6	3,326.5	3,214.4	112.04	29.691	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - P & A Farms 28-2 (Exist) - Wellbore #1 - Wellbore

Offset Site Error: 0.0 ft

Survey Program: 7600-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,060.8	5,059.8	5,059.8	14.7	101.2	-168.74	-2,932.7	-239.6	3,326.7	3,212.5	114.20	29.131	
5,200.0	5,160.8	5,159.8	5,159.8	14.8	103.2	-168.74	-2,932.7	-239.6	3,326.7	3,210.3	116.38	28.584	
5,300.0	5,260.8	5,259.8	5,259.8	15.0	105.2	-168.74	-2,932.7	-239.6	3,326.7	3,208.1	118.57	28.056	
5,400.0	5,360.8	5,359.8	5,359.8	15.2	107.2	-168.74	-2,932.7	-239.6	3,326.7	3,205.9	120.76	27.548	
5,500.0	5,460.8	5,459.8	5,459.8	15.3	109.2	-168.74	-2,932.7	-239.6	3,326.7	3,203.7	122.95	27.057	
5,600.0	5,560.8	5,559.8	5,559.8	15.5	111.2	-168.74	-2,932.7	-239.6	3,326.7	3,201.5	125.14	26.583	
5,700.0	5,660.8	5,659.8	5,659.8	15.7	113.2	-168.74	-2,932.7	-239.6	3,326.7	3,199.3	127.33	26.126	
5,800.0	5,760.8	5,759.8	5,759.8	15.8	115.2	-168.74	-2,932.7	-239.6	3,326.7	3,197.2	129.53	25.683	
5,900.0	5,860.8	5,859.8	5,859.8	16.0	117.2	-168.74	-2,932.7	-239.6	3,326.7	3,195.0	131.72	25.255	
6,000.0	5,960.8	5,959.8	5,959.8	16.2	119.2	11.27	-2,932.7	-239.6	3,325.9	3,192.2	133.74	24.868	
6,100.0	6,060.1	6,059.1	6,059.1	16.3	121.2	11.47	-2,932.7	-239.6	3,315.0	3,181.1	133.90	24.757	
6,200.0	6,157.1	6,156.1	6,156.1	16.3	123.1	11.92	-2,932.7	-239.6	3,291.6	3,159.8	131.78	24.978	
6,300.0	6,250.2	6,249.2	6,249.2	16.3	125.0	12.67	-2,932.7	-239.6	3,255.9	3,128.5	127.39	25.558	
6,400.0	6,337.7	6,336.7	6,336.7	16.2	126.7	13.78	-2,932.7	-239.6	3,208.6	3,087.7	120.90	26.540	
6,500.0	6,418.1	6,417.1	6,417.1	16.1	128.3	15.40	-2,932.7	-239.6	3,150.6	3,037.9	112.67	27.963	
6,600.0	6,490.2	6,489.2	6,489.2	16.0	129.8	17.73	-2,932.7	-239.6	3,082.9	2,979.4	103.48	29.792	
6,700.0	6,552.6	6,551.6	6,551.6	16.0	131.0	21.14	-2,932.7	-239.6	3,006.6	2,911.7	94.92	31.676	
6,800.0	6,604.2	6,603.2	6,603.2	16.0	132.1	26.35	-2,932.7	-239.6	2,923.2	2,832.9	90.21	32.405	
6,900.0	6,644.3	6,643.3	6,643.3	16.3	132.9	34.69	-2,932.7	-239.6	2,834.0	2,739.0	94.96	29.843	
7,000.0	6,672.1	6,671.1	6,671.1	16.8	133.4	48.67	-2,932.7	-239.6	2,740.6	2,626.0	114.59	23.918	
7,100.0	6,687.1	6,686.1	6,686.1	17.7	133.7	71.42	-2,932.7	-239.6	2,644.7	2,502.1	142.68	18.537	
7,200.0	6,689.9	6,688.9	6,688.9	18.7	133.8	89.96	-2,932.7	-239.6	2,548.0	2,396.3	151.72	16.794	
7,300.0	6,689.9	6,688.9	6,688.9	19.8	133.8	89.96	-2,932.7	-239.6	2,451.4	2,298.6	152.87	16.036	
7,400.0	6,689.9	6,688.9	6,688.9	21.0	133.8	89.97	-2,932.7	-239.6	2,355.1	2,201.0	154.13	15.280	
7,500.0	6,689.9	6,688.9	6,688.9	22.4	133.8	89.97	-2,932.7	-239.6	2,259.2	2,103.7	155.50	14.529	
7,600.0	6,689.9	6,688.9	6,688.9	23.8	133.8	89.97	-2,932.7	-239.6	2,163.6	2,006.7	156.94	13.786	
7,700.0	6,689.9	6,688.9	6,688.9	25.3	133.8	89.97	-2,932.7	-239.6	2,068.4	1,910.0	158.44	13.055	
7,800.0	6,690.0	6,689.0	6,689.0	26.8	133.8	89.97	-2,932.7	-239.6	1,973.7	1,813.7	160.01	12.335	
7,900.0	6,690.0	6,689.0	6,689.0	28.4	133.8	89.97	-2,932.7	-239.6	1,879.6	1,718.0	161.61	11.630	
8,000.0	6,690.0	6,689.0	6,689.0	30.0	133.8	89.97	-2,932.7	-239.6	1,786.1	1,622.8	163.25	10.940	
8,100.0	6,690.0	6,689.0	6,689.0	31.7	133.8	89.98	-2,932.7	-239.6	1,693.3	1,528.4	164.93	10.267	
8,200.0	6,690.0	6,689.0	6,689.0	33.4	133.8	89.98	-2,932.7	-239.6	1,601.4	1,434.8	166.63	9.610	
8,300.0	6,690.0	6,689.0	6,689.0	35.1	133.8	89.98	-2,932.7	-239.6	1,510.6	1,342.2	168.36	8.972	
8,400.0	6,690.1	6,689.1	6,689.1	36.8	133.8	89.98	-2,932.7	-239.6	1,420.9	1,250.8	170.10	8.353	
8,500.0	6,690.1	6,689.1	6,689.1	38.5	133.8	89.98	-2,932.7	-239.6	1,332.7	1,160.9	171.87	7.755	
8,600.0	6,690.1	6,689.1	6,689.1	40.3	133.8	89.98	-2,932.7	-239.6	1,246.4	1,072.7	173.64	7.178	
8,700.0	6,690.1	6,689.1	6,689.1	42.1	133.8	89.99	-2,932.7	-239.6	1,162.2	986.8	175.43	6.625	
8,800.0	6,690.1	6,689.1	6,689.1	43.8	133.8	89.99	-2,932.7	-239.6	1,080.7	903.5	177.23	6.098	
8,900.0	6,690.2	6,689.2	6,689.2	45.6	133.8	89.99	-2,932.7	-239.6	1,002.6	823.5	179.04	5.600	
9,000.0	6,690.2	6,689.2	6,689.2	47.4	133.8	89.99	-2,932.7	-239.6	928.6	747.8	180.86	5.134	
9,100.0	6,690.2	6,689.2	6,689.2	49.3	133.8	89.99	-2,932.7	-239.6	860.0	677.3	182.69	4.707	
9,200.0	6,690.2	6,689.2	6,689.2	51.1	133.8	89.99	-2,932.7	-239.6	798.0	613.5	184.52	4.325	
9,300.0	6,690.2	6,689.2	6,689.2	52.9	133.8	89.99	-2,932.7	-239.6	744.3	558.0	186.36	3.994	
9,400.0	6,690.2	6,689.2	6,689.2	54.8	133.8	90.00	-2,932.7	-239.6	700.9	512.7	188.21	3.724	
9,500.0	6,690.3	6,689.3	6,689.3	56.6	133.8	90.00	-2,932.7	-239.6	669.7	479.6	190.06	3.524	
9,600.0	6,690.3	6,689.3	6,689.3	58.4	133.8	90.00	-2,932.7	-239.6	652.5	460.6	191.92	3.400	
9,663.9	6,690.3	6,689.3	6,689.3	59.6	133.8	90.00	-2,932.7	-239.6	649.3	456.2	193.11	3.363	CC, ES
9,700.0	6,690.3	6,689.3	6,689.3	60.3	133.8	90.00	-2,932.7	-239.6	650.3	456.6	193.78	3.356	SF
9,800.0	6,690.3	6,689.3	6,689.3	62.1	133.8	90.00	-2,932.7	-239.6	663.5	467.8	195.64	3.391	
9,900.0	6,690.3	6,689.3	6,689.3	64.0	133.8	90.00	-2,932.7	-239.6	690.9	493.4	197.51	3.498	
10,000.0	6,690.3	6,689.3	6,689.3	65.9	133.8	90.01	-2,932.7	-239.6	731.2	531.8	199.38	3.667	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - P & A Farms 28-2 (Exist) - Wellbore #1 - Wellbore

Offset Site Error: 0.0 ft

Survey Program: 7600-UNKNOWN

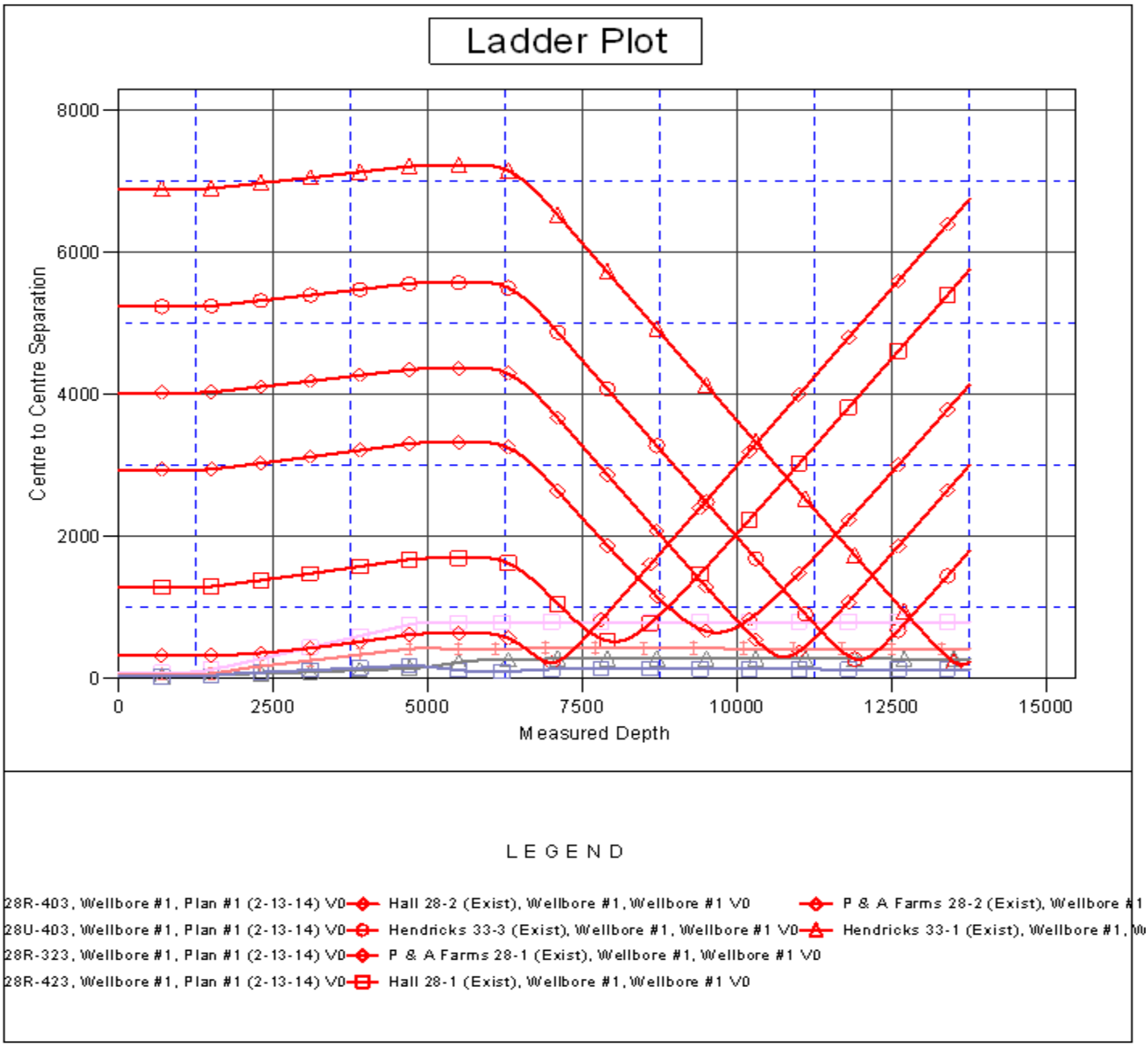
Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	6,690.4	6,689.4	6,689.4	67.7	133.8	90.01	-2,932.7	-239.6	782.2	581.0	201.25	3.887	
10,200.0	6,690.4	6,689.4	6,689.4	69.6	133.8	90.01	-2,932.7	-239.6	842.1	638.9	203.13	4.146	
10,300.0	6,690.4	6,689.4	6,689.4	71.5	133.8	90.01	-2,932.7	-239.6	909.0	704.0	205.00	4.434	
10,400.0	6,690.4	6,689.4	6,689.4	73.3	133.8	90.01	-2,932.7	-239.6	981.6	774.7	206.88	4.745	
10,500.0	6,690.4	6,689.4	6,689.4	75.2	133.8	90.01	-2,932.7	-239.6	1,058.7	849.9	208.77	5.071	
10,600.0	6,690.4	6,689.4	6,689.4	77.1	133.8	90.01	-2,932.7	-239.6	1,139.3	928.6	210.65	5.408	
10,700.0	6,690.5	6,689.5	6,689.5	79.0	133.8	90.02	-2,932.7	-239.6	1,222.8	1,010.2	212.54	5.753	
10,800.0	6,690.5	6,689.5	6,689.5	80.9	133.8	90.02	-2,932.7	-239.6	1,308.6	1,094.2	214.43	6.103	
10,900.0	6,690.5	6,689.5	6,689.5	82.7	133.8	90.02	-2,932.7	-239.6	1,396.3	1,180.0	216.31	6.455	
11,000.0	6,690.5	6,689.5	6,689.5	84.6	133.8	90.02	-2,932.7	-239.6	1,485.6	1,267.4	218.21	6.808	
11,100.0	6,690.5	6,689.5	6,689.5	86.5	133.8	90.02	-2,932.7	-239.6	1,576.1	1,356.0	220.10	7.161	
11,200.0	6,690.6	6,689.6	6,689.6	88.4	133.8	90.02	-2,932.7	-239.6	1,667.7	1,445.7	221.99	7.513	
11,300.0	6,690.6	6,689.6	6,689.6	90.3	133.8	90.03	-2,932.7	-239.6	1,760.3	1,536.4	223.89	7.862	
11,400.0	6,690.6	6,689.6	6,689.6	92.2	133.8	90.03	-2,932.7	-239.6	1,853.6	1,627.8	225.78	8.210	
11,500.0	6,690.6	6,689.6	6,689.6	94.1	133.8	90.03	-2,932.7	-239.6	1,947.6	1,719.9	227.68	8.554	
11,600.0	6,690.6	6,689.6	6,689.6	96.0	133.8	90.03	-2,932.7	-239.6	2,042.1	1,812.5	229.58	8.895	
11,700.0	6,690.6	6,689.6	6,689.6	97.9	133.8	90.03	-2,932.7	-239.6	2,137.2	1,905.7	231.47	9.233	
11,800.0	6,690.7	6,689.7	6,689.7	99.8	133.8	90.03	-2,932.7	-239.6	2,232.6	1,999.3	233.37	9.567	
11,900.0	6,690.7	6,689.7	6,689.7	101.7	133.8	90.03	-2,932.7	-239.6	2,328.5	2,093.2	235.27	9.897	
12,000.0	6,690.7	6,689.7	6,689.7	103.6	133.8	90.04	-2,932.7	-239.6	2,424.7	2,187.5	237.17	10.223	
12,100.0	6,690.7	6,689.7	6,689.7	105.5	133.8	90.04	-2,932.7	-239.6	2,521.2	2,282.1	239.08	10.546	
12,200.0	6,690.7	6,689.7	6,689.7	107.4	133.8	90.04	-2,932.7	-239.6	2,617.9	2,377.0	240.98	10.864	
12,300.0	6,690.7	6,689.7	6,689.7	109.3	133.8	90.04	-2,932.7	-239.6	2,714.9	2,472.0	242.88	11.178	
12,400.0	6,690.8	6,689.8	6,689.8	111.2	133.8	90.04	-2,932.7	-239.6	2,812.1	2,567.3	244.79	11.488	
12,500.0	6,690.8	6,689.8	6,689.8	113.1	133.8	90.04	-2,932.7	-239.6	2,909.5	2,662.8	246.69	11.794	
12,600.0	6,690.8	6,689.8	6,689.8	115.0	133.8	90.05	-2,932.7	-239.6	3,007.1	2,758.5	248.60	12.096	
12,700.0	6,690.8	6,689.8	6,689.8	116.9	133.8	90.05	-2,932.7	-239.6	3,104.8	2,854.3	250.50	12.394	
12,800.0	6,690.8	6,689.8	6,689.8	118.8	133.8	90.05	-2,932.7	-239.6	3,202.6	2,950.2	252.41	12.688	
12,900.0	6,690.9	6,689.9	6,689.9	120.7	133.8	90.05	-2,932.7	-239.6	3,300.6	3,046.3	254.31	12.979	
13,000.0	6,690.9	6,689.9	6,689.9	122.6	133.8	90.05	-2,932.7	-239.6	3,398.7	3,142.5	256.22	13.265	
13,100.0	6,690.9	6,689.9	6,689.9	124.5	133.8	90.05	-2,932.7	-239.6	3,496.9	3,238.8	258.13	13.547	
13,200.0	6,690.9	6,689.9	6,689.9	126.4	133.8	90.05	-2,932.7	-239.6	3,595.3	3,335.2	260.04	13.826	
13,300.0	6,690.9	6,689.9	6,689.9	128.3	133.8	90.06	-2,932.7	-239.6	3,693.7	3,431.7	261.94	14.101	
13,400.0	6,690.9	6,689.9	6,689.9	130.2	133.8	90.06	-2,932.7	-239.6	3,792.1	3,528.3	263.85	14.372	
13,500.0	6,691.0	6,690.0	6,690.0	132.1	133.8	90.06	-2,932.7	-239.6	3,890.7	3,624.9	265.76	14.640	
13,600.0	6,691.0	6,690.0	6,690.0	134.0	133.8	90.06	-2,932.7	-239.6	3,989.3	3,721.7	267.67	14.904	
13,700.0	6,691.0	6,690.0	6,690.0	135.9	133.8	90.06	-2,932.7	-239.6	4,088.0	3,818.5	269.58	15.164	
13,755.1	6,691.0	6,690.0	6,690.0	137.0	133.8	90.06	-2,932.7	-239.6	4,142.4	3,871.8	270.63	15.306	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4635.0ft (RKB - 15')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Chesnut 28U-243
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.61°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
Project:	SEC.28-T5N-R64W	**TVD Reference:**	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	**MD Reference:**	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (2-13-14)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4635.0ft (RKB - 15')	Coordinates are relative to: Chesnut 28U-243
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000 °	Grid Convergence at Surface is: 0.61°