PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Chesnut 27K-323**

Surface Location: Chesnut 27K-HZ Pad Sec.27-T5N-R64W

North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

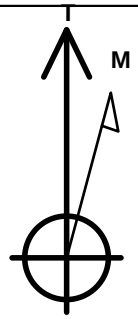
Ground Elevation: 4617.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1378851.16	3267262.58	40.369380	-104.540800	

Ensign 121 RKB - 13.5' WELL @ 4630.5ft (RKB 13.5')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 2307'FSL & 1213'FWL, Sec.27	1.0	0.0	0.0	Point
BHL 500'FSL & 1760'FWL, Sec.34	6644.0	-7082.2	551.9	Point



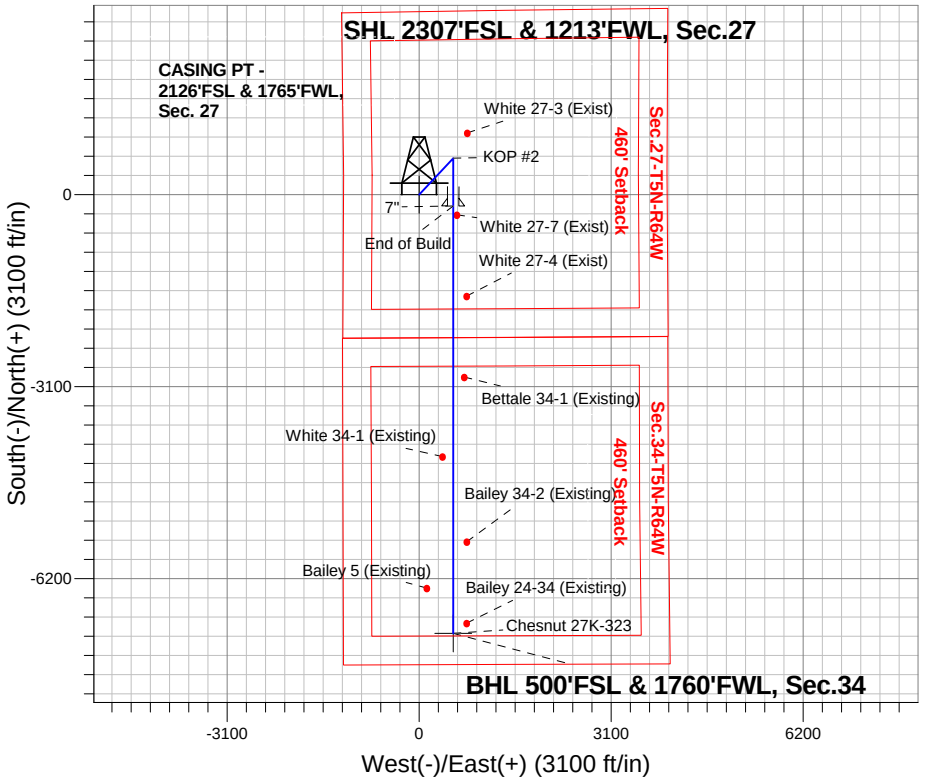
Azimuths to True North
Magnetic North: 8.34°

Magnetic Field
Strength: 52827.7snT
Dip Angle: 66.96°
Date: 6/3/2014
Model: IGRF2010

Chesnut 27K-HZ Pad Sec.27-T5N-R64W
Chesnut 27K-323
Plan #2 (7-09-14)
July 09 2014

ANNOTATIONS

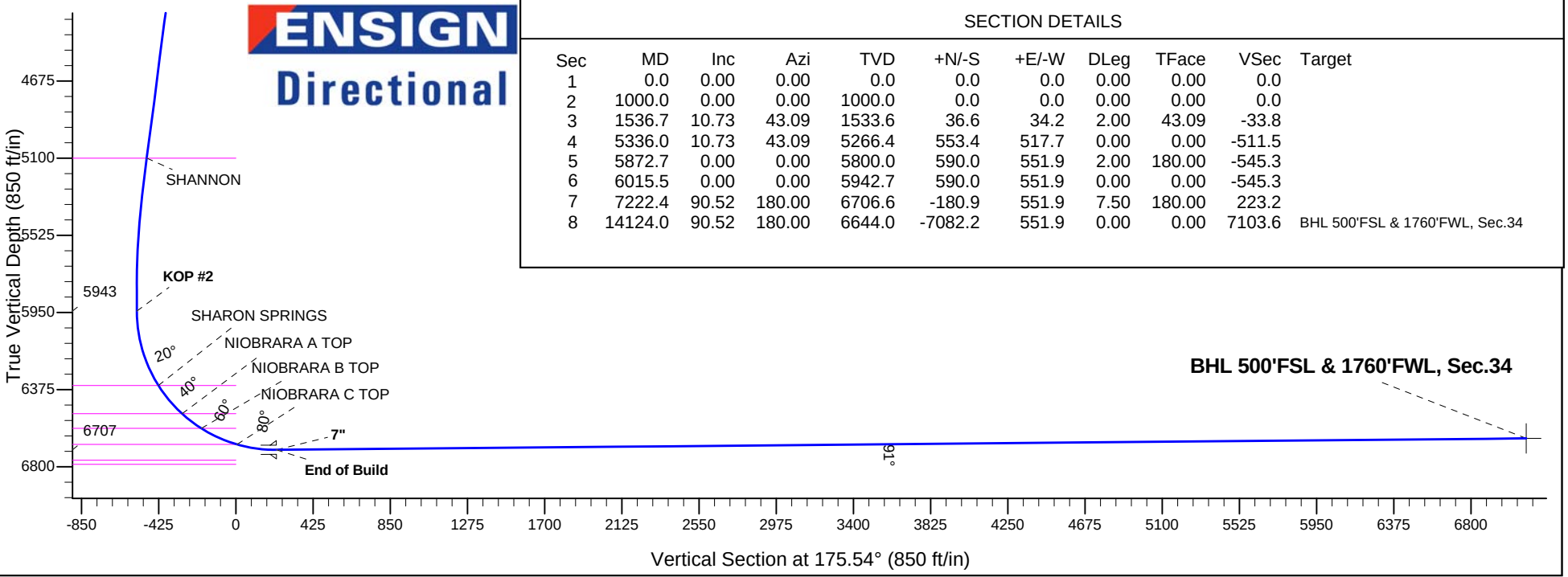
TVD	MD	Annotation
1000.0	1000.0	KOP #1
5942.8	6015.5	KOP #2
6706.6	7222.4	End of Build



ENSIGN Directional

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1536.7	10.73	43.09	1533.6	36.6	34.2	2.00	43.09	-33.8	
4	5336.0	10.73	43.09	5266.4	553.4	517.7	0.00	0.00	-511.5	
5	5872.7	0.00	0.00	5800.0	590.0	551.9	2.00	180.00	-545.3	
6	6015.5	0.00	0.00	5942.7	590.0	551.9	0.00	0.00	-545.3	
7	7222.4	90.52	180.00	6706.6	-180.9	551.9	7.50	180.00	223.2	
8	14124.0	90.52	180.00	6644.0	-7082.2	551.9	0.00	0.00	7103.6	BHL 500'FSL & 1760'FWL, Sec.34



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.27-T5N-R64W
Chesnut 27K-HZ Pad Sec.27-T5N-R64W
Chesnut 27K-323

Wellbore #1

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

Standard Planning Report

09 July, 2014

Database:	landmark	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Project:	SEC.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**North Reference:**	True
Well:	Chesnut 27K-323	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-09-14)		

Project SEC.27-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 27K-HZ Pad Sec.27-T5N-R64W

Site Position:		**Northing:**	1,378,883.95 ft	**Latitude:**	40.369470
From:	Lat/Long	**Easting:**	3,267,262.23 ft	**Longitude:**	-104.540800
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.62 °

Well Chesnut 27K-323

Well Position	**+N/-S**	-32.8 ft	**Northing:**	1,378,851.15 ft	**Latitude:**	40.369380
	+E/-W	0.0 ft	**Easting:**	3,267,262.58 ft	**Longitude:**	-104.540800
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,617.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/8/2014	8.33	66.96	52,818

Design Plan #2 (7-09-14)

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	175.54

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	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,536.7	10.73	43.09	1,533.6	36.6	34.2	2.00	2.00	0.00	43.09	
5,336.0	10.73	43.09	5,266.4	553.4	517.7	0.00	0.00	0.00	0.00	
5,872.7	0.00	0.00	5,800.0	590.0	551.9	2.00	-2.00	0.00	180.00	
6,015.5	0.00	0.00	5,942.7	590.0	551.9	0.00	0.00	0.00	0.00	
7,222.4	90.52	180.00	6,706.6	-180.9	551.9	7.50	7.50	0.00	180.00	
14,124.0	90.52	180.00	6,644.0	-7,082.1	551.9	0.00	0.00	0.00	0.00	BHL 500'FSL & 176

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Project:	SEC.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**North Reference:**	True
Well:	Chesnut 27K-323	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-09-14)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
1,100.0	2.00	43.09	1,100.0	1.3	1.2	-1.2	2.00	2.00	0.00
1,200.0	4.00	43.09	1,199.8	5.1	4.8	-4.7	2.00	2.00	0.00
1,300.0	6.00	43.09	1,299.5	11.5	10.7	-10.6	2.00	2.00	0.00
1,400.0	8.00	43.09	1,398.7	20.4	19.0	-18.8	2.00	2.00	0.00
1,500.0	10.00	43.09	1,497.5	31.8	29.7	-29.4	2.00	2.00	0.00
1,536.7	10.73	43.09	1,533.6	36.6	34.2	-33.8	2.00	2.00	0.00
1,600.0	10.73	43.09	1,595.8	45.2	42.3	-41.8	0.00	0.00	0.00
1,700.0	10.73	43.09	1,694.0	58.8	55.0	-54.4	0.00	0.00	0.00
1,800.0	10.73	43.09	1,792.3	72.4	67.7	-66.9	0.00	0.00	0.00
1,900.0	10.73	43.09	1,890.5	86.0	80.5	-79.5	0.00	0.00	0.00
2,000.0	10.73	43.09	1,988.8	99.6	93.2	-92.1	0.00	0.00	0.00
2,100.0	10.73	43.09	2,087.0	113.2	105.9	-104.7	0.00	0.00	0.00
2,200.0	10.73	43.09	2,185.3	126.8	118.6	-117.2	0.00	0.00	0.00
2,300.0	10.73	43.09	2,283.5	140.4	131.4	-129.8	0.00	0.00	0.00
2,400.0	10.73	43.09	2,381.8	154.0	144.1	-142.4	0.00	0.00	0.00
2,500.0	10.73	43.09	2,480.0	167.6	156.8	-154.9	0.00	0.00	0.00
2,600.0	10.73	43.09	2,578.3	181.2	169.5	-167.5	0.00	0.00	0.00
2,700.0	10.73	43.09	2,676.5	194.8	182.3	-180.1	0.00	0.00	0.00
2,800.0	10.73	43.09	2,774.8	208.4	195.0	-192.7	0.00	0.00	0.00
2,900.0	10.73	43.09	2,873.0	222.0	207.7	-205.2	0.00	0.00	0.00
3,000.0	10.73	43.09	2,971.3	235.6	220.4	-217.8	0.00	0.00	0.00
3,100.0	10.73	43.09	3,069.5	249.2	233.2	-230.4	0.00	0.00	0.00
3,200.0	10.73	43.09	3,167.8	262.8	245.9	-243.0	0.00	0.00	0.00
3,300.0	10.73	43.09	3,266.0	276.5	258.6	-255.5	0.00	0.00	0.00
3,400.0	10.73	43.09	3,364.3	290.1	271.3	-268.1	0.00	0.00	0.00
3,466.9	10.73	43.09	3,430.0	299.2	279.8	-276.5	0.00	0.00	0.00
PARKMAN									
3,500.0	10.73	43.09	3,462.5	303.7	284.0	-280.7	0.00	0.00	0.00
3,600.0	10.73	43.09	3,560.8	317.3	296.8	-293.2	0.00	0.00	0.00
3,700.0	10.73	43.09	3,659.0	330.9	309.5	-305.8	0.00	0.00	0.00
3,800.0	10.73	43.09	3,757.3	344.5	322.2	-318.4	0.00	0.00	0.00
3,900.0	10.73	43.09	3,855.5	358.1	334.9	-331.0	0.00	0.00	0.00
4,000.0	10.73	43.09	3,953.8	371.7	347.7	-343.5	0.00	0.00	0.00
4,100.0	10.73	43.09	4,052.0	385.3	360.4	-356.1	0.00	0.00	0.00
4,199.7	10.73	43.09	4,150.0	398.8	373.1	-368.6	0.00	0.00	0.00
SUSSEX									
4,200.0	10.73	43.09	4,150.3	398.9	373.1	-368.7	0.00	0.00	0.00
4,300.0	10.73	43.09	4,248.5	412.5	385.8	-381.2	0.00	0.00	0.00
4,400.0	10.73	43.09	4,346.8	426.1	398.6	-393.8	0.00	0.00	0.00
4,500.0	10.73	43.09	4,445.0	439.7	411.3	-406.4	0.00	0.00	0.00
4,600.0	10.73	43.09	4,543.3	453.3	424.0	-419.0	0.00	0.00	0.00

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Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**North Reference:**	True
Well:	Chesnut 27K-323	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-09-14)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,700.0	10.73	43.09	4,641.5	466.9	436.7	-431.5	0.00	0.00	0.00
4,800.0	10.73	43.09	4,739.8	480.5	449.5	-444.1	0.00	0.00	0.00
4,900.0	10.73	43.09	4,838.0	494.1	462.2	-456.7	0.00	0.00	0.00
5,000.0	10.73	43.09	4,936.3	507.7	474.9	-469.3	0.00	0.00	0.00
5,100.0	10.73	43.09	5,034.5	521.3	487.6	-481.8	0.00	0.00	0.00
5,166.7	10.73	43.09	5,100.0	530.4	496.1	-490.2	0.00	0.00	0.00
SHANNON									
5,200.0	10.73	43.09	5,132.8	534.9	500.3	-494.4	0.00	0.00	0.00
5,300.0	10.73	43.09	5,231.0	548.5	513.1	-507.0	0.00	0.00	0.00
5,336.0	10.73	43.09	5,266.4	553.4	517.7	-511.5	0.00	0.00	0.00
5,400.0	9.45	43.09	5,329.4	561.6	525.3	-519.1	2.00	-2.00	0.00
5,500.0	7.45	43.09	5,428.3	572.3	535.4	-529.0	2.00	-2.00	0.00
5,600.0	5.45	43.09	5,527.7	580.5	543.0	-536.6	2.00	-2.00	0.00
5,700.0	3.45	43.09	5,627.4	586.2	548.3	-541.8	2.00	-2.00	0.00
5,800.0	1.45	43.09	5,727.3	589.3	551.3	-544.7	2.00	-2.00	0.00
5,872.7	0.00	0.00	5,800.0	590.0	551.9	-545.3	2.00	-2.00	0.00
5,900.0	0.00	0.00	5,827.3	590.0	551.9	-545.3	0.00	0.00	0.00
6,000.0	0.00	0.00	5,927.3	590.0	551.9	-545.3	0.00	0.00	0.00
6,015.5	0.00	0.00	5,942.8	590.0	551.9	-545.3	0.00	0.00	0.00
KOP #2									
6,100.0	6.34	180.00	6,027.1	585.3	551.9	-540.7	7.50	7.50	0.00
6,200.0	13.84	180.00	6,125.5	567.8	551.9	-523.2	7.50	7.50	0.00
6,300.0	21.34	180.00	6,220.7	537.6	551.9	-493.1	7.50	7.50	0.00
6,400.0	28.84	180.00	6,311.2	495.3	551.9	-450.9	7.50	7.50	0.00
6,447.4	32.39	180.00	6,352.0	471.1	551.9	-426.8	7.50	7.50	0.00
SHARON SPRINGS									
6,500.0	36.34	180.00	6,395.4	441.4	551.9	-397.2	7.50	7.50	0.00
6,600.0	43.84	180.00	6,471.9	377.1	551.9	-333.1	7.50	7.50	0.00
6,651.8	47.73	180.00	6,508.0	339.9	551.9	-296.0	7.50	7.50	0.00
NIOBRARA A TOP									
6,700.0	51.34	180.00	6,539.3	303.3	551.9	-259.5	7.50	7.50	0.00
6,785.8	57.78	180.00	6,589.0	233.4	551.9	-189.8	7.50	7.50	0.00
NIOBRARA B TOP									
6,800.0	58.84	180.00	6,596.4	221.3	551.9	-177.8	7.50	7.50	0.00
6,900.0	66.34	180.00	6,642.4	132.6	551.9	-89.4	7.50	7.50	0.00
7,000.0	73.84	180.00	6,676.5	38.7	551.9	4.3	7.50	7.50	0.00
7,001.9	73.98	180.00	6,677.0	36.9	551.9	6.1	7.50	7.50	0.00
NIOBRARA C TOP									
7,100.0	81.34	180.00	6,698.0	-58.9	551.9	101.6	7.50	7.50	0.00
7,200.0	88.84	180.00	6,706.5	-158.5	551.9	200.9	7.50	7.50	0.00
7,222.4	90.52	180.00	6,706.6	-180.9	551.9	223.2	7.50	7.50	0.00
End of Build - 7"									
7,300.0	90.52	180.00	6,705.9	-258.5	551.9	300.6	0.00	0.00	0.00
7,400.0	90.52	180.00	6,705.0	-358.5	551.9	400.3	0.00	0.00	0.00
7,500.0	90.52	180.00	6,704.1	-458.5	551.9	500.0	0.00	0.00	0.00
7,600.0	90.52	180.00	6,703.2	-558.5	551.9	599.6	0.00	0.00	0.00
7,700.0	90.52	180.00	6,702.3	-658.5	551.9	699.3	0.00	0.00	0.00
7,800.0	90.52	180.00	6,701.4	-758.4	551.9	799.0	0.00	0.00	0.00
7,900.0	90.52	180.00	6,700.5	-858.4	551.9	898.7	0.00	0.00	0.00
8,000.0	90.52	180.00	6,699.6	-958.4	551.9	998.4	0.00	0.00	0.00
8,100.0	90.52	180.00	6,698.7	-1,058.4	551.9	1,098.1	0.00	0.00	0.00
8,200.0	90.52	180.00	6,697.8	-1,158.4	551.9	1,197.8	0.00	0.00	0.00

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Well:	Chesnut 27K-323	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-09-14)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,300.0	90.52	180.00	6,696.9	-1,258.4	551.9	1,297.5	0.00	0.00	0.00
8,400.0	90.52	180.00	6,695.9	-1,358.4	551.9	1,397.2	0.00	0.00	0.00
8,500.0	90.52	180.00	6,695.0	-1,458.4	551.9	1,496.9	0.00	0.00	0.00
8,600.0	90.52	180.00	6,694.1	-1,558.4	551.9	1,596.6	0.00	0.00	0.00
8,700.0	90.52	180.00	6,693.2	-1,658.4	551.9	1,696.3	0.00	0.00	0.00
8,800.0	90.52	180.00	6,692.3	-1,758.4	551.9	1,796.0	0.00	0.00	0.00
8,900.0	90.52	180.00	6,691.4	-1,858.4	551.9	1,895.7	0.00	0.00	0.00
9,000.0	90.52	180.00	6,690.5	-1,958.4	551.9	1,995.4	0.00	0.00	0.00
9,100.0	90.52	180.00	6,689.6	-2,058.4	551.9	2,095.0	0.00	0.00	0.00
9,200.0	90.52	180.00	6,688.7	-2,158.4	551.9	2,194.7	0.00	0.00	0.00
9,300.0	90.52	180.00	6,687.8	-2,258.4	551.9	2,294.4	0.00	0.00	0.00
9,400.0	90.52	180.00	6,686.9	-2,358.4	551.9	2,394.1	0.00	0.00	0.00
9,500.0	90.52	180.00	6,686.0	-2,458.4	551.9	2,493.8	0.00	0.00	0.00
9,600.0	90.52	180.00	6,685.1	-2,558.4	551.9	2,593.5	0.00	0.00	0.00
9,700.0	90.52	180.00	6,684.2	-2,658.4	551.9	2,693.2	0.00	0.00	0.00
9,800.0	90.52	180.00	6,683.2	-2,758.4	551.9	2,792.9	0.00	0.00	0.00
9,900.0	90.52	180.00	6,682.3	-2,858.4	551.9	2,892.6	0.00	0.00	0.00
10,000.0	90.52	180.00	6,681.4	-2,958.4	551.9	2,992.3	0.00	0.00	0.00
10,100.0	90.52	180.00	6,680.5	-3,058.4	551.9	3,092.0	0.00	0.00	0.00
10,200.0	90.52	180.00	6,679.6	-3,158.3	551.9	3,191.7	0.00	0.00	0.00
10,300.0	90.52	180.00	6,678.7	-3,258.3	551.9	3,291.4	0.00	0.00	0.00
10,400.0	90.52	180.00	6,677.8	-3,358.3	551.9	3,391.1	0.00	0.00	0.00
10,500.0	90.52	180.00	6,676.9	-3,458.3	551.9	3,490.8	0.00	0.00	0.00
10,600.0	90.52	180.00	6,676.0	-3,558.3	551.9	3,590.5	0.00	0.00	0.00
10,700.0	90.52	180.00	6,675.1	-3,658.3	551.9	3,690.1	0.00	0.00	0.00
10,800.0	90.52	180.00	6,674.2	-3,758.3	551.9	3,789.8	0.00	0.00	0.00
10,900.0	90.52	180.00	6,673.3	-3,858.3	551.9	3,889.5	0.00	0.00	0.00
11,000.0	90.52	180.00	6,672.4	-3,958.3	551.9	3,989.2	0.00	0.00	0.00
11,100.0	90.52	180.00	6,671.4	-4,058.3	551.9	4,088.9	0.00	0.00	0.00
11,200.0	90.52	180.00	6,670.5	-4,158.3	551.9	4,188.6	0.00	0.00	0.00
11,300.0	90.52	180.00	6,669.6	-4,258.3	551.9	4,288.3	0.00	0.00	0.00
11,400.0	90.52	180.00	6,668.7	-4,358.3	551.9	4,388.0	0.00	0.00	0.00
11,500.0	90.52	180.00	6,667.8	-4,458.3	551.9	4,487.7	0.00	0.00	0.00
11,600.0	90.52	180.00	6,666.9	-4,558.3	551.9	4,587.4	0.00	0.00	0.00
11,700.0	90.52	180.00	6,666.0	-4,658.3	551.9	4,687.1	0.00	0.00	0.00
11,800.0	90.52	180.00	6,665.1	-4,758.3	551.9	4,786.8	0.00	0.00	0.00
11,900.0	90.52	180.00	6,664.2	-4,858.3	551.9	4,886.5	0.00	0.00	0.00
12,000.0	90.52	180.00	6,663.3	-4,958.3	551.9	4,986.2	0.00	0.00	0.00
12,100.0	90.52	180.00	6,662.4	-5,058.3	551.9	5,085.9	0.00	0.00	0.00
12,200.0	90.52	180.00	6,661.5	-5,158.3	551.9	5,185.6	0.00	0.00	0.00
12,300.0	90.52	180.00	6,660.6	-5,258.3	551.9	5,285.2	0.00	0.00	0.00
12,400.0	90.52	180.00	6,659.6	-5,358.3	551.9	5,384.9	0.00	0.00	0.00
12,500.0	90.52	180.00	6,658.7	-5,458.3	551.9	5,484.6	0.00	0.00	0.00
12,600.0	90.52	180.00	6,657.8	-5,558.2	551.9	5,584.3	0.00	0.00	0.00
12,700.0	90.52	180.00	6,656.9	-5,658.2	551.9	5,684.0	0.00	0.00	0.00
12,800.0	90.52	180.00	6,656.0	-5,758.2	551.9	5,783.7	0.00	0.00	0.00
12,900.0	90.52	180.00	6,655.1	-5,858.2	551.9	5,883.4	0.00	0.00	0.00
13,000.0	90.52	180.00	6,654.2	-5,958.2	551.9	5,983.1	0.00	0.00	0.00
13,100.0	90.52	180.00	6,653.3	-6,058.2	551.9	6,082.8	0.00	0.00	0.00
13,200.0	90.52	180.00	6,652.4	-6,158.2	551.9	6,182.5	0.00	0.00	0.00
13,300.0	90.52	180.00	6,651.5	-6,258.2	551.9	6,282.2	0.00	0.00	0.00
13,400.0	90.52	180.00	6,650.6	-6,358.2	551.9	6,381.9	0.00	0.00	0.00
13,500.0	90.52	180.00	6,649.7	-6,458.2	551.9	6,481.6	0.00	0.00	0.00

Database:	landmark	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Project:	SEC.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**North Reference:**	True
Well:	Chesnut 27K-323	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-09-14)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,600.0	90.52	180.00	6,648.8	-6,558.2	551.9	6,581.3	0.00	0.00	0.00
13,700.0	90.52	180.00	6,647.8	-6,658.2	551.9	6,681.0	0.00	0.00	0.00
13,800.0	90.52	180.00	6,646.9	-6,758.2	551.9	6,780.6	0.00	0.00	0.00
13,900.0	90.52	180.00	6,646.0	-6,858.2	551.9	6,880.3	0.00	0.00	0.00
14,000.0	90.52	180.00	6,645.1	-6,958.2	551.9	6,980.0	0.00	0.00	0.00
14,100.0	90.52	180.00	6,644.2	-7,058.2	551.9	7,079.7	0.00	0.00	0.00
14,124.0	90.52	180.00	6,644.0	-7,082.1	551.9	7,103.6	0.00	0.00	0.00

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,222.4	6,706.6	7"	7	7-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,466.9	3,430.0	PARKMAN		0.00	
4,199.7	4,150.0	SUSSEX		0.00	
5,166.7	5,100.0	SHANNON		0.00	
6,447.4	6,352.0	SHARON SPRINGS		0.00	
6,651.8	6,508.0	NIOBRARA A TOP		0.00	
6,785.8	6,589.0	NIOBRARA B TOP		0.00	
7,001.9	6,677.0	NIOBRARA C TOP		0.00	
	6,764.0	FT HAYS		0.00	
	6,787.0	CODELL		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
1,000.0	1,000.0	0.0	0.0	KOP #1
6,015.5	5,942.8	590.0	551.9	KOP #2
7,222.4	6,706.6	-180.9	551.9	End of Build

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.27-T5N-R64W
Chesnut 27K-HZ Pad Sec.27-T5N-R64W
Chesnut 27K-323

Wellbore #1
Plan #2 (7-09-14)

Anticollision Report

09 July, 2014

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Reference Plan #2 (7-09-14)

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 1,000.0ft	**Error Surface:**	Elliptical Conic

Warning Levels Evaluated at: 2.00 **Sigma**

Survey Tool Program **Date** 7/9/2014

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	14,124.0	Plan #2 (7-09-14) (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 27G-HZ Pad Sec.27-T5N-R64W						
Chesnut 27K-203 - Wellbore #1 - Plan #2 (7-08-14)	5,215.4	5,300.0	636.1	607.8	22.449	CC
Chesnut 27K-203 - Wellbore #1 - Plan #2 (7-08-14)	14,124.0	13,885.9	641.1	354.6	2.237	ES, SF
Chesnut 27GK-HZ Pad Sec.27-T5N-R64W						
Chesnut 27K-201 - Wellbore #1 - Plan #1 (4-23-14)	5,063.0	5,022.8	451.5	421.4	14.987	CC
Chesnut 27K-201 - Wellbore #1 - Plan #1 (4-23-14)	5,100.0	5,059.1	451.6	421.2	14.885	ES
Chesnut 27K-201 - Wellbore #1 - Plan #1 (4-23-14)	6,000.0	5,936.7	463.7	429.7	13.642	SF
Chesnut 27K-421 - Wellbore #1 - Plan #1 (4-23-14)	6,000.0	5,979.4	249.6	213.7	6.949	CC, ES, SF
Chesnut 27O-201 - Wellbore #1 - Pan #1 (4-23-14)	3,998.0	3,938.9	603.6	579.7	25.226	CC
Chesnut 27O-201 - Wellbore #1 - Pan #1 (4-23-14)	4,100.0	4,039.4	603.9	579.5	24.762	ES
Chesnut 27O-201 - Wellbore #1 - Pan #1 (4-23-14)	6,000.0	6,050.0	636.0	604.1	19.945	SF
Chesnut 27O-341 - Wellbore #1 - Plan #1 (4-23-14)	5,959.4	5,978.6	346.7	316.0	11.307	CC
Chesnut 27O-341 - Wellbore #1 - Plan #1 (4-23-14)	6,000.0	6,015.1	346.8	316.0	11.259	ES, SF
Chesnut 27K-HZ Pad Sec.27-T5N-R64W						
Chesnut 27K-403 - Wellbore #1 - Plan #2 (7-09-14)	1,000.0	1,001.0	29.3	25.0	6.850	CC, ES
Chesnut 27K-403 - Wellbore #1 - Plan #2 (7-09-14)	14,124.0	14,158.9	333.3	70.5	1.268	Level 3, SF
Chesnut 27O-243 - Wellbore #1 - Plan #2 (7-08-14)	400.0	400.0	32.8	31.2	20.845	CC, ES
Chesnut 27O-243 - Wellbore #1 - Plan #2 (7-08-14)	14,124.0	14,086.4	358.3	83.1	1.302	Level 3, SF
Chesnut 27O-303 - Wellbore #1 - Plan #2 (7-08-14)	200.0	200.0	61.9	61.3	91.860	CC, ES
Chesnut 27O-303 - Wellbore #1 - Plan #2 (7-08-14)	14,124.0	14,222.0	680.1	400.9	2.435	SF
Chesnut Existing Pad Sec.27-T5N-R64W						
Bailey 24-34 (Existing) - Wellbore #1 - Wellbore #1	13,956.4	6,670.0	217.4	-52.1	0.807	Level 1, CC, ES, SF
Bailey 34-2 (Existing) - Wellbore #1 - Wellbore #1	12,641.2	6,671.0	220.1	-24.4	0.900	Level 1, CC, ES, SF
Bailey 5 (Existing) - Wellbore #1 - Wellbore #1	13,391.7	6,675.1	426.5	167.6	1.647	CC
Bailey 5 (Existing) - Wellbore #1 - Wellbore #1	13,400.0	6,675.1	426.5	167.5	1.647	ES, SF
Bettale 34-1 (Existing) - Wellbore #1 - Wellbore #1	9,985.3	6,699.1	175.5	-19.6	0.900	Level 1, CC, ES, SF
White 27-3 (Exist) - Wellbore #1 - Wellbore #1	6,000.0	5,897.8	466.4	333.9	3.520	CC, ES
White 27-3 (Exist) - Wellbore #1 - Wellbore #1	6,100.0	5,997.6	470.5	336.6	3.515	SF
White 27-4 (Exist) - Wellbore #1 - Wellbore #1	8,677.3	6,689.9	217.2	46.0	1.269	Level 3, CC, ES, SF
White 27-7 (Exist) - Wellbore #1 - Wellbore #1	7,365.8	6,687.8	58.3	-93.7	0.384	Level 1, CC, ES, SF
White 34-1 (Existing) - Wellbore #1 - Wellbore #1	11,267.6	6,682.4	172.9	-45.9	0.790	Level 1, CC, ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 27G-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-203 - Wellbore #1 - Plan #2 (7-08-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference 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
1,300.0	1,299.5	1,445.6	1,443.8	2.8	3.1	-94.17	642.1	-747.1	996.1	990.3	5.86	169.875	
1,400.0	1,398.7	1,558.1	1,554.8	3.1	3.4	-94.84	636.7	-729.1	981.5	975.1	6.36	154.270	
1,500.0	1,497.5	1,656.6	1,651.8	3.3	3.7	-95.68	631.8	-713.1	967.0	960.1	6.85	141.095	
1,600.0	1,595.8	1,754.9	1,748.7	3.6	4.1	-96.51	627.0	-697.2	952.9	945.5	7.38	129.117	
1,700.0	1,694.0	1,853.1	1,845.5	4.0	4.4	-97.27	622.2	-681.2	939.0	931.1	7.93	118.406	
1,800.0	1,792.3	1,951.3	1,942.3	4.3	4.7	-98.06	617.3	-665.2	925.3	916.8	8.50	108.893	
1,900.0	1,890.5	2,049.6	2,039.1	4.6	5.1	-98.87	612.5	-649.3	911.7	902.6	9.08	100.453	
2,000.0	1,988.8	2,147.8	2,135.9	5.0	5.4	-99.71	607.7	-633.3	898.3	888.7	9.66	92.959	
2,100.0	2,087.0	2,246.0	2,232.7	5.4	5.8	-100.56	602.9	-617.4	885.2	874.9	10.26	86.291	
2,200.0	2,185.3	2,344.2	2,329.5	5.8	6.1	-101.45	598.0	-601.4	872.2	861.3	10.86	80.339	
2,300.0	2,283.5	2,442.5	2,426.3	6.1	6.5	-102.36	593.2	-585.5	859.4	848.0	11.46	75.010	
2,400.0	2,381.8	2,540.7	2,523.1	6.5	6.9	-103.29	588.4	-569.5	846.9	834.9	12.06	70.222	
2,500.0	2,480.0	2,638.9	2,619.8	6.9	7.2	-104.26	583.6	-553.5	834.6	822.0	12.66	65.906	
2,600.0	2,578.3	2,737.1	2,716.6	7.3	7.6	-105.25	578.7	-537.6	822.6	809.3	13.27	62.003	
2,700.0	2,676.5	2,835.3	2,813.4	7.7	8.0	-106.27	573.9	-521.6	810.8	796.9	13.87	58.462	
2,800.0	2,774.8	2,933.6	2,910.2	8.1	8.4	-107.32	569.1	-505.7	799.2	784.8	14.47	55.240	
2,900.0	2,873.0	3,031.8	3,007.0	8.5	8.7	-108.40	564.2	-489.7	788.0	772.9	15.07	52.300	
3,000.0	2,971.3	3,130.0	3,103.8	8.9	9.1	-109.51	559.4	-473.8	777.0	761.4	15.66	49.611	
3,100.0	3,069.5	3,228.2	3,200.6	9.3	9.5	-110.65	554.6	-457.8	766.4	750.1	16.26	47.146	
3,200.0	3,167.8	3,326.5	3,297.4	9.7	9.9	-111.82	549.8	-441.9	756.0	739.2	16.85	44.880	
3,300.0	3,266.0	3,424.7	3,394.2	10.1	10.3	-113.02	544.9	-425.9	746.0	728.6	17.43	42.794	
3,400.0	3,364.3	3,522.9	3,491.0	10.5	10.6	-114.25	540.1	-409.9	736.4	718.3	18.02	40.870	
3,500.0	3,462.5	3,621.1	3,587.8	10.9	11.0	-115.52	535.3	-394.0	727.0	708.4	18.60	39.092	
3,600.0	3,560.8	3,719.4	3,684.6	11.3	11.4	-116.81	530.4	-378.0	718.1	698.9	19.18	37.447	
3,700.0	3,659.0	3,817.6	3,781.4	11.7	11.8	-118.14	525.6	-362.1	709.5	689.8	19.75	35.923	
3,800.0	3,757.3	3,915.8	3,878.2	12.1	12.2	-119.49	520.8	-346.1	701.4	681.0	20.32	34.509	
3,900.0	3,855.5	4,014.0	3,975.0	12.5	12.6	-120.88	516.0	-330.2	693.6	672.7	20.89	33.196	
4,000.0	3,953.8	4,112.2	4,071.8	12.9	12.9	-122.30	511.1	-314.2	686.3	664.8	21.46	31.976	
4,100.0	4,052.0	4,210.5	4,168.6	13.3	13.3	-123.74	506.3	-298.3	679.4	657.4	22.03	30.840	
4,200.0	4,150.3	4,308.7	4,265.4	13.7	13.7	-125.22	501.5	-282.3	673.0	650.4	22.60	29.784	
4,300.0	4,248.5	4,406.9	4,362.2	14.1	14.1	-126.72	496.6	-266.3	667.0	643.8	23.16	28.801	
4,400.0	4,346.8	4,505.1	4,459.0	14.6	14.5	-128.24	491.8	-250.4	661.5	637.8	23.72	27.885	
4,500.0	4,445.0	4,603.4	4,555.8	15.0	14.9	-129.79	487.0	-234.4	656.5	632.2	24.29	27.032	
4,600.0	4,543.3	4,701.6	4,652.6	15.4	15.3	-131.36	482.2	-218.5	652.0	627.2	24.85	26.237	
4,700.0	4,641.5	4,799.8	4,749.4	15.8	15.6	-132.95	477.3	-202.5	648.0	622.6	25.42	25.497	
4,800.0	4,739.8	4,898.0	4,846.2	16.2	16.0	-134.56	472.5	-186.6	644.6	618.6	25.98	24.807	
4,900.0	4,838.0	4,996.3	4,943.0	16.6	16.4	-136.19	467.7	-170.6	641.7	615.1	26.55	24.166	
5,000.0	4,936.3	5,094.5	5,039.8	17.0	16.8	-137.82	462.8	-154.7	639.3	612.1	27.12	23.569	
5,100.0	5,034.5	5,192.7	5,136.6	17.4	17.2	-139.47	458.0	-138.7	637.4	609.7	27.70	23.014	
5,200.0	5,132.8	5,287.6	5,230.1	17.8	17.6	-141.07	453.4	-123.3	636.2	607.9	28.26	22.512	
5,215.4	5,147.9	5,300.0	5,242.4	17.9	17.6	-141.27	452.8	-121.4	636.1	607.8	28.34	22.449	CC
5,300.0	5,231.0	5,369.4	5,311.0	18.2	17.8	-142.39	449.8	-111.6	637.2	608.5	28.74	22.172	
5,400.0	5,329.4	5,451.6	5,392.6	18.6	18.0	-143.61	446.9	-102.0	640.7	611.5	29.20	21.937	
5,500.0	5,428.3	5,534.3	5,474.9	18.9	18.2	-144.61	444.7	-94.7	644.4	614.8	29.61	21.765	
5,600.0	5,527.7	5,617.3	5,557.8	19.1	18.3	-145.35	443.2	-89.6	648.0	618.0	29.96	21.629	
5,700.0	5,627.4	5,700.0	5,640.4	19.3	18.5	-145.84	442.3	-86.8	651.3	621.1	30.26	21.524	
5,800.0	5,727.3	5,788.9	5,729.3	19.5	18.6	-146.08	442.1	-86.2	654.2	623.7	30.53	21.430	
5,900.0	5,827.3	5,888.9	5,829.3	19.6	18.7	-103.05	442.1	-86.2	655.0	624.2	30.80	21.263	
5,910.7	5,838.0	5,899.6	5,840.0	19.7	18.7	-103.05	442.1	-86.2	655.0	624.2	30.84	21.238	
6,000.0	5,927.3	5,978.6	5,918.9	19.8	18.8	-103.20	440.3	-86.2	655.5	624.4	31.14	21.049	
6,100.0	6,027.1	6,061.5	6,001.2	19.9	19.0	76.15	430.1	-86.2	657.3	625.9	31.39	20.937	

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 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 27G-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-203 - Wellbore #1 - Plan #2 (7-08-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference 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
6,200.0	6,125.5	6,144.0	6,081.5	19.8	19.2	75.66	411.2	-86.2	658.6	627.1	31.56	20.868	
6,300.0	6,220.7	6,226.2	6,158.9	19.7	19.4	75.38	383.8	-86.2	659.5	627.8	31.69	20.812	
6,400.0	6,311.2	6,308.3	6,232.9	19.5	19.7	75.30	348.4	-86.2	659.7	627.9	31.79	20.754	
6,500.0	6,395.4	6,390.3	6,302.6	19.3	20.0	75.43	305.2	-86.2	659.3	627.4	31.91	20.663	
6,600.0	6,471.9	6,472.6	6,367.5	19.0	20.4	75.76	254.7	-86.2	658.4	626.3	32.10	20.508	
6,700.0	6,539.3	6,555.2	6,426.8	18.7	20.9	76.29	197.3	-86.2	656.9	624.5	32.42	20.262	
6,800.0	6,596.4	6,638.3	6,479.8	18.4	21.5	77.02	133.3	-86.2	655.0	622.0	32.93	19.891	
6,900.0	6,642.4	6,722.1	6,525.9	18.1	22.1	77.94	63.4	-86.2	652.7	619.0	33.68	19.382	
7,000.0	6,676.5	6,806.7	6,564.5	17.8	22.9	79.04	-11.9	-86.2	650.2	615.5	34.70	18.734	
7,100.0	6,698.0	6,892.5	6,594.8	17.6	23.8	80.31	-92.1	-86.2	647.5	611.5	36.05	17.962	
7,200.0	6,706.5	6,979.5	6,616.2	17.7	24.8	81.74	-176.4	-86.2	645.0	607.3	37.72	17.098	
7,300.0	6,705.9	7,068.5	6,628.0	18.4	25.8	82.87	-264.5	-86.2	643.1	603.3	39.78	16.167	
7,400.0	6,705.0	7,162.0	6,629.9	19.3	27.1	83.11	-357.9	-86.2	642.7	600.7	42.05	15.286	
7,500.0	6,704.1	7,262.0	6,629.2	20.4	28.4	83.13	-457.9	-86.2	642.7	598.1	44.59	14.415	
7,600.0	6,703.2	7,362.0	6,628.5	21.6	29.9	83.15	-557.9	-86.2	642.7	595.4	47.30	13.587	
7,700.0	6,702.3	7,462.0	6,627.9	22.9	31.4	83.17	-657.9	-86.2	642.7	592.5	50.16	12.811	
7,800.0	6,701.4	7,562.0	6,627.2	24.2	32.9	83.19	-757.9	-86.2	642.6	589.5	53.15	12.090	
7,900.0	6,700.5	7,662.0	6,626.5	25.6	34.5	83.20	-857.9	-86.2	642.6	586.3	56.25	11.424	
8,000.0	6,699.6	7,762.0	6,625.8	27.1	36.1	83.22	-957.9	-86.2	642.6	583.1	59.43	10.812	
8,100.0	6,698.7	7,862.0	6,625.1	28.6	37.7	83.24	-1,057.9	-86.2	642.5	579.9	62.69	10.249	
8,200.0	6,697.8	7,962.0	6,624.4	30.2	39.4	83.26	-1,157.9	-86.2	642.5	576.5	66.01	9.733	
8,300.0	6,696.9	8,062.0	6,623.7	31.8	41.0	83.28	-1,257.9	-86.2	642.5	573.1	69.39	9.259	
8,400.0	6,695.9	8,162.0	6,623.0	33.5	42.7	83.30	-1,357.9	-86.2	642.5	569.7	72.81	8.824	
8,500.0	6,695.0	8,262.0	6,622.3	35.1	44.5	83.32	-1,457.9	-86.2	642.4	566.2	76.27	8.423	
8,600.0	6,694.1	8,362.0	6,621.6	36.8	46.2	83.33	-1,557.9	-86.2	642.4	562.7	79.77	8.054	
8,700.0	6,693.2	8,462.0	6,620.9	38.5	48.0	83.35	-1,657.9	-86.2	642.4	559.1	83.29	7.713	
8,800.0	6,692.3	8,562.0	6,620.2	40.2	49.7	83.37	-1,757.9	-86.2	642.4	555.5	86.84	7.397	
8,900.0	6,691.4	8,662.0	6,619.5	42.0	51.5	83.39	-1,857.9	-86.2	642.3	551.9	90.42	7.104	
9,000.0	6,690.5	8,762.0	6,618.8	43.7	53.3	83.41	-1,957.9	-86.2	642.3	548.3	94.01	6.832	
9,100.0	6,689.6	8,862.0	6,618.1	45.5	55.1	83.43	-2,057.9	-86.2	642.3	544.7	97.63	6.579	
9,200.0	6,688.7	8,962.0	6,617.4	47.3	56.9	83.45	-2,157.9	-86.2	642.3	541.0	101.25	6.343	
9,300.0	6,687.8	9,062.0	6,616.7	49.1	58.7	83.46	-2,257.9	-86.2	642.2	537.4	104.90	6.123	
9,400.0	6,686.9	9,162.0	6,616.0	50.9	60.5	83.48	-2,357.9	-86.2	642.2	533.7	108.55	5.916	
9,500.0	6,686.0	9,262.0	6,615.3	52.7	62.3	83.50	-2,457.9	-86.2	642.2	530.0	112.22	5.723	
9,600.0	6,685.1	9,362.0	6,614.6	54.5	64.2	83.52	-2,557.9	-86.2	642.2	526.3	115.90	5.541	
9,700.0	6,684.2	9,461.9	6,613.9	56.3	66.0	83.54	-2,657.9	-86.2	642.2	522.6	119.59	5.370	
9,800.0	6,683.2	9,561.9	6,613.2	58.2	67.8	83.56	-2,757.9	-86.2	642.1	518.8	123.28	5.209	
9,900.0	6,682.3	9,661.9	6,612.5	60.0	69.7	83.58	-2,857.9	-86.2	642.1	515.1	126.99	5.056	
10,000.0	6,681.4	9,761.9	6,611.8	61.8	71.5	83.59	-2,957.9	-86.2	642.1	511.4	130.70	4.913	
10,100.0	6,680.5	9,861.9	6,611.1	63.7	73.4	83.61	-3,057.9	-86.2	642.1	507.6	134.42	4.776	
10,200.0	6,679.6	9,961.9	6,610.4	65.5	75.2	83.63	-3,157.9	-86.2	642.0	503.9	138.14	4.648	
10,300.0	6,678.7	10,061.9	6,609.7	67.4	77.1	83.65	-3,257.9	-86.2	642.0	500.1	141.87	4.525	
10,400.0	6,677.8	10,161.9	6,609.0	69.2	78.9	83.67	-3,357.8	-86.2	642.0	496.4	145.61	4.409	
10,500.0	6,676.9	10,261.9	6,608.3	71.1	80.8	83.69	-3,457.8	-86.2	642.0	492.6	149.35	4.298	
10,600.0	6,676.0	10,361.9	6,607.6	73.0	82.7	83.71	-3,557.8	-86.2	641.9	488.8	153.10	4.193	
10,700.0	6,675.1	10,461.9	6,606.9	74.8	84.5	83.72	-3,657.8	-86.2	641.9	485.1	156.85	4.093	
10,800.0	6,674.2	10,561.9	6,606.2	76.7	86.4	83.74	-3,757.8	-86.2	641.9	481.3	160.60	3.997	
10,900.0	6,673.3	10,661.9	6,605.5	78.6	88.3	83.76	-3,857.8	-86.2	641.9	477.5	164.36	3.905	
11,000.0	6,672.4	10,761.9	6,604.8	80.4	90.2	83.78	-3,957.8	-86.2	641.8	473.7	168.12	3.818	
11,100.0	6,671.4	10,861.9	6,604.1	82.3	92.0	83.80	-4,057.8	-86.2	641.8	469.9	171.88	3.734	
11,200.0	6,670.5	10,961.9	6,603.4	84.2	93.9	83.82	-4,157.8	-86.2	641.8	466.2	175.65	3.654	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 27G-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-203 - Wellbore #1 - Plan #2 (7-08-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference 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
11,300.0	6,669.6	11,061.9	6,602.7	86.1	95.8	83.84	-4,257.8	-86.2	641.8	462.4	179.42	3.577	
11,400.0	6,668.7	11,161.9	6,602.0	87.9	97.7	83.85	-4,357.8	-86.2	641.7	458.6	183.19	3.503	
11,500.0	6,667.8	11,261.9	6,601.3	89.8	99.6	83.87	-4,457.8	-86.2	641.7	454.8	186.96	3.432	
11,600.0	6,666.9	11,361.9	6,600.6	91.7	101.4	83.89	-4,557.8	-86.2	641.7	451.0	190.74	3.364	
11,700.0	6,666.0	11,461.9	6,599.9	93.6	103.3	83.91	-4,657.8	-86.2	641.7	447.2	194.52	3.299	
11,800.0	6,665.1	11,561.9	6,599.2	95.5	105.2	83.93	-4,757.8	-86.2	641.7	443.4	198.30	3.236	
11,900.0	6,664.2	11,661.9	6,598.5	97.4	107.1	83.95	-4,857.8	-86.2	641.6	439.6	202.08	3.175	
12,000.0	6,663.3	11,761.9	6,597.8	99.3	109.0	83.97	-4,957.8	-86.2	641.6	435.7	205.87	3.117	
12,100.0	6,662.4	11,861.9	6,597.1	101.1	110.9	83.98	-5,057.8	-86.2	641.6	431.9	209.65	3.060	
12,200.0	6,661.5	11,961.9	6,596.4	103.0	112.8	84.00	-5,157.8	-86.2	641.6	428.1	213.44	3.006	
12,300.0	6,660.6	12,061.9	6,595.7	104.9	114.7	84.02	-5,257.8	-86.2	641.5	424.3	217.23	2.953	
12,400.0	6,659.6	12,161.9	6,595.0	106.8	116.6	84.04	-5,357.8	-86.2	641.5	420.5	221.03	2.902	
12,500.0	6,658.7	12,261.9	6,594.3	108.7	118.5	84.06	-5,457.8	-86.2	641.5	416.7	224.82	2.853	
12,600.0	6,657.8	12,361.9	6,593.6	110.6	120.4	84.08	-5,557.8	-86.2	641.5	412.9	228.62	2.806	
12,700.0	6,656.9	12,461.9	6,592.9	112.5	122.3	84.10	-5,657.8	-86.2	641.5	409.0	232.41	2.760	
12,800.0	6,656.0	12,561.9	6,592.2	114.4	124.1	84.11	-5,757.8	-86.2	641.4	405.2	236.21	2.716	
12,900.0	6,655.1	12,661.9	6,591.5	116.3	126.0	84.13	-5,857.8	-86.2	641.4	401.4	240.01	2.672	
13,000.0	6,654.2	12,761.9	6,590.8	118.2	127.9	84.15	-5,957.8	-86.2	641.4	397.6	243.81	2.631	
13,100.0	6,653.3	12,861.9	6,590.2	120.1	129.8	84.17	-6,057.8	-86.2	641.4	393.8	247.61	2.590	
13,200.0	6,652.4	12,961.9	6,589.5	122.0	131.7	84.19	-6,157.8	-86.2	641.3	389.9	251.41	2.551	
13,300.0	6,651.5	13,061.9	6,588.8	123.9	133.6	84.21	-6,257.8	-86.2	641.3	386.1	255.22	2.513	
13,400.0	6,650.6	13,161.9	6,588.1	125.8	135.5	84.23	-6,357.8	-86.2	641.3	382.3	259.02	2.476	
13,500.0	6,649.7	13,261.9	6,587.4	127.7	137.4	84.24	-6,457.8	-86.2	641.3	378.5	262.83	2.440	
13,600.0	6,648.8	13,361.9	6,586.7	129.6	139.3	84.26	-6,557.8	-86.2	641.3	374.6	266.63	2.405	
13,700.0	6,647.8	13,461.9	6,586.0	131.5	141.2	84.28	-6,657.8	-86.2	641.2	370.8	270.44	2.371	
13,800.0	6,646.9	13,561.9	6,585.3	133.4	143.1	84.30	-6,757.8	-86.2	641.2	367.0	274.25	2.338	
13,900.0	6,646.0	13,661.9	6,584.6	135.3	145.1	84.32	-6,857.8	-86.2	641.2	363.1	278.06	2.306	
14,000.0	6,645.1	13,761.9	6,583.9	137.2	147.0	84.34	-6,957.8	-86.2	641.2	359.3	281.87	2.275	
14,100.0	6,644.2	13,861.9	6,583.2	139.1	148.9	84.36	-7,057.8	-86.2	641.2	355.5	285.68	2.244	
14,124.0	6,644.0	13,885.9	6,583.0	139.6	149.3	84.36	-7,081.7	-86.2	641.1	354.6	286.59	2.237	ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 27GK-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-201 - Wellbore #1 - Plan #1 (4-23-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

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	1.5	1.5	0.0	0.0	-11.98	564.7	-119.8	577.3				
100.0	100.0	101.5	101.5	0.1	0.1	-11.98	564.7	-119.8	577.3	577.0	0.23	2,530.319	
200.0	200.0	201.5	201.5	0.3	0.3	-11.98	564.7	-119.8	577.3	576.6	0.68	851.832	
300.0	300.0	301.5	301.5	0.6	0.6	-11.98	564.7	-119.8	577.3	576.1	1.13	512.118	
400.0	400.0	401.5	401.5	0.8	0.8	-11.98	564.7	-119.8	577.3	575.7	1.58	366.112	
500.0	500.0	501.5	501.5	1.0	1.0	-11.98	564.7	-119.8	577.3	575.2	2.03	284.889	
600.0	600.0	601.5	601.5	1.2	1.2	-11.98	564.7	-119.8	577.3	574.8	2.48	233.161	
700.0	700.0	701.5	701.5	1.5	1.5	-11.98	564.7	-119.8	577.3	574.3	2.93	197.332	
800.0	800.0	801.5	801.5	1.7	1.7	-11.98	564.7	-119.8	577.3	573.9	3.37	171.047	
900.0	900.0	901.5	901.5	1.9	1.9	-11.98	564.7	-119.8	577.3	573.4	3.82	150.942	
1,000.0	1,000.0	1,001.5	1,001.5	2.1	2.1	-11.98	564.7	-119.8	577.3	573.0	4.27	135.066	
1,100.0	1,100.0	1,101.5	1,101.5	2.4	2.4	-55.23	564.7	-119.8	576.3	571.5	4.72	122.093	
1,200.0	1,199.8	1,201.3	1,201.3	2.6	2.6	-55.71	564.7	-119.8	573.3	568.1	5.16	111.016	
1,300.0	1,299.5	1,301.0	1,301.0	2.8	2.8	-56.51	564.7	-119.8	568.4	562.8	5.61	101.255	
1,400.0	1,398.7	1,400.2	1,400.2	3.1	3.0	-57.65	564.7	-119.8	561.8	555.7	6.08	92.471	
1,500.0	1,497.5	1,499.0	1,499.0	3.3	3.3	-59.15	564.7	-119.8	553.5	546.9	6.56	84.424	
1,600.0	1,595.8	1,597.3	1,597.3	3.6	3.5	-60.85	564.7	-119.8	544.2	537.1	7.07	76.992	
1,700.0	1,694.0	1,688.6	1,688.6	4.0	3.7	-62.32	565.6	-118.8	535.8	528.3	7.58	70.670	
1,800.0	1,792.3	1,780.7	1,780.5	4.3	3.9	-63.54	568.6	-115.7	529.2	521.1	8.11	65.236	
1,900.0	1,890.5	1,873.5	1,873.0	4.6	4.1	-64.50	573.7	-110.4	524.0	515.4	8.66	60.516	
2,000.0	1,988.8	1,966.8	1,965.8	5.0	4.3	-65.18	580.9	-102.8	520.2	511.0	9.22	56.395	
2,100.0	2,087.0	2,066.7	2,064.9	5.4	4.5	-65.74	589.6	-93.6	517.1	507.2	9.82	52.627	
2,200.0	2,185.3	2,166.5	2,163.9	5.8	4.8	-66.32	598.4	-84.4	514.0	503.5	10.44	49.224	
2,300.0	2,283.5	2,266.3	2,262.9	6.1	5.1	-66.89	607.2	-75.2	510.9	499.8	11.07	46.148	
2,400.0	2,381.8	2,366.1	2,361.9	6.5	5.3	-67.48	616.0	-66.0	507.9	496.2	11.71	43.362	
2,500.0	2,480.0	2,465.9	2,460.9	6.9	5.6	-68.07	624.7	-56.8	505.0	492.6	12.37	40.835	
2,600.0	2,578.3	2,565.8	2,559.9	7.3	5.9	-68.67	633.5	-47.5	502.1	489.0	13.03	38.538	
2,700.0	2,676.5	2,665.6	2,658.9	7.7	6.2	-69.28	642.3	-38.3	499.2	485.5	13.70	36.445	
2,800.0	2,774.8	2,765.4	2,757.9	8.1	6.5	-69.89	651.1	-29.1	496.5	482.1	14.38	34.533	
2,900.0	2,873.0	2,865.2	2,856.9	8.5	6.7	-70.51	659.8	-19.9	493.7	478.7	15.06	32.782	
3,000.0	2,971.3	2,965.0	2,955.9	8.9	7.0	-71.14	668.6	-10.7	491.1	475.3	15.75	31.175	
3,100.0	3,069.5	3,064.9	3,054.9	9.3	7.3	-71.77	677.4	-1.5	488.5	472.0	16.45	29.697	
3,200.0	3,167.8	3,164.7	3,153.9	9.7	7.6	-72.41	686.2	7.7	485.9	468.8	17.15	28.334	
3,300.0	3,266.0	3,264.5	3,252.9	10.1	7.9	-73.06	694.9	17.0	483.5	465.6	17.86	27.075	
3,400.0	3,364.3	3,364.3	3,351.9	10.5	8.2	-73.72	703.7	26.2	481.1	462.5	18.57	25.909	
3,500.0	3,462.5	3,464.1	3,450.9	10.9	8.5	-74.38	712.5	35.4	478.7	459.4	19.28	24.827	
3,600.0	3,560.8	3,564.0	3,549.9	11.3	8.9	-75.04	721.3	44.6	476.4	456.4	20.00	23.822	
3,700.0	3,659.0	3,663.8	3,648.9	11.7	9.2	-75.72	730.0	53.8	474.2	453.5	20.72	22.886	
3,800.0	3,757.3	3,763.6	3,747.9	12.1	9.5	-76.39	738.8	63.0	472.0	450.6	21.44	22.013	
3,900.0	3,855.5	3,863.4	3,846.9	12.5	9.8	-77.08	747.6	72.2	469.9	447.8	22.17	21.198	
4,000.0	3,953.8	3,963.2	3,945.9	12.9	10.1	-77.77	756.4	81.5	467.9	445.0	22.90	20.436	
4,100.0	4,052.0	4,063.0	4,044.9	13.3	10.4	-78.47	765.2	90.7	466.0	442.3	23.63	19.722	
4,200.0	4,150.3	4,162.9	4,143.9	13.7	10.7	-79.17	773.9	99.9	464.1	439.7	24.36	19.053	
4,300.0	4,248.5	4,262.7	4,243.0	14.1	11.0	-79.88	782.7	109.1	462.3	437.2	25.09	18.425	
4,400.0	4,346.8	4,362.5	4,342.0	14.6	11.3	-80.59	791.5	118.3	460.5	434.7	25.82	17.834	
4,500.0	4,445.0	4,462.3	4,441.0	15.0	11.7	-81.31	800.3	127.5	458.9	432.3	26.56	17.278	
4,600.0	4,543.3	4,562.2	4,540.0	15.4	12.0	-82.04	809.0	136.7	457.3	430.0	27.29	16.756	
4,700.0	4,641.5	4,663.1	4,640.3	15.8	12.2	-83.02	816.6	144.6	455.6	427.7	27.96	16.296	
4,800.0	4,739.8	4,763.3	4,740.2	16.2	12.4	-84.44	821.6	150.0	454.0	425.4	28.59	15.876	
4,900.0	4,838.0	4,862.6	4,839.4	16.6	12.6	-86.30	824.2	152.7	452.5	423.3	29.20	15.500	
5,000.0	4,936.3	4,960.9	4,937.8	17.0	12.8	-88.54	824.7	153.2	451.7	421.9	29.77	15.172	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 27GK-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-201 - Wellbore #1 - Plan #1 (4-23-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

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
5,063.0	4,998.2	5,022.8	4,999.7	17.3	12.9	-90.00	824.7	153.2	451.5	421.4	30.13	14.987	CC
5,100.0	5,034.5	5,059.1	5,036.0	17.4	12.9	-90.86	824.7	153.2	451.6	421.2	30.34	14.885	ES
5,200.0	5,132.8	5,157.4	5,134.3	17.8	13.1	-93.18	824.7	153.2	452.2	421.3	30.89	14.640	
5,300.0	5,231.0	5,255.6	5,232.5	18.2	13.3	-95.49	824.7	153.2	453.7	422.2	31.43	14.436	
5,400.0	5,329.4	5,354.0	5,330.9	18.6	13.5	-97.72	824.7	153.2	455.7	423.8	31.91	14.282	
5,500.0	5,428.3	5,452.9	5,429.8	18.9	13.7	-99.57	824.7	153.2	458.0	425.7	32.30	14.178	
5,600.0	5,527.7	5,552.3	5,529.2	19.1	13.9	-100.98	824.7	153.2	460.0	427.3	32.67	14.081	
5,700.0	5,627.4	5,652.0	5,628.9	19.3	14.1	-101.96	824.7	153.2	461.6	428.5	33.01	13.981	
5,800.0	5,727.3	5,751.9	5,728.8	19.5	14.3	-102.49	824.7	153.2	462.5	429.1	33.34	13.870	
5,900.0	5,827.3	5,851.9	5,828.8	19.6	14.5	-59.52	824.7	153.2	462.7	429.0	33.66	13.744	
5,906.5	5,833.7	5,858.4	5,835.2	19.7	14.5	-59.52	824.7	153.2	462.7	429.0	33.68	13.736	
6,000.0	5,927.3	5,936.7	5,913.5	19.8	14.6	-59.35	826.3	153.2	463.7	429.7	33.99	13.642	SF
6,100.0	6,027.1	6,011.4	5,987.7	19.9	14.8	121.40	834.7	153.2	472.1	437.8	34.28	13.770	
6,200.0	6,125.5	6,079.8	6,054.6	19.8	15.0	122.65	848.8	153.2	493.1	458.8	34.32	14.366	
6,300.0	6,220.7	6,138.2	6,110.5	19.7	15.2	123.58	865.5	153.2	528.1	494.1	34.06	15.508	
6,400.0	6,311.2	6,184.7	6,154.2	19.5	15.4	123.32	881.8	153.2	577.6	544.0	33.51	17.235	
6,500.0	6,395.4	6,219.5	6,186.0	19.3	15.6	121.15	895.7	153.2	640.2	607.4	32.82	19.505	
6,600.0	6,471.9	6,250.0	6,213.4	19.0	15.7	117.06	909.2	153.2	713.9	681.7	32.21	22.166	
6,700.0	6,539.3	6,250.0	6,213.4	18.7	15.7	107.13	909.2	153.2	795.7	764.0	31.75	25.066	
6,800.0	6,596.4	6,263.6	6,225.5	18.4	15.8	95.79	915.5	153.2	882.9	851.6	31.33	28.185	
6,900.0	6,642.4	6,250.0	6,213.4	18.1	15.7	78.28	909.2	153.2	973.3	943.6	29.74	32.730	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 27GK-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-421 - Wellbore #1 - Plan #1 (4-23-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

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	1.5	1.5	0.0	0.0	-8.90	623.0	-97.5	630.6				
100.0	100.0	101.5	101.5	0.1	0.1	-8.90	623.0	-97.5	630.6	630.3	0.23	2,763.974	
200.0	200.0	201.5	201.5	0.3	0.3	-8.90	623.0	-97.5	630.6	629.9	0.68	930.492	
300.0	300.0	301.5	301.5	0.6	0.6	-8.90	623.0	-97.5	630.6	629.4	1.13	559.409	
400.0	400.0	401.5	401.5	0.8	0.8	-8.90	623.0	-97.5	630.6	629.0	1.58	399.919	
500.0	500.0	501.5	501.5	1.0	1.0	-8.90	623.0	-97.5	630.6	628.5	2.03	311.196	
600.0	600.0	601.5	601.5	1.2	1.2	-8.90	623.0	-97.5	630.6	628.1	2.48	254.692	
700.0	700.0	701.5	701.5	1.5	1.5	-8.90	623.0	-97.5	630.6	627.6	2.93	215.554	
800.0	800.0	801.5	801.5	1.7	1.7	-8.90	623.0	-97.5	630.6	627.2	3.37	186.842	
900.0	900.0	901.5	901.5	1.9	1.9	-8.90	623.0	-97.5	630.6	626.7	3.82	164.880	
1,000.0	1,000.0	1,001.5	1,001.5	2.1	2.1	-8.90	623.0	-97.5	630.6	626.3	4.27	147.538	
1,100.0	1,100.0	1,101.5	1,101.5	2.4	2.4	-52.13	623.0	-97.5	629.5	624.8	4.72	133.371	
1,200.0	1,199.8	1,200.0	1,200.0	2.6	2.6	-52.55	623.0	-97.5	626.3	621.1	5.16	121.356	
1,300.0	1,299.5	1,297.4	1,297.4	2.8	2.8	-53.10	623.5	-96.0	621.3	615.7	5.60	111.024	
1,400.0	1,398.7	1,393.6	1,393.5	3.1	3.0	-53.63	625.2	-91.4	614.9	608.8	6.04	101.861	
1,500.0	1,497.5	1,489.9	1,489.5	3.3	3.2	-54.15	627.9	-83.7	606.9	600.4	6.50	93.318	
1,600.0	1,595.8	1,586.4	1,585.2	3.6	3.4	-54.51	631.7	-73.0	597.9	590.9	7.01	85.233	
1,700.0	1,694.0	1,683.0	1,680.7	4.0	3.7	-54.54	636.6	-59.3	589.2	581.6	7.57	77.860	
1,800.0	1,792.3	1,781.7	1,777.9	4.3	4.0	-54.31	642.5	-42.9	580.9	572.8	8.16	71.173	
1,900.0	1,890.5	1,881.4	1,875.9	4.6	4.3	-54.06	648.5	-26.2	572.7	563.9	8.79	65.167	
2,000.0	1,988.8	1,981.0	1,974.0	5.0	4.6	-53.80	654.4	-9.4	564.5	555.0	9.43	59.836	
2,100.0	2,087.0	2,080.6	2,072.0	5.4	5.0	-53.54	660.4	7.3	556.2	546.2	10.10	55.093	
2,200.0	2,185.3	2,180.3	2,170.1	5.8	5.3	-53.26	666.4	24.0	548.0	537.3	10.77	50.879	
2,300.0	2,283.5	2,279.9	2,268.1	6.1	5.7	-52.98	672.3	40.7	539.9	528.4	11.46	47.120	
2,400.0	2,381.8	2,379.5	2,366.1	6.5	6.0	-52.69	678.3	57.4	531.7	519.5	12.15	43.759	
2,500.0	2,480.0	2,479.1	2,464.2	6.9	6.4	-52.39	684.3	74.1	523.5	510.7	12.85	40.741	
2,600.0	2,578.3	2,578.8	2,562.2	7.3	6.7	-52.08	690.2	90.8	515.4	501.8	13.55	38.023	
2,700.0	2,676.5	2,678.4	2,660.2	7.7	7.1	-51.77	696.2	107.5	507.2	493.0	14.26	35.566	
2,800.0	2,774.8	2,778.0	2,758.3	8.1	7.5	-51.44	702.2	124.2	499.1	484.1	14.97	33.336	
2,900.0	2,873.0	2,877.7	2,856.3	8.5	7.9	-51.10	708.1	140.9	491.0	475.3	15.68	31.306	
3,000.0	2,971.3	2,977.3	2,954.3	8.9	8.3	-50.75	714.1	157.6	482.9	466.5	16.40	29.451	
3,100.0	3,069.5	3,076.9	3,052.4	9.3	8.6	-50.38	720.1	174.3	474.9	457.8	17.11	27.752	
3,200.0	3,167.8	3,176.5	3,150.4	9.7	9.0	-50.01	726.0	191.0	466.8	449.0	17.82	26.190	
3,300.0	3,266.0	3,276.2	3,248.5	10.1	9.4	-49.62	732.0	207.7	458.8	440.3	18.54	24.751	
3,400.0	3,364.3	3,375.8	3,346.5	10.5	9.8	-49.22	738.0	224.4	450.8	431.5	19.25	23.421	
3,500.0	3,462.5	3,475.4	3,444.5	10.9	10.2	-48.80	743.9	241.1	442.8	422.9	19.96	22.188	
3,600.0	3,560.8	3,575.1	3,542.6	11.3	10.6	-48.37	749.9	257.8	434.9	414.2	20.66	21.044	
3,700.0	3,659.0	3,674.7	3,640.6	11.7	11.0	-47.92	755.9	274.5	426.9	405.6	21.37	19.980	
3,800.0	3,757.3	3,774.3	3,738.6	12.1	11.4	-47.45	761.9	291.2	419.0	397.0	22.07	18.987	
3,900.0	3,855.5	3,873.9	3,836.7	12.5	11.8	-46.97	767.8	308.0	411.1	388.4	22.77	18.060	
4,000.0	3,953.8	3,973.6	3,934.7	12.9	12.2	-46.47	773.8	324.7	403.3	379.8	23.46	17.192	
4,100.0	4,052.0	4,073.2	4,032.7	13.3	12.5	-45.95	779.8	341.4	395.5	371.3	24.15	16.379	
4,200.0	4,150.3	4,172.8	4,130.8	13.7	12.9	-45.41	785.7	358.1	387.7	362.9	24.83	15.615	
4,300.0	4,248.5	4,272.5	4,228.8	14.1	13.3	-44.84	791.7	374.8	380.0	354.5	25.51	14.897	
4,400.0	4,346.8	4,372.1	4,326.9	14.6	13.7	-44.25	797.7	391.5	372.3	346.1	26.18	14.221	
4,500.0	4,445.0	4,471.7	4,424.9	15.0	14.1	-43.64	803.6	408.2	364.6	337.8	26.84	13.584	
4,600.0	4,543.3	4,572.8	4,524.4	15.4	14.5	-43.02	809.6	424.9	356.9	329.4	27.48	12.986	
4,700.0	4,641.5	4,676.9	4,627.3	15.8	14.8	-42.81	814.8	439.5	348.3	320.2	28.09	12.400	
4,800.0	4,739.8	4,780.6	4,730.4	16.2	15.1	-43.20	818.7	450.4	338.4	309.7	28.71	11.786	
4,900.0	4,838.0	4,883.9	4,833.3	16.6	15.3	-44.22	821.3	457.8	327.4	298.0	29.38	11.143	
5,000.0	4,936.3	4,986.3	4,935.7	17.0	15.5	-45.94	822.7	461.7	315.3	285.2	30.10	10.478	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 27GK-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-421 - Wellbore #1 - Plan #1 (4-23-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

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	5,034.5	5,086.6	5,036.0	17.4	15.6	-48.38	823.0	462.4	302.7	271.9	30.86	9.809	
5,200.0	5,132.8	5,184.9	5,134.3	17.8	15.7	-51.09	823.0	462.4	290.6	258.9	31.67	9.176	
5,300.0	5,231.0	5,283.1	5,232.5	18.2	15.9	-54.03	823.0	462.4	279.1	246.6	32.48	8.593	
5,400.0	5,329.4	5,381.5	5,330.9	18.6	16.1	-56.99	823.0	462.4	268.9	235.6	33.27	8.082	
5,500.0	5,428.3	5,480.4	5,429.8	18.9	16.2	-59.54	823.0	462.4	261.1	227.2	33.91	7.699	
5,600.0	5,527.7	5,579.8	5,529.2	19.1	16.4	-61.60	823.0	462.4	255.5	221.1	34.46	7.415	
5,700.0	5,627.4	5,679.5	5,628.9	19.3	16.5	-63.09	823.0	462.4	251.9	217.0	34.92	7.214	
5,800.0	5,727.3	5,779.4	5,728.8	19.5	16.7	-63.93	823.0	462.4	250.0	214.7	35.30	7.083	
5,900.0	5,827.3	5,879.4	5,828.8	19.6	16.9	-21.02	823.0	462.4	249.6	214.0	35.60	7.011	
6,000.0	5,927.3	5,979.4	5,928.8	19.8	17.0	-21.02	823.0	462.4	249.6	213.7	35.92	6.949	CC, ES, SF
6,100.0	6,027.1	6,069.0	6,018.4	19.9	17.2	159.21	823.7	462.4	254.8	218.9	35.94	7.091	
6,200.0	6,125.5	6,141.5	6,090.6	19.8	17.3	160.01	830.2	462.4	279.6	244.2	35.38	7.904	
6,300.0	6,220.7	6,200.0	6,148.1	19.7	17.5	160.66	840.4	462.4	324.4	290.0	34.32	9.452	
6,400.0	6,311.2	6,258.7	6,204.9	19.5	17.6	161.22	855.1	462.4	386.2	353.4	32.82	11.767	
6,500.0	6,395.4	6,300.0	6,244.2	19.3	17.7	160.52	868.0	462.4	461.9	430.8	31.05	14.876	
6,600.0	6,471.9	6,329.0	6,271.3	19.0	17.8	158.00	878.4	462.4	547.9	518.6	29.27	18.715	
6,700.0	6,539.3	6,350.0	6,290.7	18.7	17.9	152.09	886.5	462.4	640.8	612.8	28.05	22.849	
6,800.0	6,596.4	6,350.0	6,290.7	18.4	17.9	132.21	886.5	462.4	738.1	708.6	29.53	24.997	
6,900.0	6,642.4	6,350.0	6,290.7	18.1	17.9	76.76	886.5	462.4	837.3	808.1	29.19	28.688	
7,000.0	6,676.5	6,350.0	6,290.7	17.8	17.9	33.34	886.5	462.4	936.4	917.3	19.04	49.191	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 27GK-HZ Pad Sec.27-T5N-R64W - Chesnut 27O-201 - Wellbore #1 - Pan #1 (4-23-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference 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	0.5	0.5	0.0	0.0	-4.55	735.9	-58.5	738.2				
100.0	100.0	100.5	100.5	0.1	0.1	-4.55	735.9	-58.5	738.2	738.0	0.23	3,268.131	
200.0	200.0	200.5	200.5	0.3	0.3	-4.55	735.9	-58.5	738.2	737.6	0.68	1,093.067	
300.0	300.0	300.8	300.8	0.6	0.6	-4.41	736.0	-56.7	738.2	737.1	1.12	661.164	
400.0	400.0	400.8	400.7	0.8	0.8	-4.00	736.4	-51.5	738.2	736.6	1.56	471.893	
433.5	433.5	434.2	434.0	0.9	0.9	-3.80	736.5	-49.0	738.2	736.5	1.72	429.182	
500.0	500.0	500.4	499.9	1.0	1.0	-3.32	737.0	-42.8	738.2	736.2	2.03	363.829	
600.0	600.0	599.2	597.9	1.2	1.3	-2.39	737.8	-30.8	738.4	735.9	2.51	293.613	
700.0	700.0	697.1	694.6	1.5	1.6	-1.21	738.8	-15.6	739.0	735.9	3.03	243.978	
800.0	800.0	793.9	789.6	1.7	2.0	0.21	740.0	2.7	740.1	736.5	3.58	206.867	
900.0	900.0	889.2	882.6	1.9	2.4	1.84	741.4	23.8	742.0	737.8	4.17	177.945	
1,000.0	1,000.0	985.8	976.2	2.1	2.9	3.64	742.9	47.3	744.8	740.0	4.80	155.064	
1,100.0	1,100.0	1,083.0	1,070.5	2.4	3.4	-37.69	744.5	71.0	747.1	741.4	5.72	130.505	
1,200.0	1,199.8	1,180.8	1,165.3	2.6	3.9	-36.12	746.1	94.8	747.3	740.9	6.42	116.326	
1,300.0	1,299.5	1,278.9	1,260.5	2.8	4.4	-34.71	747.7	118.7	745.2	738.0	7.13	104.565	
1,400.0	1,398.7	1,377.4	1,356.0	3.1	4.9	-33.46	749.3	142.7	740.6	732.8	7.83	94.573	
1,500.0	1,497.5	1,475.9	1,451.5	3.3	5.4	-32.36	750.9	166.7	733.5	725.0	8.54	85.908	
1,600.0	1,595.8	1,574.5	1,547.2	3.6	5.9	-31.31	752.5	190.7	724.3	715.1	9.27	78.180	
1,700.0	1,694.0	1,673.1	1,642.8	4.0	6.4	-30.20	754.1	214.7	715.2	705.2	10.00	71.501	
1,800.0	1,792.3	1,771.7	1,738.4	4.3	6.9	-29.06	755.7	238.8	706.4	695.7	10.74	65.775	
1,900.0	1,890.5	1,870.3	1,834.0	4.6	7.4	-27.90	757.3	262.8	697.9	686.4	11.47	60.832	
2,000.0	1,988.8	1,968.9	1,929.6	5.0	8.0	-26.71	758.9	286.8	689.7	677.5	12.20	56.536	
2,100.0	2,087.0	2,067.5	2,025.2	5.4	8.5	-25.49	760.5	310.8	681.8	668.8	12.92	52.780	
2,200.0	2,185.3	2,166.1	2,120.8	5.8	9.0	-24.24	762.1	334.9	674.2	660.5	13.63	49.479	
2,300.0	2,283.5	2,264.7	2,216.4	6.1	9.5	-22.97	763.7	358.9	666.9	652.6	14.32	46.564	
2,400.0	2,381.8	2,363.3	2,312.0	6.5	10.0	-21.67	765.3	382.9	660.0	645.0	15.01	43.978	
2,500.0	2,480.0	2,461.9	2,407.7	6.9	10.5	-20.34	766.9	406.9	653.4	637.7	15.68	41.676	
2,600.0	2,578.3	2,560.5	2,503.3	7.3	11.1	-18.99	768.5	430.9	647.2	630.9	16.34	39.620	
2,700.0	2,676.5	2,659.1	2,598.9	7.7	11.6	-17.62	770.1	455.0	641.4	624.4	16.98	37.778	
2,800.0	2,774.8	2,757.7	2,694.5	8.1	12.1	-16.22	771.6	479.0	635.9	618.3	17.60	36.123	
2,900.0	2,873.0	2,856.3	2,790.1	8.5	12.6	-14.79	773.2	503.0	630.9	612.6	18.21	34.635	
3,000.0	2,971.3	2,954.9	2,885.7	8.9	13.1	-13.35	774.8	527.0	626.2	607.4	18.81	33.292	
3,100.0	3,069.5	3,053.5	2,981.3	9.3	13.7	-11.88	776.4	551.1	622.0	602.6	19.39	32.081	
3,200.0	3,167.8	3,152.1	3,076.9	9.7	14.2	-10.40	778.0	575.1	618.2	598.2	19.95	30.985	
3,300.0	3,266.0	3,250.7	3,172.6	10.1	14.7	-8.90	779.6	599.1	614.8	594.3	20.50	29.994	
3,400.0	3,364.3	3,349.2	3,268.2	10.5	15.2	-7.39	781.2	623.1	611.8	590.8	21.03	29.096	
3,500.0	3,462.5	3,447.8	3,363.8	10.9	15.7	-5.86	782.8	647.1	609.3	587.8	21.55	28.282	
3,600.0	3,560.8	3,546.4	3,459.4	11.3	16.2	-4.32	784.4	671.2	607.3	585.2	22.05	27.544	
3,700.0	3,659.0	3,645.0	3,555.0	11.7	16.8	-2.77	786.0	695.2	605.7	583.2	22.54	26.875	
3,800.0	3,757.3	3,743.6	3,650.6	12.1	17.3	-1.21	787.6	719.2	604.5	581.5	23.01	26.268	
3,900.0	3,855.5	3,842.2	3,746.2	12.5	17.8	0.35	789.2	743.2	603.9	580.4	23.48	25.717	
3,998.0	3,951.8	3,938.9	3,839.9	12.9	18.3	1.88	790.8	766.8	603.6	579.7	23.93	25.226 CC	
4,000.0	3,953.8	3,940.8	3,841.8	12.9	18.3	1.91	790.8	767.3	603.6	579.7	23.94	25.217	
4,100.0	4,052.0	4,039.4	3,937.5	13.3	18.8	3.47	792.4	791.3	603.9	579.5	24.39	24.762 ES	
4,200.0	4,150.3	4,138.0	4,033.1	13.7	19.4	5.03	794.0	815.3	604.6	579.8	24.83	24.349	
4,300.0	4,248.5	4,236.6	4,128.7	14.1	19.9	6.58	795.6	839.3	605.7	580.5	25.27	23.973	
4,400.0	4,346.8	4,335.2	4,224.3	14.6	20.4	8.13	797.2	863.3	607.4	581.7	25.70	23.631	
4,500.0	4,445.0	4,433.8	4,319.9	15.0	20.9	9.67	798.8	887.4	609.4	583.3	26.13	23.320	
4,600.0	4,543.3	4,532.4	4,415.5	15.4	21.4	11.20	800.4	911.4	611.9	585.4	26.57	23.035	
4,700.0	4,641.5	4,631.0	4,511.1	15.8	22.0	12.71	802.0	935.4	614.9	587.9	27.00	22.775	
4,800.0	4,739.8	4,729.6	4,606.7	16.2	22.5	14.21	803.6	959.4	618.3	590.9	27.44	22.537	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 27GK-HZ Pad Sec.27-T5N-R64W - Chesnut 27O-201 - Wellbore #1 - Pan #1 (4-23-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference 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
4,900.0	4,838.0	4,828.2	4,702.3	16.6	23.0	15.70	805.2	983.5	622.1	594.3	27.88	22.318	
5,000.0	4,936.3	4,926.8	4,798.0	17.0	23.5	17.16	806.8	1,007.5	626.4	598.1	28.32	22.116	
5,100.0	5,034.5	5,025.4	4,893.6	17.4	24.0	18.60	808.4	1,031.5	631.1	602.3	28.78	21.930	
5,200.0	5,132.8	5,124.0	4,989.2	17.8	24.6	20.02	810.0	1,055.5	636.1	606.9	29.24	21.757	
5,300.0	5,231.0	5,245.6	5,107.6	18.2	25.1	21.68	811.8	1,083.1	640.0	610.3	29.69	21.557	
5,400.0	5,329.4	5,371.1	5,230.9	18.6	25.5	23.18	813.4	1,106.3	640.9	610.8	30.12	21.276	
5,500.0	5,428.3	5,497.2	5,355.7	18.9	25.8	24.38	814.5	1,124.2	640.9	610.4	30.50	21.012	
5,600.0	5,527.7	5,623.8	5,481.7	19.1	26.1	25.26	815.4	1,136.6	640.0	609.2	30.83	20.757	
5,700.0	5,627.4	5,750.6	5,608.4	19.3	26.3	25.81	815.8	1,143.4	638.1	607.0	31.12	20.506	
5,800.0	5,727.3	5,870.1	5,727.8	19.5	26.4	26.03	815.9	1,144.9	635.4	604.0	31.36	20.263	
5,900.0	5,827.3	5,970.0	5,827.8	19.6	26.5	69.14	815.9	1,144.9	634.6	603.0	31.58	20.091	
6,000.0	5,927.3	6,050.0	5,907.6	19.8	26.6	68.87	819.1	1,144.9	636.0	604.1	31.89	19.945 SF	
6,100.0	6,027.1	6,124.1	5,981.0	19.9	26.7	-111.83	829.5	1,144.9	643.0	611.0	31.94	20.133	
6,200.0	6,125.5	6,192.0	6,047.0	19.8	26.8	-112.89	845.1	1,144.9	659.4	627.6	31.75	20.771	
6,300.0	6,220.7	6,250.0	6,102.1	19.7	26.8	-113.67	863.2	1,144.9	686.9	655.5	31.33	21.925	
6,400.0	6,311.2	6,300.0	6,148.4	19.5	26.9	-113.68	882.0	1,144.9	726.5	695.8	30.74	23.635	
6,500.0	6,395.4	6,328.2	6,174.0	19.3	26.9	-111.45	893.9	1,144.9	778.2	748.0	30.21	25.764	
6,600.0	6,471.9	6,350.0	6,193.4	19.0	27.0	-107.48	903.8	1,144.9	840.8	810.7	30.05	27.975	
6,700.0	6,539.3	6,364.1	6,205.8	18.7	27.0	-101.30	910.5	1,144.9	912.0	881.5	30.57	29.833	
6,800.0	6,596.4	6,369.3	6,210.4	18.4	27.0	-92.61	913.0	1,144.9	989.7	958.0	31.69	31.226	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 27GK-HZ Pad Sec.27-T5N-R64W - Chesnut 27O-341 - Wellbore #1 - Plan #1 (4-23-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

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	0.5	0.5	0.0	0.0	-6.57	677.6	-78.0	682.1				
100.0	100.0	100.5	100.5	0.1	0.1	-6.57	677.6	-78.0	682.1	681.9	0.23	3,019.622	
200.0	200.0	200.5	200.5	0.3	0.3	-6.57	677.6	-78.0	682.1	681.4	0.68	1,009.890	
300.0	300.0	300.5	300.5	0.6	0.6	-6.57	677.6	-78.0	682.1	681.0	1.12	606.338	
400.0	400.0	400.5	400.5	0.8	0.8	-6.57	677.6	-78.0	682.1	680.5	1.57	433.222	
500.0	500.0	500.5	500.5	1.0	1.0	-6.57	677.6	-78.0	682.1	680.1	2.02	337.004	
600.0	600.0	600.5	600.5	1.2	1.2	-6.57	677.6	-78.0	682.1	679.6	2.47	275.758	
700.0	700.0	700.5	700.5	1.5	1.5	-6.57	677.6	-78.0	682.1	679.2	2.92	233.350	
766.5	766.5	767.0	767.0	1.6	1.6	-6.57	677.6	-78.0	682.1	678.9	3.22	211.700	
800.0	800.0	800.5	800.5	1.7	1.7	-6.57	677.6	-78.0	682.1	678.7	3.37	202.251	
900.0	900.0	900.0	900.0	1.9	1.9	-6.42	677.9	-76.3	682.2	678.4	3.81	179.050	
1,000.0	1,000.0	998.2	998.1	2.1	2.1	-5.99	678.7	-71.2	682.4	678.2	4.24	160.940	
1,100.0	1,100.0	1,096.6	1,096.1	2.4	2.3	-48.49	680.0	-62.9	681.8	677.1	4.69	145.497	
1,200.0	1,199.8	1,194.7	1,193.4	2.6	2.6	-47.86	681.8	-51.2	679.1	673.9	5.15	131.893	
1,300.0	1,299.5	1,292.3	1,289.9	2.8	2.8	-47.18	684.2	-36.3	674.4	668.8	5.65	119.450	
1,400.0	1,398.7	1,389.5	1,385.3	3.1	3.2	-46.46	687.0	-18.3	667.8	661.6	6.19	107.868	
1,500.0	1,497.5	1,488.2	1,481.8	3.3	3.5	-45.75	690.2	2.2	659.2	652.4	6.79	97.134	
1,600.0	1,595.8	1,587.3	1,578.8	3.6	3.9	-45.11	693.5	22.8	648.8	641.3	7.43	87.317	
1,700.0	1,694.0	1,686.5	1,675.7	4.0	4.3	-44.42	696.7	43.4	638.3	630.2	8.10	78.760	
1,800.0	1,792.3	1,785.6	1,772.6	4.3	4.7	-43.70	699.9	64.0	627.8	619.1	8.80	71.385	
1,900.0	1,890.5	1,884.7	1,869.5	4.6	5.1	-42.95	703.2	84.6	617.5	608.0	9.50	65.012	
2,000.0	1,988.8	1,983.9	1,966.4	5.0	5.5	-42.18	706.4	105.2	607.3	597.1	10.21	59.481	
2,100.0	2,087.0	2,083.0	2,063.3	5.4	6.0	-41.39	709.6	125.9	597.2	586.3	10.93	54.657	
2,200.0	2,185.3	2,182.2	2,160.3	5.8	6.4	-40.56	712.9	146.5	587.3	575.6	11.65	50.427	
2,300.0	2,283.5	2,281.3	2,257.2	6.1	6.8	-39.71	716.1	167.1	577.4	565.1	12.37	46.698	
2,400.0	2,381.8	2,380.4	2,354.1	6.5	7.3	-38.83	719.4	187.7	567.7	554.6	13.08	43.394	
2,500.0	2,480.0	2,479.6	2,451.0	6.9	7.7	-37.92	722.6	208.3	558.1	544.3	13.80	40.454	
2,600.0	2,578.3	2,578.7	2,547.9	7.3	8.2	-36.98	725.8	229.0	548.7	534.2	14.51	37.825	
2,700.0	2,676.5	2,677.9	2,644.8	7.7	8.6	-36.01	729.1	249.6	539.4	524.2	15.21	35.465	
2,800.0	2,774.8	2,777.0	2,741.8	8.1	9.1	-35.00	732.3	270.2	530.3	514.4	15.91	33.340	
2,900.0	2,873.0	2,876.1	2,838.7	8.5	9.5	-33.96	735.6	290.8	521.4	504.8	16.59	31.418	
3,000.0	2,971.3	2,975.3	2,935.6	8.9	10.0	-32.88	738.8	311.4	512.6	495.3	17.27	29.677	
3,100.0	3,069.5	3,074.4	3,032.5	9.3	10.4	-31.77	742.0	332.0	504.0	486.1	17.94	28.093	
3,200.0	3,167.8	3,173.5	3,129.4	9.7	10.9	-30.62	745.3	352.7	495.6	477.0	18.60	26.651	
3,300.0	3,266.0	3,272.7	3,226.3	10.1	11.3	-29.43	748.5	373.3	487.4	468.2	19.24	25.335	
3,400.0	3,364.3	3,371.8	3,323.3	10.5	11.8	-28.20	751.7	393.9	479.5	459.6	19.87	24.131	
3,500.0	3,462.5	3,471.0	3,420.2	10.9	12.2	-26.93	755.0	414.5	471.8	451.3	20.49	23.029	
3,600.0	3,560.8	3,570.1	3,517.1	11.3	12.7	-25.62	758.2	435.1	464.3	443.2	21.09	22.019	
3,700.0	3,659.0	3,669.2	3,614.0	11.7	13.1	-24.26	761.5	455.8	457.0	435.4	21.67	21.092	
3,800.0	3,757.3	3,768.4	3,710.9	12.1	13.6	-22.87	764.7	476.4	450.1	427.8	22.24	20.241	
3,900.0	3,855.5	3,867.5	3,807.8	12.5	14.0	-21.43	767.9	497.0	443.4	420.6	22.78	19.459	
4,000.0	3,953.8	3,966.7	3,904.8	12.9	14.5	-19.95	771.2	517.6	437.0	413.7	23.32	18.741	
4,100.0	4,052.0	4,065.8	4,001.7	13.3	14.9	-18.43	774.4	538.2	430.9	407.0	23.83	18.081	
4,200.0	4,150.3	4,164.9	4,098.6	13.7	15.4	-16.86	777.6	558.8	425.1	400.8	24.32	17.476	
4,300.0	4,248.5	4,264.1	4,195.5	14.1	15.9	-15.26	780.9	579.5	419.6	394.8	24.80	16.920	
4,400.0	4,346.8	4,363.2	4,292.4	14.6	16.3	-13.61	784.1	600.1	414.5	389.3	25.26	16.410	
4,500.0	4,445.0	4,462.3	4,389.3	15.0	16.8	-11.92	787.4	620.7	409.8	384.1	25.70	15.943	
4,600.0	4,543.3	4,561.5	4,486.3	15.4	17.2	-10.20	790.6	641.3	405.4	379.2	26.13	15.515	
4,700.0	4,641.5	4,660.6	4,583.2	15.8	17.7	-8.44	793.8	661.9	401.4	374.8	26.54	15.123	
4,800.0	4,739.8	4,759.8	4,680.1	16.2	18.1	-6.65	797.1	682.6	397.7	370.8	26.94	14.765	
4,900.0	4,838.0	4,858.9	4,777.0	16.6	18.6	-4.83	800.3	703.2	394.5	367.2	27.33	14.438	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 27GK-HZ Pad Sec.27-T5N-R64W - Chesnut 27O-341 - Wellbore #1 - Plan #1 (4-23-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

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
5,000.0	4,936.3	4,958.0	4,873.9	17.0	19.1	-2.98	803.6	723.8	391.7	364.0	27.70	14.139	
5,100.0	5,034.5	5,057.2	4,970.8	17.4	19.5	-1.11	806.8	744.4	389.3	361.2	28.08	13.866	
5,200.0	5,132.8	5,165.1	5,076.6	17.8	19.9	0.86	810.1	765.7	386.5	358.1	28.40	13.613	
5,300.0	5,231.0	5,276.6	5,186.5	18.2	20.2	2.56	813.0	783.7	381.1	352.4	28.71	13.275	
5,400.0	5,329.4	5,388.0	5,297.1	18.6	20.5	3.94	815.1	797.5	373.4	344.4	29.05	12.854	
5,500.0	5,428.3	5,499.6	5,408.3	18.9	20.8	4.95	816.6	807.0	366.0	336.6	29.37	12.460	
5,600.0	5,527.7	5,611.1	5,519.7	19.1	20.9	5.58	817.5	812.3	358.7	329.1	29.66	12.094	
5,700.0	5,627.4	5,719.3	5,627.9	19.3	21.1	5.79	817.6	813.4	351.9	321.9	29.94	11.751	
5,800.0	5,727.3	5,819.2	5,727.8	19.5	21.2	5.86	817.6	813.4	347.6	317.4	30.19	11.512	
5,900.0	5,827.3	5,919.2	5,827.8	19.6	21.3	48.96	817.6	813.4	346.7	316.2	30.45	11.386	
5,959.4	5,886.7	5,978.6	5,887.2	19.7	21.4	48.96	817.6	813.4	346.7	316.0	30.66	11.307	CC
6,000.0	5,927.3	6,015.1	5,923.6	19.8	21.4	48.94	817.7	813.4	346.8	316.0	30.80	11.259	ES, SF
6,100.0	6,027.1	6,091.2	5,999.5	19.9	21.6	-131.71	822.9	813.4	354.4	323.6	30.81	11.505	
6,200.0	6,125.5	6,161.8	6,069.1	19.8	21.7	-133.17	834.4	813.4	377.7	347.2	30.50	12.385	
6,300.0	6,220.7	6,222.8	6,128.2	19.7	21.8	-134.46	849.5	813.4	417.5	387.7	29.82	13.999	
6,400.0	6,311.2	6,272.0	6,174.9	19.5	21.9	-134.61	865.1	813.4	473.1	444.4	28.77	16.448	
6,500.0	6,395.4	6,300.0	6,201.0	19.3	21.9	-131.82	875.3	813.4	542.8	515.2	27.54	19.705	
6,600.0	6,471.9	6,335.1	6,233.1	19.0	22.0	-127.93	889.4	813.4	623.0	596.3	26.63	23.391	
6,700.0	6,539.3	6,350.0	6,246.5	18.7	22.1	-118.37	895.8	813.4	710.9	683.9	27.08	26.251	
6,800.0	6,596.4	6,350.0	6,246.5	18.4	22.1	-100.64	895.8	813.4	803.8	774.0	29.80	26.973	
6,900.0	6,642.4	6,350.0	6,246.5	18.1	22.1	-77.74	895.8	813.4	898.9	867.0	31.91	28.172	
7,000.0	6,676.5	6,350.0	6,246.5	17.8	22.1	-56.23	895.8	813.4	994.1	963.9	30.21	32.911	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 27K-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-403 - Wellbore #1 - Plan #2 (7-09-14)

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	1.0	1.0	0.0	0.0	-174.54	-29.1	-2.8	29.3	29.3	0.00	N/A	
100.0	100.0	101.0	101.0	0.1	0.1	-174.54	-29.1	-2.8	29.3	29.0	0.23	128.933	
200.0	200.0	201.0	201.0	0.3	0.3	-174.54	-29.1	-2.8	29.3	28.6	0.68	43.263	
300.0	300.0	301.0	301.0	0.6	0.6	-174.54	-29.1	-2.8	29.3	28.1	1.13	25.992	
400.0	400.0	401.0	401.0	0.8	0.8	-174.54	-29.1	-2.8	29.3	27.7	1.58	18.577	
500.0	500.0	501.0	501.0	1.0	1.0	-174.54	-29.1	-2.8	29.3	27.2	2.03	14.453	
600.0	600.0	601.0	601.0	1.2	1.2	-174.54	-29.1	-2.8	29.3	26.8	2.47	11.828	
700.0	700.0	701.0	701.0	1.5	1.5	-174.54	-29.1	-2.8	29.3	26.3	2.92	10.009	
800.0	800.0	801.0	801.0	1.7	1.7	-174.54	-29.1	-2.8	29.3	25.9	3.37	8.676	
900.0	900.0	901.0	901.0	1.9	1.9	-174.54	-29.1	-2.8	29.3	25.4	3.82	7.656	
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	-174.54	-29.1	-2.8	29.3	25.0	4.27	6.850	CC, ES
1,100.0	1,100.0	1,101.0	1,101.0	2.4	2.4	144.35	-29.1	-2.8	30.7	26.0	4.72	6.500	
1,200.0	1,199.8	1,200.8	1,200.8	2.6	2.6	149.29	-29.1	-2.8	35.1	29.9	5.16	6.793	
1,300.0	1,299.5	1,300.5	1,300.5	2.8	2.8	155.19	-29.1	-2.8	42.8	37.2	5.60	7.641	
1,400.0	1,398.7	1,399.7	1,399.7	3.1	3.0	160.54	-29.1	-2.8	54.1	48.1	6.03	8.965	
1,500.0	1,497.5	1,498.5	1,498.5	3.3	3.3	164.78	-29.1	-2.8	69.1	62.6	6.46	10.685	
1,600.0	1,595.8	1,596.8	1,596.8	3.6	3.5	167.94	-29.1	-2.8	87.0	80.1	6.90	12.597	
1,700.0	1,694.0	1,695.0	1,695.0	4.0	3.7	170.05	-29.1	-2.8	105.3	97.9	7.35	14.312	
1,800.0	1,792.3	1,793.3	1,793.3	4.3	3.9	171.54	-29.1	-2.8	123.6	115.8	7.81	15.834	
1,900.0	1,890.5	1,891.5	1,891.5	4.6	4.1	172.65	-29.1	-2.8	142.1	133.8	8.27	17.190	
2,000.0	1,988.8	1,989.8	1,989.8	5.0	4.4	173.50	-29.1	-2.8	160.6	151.9	8.73	18.404	
2,100.0	2,087.0	2,093.6	2,093.6	5.4	4.6	174.34	-27.7	-2.2	177.7	168.5	9.20	19.327	
2,200.0	2,185.3	2,199.2	2,199.0	5.8	4.8	175.35	-22.7	-0.2	191.4	181.8	9.67	19.802	
2,300.0	2,283.5	2,305.6	2,305.0	6.1	5.1	176.56	-14.1	3.4	201.7	191.5	10.14	19.883	
2,400.0	2,381.8	2,412.5	2,411.1	6.5	5.3	177.99	-1.7	8.4	208.5	197.8	10.62	19.621	
2,500.0	2,480.0	2,519.7	2,516.9	6.9	5.6	179.69	14.4	15.0	211.9	200.7	11.11	19.066	
2,600.0	2,578.3	2,621.4	2,616.7	7.3	5.9	-178.47	32.1	22.3	212.9	201.3	11.60	18.354	
2,700.0	2,676.5	2,721.2	2,714.7	7.7	6.1	-176.67	49.7	29.4	214.0	201.9	12.09	17.704	
2,800.0	2,774.8	2,820.9	2,812.6	8.1	6.4	-174.89	67.2	36.6	215.4	202.8	12.59	17.101	
2,900.0	2,873.0	2,920.7	2,910.6	8.5	6.8	-173.13	84.8	43.8	216.9	203.8	13.11	16.544	
3,000.0	2,971.3	3,020.5	3,008.5	8.9	7.1	-171.41	102.3	50.9	218.7	205.0	13.65	16.027	
3,100.0	3,069.5	3,120.2	3,106.5	9.3	7.4	-169.71	119.8	58.1	220.6	206.4	14.19	15.545	
3,200.0	3,167.8	3,220.0	3,204.4	9.7	7.8	-168.04	137.4	65.3	222.8	208.0	14.76	15.095	
3,300.0	3,266.0	3,319.8	3,302.4	10.1	8.1	-166.40	154.9	72.5	225.1	209.8	15.34	14.675	
3,400.0	3,364.3	3,419.5	3,400.4	10.5	8.5	-164.80	172.4	79.6	227.6	211.7	15.94	14.282	
3,500.0	3,462.5	3,519.3	3,498.3	10.9	8.8	-163.24	190.0	86.8	230.3	213.8	16.55	13.914	
3,600.0	3,560.8	3,619.1	3,596.3	11.3	9.2	-161.71	207.5	94.0	233.2	216.0	17.18	13.568	
3,700.0	3,659.0	3,718.9	3,694.2	11.7	9.6	-160.22	225.1	101.1	236.2	218.3	17.83	13.244	
3,800.0	3,757.3	3,818.6	3,792.2	12.1	9.9	-158.77	242.6	108.3	239.3	220.8	18.50	12.940	
3,900.0	3,855.5	3,918.4	3,890.1	12.5	10.3	-157.35	260.1	115.5	242.7	223.5	19.18	12.654	
4,000.0	3,953.8	4,018.2	3,988.1	12.9	10.7	-155.98	277.7	122.6	246.1	226.3	19.87	12.386	
4,100.0	4,052.0	4,117.9	4,086.0	13.3	11.1	-154.64	295.2	129.8	249.7	229.1	20.58	12.135	
4,200.0	4,150.3	4,217.7	4,184.0	13.7	11.4	-153.35	312.8	137.0	253.5	232.2	21.30	11.899	
4,300.0	4,248.5	4,317.5	4,281.9	14.1	11.8	-152.09	330.3	144.1	257.3	235.3	22.03	11.678	
4,400.0	4,346.8	4,417.2	4,379.9	14.6	12.2	-150.87	347.8	151.3	261.3	238.5	22.78	11.471	
4,500.0	4,445.0	4,517.0	4,477.8	15.0	12.6	-149.68	365.4	158.5	265.4	241.9	23.54	11.277	
4,600.0	4,543.3	4,616.8	4,575.8	15.4	13.0	-148.53	382.9	165.7	269.6	245.3	24.30	11.094	
4,700.0	4,641.5	4,716.5	4,673.7	15.8	13.4	-147.42	400.4	172.8	273.9	248.8	25.08	10.923	
4,800.0	4,739.8	4,816.3	4,771.7	16.2	13.8	-146.35	418.0	180.0	278.3	252.5	25.86	10.763	
4,900.0	4,838.0	4,916.1	4,869.6	16.6	14.2	-145.30	435.5	187.2	282.8	256.2	26.65	10.613	
5,000.0	4,936.3	5,015.8	4,967.6	17.0	14.6	-144.29	453.1	194.3	287.4	260.0	27.45	10.472	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 27K-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-403 - Wellbore #1 - Plan #2 (7-09-14)

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	5,034.5	5,115.6	5,065.5	17.4	15.0	-143.31	470.6	201.5	292.1	263.9	28.25	10.339	
5,200.0	5,132.8	5,215.4	5,163.5	17.8	15.4	-142.37	488.1	208.7	296.9	267.8	29.06	10.215	
5,300.0	5,231.0	5,315.1	5,261.4	18.2	15.8	-141.45	505.7	215.8	301.7	271.8	29.88	10.099	
5,400.0	5,329.4	5,414.7	5,359.2	18.6	16.2	-140.51	523.2	223.0	306.1	275.4	30.70	9.970	
5,500.0	5,428.3	5,509.5	5,452.6	18.9	16.5	-139.55	538.3	229.2	308.9	277.5	31.40	9.837	
5,600.0	5,527.7	5,604.5	5,546.6	19.1	16.7	-138.70	550.6	234.2	310.8	278.8	32.00	9.711	
5,700.0	5,627.4	5,700.0	5,641.6	19.3	17.0	-137.95	560.1	238.1	311.6	279.1	32.52	9.582	
5,800.0	5,727.3	5,794.9	5,736.2	19.5	17.2	-137.30	566.5	240.7	311.5	278.5	32.96	9.450	
5,900.0	5,827.3	5,890.3	5,831.5	19.6	17.3	-93.68	570.1	242.2	310.4	277.0	33.33	9.311	
6,000.0	5,927.3	5,987.0	5,928.3	19.8	17.5	-93.54	570.9	242.5	310.0	276.3	33.66	9.209	
6,100.0	6,027.1	6,086.5	6,027.8	19.9	17.6	87.30	570.7	242.5	309.8	275.7	34.05	9.098	
6,200.0	6,125.5	6,184.8	6,125.6	19.8	17.7	88.96	562.2	242.5	309.5	275.1	34.32	9.017	
6,262.0	6,185.0	6,246.4	6,186.0	19.8	17.7	90.00	550.6	242.5	309.4	275.0	34.36	9.005	
6,300.0	6,220.7	6,284.3	6,222.7	19.7	17.6	90.64	541.0	242.5	309.4	275.1	34.36	9.006	
6,400.0	6,311.2	6,384.9	6,317.3	19.5	17.5	92.33	506.8	242.5	309.7	275.5	34.17	9.064	
6,500.0	6,395.4	6,486.8	6,407.6	19.3	17.2	93.98	459.9	242.5	310.2	276.4	33.78	9.181	
6,600.0	6,471.9	6,589.9	6,491.9	19.0	16.9	95.56	400.6	242.5	310.9	277.6	33.27	9.344	
6,700.0	6,539.3	6,694.3	6,568.3	18.7	16.6	97.05	329.6	242.5	311.8	279.1	32.72	9.528	
6,800.0	6,596.4	6,799.8	6,634.9	18.4	16.3	98.42	247.8	242.5	312.8	280.5	32.26	9.697	
6,900.0	6,642.4	6,906.5	6,690.2	18.1	16.1	99.63	156.7	242.5	313.8	281.8	32.01	9.804	
7,000.0	6,676.5	7,014.2	6,732.6	17.8	16.0	100.67	57.9	242.5	314.9	282.7	32.12	9.803	
7,100.0	6,698.0	7,122.7	6,760.9	17.6	16.2	101.52	-46.8	242.5	315.8	283.1	32.67	9.664	
7,200.0	6,706.5	7,231.9	6,774.1	17.7	16.7	102.15	-155.2	242.5	316.5	282.8	33.72	9.387	
7,300.0	6,705.9	7,335.3	6,775.0	18.4	17.4	102.40	-258.5	242.5	316.8	281.6	35.15	9.012	
7,400.0	6,705.0	7,435.3	6,774.9	19.3	18.3	102.54	-358.5	242.5	317.0	280.1	36.88	8.595	
7,500.0	6,704.1	7,535.3	6,774.8	20.4	19.4	102.69	-458.5	242.5	317.1	278.3	38.89	8.154	
7,600.0	6,703.2	7,635.3	6,774.7	21.6	20.5	102.83	-558.5	242.5	317.3	276.2	41.15	7.711	
7,700.0	6,702.3	7,735.3	6,774.6	22.9	21.8	102.98	-658.5	242.5	317.5	273.9	43.61	7.280	
7,800.0	6,701.4	7,835.3	6,774.5	24.2	23.2	103.12	-758.5	242.5	317.7	271.5	46.25	6.870	
7,900.0	6,700.5	7,935.3	6,774.4	25.6	24.6	103.27	-858.5	242.5	317.9	268.9	49.02	6.484	
8,000.0	6,699.6	8,035.3	6,774.3	27.1	26.1	103.41	-958.5	242.5	318.1	266.2	51.92	6.126	
8,100.0	6,698.7	8,135.3	6,774.3	28.6	27.6	103.55	-1,058.5	242.5	318.3	263.4	54.91	5.796	
8,200.0	6,697.8	8,235.3	6,774.2	30.2	29.2	103.70	-1,158.5	242.5	318.5	260.5	57.99	5.492	
8,300.0	6,696.9	8,335.3	6,774.1	31.8	30.8	103.84	-1,258.5	242.5	318.7	257.5	61.14	5.212	
8,400.0	6,695.9	8,435.3	6,774.0	33.5	32.5	103.98	-1,358.5	242.5	318.8	254.5	64.34	4.955	
8,500.0	6,695.0	8,535.2	6,773.9	35.1	34.2	104.13	-1,458.5	242.5	319.0	251.4	67.60	4.720	
8,600.0	6,694.1	8,635.2	6,773.8	36.8	35.9	104.27	-1,558.5	242.5	319.2	248.4	70.90	4.503	
8,700.0	6,693.2	8,735.2	6,773.7	38.5	37.6	104.41	-1,658.5	242.5	319.5	245.2	74.23	4.303	
8,800.0	6,692.3	8,835.2	6,773.6	40.2	39.3	104.55	-1,758.5	242.5	319.7	242.1	77.60	4.120	
8,900.0	6,691.4	8,935.2	6,773.6	42.0	41.1	104.70	-1,858.5	242.5	319.9	238.9	80.99	3.950	
9,000.0	6,690.5	9,035.2	6,773.5	43.7	42.9	104.84	-1,958.5	242.5	320.1	235.7	84.40	3.792	
9,100.0	6,689.6	9,135.2	6,773.4	45.5	44.7	104.98	-2,058.5	242.5	320.3	232.5	87.83	3.647	
9,200.0	6,688.7	9,235.2	6,773.3	47.3	46.5	105.12	-2,158.5	242.5	320.5	229.2	91.28	3.511	
9,300.0	6,687.8	9,335.2	6,773.2	49.1	48.3	105.26	-2,258.5	242.5	320.7	226.0	94.74	3.385	
9,400.0	6,686.9	9,435.2	6,773.1	50.9	50.1	105.40	-2,358.5	242.5	320.9	222.7	98.21	3.268	
9,500.0	6,686.0	9,535.2	6,773.0	52.7	51.9	105.55	-2,458.5	242.5	321.1	219.4	101.70	3.158	
9,600.0	6,685.1	9,635.2	6,772.9	54.5	53.7	105.69	-2,558.4	242.5	321.4	216.2	105.19	3.055	
9,700.0	6,684.2	9,735.2	6,772.9	56.3	55.6	105.83	-2,658.4	242.5	321.6	212.9	108.69	2.959	
9,800.0	6,683.2	9,835.2	6,772.8	58.2	57.4	105.97	-2,758.4	242.5	321.8	209.6	112.20	2.868	
9,900.0	6,682.3	9,935.2	6,772.7	60.0	59.2	106.11	-2,858.4	242.5	322.0	206.3	115.71	2.783	
10,000.0	6,681.4	10,035.2	6,772.6	61.8	61.1	106.25	-2,958.4	242.5	322.3	203.0	119.23	2.703	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 27K-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-403 - Wellbore #1 - Plan #2 (7-09-14)

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	6,680.5	10,135.2	6,772.5	63.7	62.9	106.39	-3,058.4	242.5	322.5	199.8	122.74	2.627	
10,200.0	6,679.6	10,235.2	6,772.4	65.5	64.8	106.53	-3,158.4	242.5	322.7	196.5	126.27	2.556	
10,300.0	6,678.7	10,335.2	6,772.3	67.4	66.7	106.67	-3,258.4	242.5	323.0	193.2	129.79	2.488	
10,400.0	6,677.8	10,435.2	6,772.2	69.2	68.5	106.81	-3,358.4	242.5	323.2	189.9	133.31	2.424	
10,500.0	6,676.9	10,535.2	6,772.2	71.1	70.4	106.95	-3,458.4	242.5	323.4	186.6	136.84	2.364	
10,600.0	6,676.0	10,635.2	6,772.1	73.0	72.3	107.08	-3,558.4	242.5	323.7	183.3	140.36	2.306	
10,700.0	6,675.1	10,735.2	6,772.0	74.8	74.1	107.22	-3,658.4	242.5	323.9	180.0	143.89	2.251	
10,800.0	6,674.2	10,835.2	6,771.9	76.7	76.0	107.36	-3,758.4	242.5	324.2	176.7	147.42	2.199	
10,900.0	6,673.3	10,935.2	6,771.8	78.6	77.9	107.50	-3,858.4	242.5	324.4	173.5	150.94	2.149	
11,000.0	6,672.4	11,035.2	6,771.7	80.4	79.8	107.64	-3,958.4	242.5	324.7	170.2	154.46	2.102	
11,100.0	6,671.4	11,135.2	6,771.6	82.3	81.7	107.78	-4,058.4	242.5	324.9	166.9	157.98	2.057	
11,200.0	6,670.5	11,235.2	6,771.6	84.2	83.5	107.91	-4,158.4	242.5	325.2	163.7	161.50	2.013	
11,300.0	6,669.6	11,335.2	6,771.5	86.1	85.4	108.05	-4,258.4	242.5	325.4	160.4	165.02	1.972	
11,400.0	6,668.7	11,435.2	6,771.4	87.9	87.3	108.19	-4,358.4	242.5	325.7	157.1	168.53	1.932	
11,500.0	6,667.8	11,535.1	6,771.3	89.8	89.2	108.33	-4,458.4	242.5	325.9	153.9	172.05	1.894	
11,600.0	6,666.9	11,635.1	6,771.2	91.7	91.1	108.46	-4,558.4	242.5	326.2	150.6	175.55	1.858	
11,700.0	6,666.0	11,735.1	6,771.1	93.6	93.0	108.60	-4,658.4	242.5	326.4	147.4	179.06	1.823	
11,800.0	6,665.1	11,835.1	6,771.0	95.5	94.9	108.73	-4,758.4	242.5	326.7	144.1	182.56	1.790	
11,900.0	6,664.2	11,935.1	6,770.9	97.4	96.8	108.87	-4,858.4	242.5	327.0	140.9	186.06	1.757	
12,000.0	6,663.3	12,035.1	6,770.9	99.3	98.7	109.01	-4,958.4	242.5	327.2	137.7	189.56	1.726	
12,100.0	6,662.4	12,135.1	6,770.8	101.1	100.6	109.14	-5,058.4	242.5	327.5	134.5	193.05	1.696	
12,200.0	6,661.5	12,235.1	6,770.7	103.0	102.4	109.28	-5,158.4	242.5	327.8	131.2	196.54	1.668	
12,300.0	6,660.6	12,335.1	6,770.6	104.9	104.3	109.41	-5,258.4	242.5	328.0	128.0	200.02	1.640	
12,400.0	6,659.6	12,435.1	6,770.5	106.8	106.2	109.55	-5,358.4	242.5	328.3	124.8	203.50	1.613	
12,500.0	6,658.7	12,535.1	6,770.4	108.7	108.1	109.68	-5,458.4	242.5	328.6	121.6	206.98	1.588	
12,600.0	6,657.8	12,635.1	6,770.3	110.6	110.0	109.82	-5,558.3	242.5	328.9	118.4	210.45	1.563	
12,700.0	6,656.9	12,735.1	6,770.2	112.5	111.9	109.95	-5,658.3	242.5	329.1	115.2	213.92	1.539	
12,800.0	6,656.0	12,835.1	6,770.2	114.4	113.8	110.09	-5,758.3	242.5	329.4	112.0	217.38	1.515	
12,900.0	6,655.1	12,935.1	6,770.1	116.3	115.7	110.22	-5,858.3	242.5	329.7	108.9	220.84	1.493	Level 3
13,000.0	6,654.2	13,035.1	6,770.0	118.2	117.6	110.35	-5,958.3	242.5	330.0	105.7	224.30	1.471	Level 3
13,100.0	6,653.3	13,135.1	6,769.9	120.1	119.5	110.49	-6,058.3	242.5	330.3	102.5	227.74	1.450	Level 3
13,200.0	6,652.4	13,235.1	6,769.8	122.0	121.4	110.62	-6,158.3	242.5	330.6	99.4	231.19	1.430	Level 3
13,300.0	6,651.5	13,335.1	6,769.7	123.9	123.4	110.75	-6,258.3	242.5	330.9	96.2	234.63	1.410	Level 3
13,400.0	6,650.6	13,435.1	6,769.6	125.8	125.3	110.89	-6,358.3	242.5	331.1	93.1	238.06	1.391	Level 3
13,500.0	6,649.7	13,535.1	6,769.5	127.7	127.2	111.02	-6,458.3	242.5	331.4	90.0	241.49	1.372	Level 3
13,600.0	6,648.8	13,635.1	6,769.5	129.6	129.1	111.15	-6,558.3	242.5	331.7	86.8	244.91	1.355	Level 3
13,700.0	6,647.8	13,735.1	6,769.4	131.5	131.0	111.28	-6,658.3	242.5	332.0	83.7	248.33	1.337	Level 3
13,800.0	6,646.9	13,835.1	6,769.3	133.4	132.9	111.41	-6,758.3	242.5	332.3	80.6	251.74	1.320	Level 3
13,900.0	6,646.0	13,935.1	6,769.2	135.3	134.8	111.55	-6,858.3	242.5	332.6	77.5	255.15	1.304	Level 3
14,000.0	6,645.1	14,035.1	6,769.1	137.2	136.7	111.68	-6,958.3	242.5	332.9	74.4	258.55	1.288	Level 3
14,100.0	6,644.2	14,135.1	6,769.0	139.1	138.6	111.81	-7,058.3	242.5	333.2	71.3	261.95	1.272	Level 3
14,124.0	6,644.0	14,158.9	6,769.0	139.6	139.1	111.84	-7,082.2	242.5	333.3	70.5	262.76	1.268	Level 3, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 27K-HZ Pad Sec.27-T5N-R64W - Chesnut 27O-243 - Wellbore #1 - Plan #2 (7-08-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference 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	0.00	32.8	0.0	32.8				
100.0	100.0	100.0	100.0	0.1	0.1	0.00	32.8	0.0	32.8	32.6	0.22	145.912	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	32.8	0.0	32.8	32.1	0.67	48.637	
300.0	300.0	300.0	300.0	0.6	0.6	0.00	32.8	0.0	32.8	31.7	1.12	29.182	
400.0	400.0	400.0	400.0	0.8	0.8	0.00	32.8	0.0	32.8	31.2	1.57	20.845	CC, ES
500.0	500.0	499.4	499.3	1.0	1.0	2.49	33.7	1.5	33.7	31.7	2.02	16.739	
600.0	600.0	598.5	598.3	1.2	1.2	9.11	36.4	5.8	36.9	34.5	2.46	15.005	
700.0	700.0	697.1	696.6	1.5	1.5	17.74	40.9	13.1	43.1	40.2	2.92	14.739	
800.0	800.0	795.1	793.8	1.7	1.7	26.13	47.1	23.1	52.9	49.4	3.41	15.495	
900.0	900.0	892.1	889.7	1.9	2.0	33.08	55.0	35.8	66.5	62.5	3.93	16.926	
1,000.0	1,000.0	988.0	983.9	2.1	2.4	38.40	64.5	51.1	83.8	79.4	4.47	18.766	
1,100.0	1,100.0	1,084.3	1,077.9	2.4	2.7	-0.72	75.5	68.9	102.9	98.1	4.79	21.488	
1,200.0	1,199.8	1,182.8	1,173.9	2.6	3.2	2.15	87.1	87.5	119.3	114.1	5.24	22.772	
1,300.0	1,299.5	1,281.8	1,270.4	2.8	3.6	4.43	98.7	106.2	132.6	126.9	5.70	23.276	
1,400.0	1,398.7	1,381.2	1,367.3	3.1	4.0	6.45	110.3	125.0	142.5	136.4	6.15	23.163	
1,500.0	1,497.5	1,480.8	1,464.5	3.3	4.5	8.38	122.0	143.9	149.2	142.6	6.61	22.570	
1,600.0	1,595.8	1,580.6	1,561.7	3.6	5.0	10.35	133.7	162.8	153.3	146.2	7.09	21.618	
1,700.0	1,694.0	1,680.4	1,659.0	4.0	5.4	12.23	145.4	181.6	157.4	149.8	7.59	20.738	
1,800.0	1,792.3	1,780.2	1,756.3	4.3	5.9	14.02	157.1	200.5	161.6	153.5	8.09	19.962	
1,900.0	1,890.5	1,880.0	1,853.6	4.6	6.4	15.71	168.8	219.4	165.9	157.3	8.61	19.271	
2,000.0	1,988.8	1,979.8	1,950.9	5.0	6.8	17.32	180.5	238.3	170.4	161.3	9.14	18.650	
2,100.0	2,087.0	2,079.5	2,048.2	5.4	7.3	18.84	192.3	257.2	175.0	165.3	9.67	18.089	
2,200.0	2,185.3	2,179.3	2,145.4	5.8	7.8	20.29	204.0	276.0	179.7	169.5	10.23	17.577	
2,300.0	2,283.5	2,279.1	2,242.7	6.1	8.2	21.66	215.7	294.9	184.6	173.8	10.79	17.109	
2,400.0	2,381.8	2,378.9	2,340.0	6.5	8.7	22.96	227.4	313.8	189.5	178.2	11.36	16.678	
2,500.0	2,480.0	2,478.7	2,437.3	6.9	9.2	24.19	239.1	332.7	194.6	182.6	11.95	16.281	
2,600.0	2,578.3	2,578.5	2,534.6	7.3	9.7	25.36	250.8	351.5	199.7	187.1	12.55	15.913	
2,700.0	2,676.5	2,678.3	2,631.9	7.7	10.1	26.47	262.5	370.4	204.9	191.7	13.16	15.572	
2,800.0	2,774.8	2,778.1	2,729.1	8.1	10.6	27.53	274.2	389.3	210.1	196.4	13.78	15.254	
2,900.0	2,873.0	2,877.8	2,826.4	8.5	11.1	28.53	285.9	408.2	215.5	201.1	14.41	14.959	
3,000.0	2,971.3	2,977.6	2,923.7	8.9	11.6	29.49	297.6	427.0	220.9	205.8	15.04	14.683	
3,100.0	3,069.5	3,077.4	3,021.0	9.3	12.0	30.40	309.3	445.9	226.3	210.7	15.69	14.425	
3,200.0	3,167.8	3,177.2	3,118.3	9.7	12.5	31.26	321.0	464.8	231.9	215.5	16.35	14.184	
3,300.0	3,266.0	3,277.0	3,215.6	10.1	13.0	32.09	332.7	483.7	237.4	220.4	17.01	13.958	
3,400.0	3,364.3	3,376.8	3,312.9	10.5	13.5	32.88	344.4	502.6	243.0	225.4	17.68	13.746	
3,500.0	3,462.5	3,476.6	3,410.1	10.9	13.9	33.63	356.1	521.4	248.7	230.3	18.36	13.546	
3,600.0	3,560.8	3,576.4	3,507.4	11.3	14.4	34.35	367.8	540.3	254.4	235.3	19.04	13.359	
3,700.0	3,659.0	3,676.1	3,604.7	11.7	14.9	35.04	379.5	559.2	260.1	240.4	19.73	13.183	
3,800.0	3,757.3	3,775.9	3,702.0	12.1	15.4	35.70	391.2	578.1	265.9	245.5	20.43	13.017	
3,900.0	3,855.5	3,875.7	3,799.3	12.5	15.8	36.32	402.9	596.9	271.7	250.6	21.13	12.860	
4,000.0	3,953.8	3,975.5	3,896.6	12.9	16.3	36.93	414.7	615.8	277.5	255.7	21.83	12.712	
4,100.0	4,052.0	4,075.3	3,993.8	13.3	16.8	37.51	426.4	634.7	283.4	260.9	22.54	12.572	
4,200.0	4,150.3	4,175.1	4,091.1	13.7	17.3	38.06	438.1	653.6	289.3	266.0	23.26	12.440	
4,300.0	4,248.5	4,274.9	4,188.4	14.1	17.8	38.59	449.8	672.4	295.2	271.2	23.97	12.314	
4,400.0	4,346.8	4,374.7	4,285.7	14.6	18.2	39.11	461.5	691.3	301.2	276.5	24.69	12.195	
4,500.0	4,445.0	4,474.5	4,383.0	15.0	18.7	39.60	473.2	710.2	307.1	281.7	25.42	12.082	
4,600.0	4,543.3	4,574.2	4,480.3	15.4	19.2	40.07	484.9	729.1	313.1	287.0	26.15	11.975	
4,700.0	4,641.5	4,674.0	4,577.5	15.8	19.7	40.53	496.6	748.0	319.1	292.2	26.88	11.873	
4,800.0	4,739.8	4,773.8	4,674.8	16.2	20.1	40.97	508.3	766.8	325.1	297.5	27.61	11.776	
4,900.0	4,838.0	4,873.6	4,772.1	16.6	20.6	41.39	520.0	785.7	331.2	302.8	28.35	11.684	
5,000.0	4,936.3	4,973.4	4,869.4	17.0	21.1	41.80	531.7	804.6	337.3	308.2	29.08	11.596	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 27K-HZ Pad Sec.27-T5N-R64W - Chesnut 27O-243 - Wellbore #1 - Plan #2 (7-08-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference 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	5,034.5	5,073.2	4,966.7	17.4	21.6	42.19	543.4	823.5	343.3	313.5	29.82	11.512	
5,200.0	5,132.8	5,173.2	5,064.2	17.8	22.1	42.57	555.1	842.4	349.4	318.9	30.57	11.432	
5,300.0	5,231.0	5,285.2	5,173.8	18.2	22.5	43.15	567.1	861.7	353.8	322.4	31.34	11.290	
5,400.0	5,329.4	5,397.2	5,284.3	18.6	22.8	43.98	576.8	877.3	355.2	323.1	32.10	11.066	
5,500.0	5,428.3	5,509.2	5,395.5	18.9	23.1	44.74	584.2	889.3	355.7	322.9	32.75	10.861	
5,600.0	5,527.7	5,621.2	5,507.0	19.1	23.3	45.39	589.4	897.6	355.2	321.9	33.30	10.667	
5,700.0	5,627.4	5,733.1	5,618.7	19.3	23.5	45.93	592.2	902.1	353.9	320.2	33.77	10.480	
5,800.0	5,727.3	5,841.6	5,727.3	19.5	23.6	46.36	592.8	903.1	351.8	317.7	34.15	10.304	
5,900.0	5,827.3	5,941.6	5,827.3	19.6	23.7	89.54	592.8	903.1	351.2	316.8	34.42	10.203	
6,000.0	5,927.3	6,041.7	5,927.3	19.8	23.8	89.97	590.2	903.1	351.2	316.4	34.80	10.091	
6,002.6	5,929.8	6,044.3	5,929.8	19.8	23.8	-90.00	590.0	903.1	351.2	316.4	34.82	10.087	
6,100.0	6,027.1	6,140.6	6,025.0	19.9	23.8	-88.41	575.7	903.1	351.3	316.0	35.31	9.949	
6,200.0	6,125.5	6,238.2	6,118.9	19.8	23.7	-86.80	549.2	903.1	351.8	316.2	35.57	9.889	
6,300.0	6,220.7	6,334.6	6,207.6	19.7	23.6	-85.25	511.4	903.1	352.4	316.9	35.56	9.909	
6,400.0	6,311.2	6,430.0	6,289.9	19.5	23.4	-83.79	463.4	903.1	353.3	318.0	35.32	10.002	
6,500.0	6,395.4	6,524.4	6,364.8	19.3	23.2	-82.45	406.1	903.1	354.3	319.4	34.88	10.157	
6,600.0	6,471.9	6,617.9	6,431.6	19.0	22.9	-81.24	340.7	903.1	355.4	321.0	34.33	10.351	
6,700.0	6,539.3	6,710.7	6,489.4	18.7	22.7	-80.18	268.3	903.1	356.4	322.7	33.77	10.556	
6,800.0	6,596.4	6,802.8	6,537.7	18.4	22.5	-79.28	189.9	903.1	357.5	324.1	33.32	10.729	
6,900.0	6,642.4	6,894.4	6,576.1	18.1	22.3	-78.54	106.7	903.1	358.3	325.2	33.12	10.821	
7,000.0	6,676.5	6,985.6	6,604.1	17.8	22.2	-77.99	20.0	903.1	359.1	325.8	33.28	10.789	
7,100.0	6,698.0	7,076.6	6,621.6	17.6	22.2	-77.63	-69.2	903.1	359.6	325.7	33.89	10.608	
7,200.0	6,706.5	7,167.3	6,628.3	17.7	22.3	-77.45	-159.6	903.1	359.8	324.8	34.95	10.295	
7,300.0	6,705.9	7,265.5	6,627.8	18.4	22.6	-77.45	-257.8	903.1	359.8	323.4	36.43	9.877	
7,400.0	6,705.0	7,365.5	6,627.0	19.3	23.1	-77.47	-357.8	903.1	359.8	321.6	38.20	9.419	
7,500.0	6,704.1	7,465.5	6,626.2	20.4	23.8	-77.48	-457.8	903.1	359.7	319.5	40.24	8.940	
7,600.0	6,703.2	7,565.5	6,625.4	21.6	24.7	-77.50	-557.8	903.1	359.7	317.2	42.52	8.460	
7,700.0	6,702.3	7,665.5	6,624.5	22.9	25.7	-77.52	-657.8	903.1	359.7	314.7	45.00	7.993	
7,800.0	6,701.4	7,765.5	6,623.7	24.2	26.9	-77.53	-757.8	903.1	359.7	312.0	47.65	7.548	
7,900.0	6,700.5	7,865.5	6,622.9	25.6	28.2	-77.55	-857.8	903.1	359.7	309.2	50.44	7.130	
8,000.0	6,699.6	7,965.5	6,622.1	27.1	29.5	-77.57	-957.8	903.1	359.6	306.3	53.36	6.740	
8,100.0	6,698.7	8,065.5	6,621.3	28.6	30.9	-77.58	-1,057.8	903.1	359.6	303.2	56.37	6.379	
8,200.0	6,697.8	8,165.5	6,620.5	30.2	32.4	-77.60	-1,157.8	903.1	359.6	300.1	59.47	6.047	
8,300.0	6,696.9	8,265.5	6,619.7	31.8	33.9	-77.61	-1,257.8	903.1	359.6	296.9	62.64	5.740	
8,400.0	6,695.9	8,365.5	6,618.9	33.5	35.5	-77.63	-1,357.8	903.1	359.5	293.7	65.88	5.458	
8,500.0	6,695.0	8,465.5	6,618.1	35.1	37.1	-77.65	-1,457.8	903.1	359.5	290.4	69.17	5.198	
8,600.0	6,694.1	8,565.5	6,617.3	36.8	38.7	-77.66	-1,557.8	903.1	359.5	287.0	72.51	4.958	
8,700.0	6,693.2	8,665.5	6,616.5	38.5	40.3	-77.68	-1,657.8	903.1	359.5	283.6	75.88	4.737	
8,800.0	6,692.3	8,765.5	6,615.7	40.2	42.0	-77.70	-1,757.8	903.1	359.5	280.2	79.30	4.533	
8,900.0	6,691.4	8,865.5	6,614.9	42.0	43.7	-77.71	-1,857.8	903.1	359.4	276.7	82.74	4.344	
9,000.0	6,690.5	8,965.5	6,614.1	43.7	45.4	-77.73	-1,957.8	903.1	359.4	273.2	86.21	4.169	
9,100.0	6,689.6	9,065.5	6,613.3	45.5	47.1	-77.74	-2,057.8	903.1	359.4	269.7	89.71	4.006	
9,200.0	6,688.7	9,165.5	6,612.5	47.3	48.8	-77.76	-2,157.8	903.1	359.4	266.1	93.23	3.855	
9,300.0	6,687.8	9,265.5	6,611.7	49.1	50.6	-77.78	-2,257.8	903.1	359.3	262.6	96.77	3.714	
9,400.0	6,686.9	9,365.5	6,610.9	50.9	52.3	-77.79	-2,357.8	903.1	359.3	259.0	100.32	3.582	
9,500.0	6,686.0	9,465.5	6,610.1	52.7	54.1	-77.81	-2,457.8	903.1	359.3	255.4	103.89	3.458	
9,600.0	6,685.1	9,565.5	6,609.3	54.5	55.9	-77.83	-2,557.8	903.1	359.3	251.8	107.48	3.343	
9,700.0	6,684.2	9,665.5	6,608.5	56.3	57.7	-77.84	-2,657.8	903.1	359.3	248.2	111.07	3.234	
9,800.0	6,683.2	9,765.5	6,607.7	58.2	59.5	-77.86	-2,757.8	903.1	359.2	244.6	114.68	3.132	
9,900.0	6,682.3	9,865.5	6,606.9	60.0	61.3	-77.88	-2,857.8	903.1	359.2	240.9	118.30	3.036	
10,000.0	6,681.4	9,965.5	6,606.1	61.8	63.1	-77.89	-2,957.8	903.1	359.2	237.3	121.93	2.946	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 27K-HZ Pad Sec.27-T5N-R64W - Chesnut 27O-243 - Wellbore #1 - Plan #2 (7-08-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference 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	6,680.5	10,065.5	6,605.3	63.7	64.9	-77.91	-3,057.7	903.1	359.2	233.6	125.57	2.860	
10,200.0	6,679.6	10,165.5	6,604.5	65.5	66.7	-77.92	-3,157.7	903.1	359.1	229.9	129.21	2.779	
10,300.0	6,678.7	10,265.5	6,603.7	67.4	68.6	-77.94	-3,257.7	903.1	359.1	226.3	132.87	2.703	
10,400.0	6,677.8	10,365.5	6,602.9	69.2	70.4	-77.96	-3,357.7	903.1	359.1	222.6	136.53	2.630	
10,500.0	6,676.9	10,465.5	6,602.1	71.1	72.2	-77.97	-3,457.7	903.1	359.1	218.9	140.19	2.561	
10,600.0	6,676.0	10,565.5	6,601.3	73.0	74.1	-77.99	-3,557.7	903.1	359.1	215.2	143.87	2.496	
10,700.0	6,675.1	10,665.5	6,600.5	74.8	75.9	-78.01	-3,657.7	903.1	359.0	211.5	147.54	2.433	
10,800.0	6,674.2	10,765.5	6,599.7	76.7	77.8	-78.02	-3,757.7	903.1	359.0	207.8	151.23	2.374	
10,900.0	6,673.3	10,865.5	6,598.9	78.6	79.6	-78.04	-3,857.7	903.1	359.0	204.1	154.92	2.317	
11,000.0	6,672.4	10,965.5	6,598.1	80.4	81.5	-78.05	-3,957.7	903.1	359.0	200.4	158.61	2.263	
11,100.0	6,671.4	11,065.5	6,597.3	82.3	83.3	-78.07	-4,057.7	903.1	358.9	196.6	162.31	2.212	
11,200.0	6,670.5	11,165.5	6,596.5	84.2	85.2	-78.09	-4,157.7	903.1	358.9	192.9	166.01	2.162	
11,300.0	6,669.6	11,265.5	6,595.6	86.1	87.0	-78.10	-4,257.7	903.1	358.9	189.2	169.71	2.115	
11,400.0	6,668.7	11,365.5	6,594.8	87.9	88.9	-78.12	-4,357.7	903.1	358.9	185.5	173.42	2.069	
11,500.0	6,667.8	11,465.5	6,594.0	89.8	90.8	-78.14	-4,457.7	903.1	358.9	181.7	177.13	2.026	
11,600.0	6,666.9	11,565.5	6,593.2	91.7	92.6	-78.15	-4,557.7	903.1	358.8	178.0	180.85	1.984	
11,700.0	6,666.0	11,665.5	6,592.4	93.6	94.5	-78.17	-4,657.7	903.1	358.8	174.3	184.56	1.944	
11,800.0	6,665.1	11,765.5	6,591.6	95.5	96.4	-78.19	-4,757.7	903.1	358.8	170.5	188.29	1.906	
11,900.0	6,664.2	11,865.5	6,590.8	97.4	98.3	-78.20	-4,857.7	903.1	358.8	166.8	192.01	1.869	
12,000.0	6,663.3	11,965.5	6,590.0	99.3	100.1	-78.22	-4,957.7	903.1	358.8	163.0	195.73	1.833	
12,100.0	6,662.4	12,065.5	6,589.2	101.1	102.0	-78.23	-5,057.7	903.1	358.7	159.3	199.46	1.799	
12,200.0	6,661.5	12,165.5	6,588.4	103.0	103.9	-78.25	-5,157.7	903.1	358.7	155.5	203.19	1.765	
12,300.0	6,660.6	12,265.5	6,587.6	104.9	105.8	-78.27	-5,257.7	903.1	358.7	151.8	206.93	1.733	
12,400.0	6,659.6	12,365.5	6,586.8	106.8	107.7	-78.28	-5,357.7	903.1	358.7	148.0	210.66	1.703	
12,500.0	6,658.7	12,465.5	6,586.0	108.7	109.5	-78.30	-5,457.7	903.1	358.6	144.3	214.40	1.673	
12,600.0	6,657.8	12,565.5	6,585.2	110.6	111.4	-78.32	-5,557.7	903.1	358.6	140.5	218.14	1.644	
12,700.0	6,656.9	12,665.5	6,584.4	112.5	113.3	-78.33	-5,657.7	903.1	358.6	136.7	221.88	1.616	
12,800.0	6,656.0	12,765.5	6,583.6	114.4	115.2	-78.35	-5,757.7	903.1	358.6	133.0	225.62	1.589	
12,900.0	6,655.1	12,865.5	6,582.8	116.3	117.1	-78.37	-5,857.7	903.1	358.6	129.2	229.36	1.563	
13,000.0	6,654.2	12,965.5	6,582.0	118.2	119.0	-78.38	-5,957.7	903.1	358.5	125.4	233.11	1.538	
13,100.0	6,653.3	13,065.5	6,581.2	120.1	120.9	-78.40	-6,057.7	903.1	358.5	121.7	236.86	1.514	
13,200.0	6,652.4	13,165.5	6,580.4	122.0	122.8	-78.42	-6,157.6	903.1	358.5	117.9	240.60	1.490	Level 3
13,300.0	6,651.5	13,265.5	6,579.6	123.9	124.7	-78.43	-6,257.6	903.1	358.5	114.1	244.35	1.467	Level 3
13,400.0	6,650.6	13,365.5	6,578.8	125.8	126.6	-78.45	-6,357.6	903.1	358.5	110.4	248.11	1.445	Level 3
13,500.0	6,649.7	13,465.5	6,578.0	127.7	128.4	-78.46	-6,457.6	903.1	358.4	106.6	251.86	1.423	Level 3
13,600.0	6,648.8	13,565.5	6,577.2	129.6	130.3	-78.48	-6,557.6	903.1	358.4	102.8	255.61	1.402	Level 3
13,700.0	6,647.8	13,665.5	6,576.4	131.5	132.2	-78.50	-6,657.6	903.1	358.4	99.0	259.37	1.382	Level 3
13,800.0	6,646.9	13,765.5	6,575.6	133.4	134.1	-78.51	-6,757.6	903.1	358.4	95.2	263.13	1.362	Level 3
13,900.0	6,646.0	13,865.5	6,574.8	135.3	136.0	-78.53	-6,857.6	903.1	358.4	91.5	266.88	1.343	Level 3
14,000.0	6,645.1	13,965.5	6,574.0	137.2	137.9	-78.55	-6,957.6	903.1	358.3	87.7	270.64	1.324	Level 3
14,100.0	6,644.2	14,065.5	6,573.2	139.1	139.8	-78.56	-7,057.6	903.1	358.3	83.9	274.40	1.306	Level 3
14,120.1	6,644.0	14,085.7	6,573.0	139.5	140.2	-78.57	-7,077.8	903.1	358.3	83.1	275.16	1.302	Level 3
14,124.0	6,644.0	14,086.4	6,573.0	139.6	140.2	-78.57	-7,078.5	903.1	358.3	83.1	275.25	1.302	Level 3, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 27K-HZ Pad Sec.27-T5N-R64W - Chesnut 27O-303 - Wellbore #1 - Plan #2 (7-08-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference 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	0.00	61.9	0.0	61.9				
100.0	100.0	100.0	100.0	0.1	0.1	0.00	61.9	0.0	61.9	61.7	0.22	275.580	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	61.9	0.0	61.9	61.3	0.67	91.860	CC, ES
300.0	300.0	299.1	299.1	0.6	0.6	1.44	62.6	1.6	62.6	61.5	1.12	56.138	
400.0	400.0	398.0	397.8	0.8	0.8	5.55	64.6	6.3	65.0	63.4	1.56	41.548	
500.0	500.0	496.4	495.9	1.0	1.0	11.69	68.0	14.1	69.6	67.5	2.03	34.183	
600.0	600.0	594.1	592.9	1.2	1.3	18.90	72.6	24.9	77.1	74.6	2.54	30.369	
700.0	700.0	690.9	688.5	1.5	1.6	26.14	78.5	38.5	88.2	85.1	3.08	28.625	
800.0	800.0	786.6	782.5	1.7	2.0	32.71	85.6	55.0	103.2	99.6	3.66	28.187	
900.0	900.0	880.9	874.6	1.9	2.4	38.28	93.8	74.0	122.1	117.9	4.27	28.580	
1,000.0	1,000.0	973.8	964.5	2.1	2.8	42.82	103.0	95.4	144.8	139.9	4.91	29.517	
1,100.0	1,100.0	1,070.4	1,057.5	2.4	3.3	3.39	113.2	119.2	168.1	163.2	4.98	33.767	
1,200.0	1,199.8	1,167.9	1,151.4	2.6	3.9	6.26	123.6	143.2	188.6	183.1	5.45	34.603	
1,300.0	1,299.5	1,266.0	1,245.9	2.8	4.4	8.70	134.0	167.4	206.0	200.0	5.92	34.800	
1,400.0	1,398.7	1,364.6	1,340.9	3.1	4.9	10.91	144.4	191.7	220.3	213.9	6.39	34.486	
1,500.0	1,497.5	1,463.6	1,436.3	3.3	5.5	13.04	154.9	216.1	231.6	224.7	6.86	33.759	
1,600.0	1,595.8	1,562.8	1,531.8	3.6	6.0	15.16	165.4	240.5	240.5	233.1	7.35	32.728	
1,700.0	1,694.0	1,662.0	1,627.4	4.0	6.6	17.17	175.9	265.0	249.5	241.6	7.85	31.768	
1,800.0	1,792.3	1,761.2	1,723.0	4.3	7.2	19.03	186.4	289.4	258.7	250.4	8.37	30.916	
1,900.0	1,890.5	1,860.5	1,818.6	4.6	7.7	20.77	197.0	313.9	268.2	259.3	8.90	30.148	
2,000.0	1,988.8	1,959.7	1,914.2	5.0	8.3	22.38	207.5	338.3	278.0	268.5	9.44	29.449	
2,100.0	2,087.0	2,058.9	2,009.8	5.4	8.8	23.89	218.0	362.8	287.9	277.9	10.00	28.806	
2,200.0	2,185.3	2,158.2	2,105.4	5.8	9.4	25.29	228.5	387.2	298.1	287.5	10.57	28.212	
2,300.0	2,283.5	2,257.4	2,201.0	6.1	9.9	26.60	239.0	411.7	308.4	297.2	11.15	27.661	
2,400.0	2,381.8	2,356.6	2,296.6	6.5	10.5	27.83	249.5	436.1	318.8	307.1	11.74	27.147	
2,500.0	2,480.0	2,455.8	2,392.2	6.9	11.1	28.98	260.1	460.5	329.4	317.1	12.35	26.667	
2,600.0	2,578.3	2,555.1	2,487.8	7.3	11.6	30.05	270.6	485.0	340.1	327.2	12.97	26.218	
2,700.0	2,676.5	2,654.3	2,583.3	7.7	12.2	31.06	281.1	509.4	351.0	337.4	13.60	25.797	
2,800.0	2,774.8	2,753.5	2,678.9	8.1	12.7	32.01	291.6	533.9	361.9	347.6	14.25	25.403	
2,900.0	2,873.0	2,852.7	2,774.5	8.5	13.3	32.91	302.1	558.3	372.9	358.0	14.90	25.032	
3,000.0	2,971.3	2,952.0	2,870.1	8.9	13.9	33.75	312.7	582.8	384.0	368.5	15.56	24.685	
3,100.0	3,069.5	3,051.2	2,965.7	9.3	14.4	34.55	323.2	607.2	395.2	379.0	16.22	24.357	
3,200.0	3,167.8	3,150.4	3,061.3	9.7	15.0	35.30	333.7	631.7	406.4	389.5	16.90	24.050	
3,300.0	3,266.0	3,249.6	3,156.9	10.1	15.5	36.01	344.2	656.1	417.8	400.2	17.58	23.760	
3,400.0	3,364.3	3,348.9	3,252.5	10.5	16.1	36.68	354.7	680.6	429.1	410.9	18.27	23.487	
3,500.0	3,462.5	3,448.1	3,348.1	10.9	16.7	37.32	365.2	705.0	440.6	421.6	18.97	23.229	
3,600.0	3,560.8	3,547.3	3,443.7	11.3	17.2	37.93	375.8	729.5	452.1	432.4	19.67	22.986	
3,700.0	3,659.0	3,646.6	3,539.3	11.7	17.8	38.51	386.3	753.9	463.6	443.2	20.37	22.756	
3,800.0	3,757.3	3,745.8	3,634.8	12.1	18.4	39.06	396.8	778.4	475.2	454.1	21.08	22.538	
3,900.0	3,855.5	3,845.0	3,730.4	12.5	18.9	39.58	407.3	802.8	486.8	465.0	21.80	22.333	
4,000.0	3,953.8	3,944.2	3,826.0	12.9	19.5	40.08	417.8	827.3	498.4	475.9	22.52	22.138	
4,100.0	4,052.0	4,043.5	3,921.6	13.3	20.0	40.55	428.3	851.7	510.1	486.9	23.24	21.953	
4,200.0	4,150.3	4,142.7	4,017.2	13.7	20.6	41.01	438.9	876.1	521.9	497.9	23.96	21.777	
4,300.0	4,248.5	4,241.9	4,112.8	14.1	21.2	41.44	449.4	900.6	533.6	508.9	24.69	21.611	
4,400.0	4,346.8	4,341.1	4,208.4	14.6	21.7	41.86	459.9	925.0	545.4	520.0	25.42	21.452	
4,500.0	4,445.0	4,440.4	4,304.0	15.0	22.3	42.25	470.4	949.5	557.2	531.1	26.16	21.301	
4,600.0	4,543.3	4,539.6	4,399.6	15.4	22.9	42.63	480.9	973.9	569.1	542.2	26.90	21.157	
4,700.0	4,641.5	4,638.8	4,495.2	15.8	23.4	43.00	491.4	998.4	580.9	553.3	27.64	21.020	
4,800.0	4,739.8	4,738.1	4,590.8	16.2	24.0	43.35	502.0	1,022.8	592.8	564.4	28.38	20.890	
4,900.0	4,838.0	4,837.3	4,686.4	16.6	24.5	43.69	512.5	1,047.3	604.7	575.6	29.12	20.765	
5,000.0	4,936.3	4,936.5	4,781.9	17.0	25.1	44.01	523.0	1,071.7	616.6	586.8	29.87	20.646	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 27K-HZ Pad Sec.27-T5N-R64W - Chesnut 27O-303 - Wellbore #1 - Plan #2 (7-08-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference 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	5,034.5	5,035.7	4,877.5	17.4	25.7	44.33	533.5	1,096.2	628.6	598.0	30.62	20.532	
5,200.0	5,132.8	5,135.0	4,973.1	17.8	26.2	44.63	544.0	1,120.6	640.5	609.2	31.36	20.423	
5,300.0	5,231.0	5,244.5	5,078.8	18.2	26.8	44.96	555.5	1,147.2	652.2	620.1	32.13	20.296	
5,400.0	5,329.4	5,370.8	5,201.7	18.6	27.3	45.50	567.0	1,174.0	661.1	628.2	32.91	20.090	
5,500.0	5,428.3	5,497.7	5,326.3	18.9	27.7	45.97	576.4	1,195.8	668.3	634.7	33.55	19.919	
5,600.0	5,527.7	5,625.0	5,452.3	19.1	28.0	46.34	583.6	1,212.5	673.7	639.7	34.09	19.765	
5,700.0	5,627.4	5,752.7	5,579.3	19.3	28.3	46.58	588.6	1,224.2	677.5	643.0	34.53	19.625	
5,800.0	5,727.3	5,880.5	5,707.0	19.5	28.5	46.72	591.3	1,230.6	679.6	644.8	34.86	19.495	
5,900.0	5,827.3	6,000.8	5,827.3	19.6	28.6	89.84	591.9	1,232.0	680.1	645.0	35.12	19.362	
6,000.0	5,927.3	6,100.8	5,927.3	19.8	28.7	89.84	591.9	1,232.0	680.1	644.7	35.43	19.198	
6,100.0	6,027.1	6,201.0	6,027.3	19.9	28.8	-90.15	587.1	1,232.0	680.1	644.5	35.62	19.091	
6,200.0	6,125.5	6,301.3	6,125.9	19.8	28.8	-90.14	569.4	1,232.0	680.1	644.5	35.59	19.110	
6,300.0	6,220.7	6,401.5	6,221.2	19.7	28.7	-90.12	539.0	1,232.0	680.1	644.7	35.35	19.238	
6,400.0	6,311.2	6,501.6	6,311.8	19.5	28.6	-90.10	496.3	1,232.0	680.1	645.1	34.96	19.456	
6,500.0	6,395.4	6,601.8	6,396.0	19.3	28.4	-90.08	442.2	1,232.0	680.1	645.6	34.47	19.732	
6,600.0	6,471.9	6,701.9	6,472.3	19.0	28.2	-90.06	377.6	1,232.0	680.1	646.1	33.96	20.027	
6,700.0	6,539.3	6,802.0	6,539.6	18.7	28.0	-90.04	303.6	1,232.0	680.1	646.6	33.53	20.285	
6,800.0	6,596.4	6,902.0	6,596.6	18.4	27.8	-90.01	221.4	1,232.0	680.1	646.8	33.26	20.445	
6,884.2	6,636.0	6,986.2	6,635.9	18.1	27.7	-89.99	147.0	1,232.0	680.1	646.8	33.26	20.451	
6,900.0	6,642.4	7,002.0	6,642.3	18.1	27.7	-89.99	132.6	1,232.0	680.1	646.8	33.26	20.447	
7,000.0	6,676.5	7,102.0	6,676.1	17.8	27.6	-89.96	38.6	1,232.0	680.1	646.5	33.59	20.249	
7,100.0	6,698.0	7,201.9	6,697.3	17.6	27.6	-89.94	-59.0	1,232.0	680.1	645.8	34.28	19.839	
7,200.0	6,706.5	7,301.8	6,705.5	17.7	27.7	-89.92	-158.5	1,232.0	680.1	644.8	35.34	19.242	
7,300.0	6,705.9	7,401.7	6,704.9	18.4	28.0	-89.91	-258.5	1,232.0	680.1	643.3	36.76	18.500	
7,400.0	6,705.0	7,501.7	6,704.0	19.3	28.4	-89.91	-358.5	1,232.0	680.1	641.6	38.51	17.661	
7,500.0	6,704.1	7,601.7	6,703.1	20.4	28.9	-89.91	-458.5	1,232.0	680.1	639.6	40.55	16.773	
7,600.0	6,703.2	7,701.7	6,702.2	21.6	29.5	-89.91	-558.4	1,232.0	680.1	637.3	42.83	15.878	
7,700.0	6,702.3	7,801.7	6,701.3	22.9	30.3	-89.91	-658.4	1,232.0	680.1	634.8	45.33	15.003	
7,800.0	6,701.4	7,901.7	6,700.4	24.2	31.2	-89.91	-758.4	1,232.0	680.1	632.1	48.01	14.167	
7,900.0	6,700.5	8,001.7	6,699.5	25.6	32.3	-89.91	-858.4	1,232.0	680.1	629.3	50.83	13.380	
8,000.0	6,699.6	8,101.7	6,698.5	27.1	33.4	-89.91	-958.4	1,232.0	680.1	626.3	53.78	12.646	
8,100.0	6,698.7	8,201.7	6,697.6	28.6	34.6	-89.91	-1,058.4	1,232.0	680.1	623.3	56.84	11.966	
8,200.0	6,697.8	8,301.7	6,696.7	30.2	35.9	-89.91	-1,158.4	1,232.0	680.1	620.1	59.98	11.338	
8,300.0	6,696.9	8,401.7	6,695.8	31.8	37.2	-89.91	-1,258.4	1,232.0	680.1	616.9	63.21	10.760	
8,400.0	6,695.9	8,501.7	6,694.9	33.5	38.6	-89.91	-1,358.4	1,232.0	680.1	613.6	66.50	10.227	
8,500.0	6,695.0	8,601.7	6,694.0	35.1	40.1	-89.91	-1,458.4	1,232.0	680.1	610.3	69.84	9.737	
8,600.0	6,694.1	8,701.7	6,693.1	36.8	41.6	-89.91	-1,558.4	1,232.0	680.1	606.9	73.24	9.286	
8,700.0	6,693.2	8,801.7	6,692.2	38.5	43.1	-89.91	-1,658.4	1,232.0	680.1	603.4	76.67	8.870	
8,800.0	6,692.3	8,901.7	6,691.3	40.2	44.7	-89.91	-1,758.4	1,232.0	680.1	600.0	80.15	8.486	
8,900.0	6,691.4	9,001.7	6,690.4	42.0	46.3	-89.91	-1,858.4	1,232.0	680.1	596.4	83.65	8.130	
9,000.0	6,690.5	9,101.7	6,689.5	43.7	47.9	-89.91	-1,958.4	1,232.0	680.1	592.9	87.19	7.801	
9,100.0	6,689.6	9,201.7	6,688.6	45.5	49.5	-89.91	-2,058.4	1,232.0	680.1	589.4	90.74	7.495	
9,200.0	6,688.7	9,301.7	6,687.7	47.3	51.2	-89.91	-2,158.4	1,232.0	680.1	585.8	94.33	7.210	
9,300.0	6,687.8	9,401.7	6,686.7	49.1	52.9	-89.91	-2,258.4	1,232.0	680.1	582.2	97.93	6.945	
9,400.0	6,686.9	9,501.7	6,685.8	50.9	54.6	-89.91	-2,358.4	1,232.0	680.1	578.6	101.54	6.698	
9,500.0	6,686.0	9,601.7	6,684.9	52.7	56.3	-89.91	-2,458.4	1,232.0	680.1	574.9	105.18	6.466	
9,600.0	6,685.1	9,701.7	6,684.0	54.5	58.0	-89.91	-2,558.4	1,232.0	680.1	571.3	108.83	6.249	
9,700.0	6,684.2	9,801.7	6,683.1	56.3	59.7	-89.91	-2,658.4	1,232.0	680.1	567.6	112.49	6.046	
9,800.0	6,683.2	9,901.7	6,682.2	58.2	61.5	-89.91	-2,758.4	1,232.0	680.1	563.9	116.16	5.855	
9,900.0	6,682.3	10,001.7	6,681.3	60.0	63.2	-89.91	-2,858.4	1,232.0	680.1	560.3	119.84	5.675	
10,000.0	6,681.4	10,101.7	6,680.4	61.8	65.0	-89.91	-2,958.3	1,232.0	680.1	556.6	123.53	5.505	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 27K-HZ Pad Sec.27-T5N-R64W - Chesnut 27O-303 - Wellbore #1 - Plan #2 (7-08-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference 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	6,680.5	10,201.7	6,679.5	63.7	66.8	-89.91	-3,058.3	1,232.0	680.1	552.9	127.24	5.345	
10,200.0	6,679.6	10,301.7	6,678.6	65.5	68.5	-89.91	-3,158.3	1,232.0	680.1	549.2	130.95	5.194	
10,300.0	6,678.7	10,401.7	6,677.7	67.4	70.3	-89.91	-3,258.3	1,232.0	680.1	545.4	134.66	5.050	
10,400.0	6,677.8	10,501.7	6,676.8	69.2	72.1	-89.91	-3,358.3	1,232.0	680.1	541.7	138.39	4.914	
10,500.0	6,676.9	10,601.7	6,675.9	71.1	73.9	-89.91	-3,458.3	1,232.0	680.1	538.0	142.12	4.786	
10,600.0	6,676.0	10,701.7	6,674.9	73.0	75.7	-89.91	-3,558.3	1,232.0	680.1	534.2	145.85	4.663	
10,700.0	6,675.1	10,801.7	6,674.0	74.8	77.5	-89.91	-3,658.3	1,232.0	680.1	530.5	149.59	4.546	
10,800.0	6,674.2	10,901.7	6,673.1	76.7	79.4	-89.91	-3,758.3	1,232.0	680.1	526.8	153.34	4.435	
10,900.0	6,673.3	11,001.7	6,672.2	78.6	81.2	-89.91	-3,858.3	1,232.0	680.1	523.0	157.09	4.329	
11,000.0	6,672.4	11,101.7	6,671.3	80.4	83.0	-89.91	-3,958.3	1,232.0	680.1	519.3	160.84	4.228	
11,100.0	6,671.4	11,201.7	6,670.4	82.3	84.8	-89.91	-4,058.3	1,232.0	680.1	515.5	164.60	4.132	
11,200.0	6,670.5	11,301.7	6,669.5	84.2	86.7	-89.91	-4,158.3	1,232.0	680.1	511.7	168.36	4.039	
11,300.0	6,669.6	11,401.7	6,668.6	86.1	88.5	-89.91	-4,258.3	1,232.0	680.1	508.0	172.13	3.951	
11,400.0	6,668.7	11,501.7	6,667.7	87.9	90.3	-89.91	-4,358.3	1,232.0	680.1	504.2	175.90	3.866	
11,500.0	6,667.8	11,601.7	6,666.8	89.8	92.2	-89.91	-4,458.3	1,232.0	680.1	500.4	179.67	3.785	
11,600.0	6,666.9	11,701.7	6,665.9	91.7	94.0	-89.91	-4,558.3	1,232.0	680.1	496.7	183.45	3.707	
11,700.0	6,666.0	11,801.7	6,665.0	93.6	95.9	-89.91	-4,658.3	1,232.0	680.1	492.9	187.22	3.633	
11,800.0	6,665.1	11,901.7	6,664.1	95.5	97.7	-89.91	-4,758.3	1,232.0	680.1	489.1	191.01	3.561	
11,900.0	6,664.2	12,001.7	6,663.2	97.4	99.6	-89.91	-4,858.3	1,232.0	680.1	485.3	194.79	3.491	
12,000.0	6,663.3	12,101.7	6,662.2	99.3	101.4	-89.91	-4,958.3	1,232.0	680.1	481.5	198.57	3.425	
12,100.0	6,662.4	12,201.7	6,661.3	101.1	103.3	-89.91	-5,058.3	1,232.0	680.1	477.7	202.36	3.361	
12,200.0	6,661.5	12,301.7	6,660.4	103.0	105.2	-89.91	-5,158.3	1,232.0	680.1	473.9	206.15	3.299	
12,300.0	6,660.6	12,401.7	6,659.5	104.9	107.0	-89.91	-5,258.3	1,232.0	680.1	470.2	209.94	3.239	
12,400.0	6,659.6	12,501.7	6,658.6	106.8	108.9	-89.91	-5,358.3	1,232.0	680.1	466.4	213.73	3.182	
12,500.0	6,658.7	12,601.7	6,657.7	108.7	110.8	-89.91	-5,458.2	1,232.0	680.1	462.6	217.53	3.127	
12,600.0	6,657.8	12,701.7	6,656.8	110.6	112.6	-89.91	-5,558.2	1,232.0	680.1	458.8	221.32	3.073	
12,700.0	6,656.9	12,801.7	6,655.9	112.5	114.5	-89.91	-5,658.2	1,232.0	680.1	455.0	225.12	3.021	
12,800.0	6,656.0	12,901.7	6,655.0	114.4	116.4	-89.91	-5,758.2	1,232.0	680.1	451.2	228.92	2.971	
12,900.0	6,655.1	13,001.7	6,654.1	116.3	118.3	-89.91	-5,858.2	1,232.0	680.1	447.4	232.72	2.922	
13,000.0	6,654.2	13,101.7	6,653.2	118.2	120.1	-89.91	-5,958.2	1,232.0	680.1	443.6	236.52	2.875	
13,100.0	6,653.3	13,201.7	6,652.3	120.1	122.0	-89.91	-6,058.2	1,232.0	680.1	439.8	240.32	2.830	
13,200.0	6,652.4	13,301.7	6,651.4	122.0	123.9	-89.91	-6,158.2	1,232.0	680.1	436.0	244.13	2.786	
13,300.0	6,651.5	13,401.7	6,650.4	123.9	125.8	-89.91	-6,258.2	1,232.0	680.1	432.2	247.93	2.743	
13,400.0	6,650.6	13,501.7	6,649.5	125.8	127.6	-89.91	-6,358.2	1,232.0	680.1	428.4	251.74	2.702	
13,500.0	6,649.7	13,601.7	6,648.6	127.7	129.5	-89.91	-6,458.2	1,232.0	680.1	424.6	255.55	2.661	
13,600.0	6,648.8	13,701.7	6,647.7	129.6	131.4	-89.91	-6,558.2	1,232.0	680.1	420.7	259.35	2.622	
13,700.0	6,647.8	13,801.7	6,646.8	131.5	133.3	-89.91	-6,658.2	1,232.0	680.1	416.9	263.16	2.584	
13,800.0	6,646.9	13,901.7	6,645.9	133.4	135.2	-89.91	-6,758.2	1,232.0	680.1	413.1	266.97	2.547	
13,900.0	6,646.0	14,001.7	6,645.0	135.3	137.1	-89.91	-6,858.2	1,232.0	680.1	409.3	270.79	2.512	
14,000.0	6,645.1	14,101.7	6,644.1	137.2	139.0	-89.91	-6,958.2	1,232.0	680.1	405.5	274.60	2.477	
14,100.0	6,644.2	14,201.7	6,643.2	139.1	140.8	-89.91	-7,058.2	1,232.0	680.1	401.7	278.41	2.443	
14,119.5	6,644.0	14,221.3	6,643.0	139.5	141.2	-89.91	-7,077.7	1,232.0	680.1	400.9	279.15	2.436	
14,124.0	6,644.0	14,222.0	6,643.0	139.6	141.2	-89.91	-7,078.5	1,232.0	680.1	400.9	279.25	2.435	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut Existing Pad Sec.27-T5N-R64W - Bailey 24-34 (Existing) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 6992-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
13,000.0	6,654.2	6,678.7	6,678.7	118.2	133.6	-92.29	-6,914.6	769.3	980.7	729.5	251.24	3.904	
13,100.0	6,653.3	6,677.8	6,677.8	120.1	133.6	-92.05	-6,914.6	769.3	883.5	630.3	253.17	3.490	
13,200.0	6,652.4	6,676.9	6,676.9	122.0	133.5	-91.81	-6,914.6	769.3	787.0	531.9	255.10	3.085	
13,300.0	6,651.5	6,676.0	6,676.0	123.9	133.5	-91.57	-6,914.6	769.3	691.4	434.4	257.02	2.690	
13,400.0	6,650.6	6,675.1	6,675.1	125.8	133.5	-91.33	-6,914.6	769.3	597.3	338.4	258.94	2.307	
13,500.0	6,649.7	6,674.2	6,674.2	127.7	133.5	-91.09	-6,914.6	769.3	505.5	244.6	260.85	1.938	
13,600.0	6,648.8	6,673.3	6,673.3	129.6	133.5	-90.85	-6,914.6	769.3	417.4	154.7	262.76	1.589	
13,700.0	6,647.8	6,672.3	6,672.3	131.5	133.4	-90.61	-6,914.6	769.3	336.1	71.5	264.67	1.270	Level 3
13,800.0	6,646.9	6,671.4	6,671.4	133.4	133.4	-90.37	-6,914.6	769.3	267.8	1.2	266.58	1.005	Level 2
13,900.0	6,646.0	6,670.5	6,670.5	135.3	133.4	-90.13	-6,914.6	769.3	224.6	-43.9	268.48	0.837	Level 1
13,956.4	6,645.5	6,670.0	6,670.0	136.4	133.4	-90.00	-6,914.6	769.3	217.4	-52.1	269.55	0.807	Level 1, CC, ES, SF
14,000.0	6,645.1	6,669.6	6,669.6	137.2	133.4	-89.90	-6,914.6	769.3	221.7	-48.6	270.37	0.820	Level 1
14,100.0	6,644.2	6,668.7	6,668.7	139.1	133.4	-89.66	-6,914.6	769.3	260.6	-11.7	272.27	0.957	Level 1
14,124.0	6,644.0	6,668.5	6,668.5	139.6	133.4	-89.60	-6,914.6	769.3	274.5	1.8	272.72	1.006	Level 2

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut Existing Pad Sec.27-T5N-R64W - Bailey 34-2 (Existing) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 6961-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
11,700.0	6,666.0	6,679.5	6,679.5	93.6	133.6	-92.22	-5,599.4	772.0	966.5	739.9	226.61	4.265	
11,800.0	6,665.1	6,678.6	6,678.6	95.5	133.6	-91.99	-5,599.4	772.0	869.5	640.9	228.53	3.805	
11,900.0	6,664.2	6,677.7	6,677.7	97.4	133.6	-91.75	-5,599.4	772.0	773.1	542.7	230.44	3.355	
12,000.0	6,663.3	6,676.8	6,676.8	99.3	133.5	-91.51	-5,599.4	772.0	677.9	445.5	232.35	2.918	
12,100.0	6,662.4	6,675.9	6,675.9	101.1	133.5	-91.28	-5,599.4	772.0	584.2	350.0	234.25	2.494	
12,200.0	6,661.5	6,675.0	6,675.0	103.0	133.5	-91.04	-5,599.4	772.0	493.0	256.9	236.16	2.088	
12,300.0	6,660.6	6,674.1	6,674.1	104.9	133.5	-90.81	-5,599.4	772.0	406.0	168.0	238.06	1.706	
12,400.0	6,659.6	6,673.1	6,673.1	106.8	133.5	-90.57	-5,599.4	772.0	326.5	86.6	239.96	1.361	Level 3
12,500.0	6,658.7	6,672.2	6,672.2	108.7	133.4	-90.33	-5,599.4	772.0	261.5	19.7	241.85	1.081	Level 2
12,600.0	6,657.8	6,671.3	6,671.3	110.6	133.4	-90.10	-5,599.4	772.0	224.0	-19.8	243.75	0.919	Level 1
12,641.2	6,657.5	6,671.0	6,671.0	111.4	133.4	-90.00	-5,599.4	772.0	220.1	-24.4	244.52	0.900	Level 1, CC, ES, SF
12,700.0	6,656.9	6,670.4	6,670.4	112.5	133.4	-89.86	-5,599.4	772.0	227.9	-17.8	245.64	0.928	Level 1
12,800.0	6,656.0	6,669.5	6,669.5	114.4	133.4	-89.62	-5,599.4	772.0	271.5	23.9	247.52	1.097	Level 2
12,900.0	6,655.1	6,668.6	6,668.6	116.3	133.4	-89.39	-5,599.4	772.0	339.8	90.4	249.41	1.362	Level 3
13,000.0	6,654.2	6,667.7	6,667.7	118.2	133.4	-89.15	-5,599.4	772.0	421.0	169.7	251.28	1.675	
13,100.0	6,653.3	6,666.8	6,666.8	120.1	133.3	-88.92	-5,599.4	772.0	508.9	255.7	253.16	2.010	
13,200.0	6,652.4	6,665.9	6,665.9	122.0	133.3	-88.68	-5,599.4	772.0	600.6	345.6	255.03	2.355	
13,300.0	6,651.5	6,665.0	6,665.0	123.9	133.3	-88.44	-5,599.4	772.0	694.6	437.7	256.90	2.704	
13,400.0	6,650.6	6,664.1	6,664.1	125.8	133.3	-88.21	-5,599.4	772.0	790.1	531.3	258.77	3.053	
13,500.0	6,649.7	6,663.2	6,663.2	127.7	133.3	-87.97	-5,599.4	772.0	886.6	625.9	260.63	3.402	
13,600.0	6,648.8	6,662.3	6,662.3	129.6	133.2	-87.74	-5,599.4	772.0	983.7	721.3	262.48	3.748	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut Existing Pad Sec.27-T5N-R64W - Bailey 5 (Existing) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7004-UNKNOWN

Offset Well Error: 0.0 ft

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
12,500.0	6,658.7	6,683.2	6,683.2	108.7	133.7	91.09	-6,349.9	125.4	988.4	746.3	242.08	4.083	
12,600.0	6,657.8	6,682.3	6,682.3	110.6	133.6	90.97	-6,349.9	125.4	899.2	655.3	243.97	3.686	
12,700.0	6,656.9	6,681.4	6,681.4	112.5	133.6	90.84	-6,349.9	125.4	812.6	566.7	245.86	3.305	
12,800.0	6,656.0	6,680.5	6,680.5	114.4	133.6	90.72	-6,349.9	125.4	729.3	481.6	247.74	2.944	
12,900.0	6,655.1	6,679.6	6,679.6	116.3	133.6	90.60	-6,349.9	125.4	650.9	401.2	249.63	2.607	
13,000.0	6,654.2	6,678.7	6,678.7	118.2	133.6	90.48	-6,349.9	125.4	579.0	327.5	251.51	2.302	
13,100.0	6,653.3	6,677.8	6,677.8	120.1	133.6	90.36	-6,349.9	125.4	516.7	263.3	253.39	2.039	
13,200.0	6,652.4	6,676.9	6,676.9	122.0	133.5	90.23	-6,349.9	125.4	467.6	212.3	255.28	1.832	
13,300.0	6,651.5	6,676.0	6,676.0	123.9	133.5	90.11	-6,349.9	125.4	436.2	179.0	257.16	1.696	
13,391.7	6,650.6	6,675.1	6,675.1	125.6	133.5	90.00	-6,349.9	125.4	426.5	167.6	258.89	1.647	CC
13,400.0	6,650.6	6,675.1	6,675.1	125.8	133.5	89.99	-6,349.9	125.4	426.5	167.5	259.04	1.647	ES, SF
13,500.0	6,649.7	6,674.2	6,674.2	127.7	133.5	89.87	-6,349.9	125.4	440.0	179.1	260.93	1.686	
13,600.0	6,648.8	6,673.3	6,673.3	129.6	133.5	89.75	-6,349.9	125.4	474.6	211.8	262.81	1.806	
13,700.0	6,647.8	6,672.3	6,672.3	131.5	133.4	89.62	-6,349.9	125.4	526.2	261.5	264.69	1.988	
13,800.0	6,646.9	6,671.4	6,671.4	133.4	133.4	89.50	-6,349.9	125.4	590.4	323.8	266.57	2.215	
13,900.0	6,646.0	6,670.5	6,670.5	135.3	133.4	89.38	-6,349.9	125.4	663.5	395.0	268.45	2.472	
14,000.0	6,645.1	6,669.6	6,669.6	137.2	133.4	89.26	-6,349.9	125.4	742.9	472.6	270.33	2.748	
14,100.0	6,644.2	6,668.7	6,668.7	139.1	133.4	89.14	-6,349.9	125.4	826.8	554.5	272.20	3.037	
14,124.0	6,644.0	6,668.5	6,668.5	139.6	133.4	89.11	-6,349.9	125.4	847.4	574.7	272.65	3.108	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut Existing Pad Sec.27-T5N-R64W - Bettale 34-1 (Existing) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 6950-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
9,100.0	6,689.6	6,707.1	6,707.1	45.5	134.1	-92.62	-2,943.6	727.4	902.4	723.7	178.77	5.048	
9,200.0	6,688.7	6,706.2	6,706.2	47.3	134.1	-92.33	-2,943.6	727.4	804.6	624.0	180.60	4.455	
9,300.0	6,687.8	6,705.3	6,705.3	49.1	134.1	-92.03	-2,943.6	727.4	707.3	524.9	182.43	3.877	
9,400.0	6,686.9	6,704.4	6,704.4	50.9	134.1	-91.73	-2,943.6	727.4	611.0	426.7	184.27	3.316	
9,500.0	6,686.0	6,703.5	6,703.5	52.7	134.1	-91.44	-2,943.6	727.4	516.0	329.9	186.11	2.772	
9,600.0	6,685.1	6,702.6	6,702.6	54.5	134.1	-91.14	-2,943.6	727.4	423.3	235.4	187.95	2.252	
9,700.0	6,684.2	6,701.7	6,701.7	56.3	134.0	-90.85	-2,943.6	727.4	334.9	145.1	189.80	1.764	
9,800.0	6,683.2	6,700.7	6,700.7	58.2	134.0	-90.55	-2,943.6	727.4	255.2	63.5	191.64	1.331	Level 3
9,900.0	6,682.3	6,699.8	6,699.8	60.0	134.0	-90.25	-2,943.6	727.4	195.1	1.6	193.49	1.008	Level 2
9,985.3	6,681.6	6,699.1	6,699.1	61.6	134.0	-90.00	-2,943.6	727.4	175.5	-19.6	195.06	0.900	Level 1, CC, ES, SF
10,000.0	6,681.4	6,698.9	6,698.9	61.8	134.0	-89.96	-2,943.6	727.4	176.1	-19.3	195.34	0.901	Level 1
10,100.0	6,680.5	6,698.0	6,698.0	63.7	134.0	-89.66	-2,943.6	727.4	209.7	12.5	197.18	1.063	Level 2
10,200.0	6,679.6	6,697.1	6,697.1	65.5	133.9	-89.36	-2,943.6	727.4	277.3	78.3	199.02	1.393	Level 3
10,300.0	6,678.7	6,696.2	6,696.2	67.4	133.9	-89.07	-2,943.6	727.4	360.3	159.5	200.86	1.794	
10,400.0	6,677.8	6,695.3	6,695.3	69.2	133.9	-88.77	-2,943.6	727.4	450.3	247.6	202.70	2.222	
10,500.0	6,676.9	6,694.4	6,694.4	71.1	133.9	-88.47	-2,943.6	727.4	543.8	339.3	204.54	2.659	
10,600.0	6,676.0	6,693.5	6,693.5	73.0	133.9	-88.18	-2,943.6	727.4	639.3	432.9	206.37	3.098	
10,700.0	6,675.1	6,692.6	6,692.6	74.8	133.9	-87.88	-2,943.6	727.4	735.9	527.7	208.20	3.535	
10,800.0	6,674.2	6,691.7	6,691.7	76.7	133.8	-87.59	-2,943.6	727.4	833.4	623.4	210.03	3.968	
10,900.0	6,673.3	6,690.8	6,690.8	78.6	133.8	-87.29	-2,943.6	727.4	931.4	719.5	211.85	4.396	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut Existing Pad Sec.27-T5N-R64W - White 27-3 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 6910-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
2,700.0	2,676.5	2,647.0	2,647.0	7.7	52.9	-6.67	998.2	777.4	999.8	941.6	58.21	17.176	
2,800.0	2,774.8	2,745.3	2,745.3	8.1	54.9	-6.80	998.2	777.4	981.3	920.9	60.40	16.247	
2,900.0	2,873.0	2,843.5	2,843.5	8.5	56.9	-6.93	998.2	777.4	962.8	900.2	62.59	15.383	
3,000.0	2,971.3	2,941.8	2,941.8	8.9	58.8	-7.07	998.2	777.4	944.3	879.5	64.78	14.577	
3,100.0	3,069.5	3,040.0	3,040.0	9.3	60.8	-7.21	998.2	777.4	925.8	858.9	66.97	13.824	
3,200.0	3,167.8	3,138.3	3,138.3	9.7	62.8	-7.36	998.2	777.4	907.4	838.2	69.17	13.119	
3,300.0	3,266.0	3,236.5	3,236.5	10.1	64.7	-7.51	998.2	777.4	888.9	817.5	71.36	12.456	
3,400.0	3,364.3	3,334.8	3,334.8	10.5	66.7	-7.67	998.2	777.4	870.4	796.9	73.55	11.834	
3,500.0	3,462.5	3,433.0	3,433.0	10.9	68.7	-7.84	998.2	777.4	852.0	776.2	75.75	11.247	
3,600.0	3,560.8	3,531.3	3,531.3	11.3	70.6	-8.01	998.2	777.4	833.5	755.6	77.95	10.693	
3,700.0	3,659.0	3,629.5	3,629.5	11.7	72.6	-8.20	998.2	777.4	815.1	734.9	80.14	10.170	
3,800.0	3,757.3	3,727.8	3,727.8	12.1	74.6	-8.39	998.2	777.4	796.6	714.3	82.34	9.674	
3,900.0	3,855.5	3,826.0	3,826.0	12.5	76.5	-8.59	998.2	777.4	778.2	693.7	84.54	9.205	
4,000.0	3,953.8	3,924.3	3,924.3	12.9	78.5	-8.80	998.2	777.4	759.8	673.0	86.74	8.759	
4,100.0	4,052.0	4,022.5	4,022.5	13.3	80.5	-9.02	998.2	777.4	741.4	652.4	88.95	8.335	
4,200.0	4,150.3	4,120.8	4,120.8	13.7	82.4	-9.25	998.2	777.4	723.0	631.8	91.15	7.932	
4,300.0	4,248.5	4,219.0	4,219.0	14.1	84.4	-9.49	998.2	777.4	704.6	611.2	93.35	7.548	
4,400.0	4,346.8	4,317.3	4,317.3	14.6	86.3	-9.75	998.2	777.4	686.2	590.7	95.56	7.181	
4,500.0	4,445.0	4,415.5	4,415.5	15.0	88.3	-10.02	998.2	777.4	667.9	570.1	97.77	6.831	
4,600.0	4,543.3	4,513.8	4,513.8	15.4	90.3	-10.30	998.2	777.4	649.5	549.5	99.98	6.497	
4,700.0	4,641.5	4,612.0	4,612.0	15.8	92.2	-10.61	998.2	777.4	631.2	529.0	102.19	6.177	
4,800.0	4,739.8	4,710.3	4,710.3	16.2	94.2	-10.93	998.2	777.4	612.9	508.5	104.40	5.870	
4,900.0	4,838.0	4,808.5	4,808.5	16.6	96.2	-11.27	998.2	777.4	594.6	488.0	106.62	5.577	
5,000.0	4,936.3	4,906.8	4,906.8	17.0	98.1	-11.63	998.2	777.4	576.3	467.5	108.84	5.295	
5,100.0	5,034.5	5,005.0	5,005.0	17.4	100.1	-12.01	998.2	777.4	558.1	447.0	111.06	5.025	
5,200.0	5,132.8	5,103.3	5,103.3	17.8	102.1	-12.42	998.2	777.4	539.9	426.6	113.29	4.765	
5,300.0	5,231.0	5,201.5	5,201.5	18.2	104.0	-12.86	998.2	777.4	521.7	406.1	115.52	4.516	
5,400.0	5,329.4	5,299.9	5,299.9	18.6	106.0	-13.26	998.2	777.4	504.2	386.1	118.13	4.268	
5,500.0	5,428.3	5,398.8	5,398.8	18.9	108.0	-13.59	998.2	777.4	489.9	369.1	120.83	4.054	
5,600.0	5,527.7	5,498.2	5,498.2	19.1	110.0	-13.85	998.2	777.4	479.0	355.6	123.40	3.881	
5,700.0	5,627.4	5,597.9	5,597.9	19.3	112.0	-14.04	998.2	777.4	471.4	345.6	125.84	3.746	
5,800.0	5,727.3	5,697.8	5,697.8	19.5	114.0	-14.15	998.2	777.4	467.3	339.1	128.13	3.647	
5,900.0	5,827.3	5,797.8	5,797.8	19.6	116.0	28.91	998.2	777.4	466.4	336.1	130.29	3.580	
6,000.0	5,927.3	5,897.8	5,897.8	19.8	118.0	28.91	998.2	777.4	466.4	333.9	132.48	3.520	CC, ES
6,100.0	6,027.1	5,997.6	5,997.6	19.9	120.0	-151.21	998.2	777.4	470.5	336.6	133.86	3.515	SF
6,200.0	6,125.5	6,096.0	6,096.0	19.8	121.9	-151.65	998.2	777.4	485.9	352.5	133.40	3.642	
6,300.0	6,220.7	6,191.2	6,191.2	19.7	123.8	-152.27	998.2	777.4	512.8	381.8	131.00	3.915	
6,400.0	6,311.2	6,281.7	6,281.7	19.5	125.6	-152.90	998.2	777.4	551.2	424.6	126.64	4.353	
6,500.0	6,395.4	6,365.9	6,365.9	19.3	127.3	-153.31	998.2	777.4	600.7	480.3	120.44	4.988	
6,600.0	6,471.9	6,442.4	6,442.4	19.0	128.8	-153.28	998.2	777.4	660.8	548.0	112.82	5.857	
6,700.0	6,539.3	6,509.8	6,509.8	18.7	130.2	-152.55	998.2	777.4	730.6	626.0	104.65	6.981	
6,800.0	6,596.4	6,566.9	6,566.9	18.4	131.3	-150.71	998.2	777.4	809.0	711.4	97.59	8.290	
6,900.0	6,642.4	6,612.9	6,612.9	18.1	132.3	-147.01	998.2	777.4	894.5	799.8	94.69	9.446	
7,000.0	6,676.5	6,647.0	6,647.0	17.8	132.9	-139.82	998.2	777.4	985.7	884.6	101.11	9.748	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut Existing Pad Sec.27-T5N-R64W - White 27-4 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 6940-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
7,800.0	6,701.4	6,697.9	6,697.9	24.2	134.0	-92.10	-1,635.7	769.1	903.8	746.6	157.14	5.751	
7,900.0	6,700.5	6,697.0	6,697.0	25.6	133.9	-91.86	-1,635.7	769.1	807.1	648.5	158.58	5.089	
8,000.0	6,699.6	6,696.1	6,696.1	27.1	133.9	-91.62	-1,635.7	769.1	711.3	551.2	160.08	4.443	
8,100.0	6,698.7	6,695.2	6,695.2	28.6	133.9	-91.38	-1,635.7	769.1	616.8	455.2	161.64	3.816	
8,200.0	6,697.8	6,694.3	6,694.3	30.2	133.9	-91.14	-1,635.7	769.1	524.4	361.2	163.23	3.213	
8,300.0	6,696.9	6,693.4	6,693.4	31.8	133.9	-90.90	-1,635.7	769.1	435.4	270.5	164.86	2.641	
8,400.0	6,695.9	6,692.4	6,692.4	33.5	133.8	-90.66	-1,635.7	769.1	352.3	185.7	166.52	2.115	
8,500.0	6,695.0	6,691.5	6,691.5	35.1	133.8	-90.42	-1,635.7	769.1	280.4	112.2	168.20	1.667	
8,600.0	6,694.1	6,690.6	6,690.6	36.8	133.8	-90.19	-1,635.7	769.1	230.6	60.7	169.91	1.357	Level 3
8,677.3	6,693.4	6,689.9	6,689.9	38.1	133.8	-90.00	-1,635.7	769.1	217.2	46.0	171.24	1.269	Level 3, CC, ES, SF
8,700.0	6,693.2	6,689.7	6,689.7	38.5	133.8	-89.95	-1,635.7	769.1	218.4	46.8	171.63	1.273	Level 3
8,800.0	6,692.3	6,688.8	6,688.8	40.2	133.8	-89.71	-1,635.7	769.1	249.5	76.1	173.36	1.439	Level 3
8,900.0	6,691.4	6,687.9	6,687.9	42.0	133.8	-89.47	-1,635.7	769.1	311.1	136.0	175.11	1.776	
9,000.0	6,690.5	6,687.0	6,687.0	43.7	133.7	-89.23	-1,635.7	769.1	389.0	212.1	176.87	2.199	
9,100.0	6,689.6	6,686.1	6,686.1	45.5	133.7	-88.99	-1,635.7	769.1	475.2	296.6	178.64	2.660	
9,200.0	6,688.7	6,685.2	6,685.2	47.3	133.7	-88.75	-1,635.7	769.1	566.0	385.6	180.41	3.137	
9,300.0	6,687.8	6,684.3	6,684.3	49.1	133.7	-88.51	-1,635.7	769.1	659.5	477.3	182.19	3.620	
9,400.0	6,686.9	6,683.4	6,683.4	50.9	133.7	-88.27	-1,635.7	769.1	754.6	570.6	183.98	4.102	
9,500.0	6,686.0	6,682.5	6,682.5	52.7	133.6	-88.03	-1,635.7	769.1	850.8	665.1	185.77	4.580	
9,600.0	6,685.1	6,681.6	6,681.6	54.5	133.6	-87.79	-1,635.7	769.1	947.9	760.3	187.56	5.054	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut Existing Pad Sec.27-T5N-R64W - White 27-7 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 6893-UNKNOWN

Offset Well Error: 0.0 ft

Reference 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	117.98	-324.2	610.2	691.2				
100.0	100.0	82.5	82.5	0.1	1.7	117.98	-324.2	610.2	691.0	689.3	1.76	392.054	
200.0	200.0	182.5	182.5	0.3	3.7	117.98	-324.2	610.2	691.0	687.0	3.99	173.305	
300.0	300.0	282.5	282.5	0.6	5.7	117.98	-324.2	610.2	691.0	684.8	6.21	111.239	
400.0	400.0	382.5	382.5	0.8	7.7	117.98	-324.2	610.2	691.0	682.6	8.44	81.906	
500.0	500.0	482.5	482.5	1.0	9.7	117.98	-324.2	610.2	691.0	680.4	10.66	64.814	
600.0	600.0	582.5	582.5	1.2	11.7	117.98	-324.2	610.2	691.0	678.1	12.89	53.625	
700.0	700.0	682.5	682.5	1.5	13.7	117.98	-324.2	610.2	691.0	675.9	15.11	45.730	
800.0	800.0	782.5	782.5	1.7	15.7	117.98	-324.2	610.2	691.0	673.7	17.34	39.861	
900.0	900.0	882.5	882.5	1.9	17.7	117.98	-324.2	610.2	691.0	671.5	19.56	35.327	
1,000.0	1,000.0	982.5	982.5	2.1	19.7	117.98	-324.2	610.2	691.0	669.2	21.79	31.720	
1,100.0	1,100.0	1,082.5	1,082.5	2.4	21.6	75.04	-324.2	610.2	690.6	666.6	24.00	28.768	
1,200.0	1,199.8	1,182.3	1,182.3	2.6	23.6	75.49	-324.2	610.2	689.2	663.0	26.22	26.289	
1,300.0	1,299.5	1,282.0	1,282.0	2.8	25.6	76.23	-324.2	610.2	687.1	658.7	28.43	24.166	
1,400.0	1,398.7	1,381.2	1,381.2	3.1	27.6	77.27	-324.2	610.2	684.3	653.6	30.66	22.322	
1,500.0	1,497.5	1,480.0	1,480.0	3.3	29.6	78.60	-324.2	610.2	681.0	648.1	32.89	20.702	
1,600.0	1,595.8	1,578.3	1,578.3	3.6	31.6	80.13	-324.2	610.2	677.5	642.4	35.16	19.268	
1,700.0	1,694.0	1,676.5	1,676.5	4.0	33.5	81.66	-324.2	610.2	674.5	637.1	37.46	18.008	
1,800.0	1,792.3	1,774.8	1,774.8	4.3	35.5	83.20	-324.2	610.2	672.0	632.3	39.77	16.900	
1,900.0	1,890.5	1,873.0	1,873.0	4.6	37.5	84.76	-324.2	610.2	670.0	628.0	42.09	15.920	
2,000.0	1,988.8	1,971.3	1,971.3	5.0	39.4	86.32	-324.2	610.2	668.6	624.2	44.42	15.051	
2,100.0	2,087.0	2,069.5	2,069.5	5.4	41.4	87.89	-324.2	610.2	667.6	620.9	46.76	14.277	
2,200.0	2,185.3	2,167.8	2,167.8	5.8	43.4	89.46	-324.2	610.2	667.2	618.1	49.10	13.587	
2,234.6	2,219.2	2,201.7	2,201.7	5.9	44.0	90.00	-324.2	610.2	667.1	617.2	49.92	13.365	
2,300.0	2,283.5	2,266.0	2,266.0	6.1	45.3	91.03	-324.2	610.2	667.3	615.8	51.45	12.969	
2,400.0	2,381.8	2,364.3	2,364.3	6.5	47.3	92.60	-324.2	610.2	667.9	614.1	53.80	12.413	
2,500.0	2,480.0	2,462.5	2,462.5	6.9	49.3	94.16	-324.2	610.2	669.0	612.8	56.15	11.914	
2,600.0	2,578.3	2,560.8	2,560.8	7.3	51.2	95.72	-324.2	610.2	670.6	612.1	58.50	11.464	
2,700.0	2,676.5	2,659.0	2,659.0	7.7	53.2	97.28	-324.2	610.2	672.8	611.9	60.84	11.057	
2,800.0	2,774.8	2,757.3	2,757.3	8.1	55.1	98.82	-324.2	610.2	675.4	612.2	63.19	10.689	
2,900.0	2,873.0	2,855.5	2,855.5	8.5	57.1	100.34	-324.2	610.2	678.6	613.0	65.53	10.355	
3,000.0	2,971.3	2,953.8	2,953.8	8.9	59.1	101.86	-324.2	610.2	682.2	614.3	67.86	10.053	
3,100.0	3,069.5	3,052.0	3,052.0	9.3	61.0	103.35	-324.2	610.2	686.3	616.1	70.19	9.778	
3,200.0	3,167.8	3,150.3	3,150.3	9.7	63.0	104.83	-324.2	610.2	691.0	618.4	72.52	9.528	
3,300.0	3,266.0	3,248.5	3,248.5	10.1	65.0	106.29	-324.2	610.2	696.0	621.2	74.83	9.301	
3,400.0	3,364.3	3,346.8	3,346.8	10.5	66.9	107.73	-324.2	610.2	701.6	624.4	77.15	9.094	
3,500.0	3,462.5	3,445.0	3,445.0	10.9	68.9	109.14	-324.2	610.2	707.6	628.1	79.45	8.905	
3,600.0	3,560.8	3,543.3	3,543.3	11.3	70.9	110.53	-324.2	610.2	714.0	632.2	81.75	8.734	
3,700.0	3,659.0	3,641.5	3,641.5	11.7	72.8	111.90	-324.2	610.2	720.8	636.8	84.04	8.577	
3,800.0	3,757.3	3,739.8	3,739.8	12.1	74.8	113.24	-324.2	610.2	728.1	641.7	86.33	8.434	
3,900.0	3,855.5	3,838.0	3,838.0	12.5	76.8	114.55	-324.2	610.2	735.7	647.1	88.60	8.303	
4,000.0	3,953.8	3,936.3	3,936.3	12.9	78.7	115.84	-324.2	610.2	743.8	652.9	90.88	8.184	
4,100.0	4,052.0	4,034.5	4,034.5	13.3	80.7	117.10	-324.2	610.2	752.2	659.1	93.14	8.076	
4,200.0	4,150.3	4,132.8	4,132.8	13.7	82.7	118.33	-324.2	610.2	761.0	665.6	95.40	7.977	
4,300.0	4,248.5	4,231.0	4,231.0	14.1	84.6	119.53	-324.2	610.2	770.1	672.5	97.65	7.886	
4,400.0	4,346.8	4,329.3	4,329.3	14.6	86.6	120.71	-324.2	610.2	779.6	679.7	99.90	7.804	
4,500.0	4,445.0	4,427.5	4,427.5	15.0	88.6	121.86	-324.2	610.2	789.4	687.2	102.14	7.729	
4,600.0	4,543.3	4,525.8	4,525.8	15.4	90.5	122.98	-324.2	610.2	799.5	695.1	104.37	7.660	
4,700.0	4,641.5	4,624.0	4,624.0	15.8	92.5	124.07	-324.2	610.2	809.9	703.3	106.60	7.598	
4,800.0	4,739.8	4,722.3	4,722.3	16.2	94.4	125.13	-324.2	610.2	820.6	711.8	108.82	7.541	
4,900.0	4,838.0	4,820.5	4,820.5	16.6	96.4	126.17	-324.2	610.2	831.6	720.5	111.04	7.489	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut Existing Pad Sec.27-T5N-R64W - White 27-7 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 6893-UNKNOWN

Offset Well Error: 0.0 ft

Reference 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
5,000.0	4,936.3	4,918.8	4,918.8	17.0	98.4	127.18	-324.2	610.2	842.8	729.6	113.25	7.442	
5,100.0	5,034.5	5,017.0	5,017.0	17.4	100.3	128.17	-324.2	610.2	854.3	738.9	115.46	7.399	
5,200.0	5,132.8	5,115.3	5,115.3	17.8	102.3	129.13	-324.2	610.2	866.1	748.4	117.67	7.361	
5,300.0	5,231.0	5,213.5	5,213.5	18.2	104.3	130.06	-324.2	610.2	878.1	758.2	119.87	7.326	
5,400.0	5,329.4	5,311.9	5,311.9	18.6	106.2	131.05	-324.2	610.2	889.9	767.7	122.21	7.282	
5,500.0	5,428.3	5,410.8	5,410.8	18.9	108.2	131.89	-324.2	610.2	899.7	775.1	124.56	7.223	
5,600.0	5,527.7	5,510.2	5,510.2	19.1	110.2	132.53	-324.2	610.2	907.2	780.4	126.88	7.151	
5,700.0	5,627.4	5,609.9	5,609.9	19.3	112.2	132.97	-324.2	610.2	912.5	783.4	129.14	7.066	
5,800.0	5,727.3	5,709.8	5,709.8	19.5	114.2	133.21	-324.2	610.2	915.4	784.1	131.34	6.970	
5,900.0	5,827.3	5,809.8	5,809.8	19.6	116.2	176.35	-324.2	610.2	916.1	782.6	133.47	6.863	
6,000.0	5,927.3	5,909.8	5,909.8	19.8	118.2	176.35	-324.2	610.2	916.1	780.4	135.64	6.754	
6,100.0	6,027.1	6,009.6	6,009.6	19.9	120.2	-3.69	-324.2	610.2	911.4	774.6	136.83	6.661	
6,200.0	6,125.5	6,108.0	6,108.0	19.8	122.2	-3.85	-324.2	610.2	893.9	758.3	135.64	6.591	
6,300.0	6,220.7	6,203.2	6,203.2	19.7	124.1	-4.16	-324.2	610.2	863.8	731.8	132.00	6.544	
6,400.0	6,311.2	6,293.7	6,293.7	19.5	125.9	-4.65	-324.2	610.2	821.5	695.6	125.93	6.524	
6,500.0	6,395.4	6,377.9	6,377.9	19.3	127.6	-5.40	-324.2	610.2	767.9	650.3	117.54	6.533	
6,600.0	6,471.9	6,454.4	6,454.4	19.0	129.1	-6.58	-324.2	610.2	703.7	596.6	107.10	6.571	
6,700.0	6,539.3	6,521.8	6,521.8	18.7	130.4	-8.47	-324.2	610.2	630.2	535.1	95.16	6.623	
6,800.0	6,596.4	6,578.9	6,578.9	18.4	131.6	-11.68	-324.2	610.2	548.7	465.5	83.19	6.596	
6,900.0	6,642.4	6,624.9	6,624.9	18.1	132.5	-17.65	-324.2	610.2	460.6	384.8	75.73	6.081	
7,000.0	6,676.5	6,659.0	6,659.0	17.8	133.2	-30.01	-324.2	610.2	367.6	281.4	86.12	4.268	
7,100.0	6,698.0	6,680.5	6,680.5	17.6	133.6	-55.60	-324.2	610.2	271.6	145.4	126.20	2.152	
7,200.0	6,706.5	6,689.0	6,689.0	17.7	133.8	-86.71	-324.2	610.2	175.7	25.1	150.62	1.167	Level 2
7,300.0	6,705.9	6,688.4	6,688.4	18.4	133.8	-90.59	-324.2	610.2	87.9	-63.5	151.41	0.581	Level 1
7,365.8	6,705.3	6,687.8	6,687.8	19.0	133.8	-90.00	-324.2	610.2	58.3	-93.7	152.01	0.384	Level 1, CC, ES, SF
7,400.0	6,705.0	6,687.5	6,687.5	19.3	133.8	-89.69	-324.2	610.2	67.7	-84.7	152.32	0.444	Level 1
7,500.0	6,704.1	6,686.6	6,686.6	20.4	133.7	-88.80	-324.2	610.2	146.4	-7.0	153.33	0.955	Level 1
7,600.0	6,703.2	6,685.7	6,685.7	21.6	133.7	-87.91	-324.2	610.2	241.4	87.0	154.44	1.563	
7,700.0	6,702.3	6,684.8	6,684.8	22.9	133.7	-87.02	-324.2	610.2	339.3	183.7	155.62	2.180	
7,800.0	6,701.4	6,683.9	6,683.9	24.2	133.7	-86.14	-324.2	610.2	438.1	281.3	156.85	2.793	
7,900.0	6,700.5	6,683.0	6,683.0	25.6	133.7	-85.25	-324.2	610.2	537.4	379.3	158.12	3.399	
8,000.0	6,699.6	6,682.1	6,682.1	27.1	133.6	-84.37	-324.2	610.2	636.9	477.5	159.41	3.995	
8,100.0	6,698.7	6,681.2	6,681.2	28.6	133.6	-83.49	-324.2	610.2	736.5	575.8	160.71	4.583	
8,200.0	6,697.8	6,680.3	6,680.3	30.2	133.6	-82.61	-324.2	610.2	836.3	674.2	162.02	5.161	
8,300.0	6,696.9	6,679.4	6,679.4	31.8	133.6	-81.73	-324.2	610.2	936.0	772.7	163.32	5.731	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut Existing Pad Sec.27-T5N-R64W - White 34-1 (Existing) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

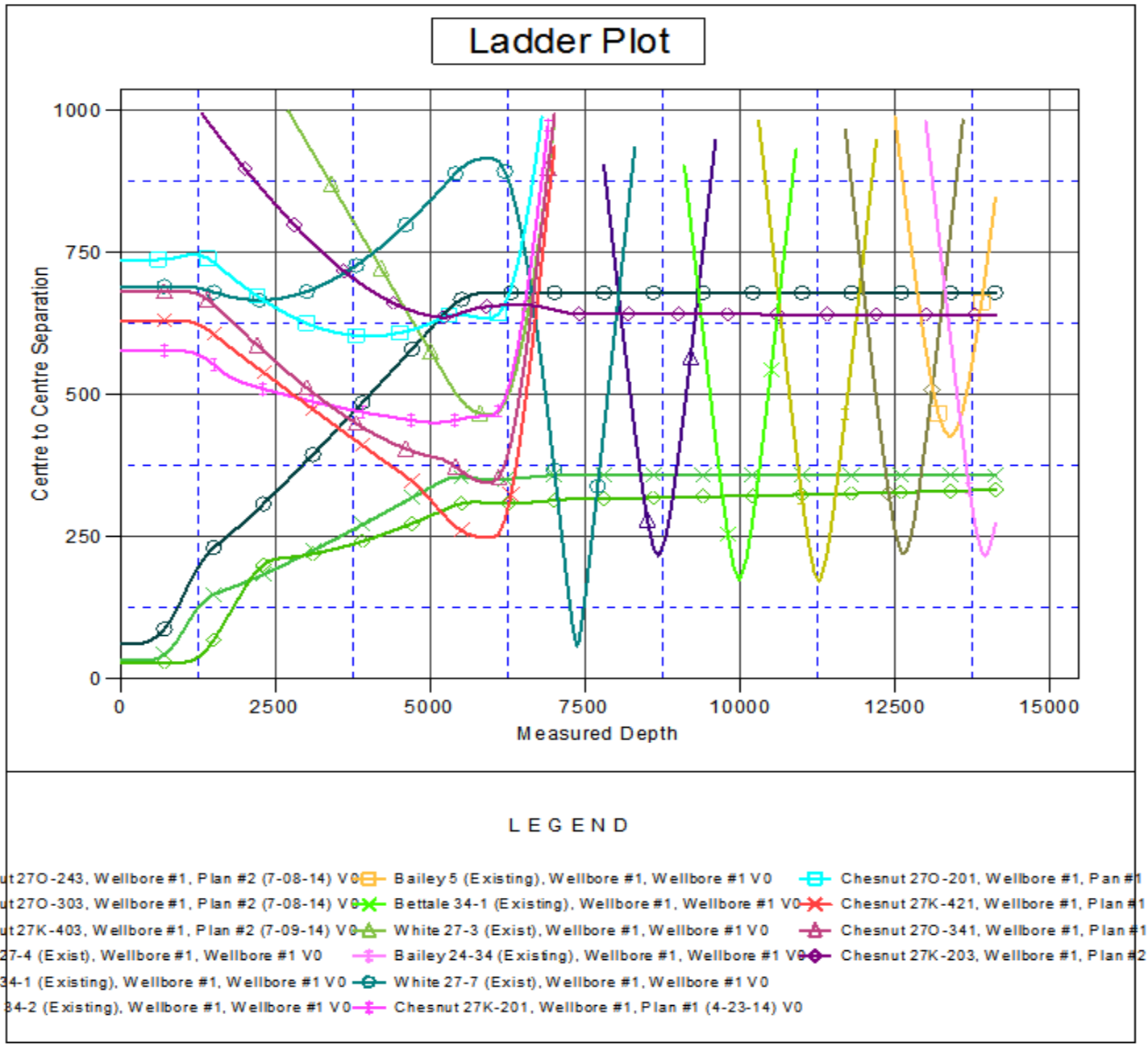
Survey Program: 7400-UNKNOWN

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
10,300.0	6,678.7	6,691.2	6,691.2	67.4	133.8	92.91	-4,226.0	379.0	983.0	782.3	200.62	4.900	
10,400.0	6,677.8	6,690.3	6,690.3	69.2	133.8	92.61	-4,226.0	379.0	884.7	682.2	202.50	4.369	
10,500.0	6,676.9	6,689.4	6,689.4	71.1	133.8	92.31	-4,226.0	379.0	786.9	582.5	204.38	3.850	
10,600.0	6,676.0	6,688.5	6,688.5	73.0	133.8	92.01	-4,226.0	379.0	689.7	483.4	206.26	3.344	
10,700.0	6,675.1	6,687.6	6,687.6	74.8	133.8	91.71	-4,226.0	379.0	593.4	385.3	208.14	2.851	
10,800.0	6,674.2	6,686.7	6,686.7	76.7	133.7	91.41	-4,226.0	379.0	498.6	288.6	210.01	2.374	
10,900.0	6,673.3	6,685.8	6,685.8	78.6	133.7	91.11	-4,226.0	379.0	406.3	194.4	211.88	1.917	
11,000.0	6,672.4	6,684.9	6,684.9	80.4	133.7	90.81	-4,226.0	379.0	318.6	104.9	213.75	1.491	Level 3
11,100.0	6,671.4	6,683.9	6,683.9	82.3	133.7	90.50	-4,226.0	379.0	240.8	25.2	215.62	1.117	Level 2
11,200.0	6,670.5	6,683.0	6,683.0	84.2	133.7	90.20	-4,226.0	379.0	185.6	-31.8	217.48	0.854	Level 1
11,267.6	6,669.9	6,682.4	6,682.4	85.4	133.6	90.00	-4,226.0	379.0	172.9	-45.9	218.74	0.790	Level 1, CC, ES, SF
11,300.0	6,669.6	6,682.1	6,682.1	86.1	133.6	89.90	-4,226.0	379.0	175.9	-43.5	219.34	0.802	Level 1
11,400.0	6,668.7	6,681.2	6,681.2	87.9	133.6	89.60	-4,226.0	379.0	217.7	-3.5	221.19	0.984	Level 1
11,500.0	6,667.8	6,680.3	6,680.3	89.8	133.6	89.30	-4,226.0	379.0	289.6	66.5	223.04	1.298	Level 3
11,600.0	6,666.9	6,679.4	6,679.4	91.7	133.6	89.00	-4,226.0	379.0	374.6	149.7	224.89	1.666	
11,700.0	6,666.0	6,678.5	6,678.5	93.6	133.6	88.70	-4,226.0	379.0	465.6	238.9	226.73	2.053	
11,800.0	6,665.1	6,677.6	6,677.6	95.5	133.6	88.40	-4,226.0	379.0	559.7	331.1	228.57	2.449	
11,900.0	6,664.2	6,676.7	6,676.7	97.4	133.5	88.10	-4,226.0	379.0	655.5	425.1	230.40	2.845	
12,000.0	6,663.3	6,675.8	6,675.8	99.3	133.5	87.80	-4,226.0	379.0	752.4	520.2	232.22	3.240	
12,100.0	6,662.4	6,674.9	6,674.9	101.1	133.5	87.50	-4,226.0	379.0	850.0	616.0	234.04	3.632	
12,200.0	6,661.5	6,674.0	6,674.0	103.0	133.5	87.20	-4,226.0	379.0	948.2	712.3	235.85	4.020	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4630.5ft (Ensign 121 RKB - Coordinates are relative to: Chesnut 27K-323
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: 0.62°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 27K-323
Project:	SEC.27-T5N-R64W	**TVD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	**MD Reference:**	WELL @ 4630.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Chesnut 27K-323	**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 #2 (7-09-14)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4630.5ft (Ensign 121 RKB - Coordinates are relative to: Chesnut 27K-323
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: 0.62°