

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Chesnut 27K-203**

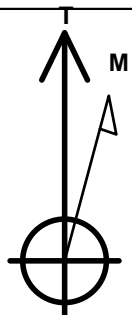
Surface Location: Chesnut 27G-HZ Pad Sec.27-T5N-R64W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4619.0

+N-S	+E-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1379494.78	3266475.41	40.371170	-104.543600	

Ensign 121 RKB - 13.5' WELL @ 4632.0ft (RKB - 13.5')

WELLBORE TARGET DETAILS

Name	TVD	+N-S	+E-W	Shape
SHL 2295'FNL & 436'FWL, Sec.27	1.0	0.0	0.0	Point
BHL 500'FSL & 1120'FWL, Sec.34	6583.0	-7734.3	694.0	Point



Azimuths to True North
Magnetic North: 8.34°

Magnetic Field
Strength: 52828.3srT
Dip Angle: 66.96°
Date: 6/3/2014
Model: IGRF2010

Chesnut 27G-HZ Pad Sec.27-T5N-R64W
Chesnut 27K-203
Plan #2 (7-08-14)
14:43, July 08 2014

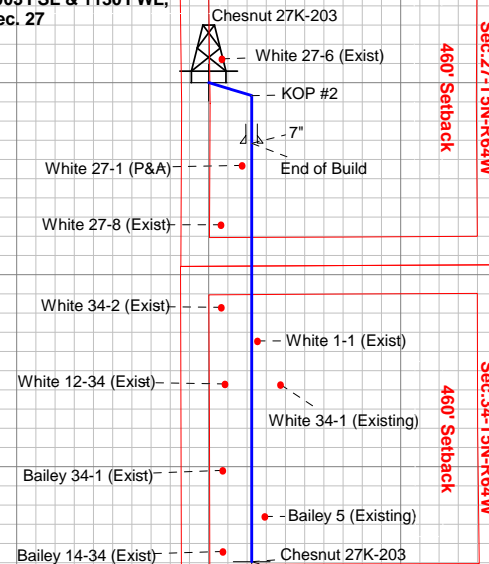
ANNOTATIONS

TVD	MD	Annotation
1000.0	1000.0	KOP #1
5866.2	5925.8	KOP #2
6630.2	7131.2	End of Build

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

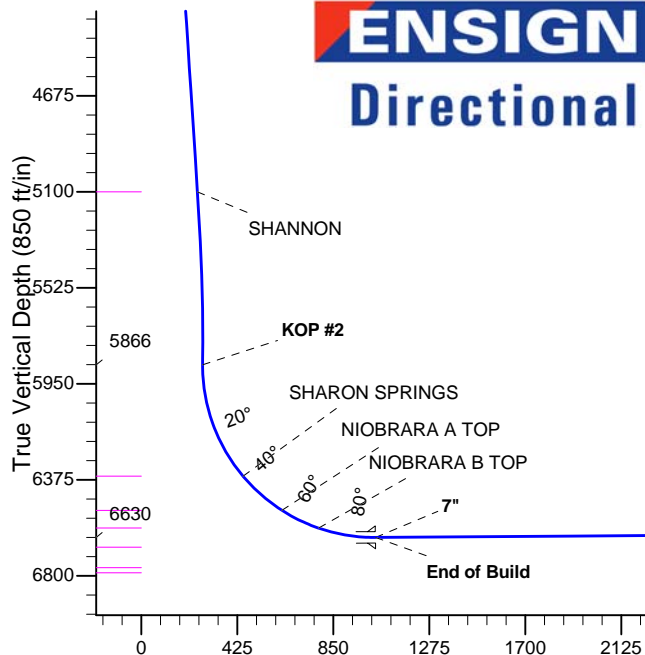
CASING PT -
2003'FSL & 1130'FWL,
Sec. 27

SHL 2295'FNL & 436'FWL, Sec.27



BHL 500'FSL & 1120'FWL, Sec.34

West(-)/East(+) (3100 ft/in)



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1488.6	9.77	106.84	1486.2	-12.0	39.8	2.00	106.84	15.5	
4	5271.0	9.77	106.84	5213.8	-198.0	654.2	0.00	0.00	255.6	
5	5759.6	0.00	0.00	5700.0	-210.0	694.0	2.00	180.00	271.2	
6	5925.8	0.00	0.00	5866.2	-210.0	694.0	0.00	0.00	271.2	
7	7131.2	90.40	180.00	6630.2	-979.3	694.0	7.50	180.00	1037.4	
8	13886.3	90.40	180.00	6583.0	-7734.3	694.0	0.00	0.00	7765.3	BHL 500'FSL & 1120'FWL, Sec.34

BHL 500'FSL & 1120'FWL, Sec.34

Vertical Section at 174.87° (850 ft/in)



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.27-T5N-R64W

Chesnut 27G-HZ Pad Sec.27-T5N-R64W

Chesnut 27K-203

Wellbore #1

Plan: Plan #2 (7-08-14)

Standard Planning Report

08 July, 2014

Database:	landmark	Local Co-ordinate Reference:	Well Chesnut 27K-203
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Project:	SEC.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	North Reference:	True
Well:	Chesnut 27K-203	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-08-14)		

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 27G-HZ Pad Sec.27-T5N-R64W		
Site Position:		Northing:	1,379,582.22 ft
From:	Lat/Long	Easting:	3,266,474.47 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40.371410
		Longitude:	-104.543600
		Grid Convergence:	0.62 °

Well	Chesnut 27K-203		
Well Position	+N/-S	-87.5 ft	Northing:
	+E/-W	0.0 ft	Easting:
Position Uncertainty		0.0 ft	Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

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 (7-08-14)			
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	174.87

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	
1,488.6	9.77	106.84	1,486.2	-12.0	39.8	2.00	2.00	0.00	106.84	
5,271.0	9.77	106.84	5,213.8	-198.0	654.2	0.00	0.00	0.00	0.00	
5,759.6	0.00	0.00	5,700.0	-210.0	694.0	2.00	-2.00	0.00	180.00	
5,925.8	0.00	0.00	5,866.2	-210.0	694.0	0.00	0.00	0.00	0.00	
7,131.2	90.40	180.00	6,630.2	-979.3	694.0	7.50	7.50	0.00	180.00	
13,886.3	90.40	180.00	6,583.0	-7,734.3	694.0	0.00	0.00	0.00	0.00	BHL 500'FSL & 112

Database:	landmark	Local Co-ordinate Reference:	Well Chesnut 27K-203
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Project:	SEC.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	North Reference:	True
Well:	Chesnut 27K-203	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-08-14)		

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	106.84	1,100.0	-0.5	1.7	0.7	2.00	2.00	0.00
1,200.0	4.00	106.84	1,199.8	-2.0	6.7	2.6	2.00	2.00	0.00
1,300.0	6.00	106.84	1,299.5	-4.5	15.0	5.9	2.00	2.00	0.00
1,400.0	8.00	106.84	1,398.7	-8.1	26.7	10.4	2.00	2.00	0.00
1,488.6	9.77	106.84	1,486.2	-12.0	39.8	15.5	2.00	2.00	0.00
1,500.0	9.77	106.84	1,497.5	-12.6	41.6	16.3	0.00	0.00	0.00
1,600.0	9.77	106.84	1,596.0	-17.5	57.9	22.6	0.00	0.00	0.00
1,700.0	9.77	106.84	1,694.6	-22.4	74.1	29.0	0.00	0.00	0.00
1,800.0	9.77	106.84	1,793.1	-27.3	90.4	35.3	0.00	0.00	0.00
1,900.0	9.77	106.84	1,891.7	-32.3	106.6	41.7	0.00	0.00	0.00
2,000.0	9.77	106.84	1,990.2	-37.2	122.9	48.0	0.00	0.00	0.00
2,100.0	9.77	106.84	2,088.8	-42.1	139.1	54.4	0.00	0.00	0.00
2,200.0	9.77	106.84	2,187.3	-47.0	155.3	60.7	0.00	0.00	0.00
2,300.0	9.77	106.84	2,285.9	-51.9	171.6	67.0	0.00	0.00	0.00
2,400.0	9.77	106.84	2,384.4	-56.8	187.8	73.4	0.00	0.00	0.00
2,500.0	9.77	106.84	2,483.0	-61.8	204.1	79.7	0.00	0.00	0.00
2,600.0	9.77	106.84	2,581.5	-66.7	220.3	86.1	0.00	0.00	0.00
2,700.0	9.77	106.84	2,680.1	-71.6	236.6	92.4	0.00	0.00	0.00
2,800.0	9.77	106.84	2,778.6	-76.5	252.8	98.8	0.00	0.00	0.00
2,900.0	9.77	106.84	2,877.2	-81.4	269.1	105.1	0.00	0.00	0.00
3,000.0	9.77	106.84	2,975.7	-86.3	285.3	111.5	0.00	0.00	0.00
3,100.0	9.77	106.84	3,074.3	-91.2	301.5	117.8	0.00	0.00	0.00
3,200.0	9.77	106.84	3,172.8	-96.2	317.8	124.2	0.00	0.00	0.00
3,300.0	9.77	106.84	3,271.4	-101.1	334.0	130.5	0.00	0.00	0.00
3,400.0	9.77	106.84	3,369.9	-106.0	350.3	136.9	0.00	0.00	0.00
3,461.0	9.77	106.84	3,430.0	-109.0	360.2	140.7	0.00	0.00	0.00
PARKMAN									
3,500.0	9.77	106.84	3,468.5	-110.9	366.5	143.2	0.00	0.00	0.00
3,600.0	9.77	106.84	3,567.0	-115.8	382.8	149.6	0.00	0.00	0.00
3,700.0	9.77	106.84	3,665.6	-120.7	399.0	155.9	0.00	0.00	0.00
3,800.0	9.77	106.84	3,764.1	-125.7	415.3	162.3	0.00	0.00	0.00
3,900.0	9.77	106.84	3,862.7	-130.6	431.5	168.6	0.00	0.00	0.00
4,000.0	9.77	106.84	3,961.2	-135.5	447.7	175.0	0.00	0.00	0.00
4,100.0	9.77	106.84	4,059.7	-140.4	464.0	181.3	0.00	0.00	0.00
4,191.6	9.77	106.84	4,150.0	-144.9	478.9	187.1	0.00	0.00	0.00
SUSSEX									
4,200.0	9.77	106.84	4,158.3	-145.3	480.2	187.7	0.00	0.00	0.00
4,300.0	9.77	106.84	4,256.8	-150.2	496.5	194.0	0.00	0.00	0.00
4,400.0	9.77	106.84	4,355.4	-155.1	512.7	200.3	0.00	0.00	0.00
4,500.0	9.77	106.84	4,453.9	-160.1	529.0	206.7	0.00	0.00	0.00
4,600.0	9.77	106.84	4,552.5	-165.0	545.2	213.0	0.00	0.00	0.00

Database:	landmark	Local Co-ordinate Reference:	Well Chesnut 27K-203
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Project:	SEC.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	North Reference:	True
Well:	Chesnut 27K-203	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-08-14)		

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	9.77	106.84	4,651.0	-169.9	561.5	219.4	0.00	0.00	0.00
4,800.0	9.77	106.84	4,749.6	-174.8	577.7	225.7	0.00	0.00	0.00
4,900.0	9.77	106.84	4,848.1	-179.7	593.9	232.1	0.00	0.00	0.00
5,000.0	9.77	106.84	4,946.7	-184.6	610.2	238.4	0.00	0.00	0.00
5,100.0	9.77	106.84	5,045.2	-189.6	626.4	244.8	0.00	0.00	0.00
5,155.6	9.77	106.84	5,100.0	-192.3	635.5	248.3	0.00	0.00	0.00
SHANNON									
5,200.0	9.77	106.84	5,143.8	-194.5	642.7	251.1	0.00	0.00	0.00
5,271.0	9.77	106.84	5,213.8	-198.0	654.2	255.6	0.00	0.00	0.00
5,300.0	9.19	106.84	5,242.4	-199.3	658.8	257.4	2.00	-2.00	0.00
5,400.0	7.19	106.84	5,341.3	-203.5	672.4	262.8	2.00	-2.00	0.00
5,500.0	5.19	106.84	5,440.8	-206.6	682.7	266.8	2.00	-2.00	0.00
5,600.0	3.19	106.84	5,540.5	-208.7	689.7	269.5	2.00	-2.00	0.00
5,700.0	1.19	106.84	5,640.4	-209.8	693.4	271.0	2.00	-2.00	0.00
5,759.6	0.00	0.00	5,700.0	-210.0	694.0	271.2	2.00	-2.00	0.00
5,800.0	0.00	0.00	5,740.4	-210.0	694.0	271.2	0.00	0.00	0.00
5,900.0	0.00	0.00	5,840.4	-210.0	694.0	271.2	0.00	0.00	0.00
5,925.8	0.00	0.00	5,866.2	-210.0	694.0	271.2	0.00	0.00	0.00
KOP #2									
6,000.0	5.56	180.00	5,940.3	-213.6	694.0	274.8	7.50	7.50	0.00
6,100.0	13.06	180.00	6,038.9	-229.8	694.0	290.9	7.50	7.50	0.00
6,200.0	20.56	180.00	6,134.5	-258.7	694.0	319.7	7.50	7.50	0.00
6,300.0	28.06	180.00	6,225.6	-299.8	694.0	360.6	7.50	7.50	0.00
6,400.0	35.56	180.00	6,310.5	-352.5	694.0	413.1	7.50	7.50	0.00
6,461.4	40.17	180.00	6,359.0	-390.2	694.0	450.6	7.50	7.50	0.00
SHARON SPRINGS									
6,500.0	43.06	180.00	6,387.8	-415.8	694.0	476.2	7.50	7.50	0.00
6,600.0	50.56	180.00	6,456.2	-488.7	694.0	548.7	7.50	7.50	0.00
6,691.5	57.43	180.00	6,510.0	-562.6	694.0	622.4	7.50	7.50	0.00
NIOBRARA A TOP									
6,700.0	58.06	180.00	6,514.5	-569.8	694.0	629.6	7.50	7.50	0.00
6,800.0	65.56	180.00	6,561.7	-657.9	694.0	717.3	7.50	7.50	0.00
6,873.9	71.10	180.00	6,589.0	-726.5	694.0	785.6	7.50	7.50	0.00
NIOBRARA B TOP									
6,900.0	73.06	180.00	6,597.0	-751.4	694.0	810.4	7.50	7.50	0.00
7,000.0	80.56	180.00	6,619.8	-848.7	694.0	907.3	7.50	7.50	0.00
7,100.0	88.06	180.00	6,629.7	-948.1	694.0	1,006.3	7.50	7.50	0.00
7,131.2	90.40	180.00	6,630.2	-979.3	694.0	1,037.4	7.49	7.49	0.00
End of Build - 7"									
7,200.0	90.40	180.00	6,629.7	-1,048.1	694.0	1,105.9	0.00	0.00	0.00
7,300.0	90.40	180.00	6,629.0	-1,148.1	694.0	1,205.5	0.00	0.00	0.00
7,400.0	90.40	180.00	6,628.3	-1,248.1	694.0	1,305.1	0.00	0.00	0.00
7,500.0	90.40	180.00	6,627.6	-1,348.1	694.0	1,404.7	0.00	0.00	0.00
7,600.0	90.40	180.00	6,626.9	-1,448.1	694.0	1,504.3	0.00	0.00	0.00
7,700.0	90.40	180.00	6,626.2	-1,548.1	694.0	1,603.9	0.00	0.00	0.00
7,800.0	90.40	180.00	6,625.5	-1,648.1	694.0	1,703.5	0.00	0.00	0.00
7,900.0	90.40	180.00	6,624.8	-1,748.1	694.0	1,803.1	0.00	0.00	0.00
8,000.0	90.40	180.00	6,624.1	-1,848.1	694.0	1,902.7	0.00	0.00	0.00
8,100.0	90.40	180.00	6,623.4	-1,948.1	694.0	2,002.3	0.00	0.00	0.00
8,200.0	90.40	180.00	6,622.7	-2,048.1	694.0	2,101.9	0.00	0.00	0.00
8,300.0	90.40	180.00	6,622.0	-2,148.1	694.0	2,201.5	0.00	0.00	0.00
8,400.0	90.40	180.00	6,621.3	-2,248.1	694.0	2,301.1	0.00	0.00	0.00

Database:	landmark	Local Co-ordinate Reference:	Well Chesnut 27K-203
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Project:	SEC.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	North Reference:	True
Well:	Chesnut 27K-203	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-08-14)		

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)
8,500.0	90.40	180.00	6,620.6	-2,348.1	694.0	2,400.7	0.00	0.00	0.00
8,600.0	90.40	180.00	6,619.9	-2,448.1	694.0	2,500.3	0.00	0.00	0.00
8,700.0	90.40	180.00	6,619.2	-2,548.1	694.0	2,599.9	0.00	0.00	0.00
8,800.0	90.40	180.00	6,618.5	-2,648.1	694.0	2,699.5	0.00	0.00	0.00
8,900.0	90.40	180.00	6,617.8	-2,748.1	694.0	2,799.1	0.00	0.00	0.00
9,000.0	90.40	180.00	6,617.1	-2,848.1	694.0	2,898.7	0.00	0.00	0.00
9,100.0	90.40	180.00	6,616.4	-2,948.1	694.0	2,998.3	0.00	0.00	0.00
9,200.0	90.40	180.00	6,615.7	-3,048.1	694.0	3,097.9	0.00	0.00	0.00
9,300.0	90.40	180.00	6,615.0	-3,148.1	694.0	3,197.5	0.00	0.00	0.00
9,400.0	90.40	180.00	6,614.3	-3,248.1	694.0	3,297.1	0.00	0.00	0.00
9,500.0	90.40	180.00	6,613.6	-3,348.0	694.0	3,396.7	0.00	0.00	0.00
9,600.0	90.40	180.00	6,612.9	-3,448.0	694.0	3,496.3	0.00	0.00	0.00
9,700.0	90.40	180.00	6,612.2	-3,548.0	694.0	3,595.9	0.00	0.00	0.00
9,800.0	90.40	180.00	6,611.5	-3,648.0	694.0	3,695.5	0.00	0.00	0.00
9,900.0	90.40	180.00	6,610.8	-3,748.0	694.0	3,795.1	0.00	0.00	0.00
10,000.0	90.40	180.00	6,610.1	-3,848.0	694.0	3,894.7	0.00	0.00	0.00
10,100.0	90.40	180.00	6,609.4	-3,948.0	694.0	3,994.3	0.00	0.00	0.00
10,200.0	90.40	180.00	6,608.7	-4,048.0	694.0	4,093.9	0.00	0.00	0.00
10,300.0	90.40	180.00	6,608.0	-4,148.0	694.0	4,193.5	0.00	0.00	0.00
10,400.0	90.40	180.00	6,607.3	-4,248.0	694.0	4,293.1	0.00	0.00	0.00
10,500.0	90.40	180.00	6,606.6	-4,348.0	694.0	4,392.6	0.00	0.00	0.00
10,600.0	90.40	180.00	6,605.9	-4,448.0	694.0	4,492.2	0.00	0.00	0.00
10,700.0	90.40	180.00	6,605.2	-4,548.0	694.0	4,591.8	0.00	0.00	0.00
10,800.0	90.40	180.00	6,604.5	-4,648.0	694.0	4,691.4	0.00	0.00	0.00
10,900.0	90.40	180.00	6,603.8	-4,748.0	694.0	4,791.0	0.00	0.00	0.00
11,000.0	90.40	180.00	6,603.2	-4,848.0	694.0	4,890.6	0.00	0.00	0.00
11,100.0	90.40	180.00	6,602.5	-4,948.0	694.0	4,990.2	0.00	0.00	0.00
11,200.0	90.40	180.00	6,601.8	-5,048.0	694.0	5,089.8	0.00	0.00	0.00
11,300.0	90.40	180.00	6,601.1	-5,148.0	694.0	5,189.4	0.00	0.00	0.00
11,400.0	90.40	180.00	6,600.4	-5,248.0	694.0	5,289.0	0.00	0.00	0.00
11,500.0	90.40	180.00	6,599.7	-5,348.0	694.0	5,388.6	0.00	0.00	0.00
11,600.0	90.40	180.00	6,599.0	-5,448.0	694.0	5,488.2	0.00	0.00	0.00
11,700.0	90.40	180.00	6,598.3	-5,548.0	694.0	5,587.8	0.00	0.00	0.00
11,800.0	90.40	180.00	6,597.6	-5,648.0	694.0	5,687.4	0.00	0.00	0.00
11,900.0	90.40	180.00	6,596.9	-5,748.0	694.0	5,787.0	0.00	0.00	0.00
12,000.0	90.40	180.00	6,596.2	-5,848.0	694.0	5,886.6	0.00	0.00	0.00
12,100.0	90.40	180.00	6,595.5	-5,948.0	694.0	5,986.2	0.00	0.00	0.00
12,200.0	90.40	180.00	6,594.8	-6,048.0	694.0	6,085.8	0.00	0.00	0.00
12,300.0	90.40	180.00	6,594.1	-6,148.0	694.0	6,185.4	0.00	0.00	0.00
12,400.0	90.40	180.00	6,593.4	-6,248.0	694.0	6,285.0	0.00	0.00	0.00
12,500.0	90.40	180.00	6,592.7	-6,348.0	694.0	6,384.6	0.00	0.00	0.00
12,600.0	90.40	180.00	6,592.0	-6,448.0	694.0	6,484.2	0.00	0.00	0.00
12,700.0	90.40	180.00	6,591.3	-6,548.0	694.0	6,583.8	0.00	0.00	0.00
12,800.0	90.40	180.00	6,590.6	-6,648.0	694.0	6,683.4	0.00	0.00	0.00
12,900.0	90.40	180.00	6,589.9	-6,748.0	694.0	6,783.0	0.00	0.00	0.00
13,000.0	90.40	180.00	6,589.2	-6,848.0	694.0	6,882.6	0.00	0.00	0.00
13,100.0	90.40	180.00	6,588.5	-6,948.0	694.0	6,982.2	0.00	0.00	0.00
13,200.0	90.40	180.00	6,587.8	-7,048.0	694.0	7,081.8	0.00	0.00	0.00
13,300.0	90.40	180.00	6,587.1	-7,148.0	694.0	7,181.4	0.00	0.00	0.00
13,400.0	90.40	180.00	6,586.4	-7,248.0	694.0	7,281.0	0.00	0.00	0.00
13,500.0	90.40	180.00	6,585.7	-7,348.0	694.0	7,380.6	0.00	0.00	0.00
13,600.0	90.40	180.00	6,585.0	-7,447.9	694.0	7,480.2	0.00	0.00	0.00
13,700.0	90.40	180.00	6,584.3	-7,547.9	694.0	7,579.8	0.00	0.00	0.00

Database:	landmark	Local Co-ordinate Reference:	Well Chesnut 27K-203
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Project:	SEC.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	North Reference:	True
Well:	Chesnut 27K-203	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-08-14)		

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)
13,800.0	90.40	180.00	6,583.6	-7,647.9	694.0	7,679.4	0.00	0.00	0.00
13,886.3	90.40	180.00	6,583.0	-7,734.3	694.0	7,765.3	0.00	0.00	0.00

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,131.2	6,630.2	7"	7	7-1/2

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,461.0	3,430.0	PARKMAN		0.00	
4,191.6	4,150.0	SUSSEX		0.00	
5,155.6	5,100.0	SHANNON		0.00	
6,461.4	6,359.0	SHARON SPRINGS		0.00	
6,691.5	6,510.0	NIOBRARA A TOP		0.00	
6,873.9	6,589.0	NIOBRARA B TOP		0.00	
	6,674.0	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		Comment
		+N/-S (ft)	+E/-W (ft)	
1,000.0	1,000.0	0.0	0.0	KOP #1
5,925.8	5,866.2	-210.0	694.0	KOP #2
7,131.2	6,630.2	-979.3	694.0	End of Build



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.27-T5N-R64W

Chesnut 27G-HZ Pad Sec.27-T5N-R64W

Chesnut 27K-203

Wellbore #1

Plan #2 (7-08-14)

Anticollision Report

08 July, 2014



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Reference	Plan #2 (7-08-14)
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	MD Interval 100.0ft
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 1,000.0ft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic

Survey Tool Program		Date	7/8/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	13,886.3	Plan #2 (7-08-14) (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Chesnut 27G-HZ Pad Sec.27-T5N-R64W						
Chesnut 27G-203 - Wellbore #1 - Plan #2 (7-08-14)	1,000.0	1,000.0	58.3	54.0	13.650	CC, ES
Chesnut 27G-203 - Wellbore #1 - Plan #2 (7-08-14)	13,886.8	13,844.7	989.5	690.8	3.313	SF
Chesnut 27G-423 - Wellbore #1 - Plan #2 (7-08-14)	1,000.0	1,000.0	87.4	83.2	20.474	CC, ES
Chesnut 27G-423 - Wellbore #1 - Plan #2 (7-08-14)	13,886.8	13,984.1	668.4	378.8	2.308	SF
Chesnut 27K-343 - Wellbore #1 - Plan #2 (7-08-14)	1,000.0	1,000.0	29.1	24.9	6.825	CC, ES
Chesnut 27K-343 - Wellbore #1 - Plan #2 (7-08-14)	13,886.8	13,930.3	339.2	46.0	1.157	Level 2, SF
Chesnut 27GK-HZ Pad Sec.27-T5N-R64W						
Chesnut 27G-221 - Wellbore #1 - Plan #1 (4-23-14)	3,135.8	3,140.9	178.0	159.3	9.526	CC, ES
Chesnut 27G-221 - Wellbore #1 - Plan #1 (4-23-14)	3,200.0	3,201.1	179.4	160.3	9.382	SF
Chesnut 27G-301 - Wellbore #1 - Plan #1 (4-23-14)	2,679.8	2,712.0	173.0	155.1	9.641	CC, ES
Chesnut 27G-301 - Wellbore #1 - Plan #1 (4-23-14)	2,700.0	2,730.6	173.2	155.1	9.560	SF
Chesnut 27K-201 - Wellbore #1 - Plan #1 (4-23-14)	5,787.2	5,750.2	451.2	420.0	14.478	CC
Chesnut 27K-201 - Wellbore #1 - Plan #1 (4-23-14)	5,900.0	5,863.0	451.3	419.7	14.299	ES, SF
Chesnut 27K-341 - Wellbore #1 - Plan #1 (4-23-14)	3,482.8	3,465.8	200.4	180.8	10.243	CC
Chesnut 27K-341 - Wellbore #1 - Plan #1 (4-23-14)	3,500.0	3,482.1	200.4	180.7	10.182	ES
Chesnut 27K-341 - Wellbore #1 - Plan #1 (4-23-14)	3,600.0	3,577.3	203.6	183.2	10.021	SF
Chesnut 27K-401 - Wellbore #1 - Plan #1 (4-23-14)	3,935.4	3,887.4	277.8	256.9	13.337	CC
Chesnut 27K-401 - Wellbore #1 - Plan #1 (4-23-14)	4,000.0	3,950.1	278.2	256.9	13.048	ES
Chesnut 27K-401 - Wellbore #1 - Plan #1 (4-23-14)	4,300.0	4,241.3	291.3	267.9	12.437	SF
Chesnut 27K-421 - Wellbore #1 - Plan #1 (4-23-14)	1,815.2	1,703.7	640.5	633.0	85.389	CC, ES
Chesnut 27K-421 - Wellbore #1 - Plan #1 (4-23-14)	6,000.0	5,990.4	669.9	639.1	21.769	SF
Chesnut 27O-201 - Wellbore #1 - Pan #1 (4-23-14)	200.0	198.5	726.5	725.9	1,082.871	CC, ES
Chesnut 27O-201 - Wellbore #1 - Pan #1 (4-23-14)	2,600.0	2,390.5	996.1	983.9	81.576	SF
Chesnut 27O-341 - Wellbore #1 - Plan #1 (4-23-14)	800.0	798.5	702.6	699.3	208.614	CC, ES
Chesnut 27O-341 - Wellbore #1 - Plan #1 (4-23-14)	6,000.0	6,020.7	976.3	945.6	31.752	SF
Chesnut 27K-HZ Pad Sec.27-T5N-R64W						
Chesnut 27K-323 - Wellbore #1 - Plan #1 (4-22-14)	5,301.1	5,215.0	635.9	607.6	22.442	CC
Chesnut 27K-323 - Wellbore #1 - Plan #1 (4-22-14)	13,886.8	14,124.0	641.3	354.8	2.238	ES, SF
Chesnut 27K-403 - Wellbore #1 - Plan #1 (4-22-14)	5,410.8	5,368.4	334.9	305.8	11.534	CC
Chesnut 27K-403 - Wellbore #1 - Plan #1 (4-22-14)	13,886.8	14,163.7	378.9	124.6	1.490	Level 3, ES, SF
Chesnut 27O-243 - Wellbore #1 - Plan #1 (4-22-14)	3,736.9	3,607.3	948.4	928.2	46.942	CC
Chesnut 27O-243 - Wellbore #1 - Plan #1 (4-22-14)	13,886.8	14,086.4	989.3	700.9	3.430	ES, SF
Chesnut 27O-303 - Wellbore #1 - Plan #1 (4-22-14)	200.0	195.5	978.3	977.6	1,472.899	CC, ES
Chesnut 27O-303 - Wellbore #1 - Plan #1 (4-22-14)	700.0	620.9	996.8	994.0	352.580	SF

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Chesnut Existing Pad Sec.27-T5N-R64W						
Bailey 14-34 (Exist) - Wellbore #1 - Wellbore #1	13,722.4	6,619.6	465.5	187.4	1.674	CC, ES, SF
Bailey 34-1 (Exist) - Wellbore #1 - Wellbore #1	12,410.9	6,616.8	468.3	215.3	1.851	CC, ES, SF
Bailey 5 (Existing) - Wellbore #1 - Wellbore #1	13,154.1	6,610.6	211.8	-55.3	0.793	Level 1, CC, ES, SF
White 1-1 (Exist) - Wellbore #1 - Wellbore #1	10,323.3	6,615.4	91.9	-121.5	0.431	Level 1, CC, ES, SF
White 12-34 (Exist) - Wellbore #1 - Wellbore #1	11,015.5	6,620.5	432.0	205.5	1.907	CC, ES, SF
White 27-1 (P&A) - Wellbore #1 - Wellbore #1	7,488.9	6,632.2	156.2	-5.9	0.964	Level 1, CC, ES, SF
White 27-6 (Exist) - Wellbore #1 - Wellbore #1	1,800.9	1,771.5	428.3	388.6	10.804	CC
White 27-6 (Exist) - Wellbore #1 - Wellbore #1	2,100.0	2,066.3	431.3	384.7	9.263	ES
White 27-6 (Exist) - Wellbore #1 - Wellbore #1	6,000.0	5,917.8	765.0	631.6	5.734	SF
White 27-8 (Exist) - Wellbore #1 - Wellbore #1	8,447.1	6,620.5	496.2	317.6	2.778	CC, ES, SF
White 34-1 (Existing) - Wellbore #1 - Wellbore #1	11,030.1	6,613.4	465.4	238.7	2.053	CC, ES, SF
White 34-2 (Exist) - Wellbore #1 - Wellbore #1	9,780.5	6,617.2	490.6	287.4	2.414	CC, ES
White 34-2 (Exist) - Wellbore #1 - Wellbore #1	9,800.0	6,617.0	491.0	287.4	2.412	SF

Offset Design Chesnut 27G-HZ Pad Sec.27-T5N-R64W - Chesnut 27G-203 - Wellbore #1 - Plan #2 (7-08-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Warning						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	0.00	58.3	0.0	58.3					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	58.3	0.0	58.3	58.1	0.22	259.353		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	58.3	0.0	58.3	57.6	0.67	86.451		
300.0	300.0	300.0	300.0	0.6	0.6	0.00	58.3	0.0	58.3	57.2	1.12	51.871		
400.0	400.0	400.0	400.0	0.8	0.8	0.00	58.3	0.0	58.3	56.7	1.57	37.050		
500.0	500.0	500.0	500.0	1.0	1.0	0.00	58.3	0.0	58.3	56.3	2.02	28.817		
600.0	600.0	600.0	600.0	1.2	1.2	0.00	58.3	0.0	58.3	55.8	2.47	23.578		
700.0	700.0	700.0	700.0	1.5	1.5	0.00	58.3	0.0	58.3	55.4	2.92	19.950		
800.0	800.0	800.0	800.0	1.7	1.7	0.00	58.3	0.0	58.3	54.9	3.37	17.290		
900.0	900.0	900.0	900.0	1.9	1.9	0.00	58.3	0.0	58.3	54.5	3.82	15.256		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	0.00	58.3	0.0	58.3	54.0	4.27	13.650	CC, ES	
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.4	-108.45	58.3	0.0	58.8	54.1	4.70	12.508		
1,200.0	1,199.8	1,199.8	1,199.8	2.5	2.6	-113.10	58.3	0.0	60.7	55.6	5.12	11.841		
1,300.0	1,299.5	1,299.5	1,299.5	2.8	2.8	-120.14	58.3	0.0	64.6	59.1	5.56	11.629		
1,400.0	1,398.7	1,398.7	1,398.7	3.0	3.0	-128.47	58.3	0.0	71.5	65.5	5.99	11.937		
1,500.0	1,497.5	1,498.0	1,498.0	3.3	3.2	-138.04	57.2	-1.2	81.9	75.5	6.40	12.788		
1,600.0	1,596.0	1,596.3	1,596.1	3.6	3.4	-147.87	53.8	-5.0	95.0	88.2	6.79	13.986		
1,700.0	1,694.6	1,693.5	1,693.0	3.9	3.6	-156.84	48.2	-11.1	110.7	103.5	7.19	15.400		
1,800.0	1,793.1	1,790.0	1,788.8	4.2	3.8	-164.78	40.6	-19.4	129.1	121.6	7.59	17.014		
1,900.0	1,891.7	1,886.7	1,884.8	4.5	4.0	-170.92	32.6	-28.1	149.7	141.7	8.01	18.681		
2,000.0	1,990.2	1,983.4	1,980.8	4.9	4.3	-175.57	24.6	-36.8	171.5	163.0	8.45	20.293		
2,100.0	2,088.8	2,080.2	2,076.8	5.3	4.5	-179.17	16.7	-45.6	194.2	185.3	8.90	21.807		
2,200.0	2,187.3	2,176.9	2,172.9	5.6	4.8	177.98	8.7	-54.3	217.4	208.0	9.37	23.206		
2,300.0	2,285.9	2,273.7	2,268.9	6.0	5.0	175.69	0.7	-63.0	241.1	231.2	9.84	24.494		
2,400.0	2,384.4	2,370.4	2,364.9	6.4	5.3	173.80	-7.3	-71.8	265.0	254.7	10.32	25.672		
2,500.0	2,483.0	2,467.2	2,460.9	6.7	5.6	172.23	-15.3	-80.5	289.2	278.4	10.81	26.749		
2,600.0	2,581.5	2,563.9	2,557.0	7.1	5.8	170.90	-23.3	-89.3	313.6	302.3	11.31	27.734		
2,700.0	2,680.1	2,660.7	2,653.0	7.5	6.1	169.76	-31.2	-98.0	338.1	326.3	11.81	28.636		
2,800.0	2,778.6	2,757.4	2,749.0	7.9	6.4	168.77	-39.2	-106.7	362.7	350.4	12.31	29.463		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design		Chesnut 27G-HZ Pad Sec.27-T5N-R64W - Chesnut 27G-203 - Wellbore #1 - Plan #2 (7-08-14)										Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
2,900.0	2,877.2	2,854.2	2,845.0	8.2	6.7	167.91	-47.2	-115.5	387.4	374.6	12.82	30.223		
3,000.0	2,975.7	2,950.9	2,941.0	8.6	7.0	167.15	-55.2	-124.2	412.1	398.8	13.33	30.923		
3,100.0	3,074.3	3,047.7	3,037.1	9.0	7.3	166.48	-63.2	-132.9	437.0	423.1	13.84	31.569		
3,200.0	3,172.8	3,144.4	3,133.1	9.4	7.6	165.88	-71.1	-141.7	461.8	447.5	14.36	32.166		
3,300.0	3,271.4	3,241.2	3,229.1	9.8	7.9	165.34	-79.1	-150.4	486.8	471.9	14.88	32.720		
3,400.0	3,369.9	3,337.9	3,325.1	10.2	8.1	164.85	-87.1	-159.1	511.7	496.3	15.40	33.234		
3,500.0	3,468.5	3,434.7	3,421.2	10.6	8.4	164.41	-95.1	-167.9	536.7	520.8	15.92	33.712		
3,600.0	3,567.0	3,531.4	3,517.2	10.9	8.7	164.01	-103.1	-176.6	561.7	545.3	16.44	34.158		
3,700.0	3,665.6	3,628.2	3,613.2	11.3	9.0	163.64	-111.1	-185.3	586.8	569.8	16.97	34.575		
3,800.0	3,764.1	3,724.9	3,709.2	11.7	9.4	163.31	-119.0	-194.1	611.8	594.3	17.50	34.965		
3,900.0	3,862.7	3,821.7	3,805.2	12.1	9.7	163.00	-127.0	-202.8	636.9	618.9	18.03	35.331		
4,000.0	3,961.2	3,918.4	3,901.3	12.5	10.0	162.71	-135.0	-211.5	662.0	643.5	18.56	35.675		
4,100.0	4,059.7	4,015.2	3,997.3	12.9	10.3	162.44	-143.0	-220.3	687.1	668.0	19.09	35.998		
4,200.0	4,158.3	4,111.9	4,093.3	13.3	10.6	162.19	-151.0	-229.0	712.2	692.6	19.62	36.303		
4,300.0	4,256.8	4,208.7	4,189.3	13.7	10.9	161.96	-158.9	-237.7	737.4	717.2	20.15	36.590		
4,400.0	4,355.4	4,305.4	4,285.4	14.1	11.2	161.75	-166.9	-246.5	762.5	741.8	20.69	36.862		
4,500.0	4,453.9	4,402.2	4,381.4	14.5	11.5	161.55	-174.9	-255.2	787.7	766.5	21.22	37.119		
4,600.0	4,552.5	4,498.9	4,477.4	14.9	11.8	161.36	-182.9	-264.0	812.8	791.1	21.76	37.362		
4,700.0	4,651.0	4,595.7	4,573.4	15.3	12.1	161.18	-190.9	-272.7	838.0	815.7	22.29	37.593		
4,800.0	4,749.6	4,698.3	4,675.3	15.7	12.4	161.01	-199.3	-281.9	863.1	840.3	22.84	37.796		
4,900.0	4,848.1	4,825.1	4,801.5	16.0	12.7	160.97	-207.1	-290.4	886.0	862.7	23.37	37.918		
5,000.0	4,946.7	4,953.6	4,929.9	16.4	12.9	161.18	-211.1	-294.9	905.6	881.7	23.87	37.936		
5,100.0	5,045.2	5,068.9	5,045.2	16.8	13.1	161.54	-211.7	-295.5	922.2	897.9	24.34	37.887		
5,200.0	5,143.8	5,167.5	5,143.8	17.2	13.3	161.87	-211.7	-295.5	938.3	913.6	24.78	37.866		
5,300.0	5,242.4	5,266.1	5,242.4	17.6	13.5	162.21	-211.7	-295.5	954.4	929.1	25.23	37.821		
5,400.0	5,341.3	5,365.0	5,341.3	17.9	13.6	162.55	-211.7	-295.5	968.0	942.3	25.68	37.698		
5,500.0	5,440.8	5,464.4	5,440.8	18.1	13.8	162.80	-211.7	-295.5	978.3	952.2	26.09	37.495		
5,600.0	5,540.5	5,564.2	5,540.5	18.3	14.0	162.97	-211.7	-295.5	985.3	958.8	26.47	37.217		
5,700.0	5,640.4	5,664.1	5,640.4	18.5	14.1	163.05	-211.7	-295.5	988.9	962.1	26.82	36.865		
5,800.0	5,740.4	5,764.1	5,740.4	18.6	14.3	-90.10	-211.7	-295.5	989.5	962.3	27.17	36.417		
5,900.0	5,840.4	5,864.1	5,840.4	18.7	14.5	-90.10	-211.7	-295.5	989.5	962.0	27.54	35.935		
6,000.0	5,940.3	5,963.9	5,940.1	18.9	14.7	89.88	-215.7	-295.5	989.5	961.6	27.95	35.402		
6,100.0	6,038.9	6,063.6	6,038.3	19.1	15.0	89.84	-232.4	-295.5	989.5	961.0	28.51	34.705		
6,200.0	6,134.5	6,163.2	6,133.4	19.3	15.4	89.82	-261.7	-295.5	989.5	960.3	29.24	33.843		
6,300.0	6,225.6	6,262.7	6,223.9	19.7	15.8	89.79	-303.0	-295.5	989.5	959.3	30.16	32.810		
6,400.0	6,310.5	6,362.2	6,308.2	20.1	16.4	89.77	-355.8	-295.5	989.5	958.2	31.31	31.607		
6,500.0	6,387.8	6,461.7	6,384.9	20.6	17.1	89.75	-419.0	-295.5	989.5	956.8	32.72	30.244		
6,600.0	6,466.2	6,561.1	6,452.7	21.2	17.9	89.73	-491.6	-295.5	989.5	955.1	34.41	28.753		
6,700.0	6,514.5	6,660.5	6,510.5	21.9	18.9	89.73	-572.3	-295.5	989.5	953.1	36.41	27.178		
6,800.0	6,561.7	6,759.9	6,557.3	22.8	20.1	89.72	-659.9	-295.5	989.5	950.8	38.69	25.576		
6,900.0	6,597.0	6,859.3	6,592.4	23.9	21.3	89.72	-752.8	-295.5	989.5	948.3	41.23	23.998		
7,000.0	6,619.8	6,958.6	6,615.2	25.0	22.7	89.73	-849.5	-295.5	989.5	945.5	43.99	22.492		
7,100.0	6,629.7	7,058.0	6,625.2	26.2	24.2	89.73	-948.3	-295.5	989.5	942.6	46.92	21.090		
7,200.0	6,629.7	7,157.8	6,625.2	27.6	25.7	89.74	-1,048.1	-295.5	989.5	939.5	49.97	19.801		
7,300.0	6,629.0	7,257.8	6,624.6	29.0	27.3	89.74	-1,148.1	-295.5	989.5	936.4	53.13	18.626		
7,400.0	6,628.3	7,357.8	6,623.9	30.4	28.9	89.75	-1,248.1	-295.5	989.5	933.1	56.36	17.556		
7,500.0	6,627.6	7,457.8	6,623.3	31.9	30.5	89.75	-1,348.1	-295.5	989.5	929.8	59.67	16.582		
7,600.0	6,626.9	7,557.8	6,622.6	33.5	32.2	89.75	-1,448.1	-295.5	989.5	926.5	63.04	15.695		
7,700.0	6,626.2	7,657.8	6,622.0	35.1	33.9	89.76	-1,548.1	-295.5	989.5	923.0	66.47	14.887		
7,800.0	6,625.5	7,757.8	6,621.3	36.7	35.7	89.76	-1,648.1	-295.5	989.5	919.6	69.93	14.150		
7,900.0	6,624.8	7,857.8	6,620.7	38.3	37.4	89.76	-1,748.1	-295.5	989.5	916.1	73.43	13.475		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design		Chesnut 27G-HZ Pad Sec.27-T5N-R64W - Chesnut 27G-203 - Wellbore #1 - Plan #2 (7-08-14)											Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis				Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
8,000.0	6,624.1	7,957.8	6,620.0	40.0	39.2	89.76	-1,848.1	-295.5	989.5	912.5	76.97	12.856			
8,100.0	6,623.4	8,057.8	6,619.4	41.7	41.0	89.77	-1,948.1	-295.5	989.5	909.0	80.53	12.287			
8,200.0	6,622.7	8,157.8	6,618.7	43.4	42.7	89.77	-2,048.1	-295.5	989.5	905.4	84.12	11.763			
8,300.0	6,622.0	8,257.8	6,618.1	45.1	44.5	89.77	-2,148.1	-295.5	989.5	901.8	87.73	11.279			
8,400.0	6,621.3	8,357.8	6,617.5	46.9	46.4	89.78	-2,248.1	-295.5	989.5	898.1	91.36	10.831			
8,500.0	6,620.6	8,457.8	6,616.8	48.6	48.2	89.78	-2,348.1	-295.5	989.5	894.5	95.00	10.416			
8,600.0	6,619.9	8,557.8	6,616.2	50.4	50.0	89.78	-2,448.1	-295.5	989.5	890.8	98.66	10.029			
8,700.0	6,619.2	8,657.8	6,615.5	52.2	51.8	89.79	-2,548.1	-295.5	989.5	887.2	102.33	9.669			
8,800.0	6,618.5	8,757.8	6,614.9	54.0	53.7	89.79	-2,648.0	-295.5	989.5	883.5	106.02	9.333			
8,900.0	6,617.8	8,857.8	6,614.2	55.8	55.5	89.79	-2,748.0	-295.5	989.5	879.8	109.72	9.019			
9,000.0	6,617.1	8,957.8	6,613.6	57.6	57.4	89.80	-2,848.0	-295.5	989.5	876.1	113.42	8.724			
9,100.0	6,616.4	9,057.8	6,612.9	59.4	59.2	89.80	-2,948.0	-295.5	989.5	872.4	117.13	8.448			
9,200.0	6,615.7	9,157.8	6,612.3	61.2	61.1	89.80	-3,048.0	-295.5	989.5	868.6	120.86	8.187			
9,300.0	6,615.0	9,257.8	6,611.6	63.0	62.9	89.80	-3,148.0	-295.5	989.5	864.9	124.59	7.942			
9,400.0	6,614.3	9,357.8	6,611.0	64.9	64.8	89.81	-3,248.0	-295.5	989.5	861.2	128.32	7.711			
9,500.0	6,613.6	9,457.8	6,610.3	66.7	66.7	89.81	-3,348.0	-295.5	989.5	857.4	132.06	7.493			
9,600.0	6,612.9	9,557.8	6,609.7	68.5	68.6	89.81	-3,448.0	-295.5	989.5	853.7	135.81	7.286			
9,700.0	6,612.2	9,657.8	6,609.1	70.4	70.4	89.82	-3,548.0	-295.5	989.5	849.9	139.56	7.090			
9,800.0	6,611.5	9,757.8	6,608.4	72.2	72.3	89.82	-3,648.0	-295.5	989.5	846.2	143.32	6.904			
9,900.0	6,610.8	9,857.8	6,607.8	74.1	74.2	89.82	-3,748.0	-295.5	989.5	842.4	147.08	6.727			
10,000.0	6,610.1	9,957.8	6,607.1	75.9	76.1	89.83	-3,848.0	-295.5	989.5	838.6	150.85	6.560			
10,100.0	6,609.4	10,057.8	6,606.5	77.8	77.9	89.83	-3,948.0	-295.5	989.5	834.9	154.62	6.400			
10,200.0	6,608.7	10,157.8	6,605.8	79.7	79.8	89.83	-4,048.0	-295.5	989.5	831.1	158.39	6.247			
10,300.0	6,608.0	10,257.8	6,605.2	81.5	81.7	89.83	-4,148.0	-295.5	989.5	827.3	162.17	6.102			
10,400.0	6,607.3	10,357.8	6,604.5	83.4	83.6	89.84	-4,248.0	-295.5	989.5	823.5	165.95	5.963			
10,500.0	6,606.6	10,457.8	6,603.9	85.3	85.5	89.84	-4,348.0	-295.5	989.5	819.8	169.73	5.830			
10,600.0	6,605.9	10,557.8	6,603.2	87.1	87.4	89.84	-4,448.0	-295.5	989.5	816.0	173.51	5.703			
10,700.0	6,605.2	10,657.8	6,602.6	89.0	89.3	89.85	-4,548.0	-295.5	989.5	812.2	177.30	5.581			
10,800.0	6,604.5	10,757.8	6,602.0	90.9	91.2	89.85	-4,648.0	-295.5	989.5	808.4	181.09	5.464			
10,900.0	6,603.8	10,857.8	6,601.3	92.8	93.1	89.85	-4,748.0	-295.5	989.5	804.6	184.88	5.352			
11,000.0	6,603.2	10,957.8	6,600.7	94.6	95.0	89.86	-4,848.0	-295.5	989.5	800.8	188.67	5.244			
11,100.0	6,602.5	11,057.8	6,600.0	96.5	96.9	89.86	-4,948.0	-295.5	989.5	797.0	192.47	5.141			
11,200.0	6,601.8	11,157.8	6,599.4	98.4	98.8	89.86	-5,048.0	-295.5	989.5	793.2	196.27	5.042			
11,300.0	6,601.1	11,257.8	6,598.7	100.3	100.7	89.87	-5,148.0	-295.5	989.5	789.4	200.06	4.946			
11,400.0	6,600.4	11,357.8	6,598.1	102.2	102.6	89.87	-5,248.0	-295.5	989.5	785.6	203.86	4.854			
11,500.0	6,599.7	11,457.8	6,597.4	104.1	104.5	89.87	-5,348.0	-295.5	989.5	781.8	207.67	4.765			
11,600.0	6,599.0	11,557.8	6,596.8	105.9	106.4	89.87	-5,448.0	-295.5	989.5	778.0	211.47	4.679			
11,700.0	6,598.3	11,657.8	6,596.1	107.8	108.3	89.88	-5,548.0	-295.5	989.5	774.2	215.27	4.596			
11,800.0	6,597.6	11,757.8	6,595.5	109.7	110.2	89.88	-5,648.0	-295.5	989.5	770.4	219.08	4.517			
11,900.0	6,596.9	11,857.8	6,594.9	111.6	112.1	89.88	-5,748.0	-295.5	989.5	766.6	222.89	4.439			
12,000.0	6,596.2	11,957.8	6,594.2	113.5	114.0	89.89	-5,848.0	-295.5	989.5	762.8	226.69	4.365			
12,100.0	6,595.5	12,057.8	6,593.6	115.4	115.9	89.89	-5,948.0	-295.5	989.5	759.0	230.50	4.293			
12,200.0	6,594.8	12,157.8	6,592.9	117.3	117.8	89.89	-6,048.0	-295.5	989.5	755.2	234.31	4.223			
12,300.0	6,594.1	12,257.8	6,592.3	119.2	119.7	89.90	-6,148.0	-295.5	989.5	751.4	238.13	4.155			
12,400.0	6,593.4	12,357.8	6,591.6	121.1	121.6	89.90	-6,248.0	-295.5	989.5	747.6	241.94	4.090			
12,500.0	6,592.7	12,457.8	6,591.0	123.0	123.5	89.90	-6,348.0	-295.5	989.5	743.7	245.75	4.026			
12,600.0	6,592.0	12,557.8	6,590.3	124.9	125.4	89.90	-6,448.0	-295.5	989.5	739.9	249.57	3.965			
12,700.0	6,591.3	12,657.8	6,589.7	126.8	127.3	89.91	-6,548.0	-295.5	989.5	736.1	253.38	3.905			
12,800.0	6,590.6	12,757.8	6,589.0	128.7	129.2	89.91	-6,648.0	-295.5	989.5	732.3	257.20	3.847			
12,900.0	6,589.9	12,857.8	6,588.4	130.6	131.1	89.91	-6,748.0	-295.5	989.5	728.5	261.01	3.791			
13,000.0	6,589.2	12,957.8	6,587.7	132.5	133.0	89.92	-6,848.0	-295.5	989.5	724.7	264.83	3.736			

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut 27G-HZ Pad Sec.27-T5N-R64W - Chesnut 27G-203 - Wellbore #1 - Plan #2 (7-08-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance									Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,100.0	6,588.5	13,057.8	6,587.1	134.4	134.9	89.92	-6,948.0	-295.5	989.5	720.8	268.65	3.683		
13,200.0	6,587.8	13,157.8	6,586.5	136.3	136.8	89.92	-7,048.0	-295.5	989.5	717.0	272.47	3.632		
13,300.0	6,587.1	13,257.8	6,585.8	138.2	138.7	89.93	-7,148.0	-295.5	989.5	713.2	276.28	3.581		
13,400.0	6,586.4	13,357.8	6,585.2	140.1	140.7	89.93	-7,248.0	-295.5	989.5	709.4	280.10	3.533		
13,500.0	6,585.7	13,457.8	6,584.5	142.0	142.6	89.93	-7,347.9	-295.5	989.5	705.6	283.92	3.485		
13,600.0	6,585.0	13,557.8	6,583.9	143.9	144.5	89.93	-7,447.9	-295.5	989.5	701.7	287.75	3.439		
13,700.0	6,584.3	13,657.8	6,583.2	145.8	146.4	89.94	-7,547.9	-295.5	989.5	697.9	291.57	3.394		
13,800.0	6,583.6	13,757.8	6,582.6	147.7	148.3	89.94	-7,647.9	-295.5	989.5	694.1	295.39	3.350		
13,886.8	6,583.0	13,844.7	6,582.0	149.3	150.0	89.94	-7,734.8	-295.5	989.5	690.8	298.71	3.313 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design		Chesnut 27G-HZ Pad Sec.27-T5N-R64W - Chesnut 27G-423 - Wellbore #1 - Plan #2 (7-08-14)										Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	0.00	87.4	0.0	87.4					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	87.4	0.0	87.4	87.2	0.22	389.002		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	87.4	0.0	87.4	86.8	0.67	129.667		
300.0	300.0	300.0	300.0	0.6	0.6	0.00	87.4	0.0	87.4	86.3	1.12	77.800		
400.0	400.0	400.0	400.0	0.8	0.8	0.00	87.4	0.0	87.4	85.9	1.57	55.572		
500.0	500.0	500.0	500.0	1.0	1.0	0.00	87.4	0.0	87.4	85.4	2.02	43.222		
600.0	600.0	600.0	600.0	1.2	1.2	0.00	87.4	0.0	87.4	85.0	2.47	35.364		
700.0	700.0	700.0	700.0	1.5	1.5	0.00	87.4	0.0	87.4	84.5	2.92	29.923		
800.0	800.0	800.0	800.0	1.7	1.7	0.00	87.4	0.0	87.4	84.1	3.37	25.933		
900.0	900.0	900.0	900.0	1.9	1.9	0.00	87.4	0.0	87.4	83.6	3.82	22.882		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	0.00	87.4	0.0	87.4	83.2	4.27	20.474	CC, ES	
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.4	-107.91	87.4	0.0	88.0	83.3	4.70	18.702		
1,200.0	1,199.8	1,199.8	1,199.8	2.5	2.6	-111.06	87.4	0.0	89.7	84.6	5.12	17.503		
1,300.0	1,299.5	1,299.5	1,299.5	2.8	2.8	-115.99	87.4	0.0	93.2	87.6	5.56	16.769		
1,400.0	1,398.7	1,398.7	1,398.7	3.0	3.0	-122.19	87.4	0.0	99.2	93.2	6.00	16.525		
1,500.0	1,497.5	1,497.5	1,497.5	3.3	3.3	-129.02	87.4	0.0	108.4	101.9	6.45	16.795		
1,600.0	1,596.0	1,596.0	1,596.0	3.6	3.5	-135.29	87.4	0.0	119.9	112.9	6.91	17.346		
1,700.0	1,694.6	1,694.6	1,694.6	3.9	3.7	-140.43	87.4	0.0	132.5	125.2	7.37	17.992		
1,800.0	1,793.1	1,793.1	1,793.1	4.2	3.9	-144.66	87.4	0.0	146.1	138.3	7.82	18.679		
1,900.0	1,891.7	1,891.7	1,891.7	4.5	4.1	-148.15	87.4	0.0	160.3	152.0	8.27	19.372		
2,000.0	1,990.2	1,990.2	1,990.2	4.9	4.4	-151.08	87.4	0.0	175.0	166.3	8.73	20.051		
2,100.0	2,088.8	2,093.7	2,093.7	5.3	4.6	-153.94	85.9	0.3	188.9	179.8	9.16	20.628		
2,200.0	2,187.3	2,198.0	2,197.9	5.6	4.7	-157.10	80.7	1.2	200.5	190.9	9.55	20.984		
2,300.0	2,285.9	2,302.4	2,301.9	6.0	4.9	-160.60	71.7	2.8	209.9	199.9	9.95	21.101		
2,400.0	2,384.4	2,402.4	2,401.2	6.4	5.1	-164.13	60.7	4.7	218.2	207.9	10.34	21.105		
2,500.0	2,483.0	2,501.2	2,499.4	6.7	5.3	-167.37	49.7	6.7	227.3	216.5	10.75	21.148		
2,600.0	2,581.5	2,600.0	2,597.5	7.1	5.5	-170.36	38.7	8.6	237.0	225.8	11.17	21.220		
2,700.0	2,680.1	2,698.8	2,695.7	7.5	5.8	-173.11	27.6	10.6	247.3	235.7	11.61	21.309		
2,800.0	2,778.6	2,797.5	2,793.8	7.9	6.0	-175.63	16.6	12.5	258.2	246.1	12.06	21.407		
2,900.0	2,877.2	2,896.3	2,892.0	8.2	6.2	-177.95	5.6	14.5	269.5	257.0	12.53	21.508		
3,000.0	2,975.7	2,995.1	2,990.1	8.6	6.5	-179.92	-5.4	16.4	281.2	268.2	13.01	21.608		
3,100.0	3,074.3	3,093.9	3,088.3	9.0	6.7	-177.96	-16.4	18.3	293.3	279.8	13.51	21.706		
3,200.0	3,172.8	3,192.7	3,186.4	9.4	7.0	-176.15	-27.4	20.3	305.7	291.6	14.02	21.800		
3,300.0	3,271.4	3,291.5	3,284.6	9.8	7.2	-174.49	-38.4	22.2	318.3	303.8	14.54	21.889		
3,400.0	3,369.9	3,390.3	3,382.7	10.2	7.5	-172.95	-49.4	24.2	331.2	316.2	15.07	21.974		
3,500.0	3,468.5	3,489.0	3,480.9	10.6	7.7	-171.53	-60.4	26.1	344.4	328.7	15.61	22.053		
3,600.0	3,567.0	3,587.8	3,579.0	10.9	8.0	-170.22	-71.4	28.1	357.7	341.5	16.16	22.128		
3,700.0	3,665.6	3,686.6	3,677.2	11.3	8.3	-168.99	-82.4	30.0	371.2	354.4	16.72	22.198		
3,800.0	3,764.1	3,785.4	3,775.3	11.7	8.6	-167.86	-93.4	32.0	384.8	367.5	17.28	22.265		
3,900.0	3,862.7	3,884.2	3,873.5	12.1	8.8	-166.80	-104.5	33.9	398.6	380.8	17.85	22.327		
4,000.0	3,961.2	3,983.0	3,971.6	12.5	9.1	-165.81	-115.5	35.8	412.5	394.1	18.43	22.386		
4,100.0	4,059.7	4,081.7	4,069.8	12.9	9.4	-164.89	-126.5	37.8	426.5	407.5	19.01	22.441		
4,200.0	4,158.3	4,180.5	4,167.9	13.3	9.7	-164.02	-137.5	39.7	440.7	421.1	19.59	22.494		
4,300.0	4,256.8	4,279.3	4,266.1	13.7	10.0	-163.21	-148.5	41.7	454.9	434.7	20.18	22.543		
4,400.0	4,355.4	4,378.1	4,364.2	14.1	10.2	-162.45	-159.5	43.6	469.2	448.4	20.77	22.591		
4,500.0	4,453.9	4,476.9	4,462.4	14.5	10.5	-161.73	-170.5	45.6	483.6	462.2	21.36	22.636		
4,600.0	4,552.5	4,575.7	4,560.5	14.9	10.8	-161.06	-181.5	47.5	498.0	476.1	21.96	22.678		
4,700.0	4,651.0	4,674.4	4,658.7	15.3	11.1	-160.42	-192.5	49.5	512.6	490.0	22.56	22.719		
4,800.0	4,749.6	4,771.4	4,755.1	15.7	11.4	-159.95	-202.2	51.2	527.3	504.2	23.11	22.820		
4,900.0	4,848.1	4,868.1	4,851.5	16.0	11.6	-159.85	-208.8	52.3	542.4	518.8	23.60	22.983		
5,000.0	4,946.7	4,964.6	4,948.0	16.4	11.8	-160.08	-212.1	52.9	558.0	533.9	24.05	23.198		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design		Chesnut 27G-HZ Pad Sec.27-T5N-R64W - Chesnut 27G-423 - Wellbore #1 - Plan #2 (7-08-14)										Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
5,100.0	5,045.2	5,061.8	5,045.2	16.8	11.9	160.61	-212.6	53.0	573.9	549.4	24.47	23.452		
5,200.0	5,143.8	5,160.4	5,143.8	17.2	12.1	161.15	-212.6	53.0	590.0	565.1	24.88	23.708		
5,300.0	5,242.4	5,259.0	5,242.4	17.6	12.3	161.69	-212.6	53.0	605.9	580.6	25.30	23.947		
5,400.0	5,341.3	5,357.9	5,341.3	17.9	12.5	162.19	-212.6	53.0	619.5	593.8	25.70	24.107		
5,500.0	5,440.8	5,457.3	5,440.8	18.1	12.7	162.55	-212.6	53.0	629.8	603.7	26.07	24.156		
5,600.0	5,540.5	5,557.1	5,540.5	18.3	12.8	162.79	-212.6	53.0	636.8	610.3	26.42	24.101		
5,700.0	5,640.4	5,657.0	5,640.4	18.5	13.0	162.92	-212.6	53.0	640.4	613.7	26.75	23.944		
5,800.0	5,740.4	5,757.0	5,740.4	18.6	13.2	-90.23	-212.6	53.0	641.0	613.9	27.08	23.670		
5,900.0	5,840.4	5,857.0	5,840.4	18.7	13.4	-90.23	-212.6	53.0	641.0	613.6	27.45	23.354		
5,972.9	5,913.3	5,929.9	5,913.3	18.8	13.5	90.00	-212.6	53.0	641.0	613.3	27.71	23.129		
6,000.0	5,940.3	5,956.9	5,940.3	18.9	13.6	90.09	-212.6	53.0	641.0	613.2	27.81	23.047		
6,100.0	6,038.9	6,056.2	6,039.6	19.1	13.8	91.46	-213.2	53.0	641.2	613.0	28.18	22.751		
6,200.0	6,134.5	6,157.9	6,140.6	19.3	14.1	93.09	-223.9	53.0	642.0	613.3	28.70	22.371		
6,300.0	6,225.6	6,262.3	6,241.9	19.7	14.5	94.69	-248.9	53.0	643.2	613.8	29.41	21.870		
6,400.0	6,310.5	6,369.5	6,341.4	20.1	15.0	96.23	-288.6	53.0	644.9	614.6	30.36	21.243		
6,500.0	6,387.8	6,479.5	6,436.7	20.6	15.7	97.67	-343.4	53.0	646.9	615.3	31.59	20.482		
6,600.0	6,456.2	6,592.5	6,525.3	21.2	16.6	98.98	-413.3	53.0	649.1	616.0	33.15	19.583		
6,700.0	6,514.5	6,708.1	6,604.4	21.9	17.6	100.13	-497.5	53.0	651.3	616.2	35.09	18.560		
6,800.0	6,561.7	6,826.2	6,671.0	22.8	19.0	101.08	-594.9	53.0	653.3	615.8	37.45	17.444		
6,900.0	6,597.0	6,946.4	6,722.6	23.9	20.5	101.82	-703.3	53.0	655.0	614.7	40.22	16.286		
7,000.0	6,619.8	7,068.2	6,757.0	25.0	22.2	102.32	-820.0	53.0	656.1	612.8	43.36	15.133		
7,100.0	6,629.7	7,190.9	6,772.4	26.2	24.1	102.56	-941.6	53.0	656.7	609.9	46.79	14.037		
7,200.0	6,629.7	7,297.4	6,773.2	27.6	25.8	102.62	-1,048.1	53.0	656.9	606.9	49.97	13.146		
7,300.0	6,629.0	7,397.4	6,773.2	29.0	27.4	102.68	-1,148.1	53.0	657.0	604.0	53.07	12.381		
7,400.0	6,628.3	7,497.4	6,773.1	30.4	29.1	102.73	-1,248.1	53.0	657.2	600.9	56.24	11.685		
7,500.0	6,627.6	7,597.4	6,773.1	31.9	30.7	102.79	-1,348.1	53.0	657.3	597.8	59.49	11.050		
7,600.0	6,626.9	7,697.4	6,773.1	33.5	32.5	102.85	-1,448.1	53.0	657.5	594.7	62.78	10.472		
7,700.0	6,626.2	7,797.4	6,773.1	35.1	34.2	102.91	-1,548.1	53.0	657.6	591.5	66.13	9.945		
7,800.0	6,625.5	7,897.4	6,773.1	36.7	35.9	102.96	-1,648.1	53.0	657.8	588.3	69.51	9.463		
7,900.0	6,624.8	7,997.4	6,773.0	38.3	37.7	103.02	-1,748.1	53.0	657.9	585.0	72.93	9.021		
8,000.0	6,624.1	8,097.4	6,773.0	40.0	39.5	103.08	-1,848.1	53.0	658.1	581.7	76.38	8.616		
8,100.0	6,623.4	8,197.4	6,773.0	41.7	41.3	103.14	-1,948.1	53.0	658.2	578.4	79.86	8.243		
8,200.0	6,622.7	8,297.4	6,773.0	43.4	43.1	103.20	-2,048.1	53.0	658.4	575.1	83.35	7.899		
8,300.0	6,622.0	8,397.4	6,773.0	45.1	44.9	103.25	-2,148.1	53.0	658.6	571.7	86.87	7.581		
8,400.0	6,621.3	8,497.4	6,773.0	46.9	46.7	103.31	-2,248.1	53.0	658.7	568.3	90.40	7.287		
8,500.0	6,620.6	8,597.4	6,772.9	48.6	48.6	103.37	-2,348.1	53.0	658.9	564.9	93.94	7.014		
8,600.0	6,619.9	8,697.4	6,772.9	50.4	50.4	103.43	-2,448.1	53.0	659.0	561.5	97.50	6.759		
8,700.0	6,619.2	8,797.4	6,772.9	52.2	52.3	103.48	-2,548.1	53.0	659.2	558.1	101.07	6.522		
8,800.0	6,618.5	8,897.4	6,772.9	54.0	54.1	103.54	-2,648.1	53.0	659.4	554.7	104.65	6.300		
8,900.0	6,617.8	8,997.4	6,772.9	55.8	56.0	103.60	-2,748.1	53.0	659.5	551.3	108.24	6.093		
9,000.0	6,617.1	9,097.4	6,772.9	57.6	57.8	103.66	-2,848.1	53.0	659.7	547.8	111.84	5.899		
9,100.0	6,616.4	9,197.4	6,772.8	59.4	59.7	103.71	-2,948.1	53.0	659.8	544.4	115.44	5.716		
9,200.0	6,615.7	9,297.4	6,772.8	61.2	61.6	103.77	-3,048.1	53.0	660.0	540.9	119.05	5.544		
9,300.0	6,615.0	9,397.4	6,772.8	63.0	63.4	103.83	-3,148.1	53.0	660.2	537.5	122.66	5.382		
9,400.0	6,614.3	9,497.4	6,772.8	64.9	65.3	103.88	-3,248.1	53.0	660.3	534.0	126.28	5.229		
9,500.0	6,613.6	9,597.4	6,772.8	66.7	67.2	103.94	-3,348.1	53.0	660.5	530.6	129.91	5.084		
9,600.0	6,612.9	9,697.4	6,772.7	68.5	69.1	104.00	-3,448.1	53.0	660.7	527.1	133.53	4.948		
9,700.0	6,612.2	9,797.4	6,772.7	70.4	70.9	104.06	-3,548.1	53.0	660.8	523.7	137.16	4.818		
9,800.0	6,611.5	9,897.4	6,772.7	72.2	72.8	104.11	-3,648.1	53.0	661.0	520.2	140.80	4.695		
9,900.0	6,610.8	9,997.4	6,772.7	74.1	74.7	104.17	-3,748.1	53.0	661.2	516.7	144.43	4.578		
10,000.0	6,610.1	10,097.4	6,772.7	75.9	76.6	104.23	-3,848.1	53.0	661.3	513.3	148.07	4.466		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut 27G-HZ Pad Sec.27-T5N-R64W - Chesnut 27G-423 - Wellbore #1 - Plan #2 (7-08-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
10,100.0	6,609.4	10,197.4	6,772.7	77.8	78.5	104.29	-3,948.1	53.0	661.5	509.8	151.71	4.360		
10,200.0	6,608.7	10,297.4	6,772.6	79.7	80.4	104.34	-4,048.1	53.0	661.7	506.3	155.35	4.259		
10,300.0	6,608.0	10,397.4	6,772.6	81.5	82.3	104.40	-4,148.1	53.0	661.8	502.8	159.00	4.163		
10,400.0	6,607.3	10,497.4	6,772.6	83.4	84.2	104.46	-4,248.1	53.0	662.0	499.4	162.64	4.070		
10,500.0	6,606.6	10,597.4	6,772.6	85.3	86.0	104.51	-4,348.0	53.0	662.2	495.9	166.29	3.982		
10,600.0	6,605.9	10,697.4	6,772.6	87.1	87.9	104.57	-4,448.0	53.0	662.3	492.4	169.93	3.898		
10,700.0	6,605.2	10,797.4	6,772.6	89.0	89.8	104.63	-4,548.0	53.0	662.5	488.9	173.58	3.817		
10,800.0	6,604.5	10,897.4	6,772.5	90.9	91.7	104.68	-4,648.0	53.0	662.7	485.5	177.23	3.739		
10,900.0	6,603.8	10,997.4	6,772.5	92.8	93.6	104.74	-4,748.0	53.0	662.9	482.0	180.87	3.665		
11,000.0	6,603.2	11,097.4	6,772.5	94.6	95.5	104.80	-4,848.0	53.0	663.0	478.5	184.52	3.593		
11,100.0	6,602.5	11,197.4	6,772.5	96.5	97.4	104.86	-4,948.0	53.0	663.2	475.0	188.17	3.525		
11,200.0	6,601.8	11,297.4	6,772.5	98.4	99.3	104.91	-5,048.0	53.0	663.4	471.6	191.82	3.458		
11,300.0	6,601.1	11,397.4	6,772.5	100.3	101.2	104.97	-5,148.0	53.0	663.6	468.1	195.46	3.395		
11,400.0	6,600.4	11,497.4	6,772.4	102.2	103.1	105.03	-5,248.0	53.0	663.7	464.6	199.11	3.334		
11,500.0	6,599.7	11,597.3	6,772.4	104.1	105.0	105.08	-5,348.0	53.0	663.9	461.2	202.76	3.274		
11,600.0	6,599.0	11,697.3	6,772.4	105.9	106.9	105.14	-5,448.0	53.0	664.1	457.7	206.41	3.217		
11,700.0	6,598.3	11,797.3	6,772.4	107.8	108.8	105.20	-5,548.0	53.0	664.3	454.2	210.05	3.162		
11,800.0	6,597.6	11,897.3	6,772.4	109.7	110.7	105.25	-5,648.0	53.0	664.5	450.8	213.70	3.109		
11,900.0	6,596.9	11,997.3	6,772.3	111.6	112.7	105.31	-5,748.0	53.0	664.6	447.3	217.34	3.058		
12,000.0	6,596.2	12,097.3	6,772.3	113.5	114.6	105.37	-5,848.0	53.0	664.8	443.8	220.99	3.008		
12,100.0	6,595.5	12,197.3	6,772.3	115.4	116.5	105.42	-5,948.0	53.0	665.0	440.4	224.63	2.960		
12,200.0	6,594.8	12,297.3	6,772.3	117.3	118.4	105.48	-6,048.0	53.0	665.2	436.9	228.27	2.914		
12,300.0	6,594.1	12,397.3	6,772.3	119.2	120.3	105.53	-6,148.0	53.0	665.4	433.5	231.91	2.869		
12,400.0	6,593.4	12,497.3	6,772.3	121.1	122.2	105.59	-6,248.0	53.0	665.6	430.0	235.56	2.825		
12,500.0	6,592.7	12,597.3	6,772.2	123.0	124.1	105.65	-6,348.0	53.0	665.7	426.5	239.20	2.783		
12,600.0	6,592.0	12,697.3	6,772.2	124.9	126.0	105.70	-6,448.0	53.0	665.9	423.1	242.83	2.742		
12,700.0	6,591.3	12,797.3	6,772.2	126.8	127.9	105.76	-6,548.0	53.0	666.1	419.6	246.47	2.703		
12,800.0	6,590.6	12,897.3	6,772.2	128.7	129.8	105.82	-6,648.0	53.0	666.3	416.2	250.11	2.664		
12,900.0	6,589.9	12,997.3	6,772.2	130.6	131.7	105.87	-6,748.0	53.0	666.5	412.7	253.74	2.627		
13,000.0	6,589.2	13,097.3	6,772.2	132.5	133.6	105.93	-6,848.0	53.0	666.7	409.3	257.38	2.590		
13,100.0	6,588.5	13,197.3	6,772.1	134.4	135.5	105.99	-6,948.0	53.0	666.9	405.8	261.01	2.555		
13,200.0	6,587.8	13,297.3	6,772.1	136.3	137.5	106.04	-7,048.0	53.0	667.0	402.4	264.64	2.521		
13,300.0	6,587.1	13,397.3	6,772.1	138.2	139.4	106.10	-7,148.0	53.0	667.2	399.0	268.27	2.487		
13,400.0	6,586.4	13,497.3	6,772.1	140.1	141.3	106.15	-7,248.0	53.0	667.4	395.5	271.90	2.455		
13,500.0	6,585.7	13,597.3	6,772.1	142.0	143.2	106.21	-7,348.0	53.0	667.6	392.1	275.53	2.423		
13,600.0	6,585.0	13,697.3	6,772.1	143.9	145.1	106.27	-7,448.0	53.0	667.8	388.6	279.15	2.392		
13,700.0	6,584.3	13,797.3	6,772.0	145.8	147.0	106.32	-7,548.0	53.0	668.0	385.2	282.78	2.362		
13,800.0	6,583.6	13,897.3	6,772.0	147.7	148.9	106.38	-7,648.0	53.0	668.2	381.8	286.40	2.333		
13,886.8	6,583.0	13,984.1	6,772.0	149.3	150.6	106.43	-7,734.8	53.0	668.4	378.8	289.54	2.308 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut 27G-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-343 - Wellbore #1 - Plan #2 (7-08-14)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	29.1	0.0	29.1				
100.0	100.0	100.0	100.0	0.1	0.1	0.00	29.1	0.0	29.1	28.9	0.22	129.667	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	29.1	0.0	29.1	28.5	0.67	43.222	
300.0	300.0	300.0	300.0	0.6	0.6	0.00	29.1	0.0	29.1	28.0	1.12	25.933	
400.0	400.0	400.0	400.0	0.8	0.8	0.00	29.1	0.0	29.1	27.6	1.57	18.524	
500.0	500.0	500.0	500.0	1.0	1.0	0.00	29.1	0.0	29.1	27.1	2.02	14.407	
600.0	600.0	600.0	600.0	1.2	1.2	0.00	29.1	0.0	29.1	26.7	2.47	11.788	
700.0	700.0	700.0	700.0	1.5	1.5	0.00	29.1	0.0	29.1	26.2	2.92	9.974	
800.0	800.0	800.0	800.0	1.7	1.7	0.00	29.1	0.0	29.1	25.8	3.37	8.644	
900.0	900.0	900.0	900.0	1.9	1.9	0.00	29.1	0.0	29.1	25.3	3.82	7.627	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	0.00	29.1	0.0	29.1	24.9	4.27	6.825 CC, ES	
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.4	-110.05	29.1	0.0	29.7	25.0	4.70	6.315	
1,200.0	1,199.8	1,199.8	1,199.8	2.5	2.6	-118.87	29.1	0.0	31.9	26.7	5.12	6.221	
1,300.0	1,299.5	1,300.5	1,300.5	2.8	2.8	-129.32	28.2	1.5	35.4	29.9	5.53	6.406	
1,400.0	1,398.7	1,401.4	1,401.2	3.0	3.0	-138.86	25.2	5.9	39.3	33.4	5.92	6.648	
1,500.0	1,497.5	1,502.5	1,501.9	3.3	3.2	-147.70	20.3	13.3	43.7	37.4	6.31	6.922	
1,600.0	1,596.0	1,603.1	1,601.8	3.6	3.4	-154.94	13.7	23.3	46.9	40.2	6.72	6.982	
1,700.0	1,694.6	1,702.9	1,700.9	3.9	3.7	-161.09	6.8	33.8	50.2	43.1	7.13	7.041	
1,800.0	1,793.1	1,802.7	1,799.9	4.2	3.9	-166.42	-0.1	44.2	54.0	46.5	7.55	7.153	
1,900.0	1,891.7	1,902.6	1,898.9	4.5	4.2	-171.02	-7.0	54.6	58.2	50.2	7.98	7.294	
2,000.0	1,990.2	2,002.4	1,997.9	4.9	4.4	-174.98	-14.0	65.1	62.8	54.3	8.43	7.447	
2,100.0	2,088.8	2,102.2	2,096.9	5.3	4.7	-178.39	-20.9	75.5	67.6	58.7	8.89	7.601	
2,200.0	2,187.3	2,202.0	2,196.0	5.6	5.0	178.66	-27.8	85.9	72.6	63.2	9.36	7.749	
2,300.0	2,285.9	2,301.8	2,295.0	6.0	5.3	176.09	-34.7	96.4	77.7	67.9	9.85	7.889	
2,400.0	2,384.4	2,401.6	2,394.0	6.4	5.6	173.85	-41.6	106.8	83.0	72.7	10.35	8.019	
2,500.0	2,483.0	2,501.4	2,493.0	6.7	5.9	171.88	-48.5	117.2	88.4	77.6	10.87	8.139	
2,600.0	2,581.5	2,601.2	2,592.1	7.1	6.2	170.14	-55.4	127.6	94.0	82.6	11.39	8.248	
2,700.0	2,680.1	2,701.0	2,691.1	7.5	6.5	168.59	-62.3	138.1	99.5	87.6	11.92	8.348	
2,800.0	2,778.6	2,800.8	2,790.1	7.9	6.8	167.21	-69.2	148.5	105.2	92.7	12.47	8.439	
2,900.0	2,877.2	2,900.6	2,889.1	8.2	7.1	165.97	-76.1	158.9	110.9	97.9	13.01	8.522	
3,000.0	2,975.7	3,000.5	2,988.1	8.6	7.4	164.85	-83.1	169.4	116.6	103.1	13.57	8.597	
3,100.0	3,074.3	3,100.3	3,087.2	9.0	7.8	163.83	-90.0	179.8	122.4	108.3	14.13	8.666	
3,200.0	3,172.8	3,200.1	3,186.2	9.4	8.1	162.91	-96.9	190.2	128.3	113.6	14.69	8.729	
3,300.0	3,271.4	3,299.9	3,285.2	9.8	8.4	162.07	-103.8	200.7	134.1	118.9	15.26	8.787	
3,400.0	3,369.9	3,399.7	3,384.2	10.2	8.7	161.30	-110.7	211.1	140.0	124.2	15.84	8.840	
3,500.0	3,468.5	3,499.5	3,483.3	10.6	9.0	160.59	-117.6	221.5	145.9	129.5	16.41	8.889	
3,600.0	3,567.0	3,599.3	3,582.3	10.9	9.3	159.94	-124.5	232.0	151.8	134.8	16.99	8.935	
3,700.0	3,665.6	3,699.1	3,681.3	11.3	9.7	159.33	-131.4	242.4	157.8	140.2	17.58	8.976	
3,800.0	3,764.1	3,798.9	3,780.3	11.7	10.0	158.77	-138.3	252.8	163.7	145.6	18.16	9.015	
3,900.0	3,862.7	3,898.7	3,879.4	12.1	10.3	158.25	-145.2	263.2	169.7	151.0	18.75	9.051	
4,000.0	3,961.2	3,998.6	3,978.4	12.5	10.6	157.77	-152.1	273.7	175.7	156.4	19.34	9.085	
4,100.0	4,059.7	4,098.4	4,077.4	12.9	11.0	157.31	-159.1	284.1	181.7	161.8	19.93	9.116	
4,200.0	4,158.3	4,198.2	4,176.4	13.3	11.3	156.89	-166.0	294.5	187.7	167.2	20.53	9.146	
4,300.0	4,256.8	4,298.0	4,275.4	13.7	11.6	156.49	-172.9	305.0	193.7	172.6	21.12	9.173	
4,400.0	4,355.4	4,397.8	4,374.5	14.1	11.9	156.12	-179.8	315.4	199.8	178.1	21.72	9.199	
4,500.0	4,453.9	4,497.6	4,473.5	14.5	12.2	155.77	-186.7	325.8	205.8	183.5	22.31	9.223	
4,600.0	4,552.5	4,597.4	4,572.5	14.9	12.6	155.43	-193.6	336.3	211.9	188.9	22.91	9.246	
4,700.0	4,651.0	4,695.6	4,669.9	15.3	12.9	155.15	-200.3	346.4	218.0	194.5	23.50	9.280	
4,800.0	4,749.6	4,789.8	4,763.6	15.7	13.1	155.29	-205.5	354.2	226.1	202.1	23.96	9.436	
4,900.0	4,848.1	4,883.4	4,857.1	16.0	13.3	155.92	-208.9	359.3	236.6	212.2	24.35	9.715	
5,000.0	4,946.7	4,976.4	4,950.1	16.4	13.4	156.94	-210.6	361.9	249.6	224.9	24.68	10.113	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design		Chesnut 27G-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-343 - Wellbore #1 - Plan #2 (7-08-14)										Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
5,100.0	5,045.2	5,071.6	5,045.2	16.8	13.6	158.27	-210.9	362.3	265.0	240.0	24.98	10.607		
5,200.0	5,143.8	5,170.2	5,143.8	17.2	13.8	159.55	-210.9	362.3	280.9	255.6	25.29	11.104		
5,300.0	5,242.4	5,268.8	5,242.4	17.6	13.9	160.71	-210.9	362.3	296.7	271.1	25.62	11.583		
5,400.0	5,341.3	5,367.7	5,341.3	17.9	14.1	161.67	-210.9	362.3	310.2	284.3	25.92	11.968		
5,500.0	5,440.8	5,467.1	5,440.8	18.1	14.2	162.33	-210.9	362.3	320.5	294.3	26.23	12.220		
5,600.0	5,540.5	5,566.9	5,540.5	18.3	14.4	162.76	-210.9	362.3	327.5	300.9	26.53	12.345		
5,700.0	5,640.4	5,666.8	5,640.4	18.5	14.6	162.98	-210.9	362.3	331.1	304.3	26.82	12.347		
5,800.0	5,740.4	5,766.8	5,740.4	18.6	14.8	-90.15	-210.9	362.3	331.7	304.6	27.14	12.223		
5,900.0	5,840.4	5,866.8	5,840.4	18.7	14.9	-90.15	-210.9	362.3	331.7	304.2	27.50	12.061		
5,949.7	5,890.0	5,916.4	5,890.0	18.8	15.0	90.06	-210.9	362.3	331.7	304.0	27.67	11.986		
6,000.0	5,940.3	5,966.7	5,940.3	18.9	15.1	90.47	-210.9	362.3	331.7	303.9	27.83	11.919		
6,100.0	6,038.9	6,067.2	6,040.5	19.1	15.3	92.20	-217.1	362.3	331.9	303.8	28.17	11.784		
6,200.0	6,134.5	6,169.1	6,140.4	19.3	15.6	93.89	-236.8	362.3	332.5	303.8	28.68	11.594		
6,300.0	6,225.6	6,272.3	6,238.1	19.7	16.0	95.53	-270.1	362.3	333.3	303.9	29.36	11.349		
6,400.0	6,310.5	6,377.0	6,331.5	20.1	16.4	97.07	-316.9	362.3	334.3	304.0	30.27	11.042		
6,500.0	6,387.8	6,482.9	6,418.7	20.6	17.1	98.48	-377.0	362.3	335.4	303.9	31.45	10.666		
6,600.0	6,456.2	6,590.1	6,497.7	21.2	17.8	99.75	-449.4	362.3	336.6	303.6	32.95	10.216		
6,700.0	6,514.5	6,698.5	6,566.4	21.9	18.8	100.83	-533.0	362.3	337.7	302.9	34.82	9.698		
6,800.0	6,561.7	6,807.9	6,623.1	22.8	19.9	101.72	-626.5	362.3	338.8	301.7	37.11	9.129		
6,900.0	6,597.0	6,918.0	6,666.1	23.9	21.2	102.40	-727.8	362.3	339.6	299.8	39.80	8.533		
7,000.0	6,619.8	7,028.8	6,694.2	25.0	22.6	102.84	-834.8	362.3	340.2	297.4	42.85	7.940		
7,100.0	6,629.7	7,139.9	6,706.5	26.2	24.2	103.04	-945.1	362.3	340.5	294.3	46.17	7.374		
7,200.0	6,629.7	7,243.5	6,706.5	27.6	25.8	103.05	-1,048.7	362.3	340.5	291.2	49.32	6.904		
7,300.0	6,629.0	7,343.5	6,705.8	29.0	27.3	103.03	-1,148.7	362.3	340.5	288.1	52.38	6.499		
7,400.0	6,628.3	7,443.5	6,705.0	30.4	28.9	103.02	-1,248.7	362.3	340.4	284.9	55.54	6.130		
7,500.0	6,627.6	7,543.5	6,704.2	31.9	30.5	103.00	-1,348.7	362.3	340.4	281.7	58.76	5.793		
7,600.0	6,626.9	7,643.5	6,703.4	33.5	32.1	102.99	-1,448.7	362.3	340.4	278.4	62.05	5.486		
7,700.0	6,626.2	7,743.5	6,702.6	35.1	33.8	102.97	-1,548.7	362.3	340.4	275.0	65.38	5.206		
7,800.0	6,625.5	7,843.5	6,701.8	36.7	35.5	102.96	-1,648.7	362.3	340.4	271.6	68.76	4.950		
7,900.0	6,624.8	7,943.5	6,701.0	38.3	37.3	102.95	-1,748.7	362.3	340.3	268.2	72.18	4.715		
8,000.0	6,624.1	8,043.5	6,700.3	40.0	39.0	102.93	-1,848.7	362.3	340.3	264.7	75.63	4.500		
8,100.0	6,623.4	8,143.5	6,699.5	41.7	40.8	102.92	-1,948.7	362.3	340.3	261.2	79.11	4.301		
8,200.0	6,622.7	8,243.5	6,698.7	43.4	42.5	102.90	-2,048.7	362.3	340.3	257.7	82.62	4.119		
8,300.0	6,622.0	8,343.5	6,697.9	45.1	44.3	102.89	-2,148.7	362.3	340.3	254.1	86.15	3.950		
8,400.0	6,621.3	8,443.5	6,697.1	46.9	46.1	102.87	-2,248.7	362.3	340.3	250.6	89.69	3.794		
8,500.0	6,620.6	8,543.5	6,696.3	48.6	47.9	102.86	-2,348.7	362.3	340.2	247.0	93.26	3.648		
8,600.0	6,619.9	8,643.5	6,695.5	50.4	49.8	102.85	-2,448.7	362.3	340.2	243.4	96.84	3.513		
8,700.0	6,619.2	8,743.5	6,694.8	52.2	51.6	102.83	-2,548.7	362.3	340.2	239.8	100.43	3.387		
8,800.0	6,618.5	8,843.5	6,694.0	54.0	53.4	102.82	-2,648.7	362.3	340.2	236.1	104.03	3.270		
8,900.0	6,617.8	8,943.5	6,693.2	55.8	55.2	102.80	-2,748.7	362.3	340.2	232.5	107.65	3.160		
9,000.0	6,617.1	9,043.5	6,692.4	57.6	57.1	102.79	-2,848.7	362.3	340.1	228.9	111.28	3.057		
9,100.0	6,616.4	9,143.5	6,691.6	59.4	58.9	102.77	-2,948.7	362.3	340.1	225.2	114.91	2.960		
9,200.0	6,615.7	9,243.5	6,690.8	61.2	60.8	102.76	-3,048.6	362.3	340.1	221.5	118.56	2.869		
9,300.0	6,615.0	9,343.5	6,690.0	63.0	62.6	102.75	-3,148.6	362.3	340.1	217.9	122.21	2.783		
9,400.0	6,614.3	9,443.5	6,689.3	64.9	64.5	102.73	-3,248.6	362.3	340.1	214.2	125.87	2.702		
9,500.0	6,613.6	9,543.5	6,688.5	66.7	66.4	102.72	-3,348.6	362.3	340.0	210.5	129.54	2.625		
9,600.0	6,612.9	9,643.5	6,687.7	68.5	68.2	102.70	-3,448.6	362.3	340.0	206.8	133.21	2.553		
9,700.0	6,612.2	9,743.5	6,686.9	70.4	70.1	102.69	-3,548.6	362.3	340.0	203.1	136.88	2.484		
9,800.0	6,611.5	9,843.5	6,686.1	72.2	72.0	102.67	-3,648.6	362.3	340.0	199.4	140.57	2.419		
9,900.0	6,610.8	9,943.5	6,685.3	74.1	73.8	102.66	-3,748.6	362.3	340.0	195.7	144.25	2.357		
10,000.0	6,610.1	10,043.5	6,684.5	75.9	75.7	102.65	-3,848.6	362.3	339.9	192.0	147.94	2.298		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut 27G-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-343 - Wellbore #1 - Plan #2 (7-08-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
10,100.0	6,609.4	10,143.5	6,683.8	77.8	77.6	102.63	-3,948.6	362.3	339.9	188.3	151.64	2.242		
10,200.0	6,608.7	10,243.5	6,683.0	79.7	79.5	102.62	-4,048.6	362.3	339.9	184.6	155.34	2.188		
10,300.0	6,608.0	10,343.5	6,682.2	81.5	81.4	102.60	-4,148.6	362.3	339.9	180.8	159.04	2.137		
10,400.0	6,607.3	10,443.5	6,681.4	83.4	83.2	102.59	-4,248.6	362.3	339.9	177.1	162.75	2.088		
10,500.0	6,606.6	10,543.5	6,680.6	85.3	85.1	102.57	-4,348.6	362.3	339.8	173.4	166.46	2.042		
10,600.0	6,605.9	10,643.5	6,679.8	87.1	87.0	102.56	-4,448.6	362.3	339.8	169.7	170.17	1.997		
10,700.0	6,605.2	10,743.5	6,679.0	89.0	88.9	102.54	-4,548.6	362.3	339.8	165.9	173.89	1.954		
10,800.0	6,604.5	10,843.5	6,678.3	90.9	90.8	102.53	-4,648.6	362.3	339.8	162.2	177.60	1.913		
10,900.0	6,603.8	10,943.5	6,677.5	92.8	92.7	102.52	-4,748.6	362.3	339.8	158.4	181.33	1.874		
11,000.0	6,603.2	11,043.5	6,676.7	94.6	94.6	102.50	-4,848.6	362.3	339.7	154.7	185.05	1.836		
11,100.0	6,602.5	11,143.5	6,675.9	96.5	96.5	102.49	-4,948.6	362.3	339.7	151.0	188.77	1.800		
11,200.0	6,601.8	11,243.5	6,675.1	98.4	98.4	102.47	-5,048.6	362.3	339.7	147.2	192.50	1.765		
11,300.0	6,601.1	11,343.5	6,674.3	100.3	100.3	102.46	-5,148.6	362.3	339.7	143.5	196.23	1.731		
11,400.0	6,600.4	11,443.5	6,673.6	102.2	102.2	102.44	-5,248.6	362.3	339.7	139.7	199.96	1.699		
11,500.0	6,599.7	11,543.5	6,672.8	104.1	104.1	102.43	-5,348.6	362.3	339.7	136.0	203.70	1.667		
11,600.0	6,599.0	11,643.5	6,672.0	105.9	106.0	102.42	-5,448.6	362.3	339.6	132.2	207.43	1.637		
11,700.0	6,598.3	11,743.5	6,671.2	107.8	107.9	102.40	-5,548.6	362.3	339.6	128.4	211.17	1.608		
11,800.0	6,597.6	11,843.5	6,670.4	109.7	109.8	102.39	-5,648.6	362.3	339.6	124.7	214.91	1.580		
11,900.0	6,596.9	11,943.5	6,669.6	111.6	111.7	102.37	-5,748.6	362.3	339.6	120.9	218.65	1.553		
12,000.0	6,596.2	12,043.5	6,668.8	113.5	113.6	102.36	-5,848.6	362.3	339.6	117.2	222.39	1.527		
12,100.0	6,595.5	12,143.5	6,668.1	115.4	115.5	102.34	-5,948.6	362.3	339.5	113.4	226.13	1.502		
12,200.0	6,594.8	12,243.5	6,667.3	117.3	117.4	102.33	-6,048.6	362.3	339.5	109.6	229.87	1.477 Level 3		
12,300.0	6,594.1	12,343.5	6,666.5	119.2	119.3	102.31	-6,148.6	362.3	339.5	105.9	233.62	1.453 Level 3		
12,400.0	6,593.4	12,443.5	6,665.7	121.1	121.2	102.30	-6,248.5	362.3	339.5	102.1	237.37	1.430 Level 3		
12,500.0	6,592.7	12,543.5	6,664.9	123.0	123.1	102.29	-6,348.5	362.3	339.5	98.3	241.12	1.408 Level 3		
12,600.0	6,592.0	12,643.5	6,664.1	124.9	125.0	102.27	-6,448.5	362.3	339.4	94.6	244.87	1.386 Level 3		
12,700.0	6,591.3	12,743.5	6,663.3	126.8	126.9	102.26	-6,548.5	362.3	339.4	90.8	248.62	1.365 Level 3		
12,800.0	6,590.6	12,843.5	6,662.6	128.7	128.8	102.24	-6,648.5	362.3	339.4	87.0	252.37	1.345 Level 3		
12,900.0	6,589.9	12,943.5	6,661.8	130.6	130.7	102.23	-6,748.5	362.3	339.4	83.3	256.12	1.325 Level 3		
13,000.0	6,589.2	13,043.5	6,661.0	132.5	132.6	102.21	-6,848.5	362.3	339.4	79.5	259.88	1.306 Level 3		
13,100.0	6,588.5	13,143.5	6,660.2	134.4	134.5	102.20	-6,948.5	362.3	339.4	75.7	263.63	1.287 Level 3		
13,200.0	6,587.8	13,243.5	6,659.4	136.3	136.4	102.19	-7,048.5	362.3	339.3	71.9	267.39	1.269 Level 3		
13,300.0	6,587.1	13,343.5	6,658.6	138.2	138.3	102.17	-7,148.5	362.3	339.3	68.2	271.14	1.251 Level 3		
13,400.0	6,586.4	13,443.5	6,657.8	140.1	140.2	102.16	-7,248.5	362.3	339.3	64.4	274.90	1.234 Level 2		
13,500.0	6,585.7	13,543.5	6,657.1	142.0	142.1	102.14	-7,348.5	362.3	339.3	60.6	278.66	1.218 Level 2		
13,600.0	6,585.0	13,643.5	6,656.3	143.9	144.0	102.13	-7,448.5	362.3	339.3	56.8	282.42	1.201 Level 2		
13,700.0	6,584.3	13,743.5	6,655.5	145.8	146.0	102.11	-7,548.5	362.3	339.2	53.1	286.18	1.185 Level 2		
13,800.0	6,583.6	13,843.5	6,654.7	147.7	147.9	102.10	-7,648.5	362.3	339.2	49.3	289.94	1.170 Level 2		
13,886.8	6,583.0	13,930.3	6,654.0	149.3	149.5	102.09	-7,735.3	362.3	339.2	46.0	293.21	1.157 Level 2, SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design		Chesnut 27GK-HZ Pad Sec.27-T5N-R64W - Chesnut 27G-221 - Wellbore #1 - Plan #1 (4-23-14)											Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	691.0	691.0						
100.0	100.0	99.5	99.5	0.1	0.1	90.00	0.0	691.0	691.0	690.8	0.22	3,082.129			
200.0	200.0	199.5	199.5	0.3	0.3	90.00	0.0	691.0	691.0	690.4	0.67	1,026.523			
300.0	300.0	299.5	299.5	0.6	0.6	90.00	0.0	691.0	691.0	689.9	1.12	615.503			
400.0	400.0	399.5	399.5	0.8	0.8	90.00	0.0	691.0	691.0	689.5	1.57	439.519			
500.0	500.0	499.5	499.5	1.0	1.0	90.00	0.0	691.0	691.0	689.0	2.02	341.794			
600.0	600.0	599.5	599.5	1.2	1.2	90.00	0.0	691.0	691.0	688.6	2.47	279.621			
700.0	700.0	699.5	699.5	1.5	1.5	90.00	0.0	691.0	691.0	688.1	2.92	236.586			
800.0	800.0	799.5	799.5	1.7	1.7	90.00	0.0	691.0	691.0	687.7	3.37	205.031			
900.0	900.0	899.5	899.5	1.9	1.9	90.00	0.0	691.0	691.0	687.2	3.82	180.902			
1,000.0	1,000.0	999.5	999.5	2.1	2.1	90.00	0.0	691.0	691.0	686.8	4.27	161.855			
1,100.0	1,100.0	1,129.8	1,129.8	2.3	2.4	-16.97	0.7	688.2	687.2	682.4	4.75	144.520			
1,200.0	1,199.8	1,259.0	1,258.6	2.5	2.7	-17.38	2.7	679.6	675.6	670.4	5.22	129.339			
1,300.0	1,299.5	1,385.6	1,384.4	2.8	3.0	-18.09	5.9	665.8	656.5	650.8	5.70	115.209			
1,400.0	1,398.7	1,508.5	1,505.8	3.0	3.3	-19.16	10.3	647.2	630.0	623.9	6.18	102.002			
1,500.0	1,497.5	1,607.9	1,603.6	3.3	3.6	-20.35	14.4	629.4	598.0	591.3	6.61	90.460			
1,600.0	1,596.0	1,701.6	1,695.7	3.6	4.0	-21.46	18.4	612.5	564.7	557.7	7.05	80.099			
1,700.0	1,694.6	1,795.4	1,787.8	3.9	4.3	-22.71	22.3	595.6	531.7	524.2	7.51	70.808			
1,800.0	1,793.1	1,889.1	1,879.9	4.2	4.6	-24.12	26.3	578.7	499.0	491.0	7.99	62.460			
1,900.0	1,891.7	1,982.8	1,972.0	4.5	5.0	-25.72	30.2	561.8	466.5	458.1	8.49	54.957			
2,000.0	1,990.2	2,076.5	2,064.0	4.9	5.3	-27.55	34.2	545.0	434.5	425.5	9.01	48.198			
2,100.0	2,088.8	2,170.2	2,156.1	5.3	5.7	-29.67	38.1	528.1	402.9	393.3	9.57	42.100			
2,200.0	2,187.3	2,263.9	2,248.2	5.6	6.0	-32.13	42.1	511.2	371.9	361.8	10.16	36.595			
2,300.0	2,285.9	2,357.6	2,340.3	6.0	6.4	-35.02	46.0	494.3	341.7	330.9	10.80	31.629			
2,400.0	2,384.4	2,451.4	2,432.4	6.4	6.8	-38.44	50.0	477.4	312.4	300.9	11.50	27.163			
2,500.0	2,483.0	2,545.1	2,524.5	6.7	7.1	-42.52	53.9	460.5	284.5	272.2	12.28	23.172			
2,600.0	2,581.5	2,638.8	2,616.6	7.1	7.5	-47.40	57.9	443.7	258.2	245.0	13.14	19.647			
2,700.0	2,680.1	2,732.5	2,708.7	7.5	7.9	-53.27	61.8	426.8	234.1	220.0	14.11	16.597			
2,800.0	2,778.6	2,826.2	2,800.8	7.9	8.3	-60.28	65.8	409.9	213.1	198.0	15.17	14.046			
2,900.0	2,877.2	2,919.9	2,892.9	8.2	8.7	-68.53	69.7	393.0	196.1	179.8	16.30	12.029			
3,000.0	2,975.7	3,013.6	2,985.0	8.6	9.0	-77.94	73.7	376.1	184.2	166.8	17.42	10.577			
3,100.0	3,074.3	3,107.3	3,077.1	9.0	9.4	-88.19	77.6	359.2	178.5	160.1	18.39	9.702			
3,135.8	3,109.5	3,140.9	3,110.1	9.1	9.6	-91.95	79.0	353.2	178.0	159.3	18.69	9.526 CC, ES			
3,200.0	3,172.8	3,201.1	3,169.2	9.4	9.8	-98.67	81.5	342.3	179.4	160.3	19.12	9.382 SF			
3,300.0	3,271.4	3,294.8	3,261.3	9.8	10.2	-108.73	85.5	325.5	187.0	167.4	19.58	9.554			
3,400.0	3,369.9	3,388.5	3,353.4	10.2	10.6	-117.84	89.4	308.6	200.5	180.7	19.80	10.125			
3,500.0	3,468.5	3,482.2	3,445.5	10.6	11.0	-125.73	93.4	291.7	218.7	198.8	19.89	10.996			
3,600.0	3,567.0	3,575.9	3,537.6	10.9	11.3	-132.40	97.3	274.8	240.7	220.8	19.94	12.070			
3,700.0	3,665.6	3,669.6	3,629.7	11.3	11.7	-137.97	101.3	257.9	265.4	245.4	20.00	13.272			
3,800.0	3,764.1	3,763.3	3,721.8	11.7	12.1	-142.61	105.2	241.0	292.3	272.2	20.10	14.543			
3,900.0	3,862.7	3,857.1	3,813.9	12.1	12.5	-146.48	109.2	224.2	320.6	300.4	20.24	15.842			
4,000.0	3,961.2	3,950.8	3,906.0	12.5	12.9	-149.74	113.1	207.3	350.2	329.8	20.43	17.141			
4,100.0	4,059.7	4,044.5	3,998.0	12.9	13.3	-152.50	117.1	190.4	380.7	360.0	20.66	18.423			
4,200.0	4,158.3	4,138.2	4,090.1	13.3	13.7	-154.86	121.0	173.5	411.8	390.9	20.93	19.675			
4,300.0	4,256.8	4,231.9	4,182.2	13.7	14.1	-156.89	125.0	156.6	443.6	422.3	21.23	20.891			
4,400.0	4,355.4	4,325.6	4,274.3	14.1	14.5	-158.65	128.9	139.7	475.7	454.2	21.56	22.067			
4,500.0	4,453.9	4,419.3	4,366.4	14.5	14.8	-160.19	132.9	122.8	508.3	486.4	21.91	23.202			
4,600.0	4,552.5	4,513.1	4,458.5	14.9	15.2	-161.55	136.8	106.0	541.1	518.8	22.27	24.294			
4,700.0	4,651.0	4,606.8	4,550.6	15.3	15.6	-162.76	140.8	89.1	574.2	551.5	22.65	25.345			
4,800.0	4,749.6	4,700.5	4,642.7	15.7	16.0	-163.83	144.7	72.2	607.4	584.4	23.05	26.356			
4,900.0	4,848.1	4,794.2	4,734.8	16.0	16.4	-164.80	148.7	55.3	640.9	617.4	23.45	27.327			

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut 27GK-HZ Pad Sec.27-T5N-R64W - Chesnut 27G-221 - Wellbore #1 - Plan #1 (4-23-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Reference	Offset	Reference	Offset	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
5,000.0	4,946.7	4,887.9	4,826.9	16.4	16.8	-165.67	152.6	38.4	674.5	650.6	23.87	28.261		
5,100.0	5,045.2	4,981.6	4,919.0	16.8	17.2	-166.46	156.6	21.5	708.2	683.9	24.29	29.158		
5,200.0	5,143.8	5,089.3	5,024.9	17.2	17.6	-167.26	161.0	2.7	741.6	716.9	24.72	29.996		
5,300.0	5,242.4	5,216.9	5,151.2	17.6	17.9	-168.06	165.2	-15.2	771.6	746.4	25.17	30.653		
5,400.0	5,341.3	5,348.8	5,282.5	17.9	18.2	-168.69	168.1	-27.9	795.0	769.3	25.66	30.986		
5,500.0	5,440.8	5,484.3	5,417.7	18.1	18.5	-169.09	169.7	-34.8	810.6	784.5	26.13	31.026		
5,600.0	5,540.5	5,606.6	5,540.0	18.3	18.6	-169.26	170.0	-36.0	818.6	792.0	26.56	30.821		
5,700.0	5,640.4	5,706.5	5,639.9	18.5	18.8	-169.32	170.0	-36.0	822.4	795.4	26.95	30.515		
5,800.0	5,740.4	5,806.5	5,739.9	18.6	18.9	-62.50	170.0	-36.0	823.0	795.6	27.32	30.120		
5,900.0	5,840.4	5,906.5	5,839.9	18.7	19.1	-62.50	170.0	-36.0	823.0	795.3	27.70	29.714		
6,000.0	5,940.3	5,981.1	5,914.5	18.9	19.2	117.56	171.7	-36.0	825.8	797.8	27.98	29.512		
6,100.0	6,038.9	6,050.0	5,982.9	19.1	19.3	117.86	179.3	-36.0	838.6	810.5	28.13	29.809		
6,200.0	6,134.5	6,100.0	6,032.0	19.3	19.4	117.68	188.6	-36.0	862.2	834.1	28.11	30.676		
6,300.0	6,225.6	6,150.0	6,080.4	19.7	19.5	117.13	201.2	-36.0	897.1	869.1	28.04	31.989		
6,400.0	6,310.5	6,185.7	6,114.5	20.1	19.6	115.33	212.1	-36.0	943.3	915.2	28.11	33.557		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut 27GK-HZ Pad Sec.27-T5N-R64W - Chesnut 27G-301 - Wellbore #1 - Plan #1 (4-23-14)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	85.62	54.7	713.3	715.4				
100.0	100.0	99.5	99.5	0.1	0.1	85.62	54.7	713.3	715.4	715.2	0.22	3,190.873	
200.0	200.0	199.5	199.5	0.3	0.3	85.62	54.7	713.3	715.4	714.7	0.67	1,062.741	
300.0	300.0	299.5	299.5	0.6	0.6	85.62	54.7	713.3	715.4	714.3	1.12	637.219	
400.0	400.0	399.5	399.5	0.8	0.8	85.62	54.7	713.3	715.4	713.8	1.57	455.026	
500.0	500.0	531.8	531.8	1.0	1.1	85.58	55.0	710.3	713.2	711.1	2.08	342.607	
600.0	600.0	663.8	663.4	1.2	1.4	85.44	55.9	701.2	706.4	703.8	2.61	271.137	
700.0	700.0	794.6	793.4	1.5	1.7	85.22	57.4	686.3	695.1	691.9	3.17	219.506	
800.0	800.0	923.8	920.9	1.7	2.1	84.90	59.4	665.8	679.4	675.6	3.79	179.339	
900.0	900.0	1,050.9	1,045.3	1.9	2.6	84.47	62.0	640.1	659.4	654.9	4.47	147.544	
1,000.0	1,000.0	1,149.6	1,141.4	2.1	3.0	84.07	64.2	617.8	637.1	632.0	5.09	125.172	
1,100.0	1,100.0	1,246.5	1,235.8	2.3	3.5	-23.45	66.4	595.8	613.3	608.1	5.14	119.311	
1,200.0	1,199.8	1,342.6	1,329.4	2.5	3.9	-24.35	68.6	574.1	586.4	580.8	5.58	105.051	
1,300.0	1,299.5	1,437.7	1,422.0	2.8	4.4	-25.51	70.7	552.6	556.6	550.6	6.03	92.251	
1,400.0	1,398.7	1,531.6	1,513.5	3.0	4.8	-26.99	72.8	531.4	524.0	517.5	6.49	80.713	
1,500.0	1,497.5	1,624.3	1,603.8	3.3	5.3	-28.82	74.9	510.4	488.7	481.7	6.98	70.062	
1,600.0	1,596.0	1,716.5	1,693.5	3.6	5.7	-30.66	77.0	489.6	452.7	445.2	7.51	60.308	
1,700.0	1,694.6	1,808.7	1,783.3	3.9	6.2	-32.80	79.1	468.8	417.2	409.1	8.08	51.641	
1,800.0	1,793.1	1,900.9	1,873.1	4.2	6.6	-35.33	81.2	447.9	382.2	373.5	8.70	43.937	
1,900.0	1,891.7	1,993.1	1,962.9	4.5	7.1	-38.34	83.3	427.1	348.1	338.8	9.39	37.092	
2,000.0	1,990.2	2,085.3	2,052.6	4.9	7.5	-41.97	85.4	406.3	315.1	305.0	10.15	31.031	
2,100.0	2,088.8	2,177.5	2,142.4	5.3	8.0	-46.37	87.4	385.4	283.5	272.5	11.03	25.707	
2,200.0	2,187.3	2,269.7	2,232.2	5.6	8.4	-51.77	89.5	364.6	253.9	241.9	12.04	21.099	
2,300.0	2,285.9	2,361.8	2,322.0	6.0	8.9	-58.40	91.6	343.7	227.1	213.9	13.19	17.218	
2,400.0	2,384.4	2,454.0	2,411.8	6.4	9.3	-66.48	93.7	322.9	204.2	189.7	14.48	14.096	
2,500.0	2,483.0	2,546.2	2,501.5	6.7	9.8	-76.13	95.8	302.1	186.5	170.7	15.84	11.771	
2,600.0	2,581.5	2,638.4	2,591.3	7.1	10.2	-87.14	97.9	281.2	175.7	158.6	17.12	10.266	
2,679.8	2,660.1	2,712.0	2,663.0	7.4	10.6	-96.50	99.5	264.6	173.0	155.1	17.94	9.641 CC, ES	
2,700.0	2,680.1	2,730.6	2,681.1	7.5	10.7	-98.89	99.9	260.4	173.2	155.1	18.12	9.560 SF	
2,800.0	2,778.6	2,822.8	2,770.9	7.9	11.2	-110.44	102.0	239.6	179.2	160.4	18.72	9.573	
2,900.0	2,877.2	2,915.0	2,860.7	8.2	11.6	-120.95	104.1	218.7	192.9	173.9	18.96	10.175	
3,000.0	2,975.7	3,007.2	2,950.4	8.6	12.1	-129.97	106.2	197.9	212.9	193.9	18.98	11.214	
3,100.0	3,074.3	3,099.4	3,040.2	9.0	12.5	-137.44	108.3	177.0	237.6	218.6	18.93	12.549	
3,200.0	3,172.8	3,191.6	3,130.0	9.4	13.0	-143.54	110.4	156.2	265.6	246.7	18.89	14.062	
3,300.0	3,271.4	3,283.7	3,219.8	9.8	13.4	-148.51	112.4	135.4	296.1	277.2	18.90	15.666	
3,400.0	3,369.9	3,375.9	3,309.6	10.2	13.9	-152.57	114.5	114.5	328.3	309.3	18.97	17.303	
3,500.0	3,468.5	3,468.1	3,399.3	10.6	14.4	-155.93	116.6	93.7	361.8	342.7	19.11	18.931	
3,600.0	3,567.0	3,560.3	3,489.1	10.9	14.8	-158.74	118.7	72.9	396.3	377.0	19.31	20.527	
3,700.0	3,665.6	3,652.5	3,578.9	11.3	15.3	-161.10	120.8	52.0	431.5	411.9	19.55	22.075	
3,800.0	3,764.1	3,744.7	3,668.7	11.7	15.7	-163.11	122.9	31.2	467.2	447.4	19.82	23.568	
3,900.0	3,862.7	3,836.9	3,758.5	12.1	16.2	-164.85	124.9	10.3	503.4	483.3	20.13	25.002	
4,000.0	3,961.2	3,929.1	3,848.2	12.5	16.6	-166.35	127.0	-10.5	540.0	519.5	20.47	26.376	
4,100.0	4,059.7	4,021.3	3,938.0	12.9	17.1	-167.66	129.1	-31.3	576.8	556.0	20.83	27.690	
4,200.0	4,158.3	4,113.5	4,027.8	13.3	17.6	-168.82	131.2	-52.2	613.9	592.6	21.21	28.946	
4,300.0	4,256.8	4,205.6	4,117.6	13.7	18.0	-169.85	133.3	-73.0	651.1	629.5	21.60	30.146	
4,400.0	4,355.4	4,297.8	4,207.4	14.1	18.5	-170.77	135.4	-93.9	688.5	666.5	22.00	31.292	
4,500.0	4,453.9	4,390.0	4,297.1	14.5	18.9	-171.60	137.4	-114.7	726.1	703.7	22.42	32.388	
4,600.0	4,552.5	4,482.2	4,386.9	14.9	19.4	-172.34	139.5	-135.5	763.8	740.9	22.84	33.436	
4,700.0	4,651.0	4,574.4	4,476.7	15.3	19.9	-173.01	141.6	-156.4	801.6	778.3	23.28	34.438	
4,800.0	4,749.6	4,666.6	4,566.5	15.7	20.3	-173.63	143.7	-177.2	839.4	815.7	23.72	35.397	
4,900.0	4,848.1	4,758.8	4,656.3	16.0	20.8	-174.19	145.8	-198.0	877.4	853.2	24.16	36.315	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut 27GK-HZ Pad Sec.27-T5N-R64W - Chesnut 27G-301 - Wellbore #1 - Plan #1 (4-23-14)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,946.7	4,851.0	4,746.0	16.4	21.2	-174.70	147.9	-218.9	915.4	890.8	24.61	37.196	
5,100.0	5,045.2	4,943.2	4,835.8	16.8	21.7	-175.18	149.9	-239.7	953.5	928.4	25.07	38.040	
5,200.0	5,143.8	5,035.4	4,925.6	17.2	22.1	-175.62	152.0	-260.6	991.6	966.1	25.52	38.850	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	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-MWDD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	97.54	-87.4	660.4	666.1				
100.0	100.0	99.5	99.5	0.1	0.1	97.54	-87.4	660.4	666.1	665.9	0.22	2,971.129	
200.0	200.0	199.5	199.5	0.3	0.3	97.54	-87.4	660.4	666.1	665.5	0.67	989.554	
300.0	300.0	299.5	299.5	0.6	0.6	97.54	-87.4	660.4	666.1	665.0	1.12	593.336	
400.0	400.0	399.5	399.5	0.8	0.8	97.54	-87.4	660.4	666.1	664.6	1.57	423.690	
500.0	500.0	499.5	499.5	1.0	1.0	97.54	-87.4	660.4	666.1	664.1	2.02	329.485	
600.0	600.0	599.5	599.5	1.2	1.2	97.54	-87.4	660.4	666.1	663.7	2.47	269.551	
700.0	700.0	699.5	699.5	1.5	1.5	97.54	-87.4	660.4	666.1	663.2	2.92	228.066	
800.0	800.0	799.5	799.5	1.7	1.7	97.54	-87.4	660.4	666.1	662.8	3.37	197.647	
900.0	900.0	899.5	899.5	1.9	1.9	97.54	-87.4	660.4	666.1	662.3	3.82	174.387	
1,000.0	1,000.0	999.5	999.5	2.1	2.1	97.54	-87.4	660.4	666.1	661.9	4.27	156.026	
1,100.0	1,100.0	1,099.5	1,099.5	2.3	2.4	-9.32	-87.4	660.4	664.4	659.7	4.70	141.366	
1,200.0	1,199.8	1,199.3	1,199.3	2.5	2.6	-9.41	-87.4	660.4	659.3	654.1	5.11	128.918	
1,300.0	1,299.5	1,299.0	1,299.0	2.8	2.8	-9.57	-87.4	660.4	650.7	645.1	5.53	117.701	
1,400.0	1,398.7	1,398.2	1,398.2	3.0	3.0	-9.79	-87.4	660.4	638.6	632.7	5.94	107.482	
1,500.0	1,497.5	1,497.0	1,497.0	3.3	3.3	-10.08	-87.4	660.4	623.3	616.9	6.36	98.034	
1,600.0	1,596.0	1,595.5	1,595.5	3.6	3.5	-10.36	-87.4	660.4	606.5	599.7	6.80	89.251	
1,700.0	1,694.6	1,683.0	1,683.0	3.9	3.7	-10.72	-86.6	661.3	590.7	583.5	7.21	81.922	
1,800.0	1,793.1	1,770.3	1,770.2	4.2	3.9	-11.29	-83.9	664.0	576.9	569.3	7.63	75.638	
1,900.0	1,891.7	1,857.7	1,857.4	4.5	4.1	-12.09	-79.4	668.8	565.1	557.1	8.05	70.192	
2,000.0	1,990.2	1,945.1	1,944.3	4.9	4.3	-13.12	-73.1	675.4	555.6	547.1	8.49	65.471	
2,100.0	2,088.8	2,041.1	2,039.5	5.3	4.5	-14.44	-64.7	684.2	547.8	538.8	8.96	61.162	
2,200.0	2,187.3	2,140.0	2,137.5	5.6	4.7	-15.85	-56.0	693.3	540.3	530.9	9.45	57.203	
2,300.0	2,285.9	2,238.8	2,235.5	6.0	5.0	-17.29	-47.3	702.5	533.2	523.3	9.95	53.606	
2,400.0	2,384.4	2,337.6	2,333.6	6.4	5.3	-18.78	-38.7	711.6	526.5	516.0	10.46	50.343	
2,500.0	2,483.0	2,436.4	2,431.6	6.7	5.5	-20.30	-30.0	720.7	520.1	509.1	10.98	47.367	
2,600.0	2,581.5	2,535.2	2,529.6	7.1	5.8	-21.85	-21.3	729.8	514.1	502.6	11.51	44.657	
2,700.0	2,680.1	2,634.0	2,627.6	7.5	6.1	-23.44	-12.6	739.0	508.5	496.4	12.05	42.186	
2,800.0	2,778.6	2,732.8	2,725.6	7.9	6.4	-25.06	-3.9	748.1	503.3	490.7	12.60	39.930	
2,900.0	2,877.2	2,831.6	2,823.6	8.2	6.6	-26.72	4.8	757.2	498.5	485.4	13.17	37.867	
3,000.0	2,975.7	2,930.5	2,921.6	8.6	6.9	-28.40	13.5	766.3	494.2	480.4	13.74	35.979	
3,100.0	3,074.3	3,029.3	3,019.6	9.0	7.2	-30.11	22.2	775.4	490.3	476.0	14.31	34.250	
3,200.0	3,172.8	3,128.1	3,117.6	9.4	7.5	-31.85	30.8	784.6	486.8	471.9	14.90	32.665	
3,300.0	3,271.4	3,226.9	3,215.6	9.8	7.8	-33.61	39.5	793.7	483.8	468.3	15.50	31.211	
3,400.0	3,369.9	3,325.7	3,313.6	10.2	8.1	-35.39	48.2	802.8	481.3	465.2	16.11	29.877	
3,500.0	3,468.5	3,424.5	3,411.6	10.6	8.4	-37.18	56.9	811.9	479.3	462.6	16.73	28.653	
3,600.0	3,567.0	3,523.3	3,509.6	10.9	8.7	-38.99	65.6	821.0	477.7	460.4	17.35	27.529	
3,700.0	3,665.6	3,622.1	3,607.6	11.3	9.0	-40.81	74.3	830.2	476.7	458.7	17.99	26.498	
3,800.0	3,764.1	3,721.0	3,705.6	11.7	9.3	-42.64	83.0	839.3	476.1	457.5	18.63	25.552	
3,864.1	3,827.2	3,784.3	3,768.4	12.0	9.5	-43.81	88.5	845.1	476.0	457.0	19.05	24.987	
3,900.0	3,862.7	3,819.8	3,803.7	12.1	9.6	-44.46	91.7	848.4	476.0	456.8	19.29	24.683	
4,000.0	3,961.2	3,918.6	3,901.7	12.5	9.9	-46.29	100.3	857.5	476.5	456.5	19.95	23.887	
4,100.0	4,059.7	4,017.4	3,999.7	12.9	10.3	-48.11	109.0	866.7	477.4	456.8	20.61	23.158	
4,200.0	4,158.3	4,116.2	4,097.7	13.3	10.6	-49.92	117.7	875.8	478.8	457.5	21.29	22.490	
4,300.0	4,256.8	4,215.0	4,195.7	13.7	10.9	-51.72	126.4	884.9	480.7	458.7	21.97	21.879	
4,400.0	4,355.4	4,313.8	4,293.7	14.1	11.2	-53.51	135.1	894.0	483.1	460.4	22.66	21.320	
4,500.0	4,453.9	4,412.6	4,391.7	14.5	11.5	-55.27	143.8	903.1	485.9	462.6	23.35	20.809	
4,600.0	4,552.5	4,511.5	4,489.7	14.9	11.8	-57.02	152.5	912.3	489.3	465.2	24.05	20.343	
4,700.0	4,651.0	4,621.3	4,598.8	15.3	12.1	-58.93	161.6	921.9	492.4	467.7	24.77	19.882	
4,800.0	4,749.6	4,740.8	4,717.8	15.7	12.4	-60.98	168.6	929.2	492.4	466.9	25.48	19.325	
4,900.0	4,848.1	4,860.0	4,836.9	16.0	12.6	-63.05	172.1	932.9	488.6	462.5	26.19	18.659	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	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
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,000.0	4,946.7	4,969.3	4,946.2	16.4	12.8	-65.02	172.6	933.4	481.7	454.8	26.88	17.919		
5,100.0	5,045.2	5,067.9	5,044.7	16.8	13.0	-66.86	172.6	933.4	474.7	447.1	27.58	17.214		
5,200.0	5,143.8	5,166.4	5,143.3	17.2	13.1	-68.74	172.6	933.4	468.2	439.9	28.28	16.556		
5,300.0	5,242.4	5,265.0	5,241.9	17.6	13.3	-70.63	172.6	933.4	462.3	433.3	28.97	15.958		
5,400.0	5,341.3	5,364.0	5,340.8	17.9	13.5	-72.21	172.6	933.4	457.7	428.2	29.52	15.503		
5,500.0	5,440.8	5,463.4	5,440.3	18.1	13.7	-73.44	172.6	933.4	454.5	424.5	30.02	15.138		
5,600.0	5,540.5	5,563.1	5,540.0	18.3	13.9	-74.28	172.6	933.4	452.5	422.0	30.47	14.851		
5,700.0	5,640.4	5,663.0	5,639.9	18.5	14.1	-74.73	172.6	933.4	451.5	420.6	30.86	14.631		
5,787.2	5,727.6	5,750.2	5,727.1	18.6	14.3	-74.85	172.6	933.4	451.2	420.0	31.16	14.478 CC		
5,800.0	5,740.4	5,763.0	5,739.9	18.6	14.3	32.03	172.6	933.4	451.3	420.1	31.21	14.462		
5,900.0	5,840.4	5,863.0	5,839.9	18.7	14.5	32.03	172.6	933.4	451.3	419.7	31.56	14.299 ES, SF		
6,000.0	5,940.3	5,937.5	5,914.3	18.9	14.6	-148.03	174.2	933.4	456.5	424.8	31.70	14.399		
6,100.0	6,038.9	6,000.0	5,976.5	19.1	14.8	-148.20	180.9	933.4	479.3	447.8	31.52	15.206		
6,200.0	6,134.5	6,050.0	6,025.6	19.3	14.9	-147.92	189.8	933.4	519.8	488.8	31.03	16.749		
6,300.0	6,225.6	6,100.0	6,074.1	19.7	15.1	-147.22	202.0	933.4	576.1	545.8	30.32	19.003		
6,400.0	6,310.5	6,150.0	6,121.7	20.1	15.3	-145.93	217.3	933.4	646.1	616.6	29.47	21.926		
6,500.0	6,387.8	6,169.3	6,139.9	20.6	15.4	-141.27	224.0	933.4	726.6	697.8	28.82	25.214		
6,600.0	6,456.2	6,200.0	6,168.2	21.2	15.5	-134.84	235.7	933.4	815.2	786.4	28.85	28.253		
6,700.0	6,514.5	6,200.0	6,168.2	21.9	15.5	-118.99	235.7	933.4	908.7	877.7	31.00	29.315		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut 27GK-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-341 - Wellbore #1 - Plan #1 (4-23-14)												Offset Site Error:	0.0 ft
Survey Program: 0-MWDD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	94.96	-58.3	671.5	674.0				
100.0	100.0	99.5	99.5	0.1	0.1	94.96	-58.3	671.5	674.0	673.8	0.22	3,006.398	
200.0	200.0	199.5	199.5	0.3	0.3	94.96	-58.3	671.5	674.0	673.4	0.67	1,001.301	
300.0	300.0	299.5	299.5	0.6	0.6	94.96	-58.3	671.5	674.0	672.9	1.12	600.379	
400.0	400.0	399.5	399.5	0.8	0.8	94.96	-58.3	671.5	674.0	672.5	1.57	428.720	
500.0	500.0	499.5	499.5	1.0	1.0	94.96	-58.3	671.5	674.0	672.0	2.02	333.396	
600.0	600.0	599.5	599.5	1.2	1.2	94.96	-58.3	671.5	674.0	671.6	2.47	272.751	
700.0	700.0	699.5	699.5	1.5	1.5	94.96	-58.3	671.5	674.0	671.1	2.92	230.773	
800.0	800.0	799.5	799.5	1.7	1.7	94.96	-58.3	671.5	674.0	670.7	3.37	199.993	
900.0	900.0	899.5	899.5	1.9	1.9	94.96	-58.3	671.5	674.0	670.2	3.82	176.458	
1,000.0	1,000.0	999.5	999.5	2.1	2.1	94.96	-58.3	671.5	674.0	669.8	4.27	157.878	
1,100.0	1,100.0	1,099.5	1,099.5	2.3	2.4	-11.91	-58.3	671.5	672.3	667.6	4.70	143.051	
1,200.0	1,199.8	1,199.3	1,199.3	2.5	2.6	-12.03	-58.3	671.5	667.2	662.1	5.11	130.472	
1,300.0	1,299.5	1,299.0	1,299.0	2.8	2.8	-12.22	-58.3	671.5	658.7	653.2	5.53	119.144	
1,400.0	1,398.7	1,398.2	1,398.2	3.0	3.0	-12.50	-58.3	671.5	646.8	640.8	5.94	108.826	
1,500.0	1,497.5	1,520.9	1,520.9	3.3	3.3	-13.06	-57.0	669.3	629.7	623.3	6.41	98.250	
1,600.0	1,596.0	1,641.6	1,641.3	3.6	3.6	-13.83	-53.2	662.7	607.6	600.7	6.89	88.134	
1,700.0	1,694.6	1,759.7	1,758.8	3.9	3.8	-14.89	-47.0	652.0	582.0	574.6	7.38	78.809	
1,800.0	1,793.1	1,864.0	1,862.1	4.2	4.1	-16.10	-39.8	639.5	553.6	545.8	7.86	70.452	
1,900.0	1,891.7	1,959.2	1,956.3	4.5	4.4	-17.36	-33.0	627.7	525.2	516.8	8.32	63.151	
2,000.0	1,990.2	2,054.4	2,050.5	4.9	4.6	-18.75	-26.2	615.9	496.9	488.2	8.79	56.543	
2,100.0	2,088.8	2,149.6	2,144.7	5.3	4.9	-20.31	-19.4	604.2	469.0	459.8	9.28	50.551	
2,200.0	2,187.3	2,244.8	2,238.9	5.6	5.2	-22.06	-12.6	592.4	441.5	431.7	9.79	45.101	
2,300.0	2,285.9	2,340.0	2,333.1	6.0	5.5	-24.04	-5.8	580.6	414.4	404.1	10.32	40.152	
2,400.0	2,384.4	2,435.1	2,427.3	6.4	5.7	-26.28	1.0	568.9	387.8	377.0	10.88	35.647	
2,500.0	2,483.0	2,530.3	2,521.5	6.7	6.0	-28.84	7.8	557.1	361.9	350.5	11.47	31.551	
2,600.0	2,581.5	2,625.5	2,615.7	7.1	6.3	-31.78	14.6	545.3	336.8	324.7	12.10	27.832	
2,700.0	2,680.1	2,720.7	2,710.0	7.5	6.6	-35.16	21.4	533.6	312.7	299.9	12.78	24.469	
2,800.0	2,778.6	2,815.9	2,804.2	7.9	7.0	-39.06	28.2	521.8	289.8	276.3	13.51	21.449	
2,900.0	2,877.2	2,911.0	2,898.4	8.2	7.3	-43.58	35.0	510.1	268.5	254.2	14.31	18.766	
3,000.0	2,975.7	3,006.2	2,992.6	8.6	7.6	-48.79	41.8	498.3	249.1	234.0	15.17	16.424	
3,100.0	3,074.3	3,101.4	3,086.8	9.0	7.9	-54.76	48.6	486.5	232.2	216.1	16.09	14.433	
3,200.0	3,172.8	3,196.6	3,181.0	9.4	8.2	-61.52	55.4	474.8	218.3	201.3	17.05	12.807	
3,300.0	3,271.4	3,291.8	3,275.2	9.8	8.5	-69.00	62.1	463.0	208.1	190.1	18.00	11.556	
3,400.0	3,369.9	3,386.9	3,369.4	10.2	8.8	-77.03	68.9	451.2	202.0	183.1	18.90	10.684	
3,482.8	3,451.5	3,465.8	3,447.4	10.5	9.1	-83.91	74.6	441.5	200.4	180.8	19.56	10.243 CC	
3,500.0	3,468.5	3,482.1	3,463.6	10.6	9.1	-85.35	75.7	439.5	200.4	180.7	19.69	10.182 ES	
3,600.0	3,567.0	3,577.3	3,557.8	10.9	9.5	-93.60	82.5	427.7	203.6	183.2	20.31	10.021 SF	
3,700.0	3,665.6	3,672.5	3,652.0	11.3	9.8	-101.47	89.3	415.9	211.1	190.4	20.78	10.159	
3,800.0	3,764.1	3,767.7	3,746.2	11.7	10.1	-108.72	96.1	404.2	222.7	201.6	21.12	10.544	
3,900.0	3,862.7	3,862.8	3,840.4	12.1	10.4	-115.21	102.9	392.4	237.7	216.4	21.37	11.123	
4,000.0	3,961.2	3,958.0	3,934.6	12.5	10.8	-120.91	109.7	380.6	255.6	234.0	21.58	11.844	
4,100.0	4,059.7	4,053.2	4,028.8	12.9	11.1	-125.87	116.5	368.9	275.6	253.9	21.76	12.665	
4,200.0	4,158.3	4,148.4	4,123.0	13.3	11.4	-130.17	123.3	357.1	297.5	275.6	21.96	13.550	
4,300.0	4,256.8	4,243.6	4,217.3	13.7	11.7	-133.89	130.1	345.3	320.9	298.7	22.17	14.474	
4,400.0	4,355.4	4,338.8	4,311.5	14.1	12.0	-137.10	136.9	333.6	345.4	323.0	22.40	15.415	
4,500.0	4,453.9	4,433.9	4,405.7	14.5	12.4	-139.90	143.7	321.8	370.8	348.1	22.66	16.360	
4,600.0	4,552.5	4,529.1	4,499.9	14.9	12.7	-142.35	150.5	310.0	396.9	374.0	22.95	17.298	
4,700.0	4,651.0	4,624.8	4,594.6	15.3	13.0	-144.50	157.3	298.2	423.7	400.4	23.25	18.223	
4,800.0	4,749.6	4,736.6	4,705.5	15.7	13.3	-146.61	164.1	286.4	449.1	425.5	23.54	19.077	
4,900.0	4,848.1	4,850.8	4,819.4	16.0	13.6	-148.33	168.9	278.2	471.2	447.4	23.84	19.763	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut 27GK-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-341 - Wellbore #1 - Plan #1 (4-23-14)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,946.7	4,967.2	4,935.6	16.4	13.8	-149.74	171.4	273.9	489.9	465.7	24.18	20.263	
5,100.0	5,045.2	5,076.3	5,044.7	16.8	13.9	-150.83	171.7	273.2	505.3	480.7	24.53	20.595	
5,200.0	5,143.8	5,174.9	5,143.3	17.2	14.1	-151.74	171.7	273.2	520.2	495.3	24.92	20.878	
5,300.0	5,242.4	5,273.5	5,241.9	17.6	14.3	-152.63	171.7	273.2	535.1	509.8	25.32	21.133	
5,400.0	5,341.3	5,372.4	5,340.8	17.9	14.5	-153.43	171.7	273.2	547.8	522.1	25.73	21.291	
5,500.0	5,440.8	5,471.8	5,440.3	18.1	14.6	-154.01	171.7	273.2	557.5	531.4	26.13	21.333	
5,600.0	5,540.5	5,571.6	5,540.0	18.3	14.8	-154.39	171.7	273.2	564.1	537.6	26.53	21.267	
5,700.0	5,640.4	5,671.5	5,639.9	18.5	15.0	-154.59	171.7	273.2	567.6	540.7	26.90	21.097	
5,800.0	5,740.4	5,771.5	5,739.9	18.6	15.2	-47.79	171.7	273.2	568.1	540.8	27.28	20.828	
5,900.0	5,840.4	5,871.5	5,839.9	18.7	15.4	-47.79	171.7	273.2	568.1	540.5	27.66	20.537	
6,000.0	5,940.3	5,971.4	5,939.8	18.9	15.5	132.35	171.7	273.2	570.5	542.5	28.01	20.371	
6,100.0	6,038.9	6,036.1	6,004.5	19.1	15.7	132.54	174.4	273.2	584.4	556.4	28.03	20.847	
6,200.0	6,134.5	6,100.0	6,067.8	19.3	15.8	132.80	182.4	273.2	613.2	585.3	27.83	22.035	
6,300.0	6,225.6	6,150.0	6,116.8	19.7	16.0	132.33	192.3	273.2	656.5	629.1	27.39	23.966	
6,400.0	6,310.5	6,185.5	6,151.2	20.1	16.1	130.40	201.3	273.2	713.4	686.5	26.95	26.475	
6,500.0	6,387.8	6,216.1	6,180.4	20.6	16.2	126.92	210.3	273.2	782.3	755.4	26.91	29.071	
6,600.0	6,456.2	6,237.3	6,200.4	21.2	16.3	120.84	217.3	273.2	860.6	832.7	27.85	30.904	
6,700.0	6,514.5	6,250.0	6,212.3	21.9	16.3	111.14	221.7	273.2	945.8	915.6	30.20	31.315	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut 27GK-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-401 - Wellbore #1 - Plan #1 (4-23-14)												Offset Site Error:	0.0 ft
Survey Program: 0-MWDD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	99.83	-112.9	652.0	661.7				
100.0	100.0	99.5	99.5	0.1	0.1	99.83	-112.9	652.0	661.7	661.5	0.22	2,951.440	
200.0	200.0	199.5	199.5	0.3	0.3	99.83	-112.9	652.0	661.7	661.1	0.67	982.997	
300.0	300.0	299.5	299.5	0.6	0.6	99.83	-112.9	652.0	661.7	660.6	1.12	589.404	
400.0	400.0	399.5	399.5	0.8	0.8	99.83	-112.9	652.0	661.7	660.2	1.57	420.883	
500.0	500.0	499.5	499.5	1.0	1.0	99.83	-112.9	652.0	661.7	659.7	2.02	327.301	
600.0	600.0	599.5	599.5	1.2	1.2	99.83	-112.9	652.0	661.7	659.3	2.47	267.765	
700.0	700.0	699.5	699.5	1.5	1.5	99.83	-112.9	652.0	661.7	658.8	2.92	226.554	
800.0	800.0	799.5	799.5	1.7	1.7	99.83	-112.9	652.0	661.7	658.4	3.37	196.337	
900.0	900.0	899.5	899.5	1.9	1.9	99.83	-112.9	652.0	661.7	657.9	3.82	173.232	
1,000.0	1,000.0	999.5	999.5	2.1	2.1	99.83	-112.9	652.0	661.7	657.5	4.27	154.992	
1,100.0	1,100.0	1,099.5	1,099.5	2.3	2.4	-7.03	-112.9	652.0	660.0	655.3	4.70	140.424	
1,200.0	1,199.8	1,199.3	1,199.3	2.5	2.6	-7.10	-112.9	652.0	654.8	649.7	5.11	128.049	
1,300.0	1,299.5	1,299.0	1,299.0	2.8	2.8	-7.22	-112.9	652.0	646.2	640.6	5.53	116.894	
1,400.0	1,398.7	1,398.2	1,398.2	3.0	3.0	-7.39	-112.9	652.0	634.1	628.1	5.94	106.730	
1,500.0	1,497.5	1,497.0	1,497.0	3.3	3.3	-7.61	-112.9	652.0	618.6	612.2	6.36	97.333	
1,600.0	1,596.0	1,595.5	1,595.5	3.6	3.5	-7.83	-112.9	652.0	601.8	595.0	6.79	88.594	
1,700.0	1,694.6	1,694.1	1,694.1	3.9	3.7	-8.05	-112.9	652.0	584.9	577.7	7.24	80.848	
1,800.0	1,793.1	1,792.6	1,792.6	4.2	3.9	-8.29	-112.9	652.0	568.1	560.5	7.68	73.949	
1,900.0	1,891.7	1,891.2	1,891.2	4.5	4.1	-8.55	-112.9	652.0	551.3	543.2	8.13	67.775	
2,000.0	1,990.2	1,989.7	1,989.7	4.9	4.4	-8.82	-112.9	652.0	534.6	526.0	8.59	62.226	
2,100.0	2,088.8	2,091.9	2,091.9	5.3	4.6	-9.23	-111.8	651.8	517.5	508.4	9.06	57.128	
2,200.0	2,187.3	2,194.0	2,193.9	5.6	4.8	-9.98	-108.1	651.2	499.7	490.1	9.53	52.432	
2,300.0	2,285.9	2,295.4	2,295.1	6.0	5.0	-11.10	-101.6	650.2	481.3	471.3	10.01	48.090	
2,400.0	2,384.4	2,396.0	2,395.3	6.4	5.3	-12.62	-92.7	648.7	462.4	451.9	10.50	44.057	
2,500.0	2,483.0	2,494.2	2,492.9	6.7	5.5	-14.50	-81.8	646.9	443.4	432.4	11.00	40.325	
2,600.0	2,581.5	2,591.3	2,589.3	7.1	5.7	-16.54	-70.9	645.2	424.9	413.4	11.51	36.909	
2,700.0	2,680.1	2,688.4	2,685.8	7.5	6.0	-18.76	-60.0	643.4	407.0	395.0	12.05	33.776	
2,800.0	2,778.6	2,785.4	2,782.2	7.9	6.2	-21.18	-49.1	641.6	389.8	377.2	12.61	30.906	
2,900.0	2,877.2	2,882.5	2,878.6	8.2	6.5	-23.81	-38.2	639.8	373.3	360.1	13.20	28.283	
3,000.0	2,975.7	2,979.5	2,975.1	8.6	6.7	-26.67	-27.3	638.0	357.6	343.8	13.81	25.893	
3,100.0	3,074.3	3,076.6	3,071.5	9.0	7.0	-29.77	-16.4	636.2	343.0	328.5	14.46	23.723	
3,200.0	3,172.8	3,173.6	3,167.9	9.4	7.2	-33.12	-5.5	634.5	329.4	314.3	15.14	21.766	
3,300.0	3,271.4	3,270.7	3,264.3	9.8	7.5	-36.74	5.4	632.7	317.1	301.3	15.85	20.014	
3,400.0	3,369.9	3,367.8	3,360.8	10.2	7.8	-40.62	16.3	630.9	306.2	289.7	16.59	18.462	
3,500.0	3,468.5	3,464.8	3,457.2	10.6	8.0	-44.75	27.2	629.1	296.9	279.5	17.36	17.106	
3,600.0	3,567.0	3,561.9	3,553.6	10.9	8.3	-49.11	38.1	627.3	289.3	271.1	18.15	15.940	
3,700.0	3,665.6	3,658.9	3,650.0	11.3	8.6	-53.67	49.1	625.5	283.5	264.5	18.95	14.959	
3,800.0	3,764.1	3,756.0	3,746.5	11.7	8.8	-58.37	60.0	623.8	279.7	259.9	19.76	14.156	
3,900.0	3,862.7	3,853.1	3,842.9	12.1	9.1	-63.17	70.9	622.0	277.9	257.4	20.55	13.523	
3,935.4	3,897.6	3,887.4	3,877.1	12.3	9.2	-64.87	74.7	621.4	277.8	256.9	20.83	13.337 CC	
4,000.0	3,961.2	3,950.1	3,939.3	12.5	9.4	-67.98	81.8	620.2	278.2	256.9	21.32	13.048 ES	
4,100.0	4,059.7	4,047.2	4,035.7	12.9	9.7	-72.76	92.7	618.4	280.6	258.5	22.06	12.718	
4,200.0	4,158.3	4,144.2	4,132.2	13.3	9.9	-77.42	103.6	616.6	285.0	262.2	22.76	12.520	
4,300.0	4,256.8	4,241.3	4,228.6	13.7	10.2	-81.93	114.5	614.9	291.3	267.9	23.42	12.437 SF	
4,400.0	4,355.4	4,338.3	4,325.0	14.1	10.5	-86.22	125.4	613.1	299.5	275.4	24.04	12.455	
4,500.0	4,453.9	4,435.4	4,421.4	14.5	10.8	-90.28	136.3	611.3	309.3	284.6	24.63	12.559	
4,600.0	4,552.5	4,532.5	4,517.9	14.9	11.1	-94.09	147.2	609.5	320.6	295.4	25.17	12.734	
4,700.0	4,651.0	4,634.0	4,618.8	15.3	11.3	-97.77	158.3	607.7	332.9	307.2	25.67	12.967	
4,800.0	4,749.6	4,740.7	4,725.1	15.7	11.6	-101.23	167.3	606.2	344.1	318.0	26.12	13.174	
4,900.0	4,848.1	4,848.2	4,832.4	16.0	11.8	-104.39	173.5	605.2	353.7	327.1	26.55	13.319	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut 27GK-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-401 - Wellbore #1 - Plan #1 (4-23-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,000.0	4,946.7	4,956.5	4,940.6	16.4	12.0	-107.32	176.6	604.7	361.4	334.4	26.97	13.396		
5,100.0	5,045.2	5,060.6	5,044.7	16.8	12.1	-109.97	177.1	604.6	367.3	339.9	27.39	13.409		
5,200.0	5,143.8	5,159.1	5,143.3	17.2	12.3	-112.39	177.1	604.6	373.5	345.7	27.82	13.424		
5,300.0	5,242.4	5,257.7	5,241.9	17.6	12.5	-114.74	177.1	604.6	380.3	352.1	28.25	13.464		
5,400.0	5,341.3	5,356.7	5,340.8	17.9	12.7	-116.76	177.1	604.6	386.5	357.9	28.60	13.515		
5,500.0	5,440.8	5,456.1	5,440.3	18.1	12.9	-118.25	177.1	604.6	391.5	362.6	28.96	13.523		
5,600.0	5,540.5	5,555.8	5,540.0	18.3	13.1	-119.24	177.1	604.6	395.1	365.8	29.31	13.479		
5,700.0	5,640.4	5,655.7	5,639.9	18.5	13.3	-119.75	177.1	604.6	397.0	367.3	29.66	13.382		
5,800.0	5,740.4	5,755.7	5,739.9	18.6	13.5	-13.00	177.1	604.6	397.3	367.2	30.02	13.232		
5,900.0	5,840.4	5,855.7	5,839.9	18.7	13.8	-13.00	177.1	604.6	397.3	366.9	30.39	13.071		
6,000.0	5,940.3	5,955.6	5,939.8	18.9	14.0	167.06	177.1	604.6	400.8	370.1	30.63	13.083		
6,100.0	6,038.9	6,045.5	6,029.7	19.1	14.1	167.24	177.3	604.6	416.8	386.4	30.42	13.703		
6,200.0	6,134.5	6,100.0	6,084.1	19.3	14.3	167.20	180.4	604.6	450.8	421.1	29.68	15.188		
6,300.0	6,225.6	6,150.0	6,133.7	19.7	14.4	166.97	186.6	604.6	503.0	474.4	28.53	17.627		
6,400.0	6,310.5	6,200.0	6,182.7	20.1	14.6	166.50	196.1	604.6	570.2	543.2	27.04	21.090		
6,500.0	6,387.8	6,234.6	6,216.3	20.6	14.7	165.12	204.6	604.6	649.7	624.4	25.25	25.726		
6,600.0	6,456.2	6,250.0	6,231.1	21.2	14.8	161.66	208.8	604.6	738.2	714.7	23.47	31.452		
6,700.0	6,514.5	6,273.6	6,253.6	21.9	14.9	155.34	215.9	604.6	832.5	810.0	22.55	36.920		
6,800.0	6,561.7	6,281.3	6,260.9	22.8	14.9	134.92	218.3	604.6	930.6	903.9	26.67	34.889		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	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		Offset		Semi Major Axis			Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	+N/-S (ft)		+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	92.44	-29.1	682.7	683.3					
100.0	100.0	99.5	99.5	0.1	0.1	92.44	-29.1	682.7	683.3	683.1	0.22	3,047.620		
200.0	200.0	199.5	199.5	0.3	0.3	92.44	-29.1	682.7	683.3	682.6	0.67	1,015.030		
300.0	300.0	299.5	299.5	0.6	0.6	92.44	-29.1	682.7	683.3	682.2	1.12	608.612		
400.0	400.0	399.5	399.5	0.8	0.8	92.44	-29.1	682.7	683.3	681.7	1.57	434.598		
500.0	500.0	499.5	499.5	1.0	1.0	92.44	-29.1	682.7	683.3	681.3	2.02	337.967		
600.0	600.0	599.5	599.5	1.2	1.2	92.44	-29.1	682.7	683.3	680.8	2.47	276.491		
700.0	700.0	699.5	699.5	1.5	1.5	92.44	-29.1	682.7	683.3	680.4	2.92	233.937		
800.0	800.0	799.5	799.5	1.7	1.7	92.44	-29.1	682.7	683.3	679.9	3.37	202.735		
900.0	900.0	899.5	899.5	1.9	1.9	92.44	-29.1	682.7	683.3	679.5	3.82	178.877		
1,000.0	1,000.0	999.5	999.5	2.1	2.1	92.44	-29.1	682.7	683.3	679.0	4.27	160.043		
1,100.0	1,100.0	1,099.5	1,099.5	2.3	2.4	-14.44	-29.1	682.7	681.6	676.9	4.70	145.020		
1,200.0	1,199.8	1,199.3	1,199.3	2.5	2.6	-14.57	-29.1	682.7	676.5	671.4	5.11	132.288		
1,300.0	1,299.5	1,281.3	1,281.3	2.8	2.8	-14.80	-28.7	683.8	669.4	663.9	5.48	122.139		
1,400.0	1,398.7	1,363.2	1,363.1	3.0	2.9	-15.17	-27.6	687.0	661.6	655.7	5.84	113.244		
1,500.0	1,497.5	1,445.1	1,444.8	3.3	3.1	-15.70	-25.6	692.5	653.1	646.9	6.21	105.204		
1,600.0	1,596.0	1,527.1	1,526.4	3.6	3.3	-16.29	-22.9	700.2	646.1	639.5	6.60	97.832		
1,700.0	1,694.6	1,609.2	1,607.8	3.9	3.5	-16.96	-19.3	710.1	641.9	634.8	7.01	91.524		
1,800.0	1,793.1	1,700.0	1,697.5	4.2	3.7	-17.79	-14.5	723.7	640.5	633.1	7.45	85.924		
1,815.2	1,808.1	1,703.7	1,701.1	4.3	3.8	-17.83	-14.3	724.3	640.5	633.0	7.50	85.389 CC, ES		
1,900.0	1,891.7	1,786.1	1,782.2	4.5	4.0	-18.63	-9.3	738.1	641.2	633.3	7.90	81.177		
2,000.0	1,990.2	1,885.5	1,880.0	4.9	4.3	-19.59	-3.4	754.7	642.2	633.8	8.38	76.600		
2,100.0	2,088.8	1,984.9	1,977.8	5.3	4.6	-20.55	2.6	771.4	643.4	634.5	8.88	72.464		
2,200.0	2,187.3	2,084.3	2,075.6	5.6	5.0	-21.51	8.5	788.1	644.8	635.4	9.38	68.735		
2,300.0	2,285.9	2,183.7	2,173.4	6.0	5.3	-22.46	14.5	804.7	646.4	636.5	9.89	65.334		
2,400.0	2,384.4	2,283.1	2,271.3	6.4	5.7	-23.41	20.4	821.4	648.1	637.7	10.41	62.247		
2,500.0	2,483.0	2,382.5	2,369.1	6.7	6.0	-24.35	26.4	838.1	650.1	639.1	10.94	59.433		
2,600.0	2,581.5	2,481.9	2,466.9	7.1	6.4	-25.29	32.3	854.7	652.2	640.7	11.47	56.860		
2,700.0	2,680.1	2,581.3	2,564.7	7.5	6.8	-26.22	38.3	871.4	654.4	642.4	12.01	54.501		
2,800.0	2,778.6	2,680.7	2,662.5	7.9	7.1	-27.14	44.2	888.1	656.9	644.3	12.55	52.333		
2,900.0	2,877.2	2,780.1	2,760.3	8.2	7.5	-28.06	50.2	904.7	659.5	646.4	13.10	50.335		
3,000.0	2,975.7	2,879.5	2,858.1	8.6	7.9	-28.97	56.1	921.4	662.3	648.6	13.66	48.488		
3,100.0	3,074.3	2,978.9	2,956.0	9.0	8.3	-29.87	62.1	938.1	665.3	651.0	14.22	46.779		
3,200.0	3,172.8	3,078.3	3,053.8	9.4	8.6	-30.76	68.1	954.7	668.4	653.6	14.79	45.193		
3,300.0	3,271.4	3,177.7	3,151.6	9.8	9.0	-31.64	74.0	971.4	671.7	656.3	15.36	43.717		
3,400.0	3,369.9	3,277.1	3,249.4	10.2	9.4	-32.52	80.0	988.1	675.1	659.2	15.94	42.342		
3,500.0	3,468.5	3,376.5	3,347.2	10.6	9.8	-33.39	85.9	1,004.7	678.7	662.2	16.53	41.059		
3,600.0	3,567.0	3,475.9	3,445.0	10.9	10.2	-34.24	91.9	1,021.4	682.5	665.3	17.12	39.858		
3,700.0	3,665.6	3,575.3	3,542.9	11.3	10.6	-35.09	97.8	1,038.1	686.4	668.7	17.72	38.734		
3,800.0	3,764.1	3,674.8	3,640.7	11.7	11.0	-35.93	103.8	1,054.8	690.4	672.1	18.32	37.679		
3,900.0	3,862.7	3,774.2	3,738.5	12.1	11.4	-36.76	109.7	1,071.4	694.6	675.7	18.93	36.687		
4,000.0	3,961.2	3,873.6	3,836.3	12.5	11.8	-37.58	115.7	1,088.1	699.0	679.4	19.55	35.754		
4,100.0	4,059.7	3,973.0	3,934.1	12.9	12.2	-38.39	121.6	1,104.8	703.5	683.3	20.17	34.875		
4,200.0	4,158.3	4,072.4	4,031.9	13.3	12.5	-39.18	127.6	1,121.4	708.1	687.3	20.80	34.045		
4,300.0	4,256.8	4,171.8	4,129.7	13.7	12.9	-39.97	133.5	1,138.1	712.9	691.5	21.43	33.262		
4,400.0	4,355.4	4,271.2	4,227.6	14.1	13.3	-40.75	139.5	1,154.8	717.8	695.7	22.07	32.521		
4,500.0	4,453.9	4,370.6	4,325.4	14.5	13.7	-41.52	145.5	1,171.4	722.8	700.1	22.72	31.819		
4,600.0	4,552.5	4,470.0	4,423.2	14.9	14.1	-42.27	151.4	1,188.1	728.0	704.6	23.37	31.155		
4,700.0	4,651.0	4,580.1	4,531.6	15.3	14.5	-43.10	157.9	1,206.3	733.1	709.0	24.05	30.484		
4,800.0	4,749.6	4,713.5	4,663.7	15.7	14.9	-44.14	164.2	1,223.9	734.7	710.0	24.75	29.681		
4,900.0	4,848.1	4,846.6	4,796.2	16.0	15.2	-45.24	168.4	1,235.7	731.9	706.5	25.46	28.753		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	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
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,946.7	4,978.9	4,928.3	16.4	15.4	-46.43	170.6	1,241.7	724.8	698.6	26.16	27.707	
5,100.0	5,045.2	5,095.4	5,044.7	16.8	15.6	-47.58	170.9	1,242.6	713.8	687.0	26.84	26.600	
5,200.0	5,143.8	5,193.9	5,143.3	17.2	15.8	-48.59	170.9	1,242.6	702.4	674.9	27.49	25.552	
5,300.0	5,242.4	5,292.5	5,241.9	17.6	15.9	-49.58	170.9	1,242.6	691.3	663.1	28.13	24.575	
5,400.0	5,341.3	5,391.4	5,340.8	17.9	16.1	-50.35	170.9	1,242.6	682.1	653.4	28.64	23.813	
5,500.0	5,440.8	5,490.9	5,440.3	18.1	16.2	-50.94	170.9	1,242.6	675.2	646.1	29.10	23.199	
5,600.0	5,540.5	5,590.6	5,540.0	18.3	16.4	-51.35	170.9	1,242.6	670.6	641.1	29.51	22.723	
5,700.0	5,640.4	5,690.5	5,639.9	18.5	16.5	-51.57	170.9	1,242.6	668.2	638.3	29.86	22.376	
5,787.5	5,727.9	5,778.0	5,727.4	18.6	16.7	-51.63	170.9	1,242.6	667.6	637.4	30.15	22.140	
5,800.0	5,740.4	5,790.5	5,739.9	18.6	16.7	55.23	170.9	1,242.6	667.8	637.6	30.19	22.121	
5,900.0	5,840.4	5,890.5	5,839.9	18.7	16.9	55.23	170.9	1,242.6	667.8	637.3	30.54	21.867	
6,000.0	5,940.3	5,990.4	5,939.8	18.9	17.0	-124.90	170.9	1,242.6	669.9	639.1	30.77	21.769 SF	
6,100.0	6,038.9	6,070.9	6,020.2	19.1	17.2	-125.20	171.6	1,242.6	680.0	649.1	30.85	22.042	
6,200.0	6,134.5	6,130.8	6,079.9	19.3	17.3	-125.32	176.7	1,242.6	702.4	671.7	30.77	22.828	
6,300.0	6,225.6	6,182.6	6,131.1	19.7	17.4	-124.95	184.8	1,242.6	738.0	707.4	30.58	24.136	
6,400.0	6,310.5	6,224.9	6,172.3	20.1	17.5	-123.60	194.0	1,242.6	786.5	756.1	30.35	25.912	
6,500.0	6,387.8	6,250.0	6,196.6	20.6	17.6	-120.26	200.6	1,242.6	846.9	816.6	30.31	27.938	
6,600.0	6,456.2	6,280.0	6,225.2	21.2	17.7	-115.82	209.4	1,242.6	917.2	886.5	30.74	29.835	
6,700.0	6,514.5	6,300.0	6,244.2	21.9	17.7	-108.79	215.9	1,242.6	995.6	963.7	31.87	31.236	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	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
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	83.38	83.8	721.7	726.5				
100.0	100.0	98.5	98.5	0.1	0.1	83.38	83.8	721.7	726.5	726.3	0.22	3,256.752	
200.0	200.0	198.5	198.5	0.3	0.3	83.38	83.8	721.7	726.5	725.9	0.67	1,082.871	CC, ES
300.0	300.0	278.6	278.6	0.6	0.5	83.38	83.9	722.8	727.9	726.8	1.07	681.321	
400.0	400.0	358.2	358.1	0.8	0.7	83.39	84.1	726.0	732.0	730.5	1.47	498.315	
500.0	500.0	437.6	437.4	1.0	0.9	83.41	84.5	731.5	738.9	737.0	1.88	393.049	
600.0	600.0	516.7	516.0	1.2	1.1	83.44	85.0	739.1	748.5	746.2	2.31	324.628	
700.0	700.0	600.0	598.7	1.5	1.3	83.48	85.7	749.5	760.9	758.2	2.76	275.276	
800.0	800.0	673.2	671.0	1.7	1.6	83.52	86.4	760.6	776.0	772.8	3.22	240.663	
900.0	900.0	750.5	747.1	1.9	1.8	83.57	87.3	774.3	793.8	790.0	3.72	213.287	
1,000.0	1,000.0	826.9	821.9	2.1	2.2	83.62	88.3	789.8	814.2	809.9	4.24	191.794	
1,100.0	1,100.0	906.7	899.5	2.3	2.5	-23.03	89.6	808.2	835.6	831.2	4.37	191.298	
1,200.0	1,199.8	999.7	989.7	2.5	3.0	-22.94	91.1	830.9	855.3	850.5	4.80	178.344	
1,300.0	1,299.5	1,098.3	1,085.3	2.8	3.5	-22.96	92.7	854.9	871.8	866.6	5.24	166.258	
1,400.0	1,398.7	1,197.3	1,181.3	3.0	4.0	-23.10	94.3	879.0	885.2	879.5	5.71	155.082	
1,500.0	1,497.5	1,296.6	1,277.7	3.3	4.5	-23.34	95.9	903.2	895.4	889.2	6.19	144.676	
1,600.0	1,596.0	1,396.1	1,374.1	3.6	5.0	-23.69	97.5	927.4	904.4	897.7	6.70	135.008	
1,700.0	1,694.6	1,495.5	1,470.6	3.9	5.5	-24.03	99.1	951.7	913.4	906.2	7.22	126.527	
1,800.0	1,793.1	1,595.0	1,567.0	4.2	6.0	-24.37	100.7	975.9	922.5	914.8	7.75	119.051	
1,900.0	1,891.7	1,694.4	1,663.4	4.5	6.5	-24.69	102.3	1,000.1	931.6	923.3	8.29	112.427	
2,000.0	1,990.2	1,793.9	1,759.9	4.9	7.0	-25.02	103.9	1,024.4	940.7	931.9	8.83	106.529	
2,100.0	2,088.8	1,893.3	1,856.3	5.3	7.6	-25.33	105.5	1,048.6	949.9	940.5	9.38	101.252	
2,200.0	2,187.3	1,992.7	1,952.7	5.6	8.1	-25.64	107.1	1,072.8	959.1	949.1	9.94	96.508	
2,300.0	2,285.9	2,092.2	2,049.2	6.0	8.6	-25.94	108.8	1,097.0	968.3	957.8	10.50	92.225	
2,400.0	2,384.4	2,191.6	2,145.6	6.4	9.1	-26.24	110.4	1,121.3	977.5	966.5	11.07	88.341	
2,500.0	2,483.0	2,291.1	2,242.0	6.7	9.6	-26.53	112.0	1,145.5	986.8	975.2	11.64	84.806	
2,600.0	2,581.5	2,390.5	2,338.5	7.1	10.2	-26.82	113.6	1,169.7	996.1	983.9	12.21	81.576	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	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-MWDD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	87.92	25.5	702.2	702.6				
100.0	100.0	98.5	98.5	0.1	0.1	87.92	25.5	702.2	702.6	702.4	0.22	3,149.664	
200.0	200.0	198.5	198.5	0.3	0.3	87.92	25.5	702.2	702.6	702.0	0.67	1,047.264	
300.0	300.0	298.5	298.5	0.6	0.6	87.92	25.5	702.2	702.6	701.5	1.12	627.098	
400.0	400.0	398.5	398.5	0.8	0.8	87.92	25.5	702.2	702.6	701.1	1.57	447.542	
500.0	500.0	498.5	498.5	1.0	1.0	87.92	25.5	702.2	702.6	700.6	2.02	347.923	
600.0	600.0	598.5	598.5	1.2	1.2	87.92	25.5	702.2	702.6	700.2	2.47	284.578	
700.0	700.0	698.5	698.5	1.5	1.5	87.92	25.5	702.2	702.6	699.7	2.92	240.746	
800.0	800.0	798.5	798.5	1.7	1.7	87.92	25.5	702.2	702.6	699.3	3.37	208.614 CC, ES	
900.0	900.0	879.2	879.2	1.9	1.9	87.91	25.7	703.3	704.0	700.2	3.77	186.942	
1,000.0	1,000.0	959.5	959.4	2.1	2.0	87.88	26.2	706.6	708.1	704.0	4.16	170.212	
1,100.0	1,100.0	1,039.6	1,039.3	2.3	2.2	-19.01	27.1	712.1	713.4	708.9	4.53	157.463	
1,200.0	1,199.8	1,119.6	1,118.9	2.5	2.4	-19.17	28.3	719.8	718.1	713.2	4.89	146.927	
1,300.0	1,299.5	1,200.0	1,198.7	2.8	2.6	-19.41	29.8	729.7	722.4	717.1	5.25	137.559	
1,400.0	1,398.7	1,279.1	1,276.9	3.0	2.8	-19.75	31.7	741.7	726.1	720.5	5.62	129.182	
1,500.0	1,497.5	1,358.7	1,355.2	3.3	3.1	-20.17	33.9	755.8	729.4	723.4	6.00	121.490	
1,600.0	1,596.0	1,445.9	1,440.5	3.6	3.4	-20.71	36.7	773.5	734.1	727.6	6.44	114.026	
1,700.0	1,694.6	1,545.4	1,537.8	3.9	3.7	-21.31	40.0	794.3	739.3	732.4	6.91	106.923	
1,800.0	1,793.1	1,645.0	1,635.1	4.2	4.1	-21.91	43.2	815.0	744.6	737.2	7.40	100.594	
1,900.0	1,891.7	1,744.5	1,732.4	4.5	4.5	-22.49	46.5	835.7	750.1	742.2	7.90	94.985	
2,000.0	1,990.2	1,844.1	1,829.8	4.9	4.9	-23.07	49.7	856.4	755.5	747.1	8.41	89.889	
2,100.0	2,088.8	1,943.6	1,927.1	5.3	5.4	-23.64	53.0	877.1	761.1	752.2	8.92	85.321	
2,200.0	2,187.3	2,043.2	2,024.4	5.6	5.8	-24.20	56.2	897.8	766.8	757.3	9.44	81.198	
2,300.0	2,285.9	2,142.8	2,121.7	6.0	6.2	-24.76	59.5	918.5	772.5	762.5	9.97	77.463	
2,400.0	2,384.4	2,242.3	2,219.1	6.4	6.7	-25.30	62.7	939.2	778.3	767.7	10.51	74.067	
2,500.0	2,483.0	2,341.9	2,316.4	6.7	7.1	-25.84	66.0	959.9	784.1	773.1	11.05	70.968	
2,600.0	2,581.5	2,441.4	2,413.7	7.1	7.6	-26.37	69.2	980.6	790.0	778.4	11.60	68.132	
2,700.0	2,680.1	2,541.0	2,511.1	7.5	8.0	-26.89	72.5	1,001.3	796.0	783.9	12.15	65.529	
2,800.0	2,778.6	2,640.6	2,608.4	7.9	8.4	-27.41	75.7	1,022.0	802.1	789.4	12.70	63.131	
2,900.0	2,877.2	2,740.1	2,705.7	8.2	8.9	-27.91	79.0	1,042.7	808.2	794.9	13.27	60.917	
3,000.0	2,975.7	2,839.7	2,803.0	8.6	9.3	-28.41	82.3	1,063.4	814.4	800.5	13.83	58.867	
3,100.0	3,074.3	2,939.2	2,900.4	9.0	9.8	-28.90	85.5	1,084.1	820.6	806.2	14.41	56.965	
3,200.0	3,172.8	3,038.8	2,997.7	9.4	10.2	-29.39	88.8	1,104.8	826.9	811.9	14.98	55.195	
3,300.0	3,271.4	3,138.4	3,095.0	9.8	10.7	-29.86	92.0	1,125.5	833.3	817.7	15.56	53.544	
3,400.0	3,369.9	3,237.9	3,192.3	10.2	11.2	-30.33	95.3	1,146.2	839.7	823.5	16.15	52.002	
3,500.0	3,468.5	3,337.5	3,289.7	10.6	11.6	-30.79	98.5	1,167.0	846.1	829.4	16.74	50.558	
3,600.0	3,567.0	3,437.0	3,387.0	10.9	12.1	-31.25	101.8	1,187.7	852.7	835.3	17.33	49.203	
3,700.0	3,665.6	3,536.6	3,484.3	11.3	12.5	-31.70	105.0	1,208.4	859.2	841.3	17.93	47.930	
3,800.0	3,764.1	3,636.1	3,581.7	11.7	13.0	-32.14	108.3	1,229.1	865.9	847.4	18.53	46.732	
3,900.0	3,862.7	3,735.7	3,679.0	12.1	13.4	-32.57	111.5	1,249.8	872.6	853.4	19.13	45.602	
4,000.0	3,961.2	3,835.3	3,776.3	12.5	13.9	-33.00	114.8	1,270.5	879.3	859.5	19.74	44.535	
4,100.0	4,059.7	3,934.8	3,873.6	12.9	14.3	-33.42	118.0	1,291.2	886.1	865.7	20.36	43.527	
4,200.0	4,158.3	4,034.4	3,971.0	13.3	14.8	-33.84	121.3	1,311.9	892.9	871.9	20.97	42.572	
4,300.0	4,256.8	4,133.9	4,068.3	13.7	15.3	-34.25	124.5	1,332.6	899.8	878.2	21.59	41.666	
4,400.0	4,355.4	4,233.5	4,165.6	14.1	15.7	-34.65	127.8	1,353.3	906.7	884.5	22.22	40.807	
4,500.0	4,453.9	4,333.1	4,262.9	14.5	16.2	-35.05	131.0	1,374.0	913.6	890.8	22.85	39.990	
4,600.0	4,552.5	4,432.6	4,360.3	14.9	16.6	-35.44	134.3	1,394.7	920.6	897.2	23.48	39.213	
4,700.0	4,651.0	4,532.2	4,457.6	15.3	17.1	-35.82	137.5	1,415.4	927.7	903.6	24.11	38.472	
4,800.0	4,749.6	4,631.7	4,554.9	15.7	17.5	-36.20	140.8	1,436.1	934.8	910.0	24.75	37.766	
4,900.0	4,848.1	4,731.3	4,652.3	16.0	18.0	-36.57	144.0	1,456.8	941.9	916.5	25.39	37.093	
5,000.0	4,946.7	4,830.8	4,749.6	16.4	18.5	-36.94	147.3	1,477.5	949.1	923.0	26.04	36.449	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	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
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,045.2	4,930.4	4,846.9	16.8	18.9	-37.30	150.5	1,498.2	956.3	929.6	26.69	35.834	
5,200.0	5,143.8	5,030.0	4,944.2	17.2	19.4	-37.66	153.8	1,518.9	963.5	936.2	27.34	35.245	
5,300.0	5,242.4	5,152.1	5,063.8	17.6	19.9	-38.11	157.7	1,543.6	970.4	942.4	28.02	34.635	
5,400.0	5,341.3	5,301.1	5,210.9	17.9	20.3	-38.64	161.4	1,567.3	975.0	946.4	28.61	34.075	
5,500.0	5,440.8	5,450.6	5,359.4	18.1	20.7	-39.04	163.9	1,583.6	977.3	948.2	29.13	33.551	
5,600.0	5,540.5	5,600.2	5,508.7	18.3	20.9	-39.33	165.3	1,592.1	977.3	947.7	29.57	33.053	
5,700.0	5,640.4	5,730.4	5,638.9	18.5	21.1	-39.48	165.5	1,593.6	975.3	945.4	29.91	32.612	
5,787.5	5,727.9	5,817.9	5,726.4	18.6	21.2	-39.51	165.5	1,593.6	974.5	944.3	30.16	32.307	
5,800.0	5,740.4	5,830.4	5,738.9	18.6	21.2	67.34	165.5	1,593.6	974.8	944.6	30.20	32.282	
5,900.0	5,840.4	5,930.4	5,838.9	18.7	21.3	67.34	165.5	1,593.6	974.8	944.3	30.53	31.925	
5,900.2	5,840.6	5,930.6	5,839.1	18.7	21.3	67.34	165.5	1,593.6	974.8	944.3	30.53	31.924	
6,000.0	5,940.3	6,020.7	5,929.2	18.9	21.5	-112.72	165.8	1,593.6	976.3	945.6	30.75	31.752 SF	
6,100.0	6,038.9	6,085.1	5,993.4	19.1	21.5	-112.88	170.1	1,593.6	985.4	954.6	30.87	31.926	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut 27K-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-323 - Wellbore #1 - Plan #1 (4-22-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
1,400.0	1,398.7	1,386.8	1,385.6	3.0	3.0	22.35	-633.1	798.0	992.8	986.9	5.94	167.252		
1,500.0	1,497.5	1,483.0	1,480.7	3.3	3.3	21.92	-622.4	808.0	979.5	973.1	6.39	153.238		
1,600.0	1,596.0	1,579.7	1,575.8	3.6	3.6	21.23	-609.6	819.9	965.2	958.3	6.90	139.922		
1,700.0	1,694.6	1,677.9	1,672.3	3.9	3.9	20.49	-596.3	832.4	951.1	943.7	7.44	127.886		
1,800.0	1,793.1	1,776.1	1,768.8	4.2	4.2	19.72	-582.9	844.9	937.3	929.3	8.00	117.230		
1,900.0	1,891.7	1,874.4	1,865.3	4.5	4.6	18.93	-569.6	857.4	923.5	915.0	8.57	107.796		
2,000.0	1,990.2	1,972.6	1,961.8	4.9	4.9	18.12	-556.2	869.9	910.0	900.9	9.15	99.473		
2,100.0	2,088.8	2,070.8	2,058.3	5.3	5.3	17.28	-542.8	882.4	896.7	886.9	9.74	92.082		
2,200.0	2,187.3	2,169.0	2,154.8	5.6	5.6	16.42	-529.5	894.9	883.5	873.2	10.33	85.511		
2,300.0	2,285.9	2,267.3	2,251.3	6.0	6.0	15.53	-516.1	907.4	870.6	859.6	10.93	79.648		
2,400.0	2,384.4	2,365.5	2,347.8	6.4	6.4	14.62	-502.8	919.9	857.8	846.3	11.53	74.399		
2,500.0	2,483.0	2,463.7	2,444.3	6.7	6.8	13.68	-489.4	932.4	845.3	833.2	12.13	69.683		
2,600.0	2,581.5	2,561.9	2,540.9	7.1	7.1	12.71	-476.0	944.9	833.1	820.3	12.73	65.430		
2,700.0	2,680.1	2,660.1	2,637.4	7.5	7.5	11.72	-462.7	957.4	821.0	807.7	13.33	61.582		
2,800.0	2,778.6	2,758.4	2,733.9	7.9	7.9	10.69	-449.3	969.9	809.3	795.3	13.93	58.090		
2,900.0	2,877.2	2,856.6	2,830.4	8.2	8.3	9.64	-436.0	982.4	797.8	783.2	14.53	54.911		
3,000.0	2,975.7	2,954.8	2,926.9	8.6	8.7	8.56	-422.6	994.9	786.5	771.4	15.12	52.009		
3,100.0	3,074.3	3,053.0	3,023.4	9.0	9.1	7.45	-409.2	1,007.4	775.6	759.9	15.72	49.354		
3,200.0	3,172.8	3,151.3	3,119.9	9.4	9.5	6.30	-395.9	1,019.9	765.0	748.7	16.30	46.918		
3,300.0	3,271.4	3,249.5	3,216.4	9.8	9.9	5.13	-382.5	1,032.4	754.7	737.8	16.89	44.678		
3,400.0	3,369.9	3,347.7	3,312.9	10.2	10.3	3.92	-369.2	1,044.9	744.7	727.2	17.48	42.615		
3,500.0	3,468.5	3,445.9	3,409.4	10.6	10.7	2.69	-355.8	1,057.4	735.1	717.0	18.06	40.711		
3,600.0	3,567.0	3,544.2	3,505.9	10.9	11.1	1.42	-342.4	1,069.9	725.8	707.2	18.63	38.951		
3,700.0	3,665.6	3,642.4	3,602.4	11.3	11.5	0.12	-329.1	1,082.4	716.9	697.7	19.21	37.322		
3,800.0	3,764.1	3,740.6	3,698.9	11.7	11.9	-1.21	-315.7	1,094.9	708.4	688.6	19.78	35.811		
3,900.0	3,862.7	3,838.8	3,795.4	12.1	12.3	-2.57	-302.4	1,107.4	700.3	679.9	20.35	34.409		
4,000.0	3,961.2	3,937.0	3,891.9	12.5	12.7	-3.96	-289.0	1,119.9	692.6	671.6	20.92	33.106		
4,100.0	4,059.7	4,035.3	3,988.4	12.9	13.1	-5.38	-275.6	1,132.4	685.3	663.8	21.49	31.895		
4,200.0	4,158.3	4,133.5	4,084.9	13.3	13.5	-6.83	-262.3	1,144.9	678.4	656.4	22.05	30.767		
4,300.0	4,256.8	4,231.7	4,181.4	13.7	13.9	-8.31	-248.9	1,157.4	672.1	649.5	22.62	29.717		
4,400.0	4,355.4	4,329.9	4,277.9	14.1	14.3	-9.81	-235.6	1,169.9	666.2	643.0	23.18	28.738		
4,500.0	4,453.9	4,428.2	4,374.4	14.5	14.7	-11.34	-222.2	1,182.4	660.7	637.0	23.74	27.826		
4,600.0	4,552.5	4,526.4	4,470.9	14.9	15.1	-12.89	-208.8	1,194.9	655.8	631.5	24.31	26.976		
4,700.0	4,651.0	4,624.6	4,567.4	15.3	15.5	-14.47	-195.5	1,207.4	651.3	626.5	24.88	26.184		
4,800.0	4,749.6	4,722.8	4,663.9	15.7	15.9	-16.06	-182.1	1,219.8	647.4	622.0	25.44	25.445		
4,900.0	4,848.1	4,821.1	4,760.5	16.0	16.3	-17.67	-168.8	1,232.3	644.0	618.0	26.01	24.756		
5,000.0	4,946.7	4,919.3	4,857.0	16.4	16.7	-19.30	-155.4	1,244.8	641.1	614.6	26.59	24.115		
5,100.0	5,045.2	5,017.5	4,953.5	16.8	17.1	-20.94	-142.0	1,257.3	638.8	611.7	27.16	23.518		
5,200.0	5,143.8	5,115.7	5,050.0	17.2	17.5	-22.58	-128.7	1,269.8	637.0	609.3	27.74	22.962		
5,300.0	5,242.4	5,214.0	5,146.5	17.6	17.9	-24.23	-115.3	1,282.3	635.9	607.6	28.33	22.446		
5,301.1	5,243.4	5,215.0	5,147.5	17.6	17.9	-24.25	-115.2	1,282.5	635.9	607.6	28.34	22.442 CC		
5,400.0	5,341.3	5,312.4	5,243.2	17.9	18.3	-25.81	-101.9	1,294.9	637.7	608.9	28.87	22.087		
5,500.0	5,440.8	5,427.6	5,356.6	18.1	18.7	-27.42	-87.3	1,308.5	642.1	612.8	29.38	21.856		
5,600.0	5,540.5	5,549.2	5,477.1	18.3	19.0	-28.68	-75.4	1,319.6	646.6	616.8	29.80	21.697		
5,700.0	5,640.4	5,671.7	5,599.1	18.5	19.3	-29.48	-67.2	1,327.3	650.8	620.7	30.16	21.580		
5,800.0	5,740.4	5,794.9	5,722.1	18.6	19.5	77.00	-62.9	1,331.4	654.3	623.8	30.49	21.457		
5,900.0	5,840.4	5,909.6	5,836.9	18.7	19.7	76.95	-62.1	1,332.1	655.0	624.2	30.84	21.240		
6,000.0	5,940.3	6,009.5	5,936.8	18.9	19.8	-103.29	-62.1	1,332.1	655.9	624.7	31.14	21.060		
6,100.0	6,038.9	6,133.3	6,060.0	19.1	19.9	-104.08	-71.2	1,332.1	658.0	626.6	31.42	20.940		
6,200.0	6,134.5	6,260.3	6,183.4	19.3	19.8	-104.58	-101.0	1,332.1	659.4	627.8	31.62	20.853		
6,300.0	6,225.6	6,388.3	6,301.0	19.7	19.6	-104.76	-151.3	1,332.1	659.9	628.1	31.77	20.769		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design		Chesnut 27K-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-323 - Wellbore #1 - Plan #1 (4-22-14)										Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
6,400.0	6,310.5	6,516.4	6,408.5	20.1	19.2	-104.61	-220.5	1,332.1	659.5	627.5	31.96	20.636		
6,500.0	6,387.8	6,643.6	6,502.4	20.6	18.8	-104.14	-306.1	1,332.1	658.2	625.9	32.27	20.397		
6,600.0	6,456.2	6,769.0	6,579.9	21.2	18.4	-103.37	-404.6	1,332.1	656.1	623.3	32.81	19.998		
6,700.0	6,514.5	6,891.9	6,639.2	21.9	18.1	-102.31	-512.1	1,332.1	653.4	619.7	33.66	19.410		
6,800.0	6,561.7	7,011.8	6,679.7	22.8	17.8	-101.02	-624.7	1,332.1	650.4	615.5	34.90	18.636		
6,900.0	6,597.0	7,128.2	6,701.7	23.9	17.6	-99.53	-739.0	1,332.1	647.3	610.8	36.53	17.719		
7,000.0	6,619.8	7,238.9	6,706.5	25.0	17.9	-97.92	-849.5	1,332.1	644.4	605.9	38.51	16.735		
7,100.0	6,629.7	7,338.3	6,705.6	26.2	18.7	-97.08	-948.8	1,332.1	643.0	602.4	40.63	15.827		
7,158.8	6,631.0	7,397.0	6,705.1	27.0	19.3	-96.93	-1,007.6	1,332.1	642.8	600.8	42.00	15.305		
7,200.0	6,629.7	7,438.3	6,704.7	27.6	19.7	-97.01	-1,048.8	1,332.1	642.9	599.9	42.99	14.956		
7,300.0	6,629.0	7,538.3	6,703.8	29.0	20.8	-96.99	-1,148.8	1,332.1	642.9	597.3	45.59	14.100		
7,400.0	6,628.3	7,638.3	6,702.9	30.4	22.1	-96.98	-1,248.8	1,332.1	642.9	594.5	48.37	13.292		
7,500.0	6,627.6	7,738.3	6,702.0	31.9	23.4	-96.96	-1,348.8	1,332.1	642.8	591.6	51.28	12.536		
7,600.0	6,626.9	7,838.3	6,701.0	33.5	24.8	-96.94	-1,448.8	1,332.1	642.8	588.5	54.31	11.836		
7,700.0	6,626.2	7,938.3	6,700.1	35.1	26.2	-96.92	-1,548.8	1,332.1	642.8	585.3	57.44	11.191		
7,800.0	6,625.5	8,038.3	6,699.2	36.7	27.7	-96.90	-1,648.8	1,332.1	642.8	582.1	60.65	10.597		
7,900.0	6,624.8	8,138.3	6,698.3	38.3	29.2	-96.88	-1,748.8	1,332.1	642.7	578.8	63.94	10.053		
8,000.0	6,624.1	8,238.3	6,697.4	40.0	30.8	-96.87	-1,848.8	1,332.1	642.7	575.4	67.28	9.553		
8,100.0	6,623.4	8,338.3	6,696.5	41.7	32.4	-96.85	-1,948.8	1,332.1	642.7	572.0	70.67	9.094		
8,200.0	6,622.7	8,438.3	6,695.6	43.4	34.1	-96.83	-2,048.8	1,332.1	642.7	568.6	74.11	8.672		
8,300.0	6,622.0	8,538.3	6,694.7	45.1	35.8	-96.81	-2,148.8	1,332.1	642.6	565.1	77.58	8.283		
8,400.0	6,621.3	8,638.3	6,693.8	46.9	37.5	-96.79	-2,248.8	1,332.1	642.6	561.5	81.09	7.925		
8,500.0	6,620.6	8,738.3	6,692.9	48.6	39.2	-96.77	-2,348.8	1,332.1	642.6	558.0	84.62	7.594		
8,600.0	6,619.9	8,838.3	6,692.0	50.4	40.9	-96.75	-2,448.8	1,332.1	642.6	554.4	88.18	7.287		
8,700.0	6,619.2	8,938.3	6,691.1	52.2	42.7	-96.74	-2,548.8	1,332.1	642.5	550.8	91.76	7.002		
8,800.0	6,618.5	9,038.3	6,690.2	54.0	44.4	-96.72	-2,648.7	1,332.1	642.5	547.1	95.36	6.737		
8,900.0	6,617.8	9,138.3	6,689.2	55.8	46.2	-96.70	-2,748.7	1,332.1	642.5	543.5	98.98	6.491		
9,000.0	6,617.1	9,238.3	6,688.3	57.6	48.0	-96.68	-2,848.7	1,332.1	642.5	539.8	102.62	6.261		
9,100.0	6,616.4	9,338.3	6,687.4	59.4	49.8	-96.66	-2,948.7	1,332.1	642.4	536.2	106.26	6.046		
9,200.0	6,615.7	9,438.3	6,686.5	61.2	51.6	-96.64	-3,048.7	1,332.1	642.4	532.5	109.93	5.844		
9,300.0	6,615.0	9,538.3	6,685.6	63.0	53.4	-96.62	-3,148.7	1,332.1	642.4	528.8	113.60	5.655		
9,400.0	6,614.3	9,638.3	6,684.7	64.9	55.2	-96.61	-3,248.7	1,332.1	642.4	525.1	117.28	5.477		
9,500.0	6,613.6	9,738.3	6,683.8	66.7	57.0	-96.59	-3,348.7	1,332.1	642.3	521.4	120.97	5.310		
9,600.0	6,612.9	9,838.3	6,682.9	68.5	58.9	-96.57	-3,448.7	1,332.1	642.3	517.6	124.67	5.152		
9,700.0	6,612.2	9,938.3	6,682.0	70.4	60.7	-96.55	-3,548.7	1,332.1	642.3	513.9	128.37	5.003		
9,800.0	6,611.5	10,038.3	6,681.1	72.2	62.5	-96.53	-3,648.7	1,332.1	642.3	510.2	132.09	4.862		
9,900.0	6,610.8	10,138.3	6,680.2	74.1	64.4	-96.51	-3,748.7	1,332.1	642.2	506.4	135.81	4.729		
10,000.0	6,610.1	10,238.3	6,679.3	75.9	66.2	-96.49	-3,848.7	1,332.1	642.2	502.7	139.54	4.602		
10,100.0	6,609.4	10,338.3	6,678.4	77.8	68.1	-96.48	-3,948.7	1,332.1	642.2	498.9	143.27	4.482		
10,200.0	6,608.7	10,438.3	6,677.5	79.7	69.9	-96.46	-4,048.7	1,332.1	642.2	495.2	147.00	4.368		
10,300.0	6,608.0	10,538.3	6,676.5	81.5	71.8	-96.44	-4,148.7	1,332.1	642.1	491.4	150.75	4.260		
10,400.0	6,607.3	10,638.3	6,675.6	83.4	73.7	-96.42	-4,248.7	1,332.1	642.1	487.6	154.49	4.156		
10,500.0	6,606.6	10,738.3	6,674.7	85.3	75.5	-96.40	-4,348.7	1,332.1	642.1	483.8	158.24	4.058		
10,600.0	6,605.9	10,838.2	6,673.8	87.1	77.4	-96.38	-4,448.7	1,332.1	642.1	480.1	162.00	3.963		
10,700.0	6,605.2	10,938.2	6,672.9	89.0	79.3	-96.36	-4,548.7	1,332.1	642.0	476.3	165.75	3.873		
10,800.0	6,604.5	11,038.2	6,672.0	90.9	81.1	-96.35	-4,648.7	1,332.1	642.0	472.5	169.51	3.787		
10,900.0	6,603.8	11,138.2	6,671.1	92.8	83.0	-96.33	-4,748.7	1,332.1	642.0	468.7	173.28	3.705		
11,000.0	6,603.2	11,238.2	6,670.2	94.6	84.9	-96.31	-4,848.7	1,332.1	642.0	464.9	177.05	3.626		
11,100.0	6,602.5	11,338.2	6,669.3	96.5	86.8	-96.29	-4,948.6	1,332.1	641.9	461.1	180.82	3.550		
11,200.0	6,601.8	11,438.2	6,668.4	98.4	88.7	-96.27	-5,048.6	1,332.1	641.9	457.3	184.59	3.478		
11,300.0	6,601.1	11,538.2	6,667.5	100.3	90.5	-96.25	-5,148.6	1,332.1	641.9	453.5	188.36	3.408		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut 27K-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-323 - Wellbore #1 - Plan #1 (4-22-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
11,400.0	6,600.4	11,638.2	6,666.6	102.2	92.4	-96.23	-5,248.6	1,332.1	641.9	449.7	192.14	3.341		
11,500.0	6,599.7	11,738.2	6,665.7	104.1	94.3	-96.22	-5,348.6	1,332.1	641.9	445.9	195.92	3.276		
11,600.0	6,599.0	11,838.2	6,664.7	105.9	96.2	-96.20	-5,448.6	1,332.1	641.8	442.1	199.70	3.214		
11,700.0	6,598.3	11,938.2	6,663.8	107.8	98.1	-96.18	-5,548.6	1,332.1	641.8	438.3	203.48	3.154		
11,800.0	6,597.6	12,038.2	6,662.9	109.7	100.0	-96.16	-5,648.6	1,332.1	641.8	434.5	207.27	3.096		
11,900.0	6,596.9	12,138.2	6,662.0	111.6	101.9	-96.14	-5,748.6	1,332.1	641.8	430.7	211.06	3.041		
12,000.0	6,596.2	12,238.2	6,661.1	113.5	103.8	-96.12	-5,848.6	1,332.1	641.7	426.9	214.85	2.987		
12,100.0	6,595.5	12,338.2	6,660.2	115.4	105.7	-96.10	-5,948.6	1,332.1	641.7	423.1	218.64	2.935		
12,200.0	6,594.8	12,438.2	6,659.3	117.3	107.5	-96.09	-6,048.6	1,332.1	641.7	419.3	222.43	2.885		
12,300.0	6,594.1	12,538.2	6,658.4	119.2	109.4	-96.07	-6,148.6	1,332.1	641.7	415.4	226.22	2.836		
12,400.0	6,593.4	12,638.2	6,657.5	121.1	111.3	-96.05	-6,248.6	1,332.1	641.6	411.6	230.02	2.790		
12,500.0	6,592.7	12,738.2	6,656.6	123.0	113.2	-96.03	-6,348.6	1,332.1	641.6	407.8	233.81	2.744		
12,600.0	6,592.0	12,838.2	6,655.7	124.9	115.1	-96.01	-6,448.6	1,332.1	641.6	404.0	237.61	2.700		
12,700.0	6,591.3	12,938.2	6,654.8	126.8	117.0	-95.99	-6,548.6	1,332.1	641.6	400.2	241.41	2.658		
12,800.0	6,590.6	13,038.2	6,653.9	128.7	118.9	-95.97	-6,648.6	1,332.1	641.6	396.3	245.21	2.616		
12,900.0	6,589.9	13,138.2	6,652.9	130.6	120.8	-95.96	-6,748.6	1,332.1	641.5	392.5	249.01	2.576		
13,000.0	6,589.2	13,238.2	6,652.0	132.5	122.7	-95.94	-6,848.6	1,332.1	641.5	388.7	252.81	2.537		
13,100.0	6,588.5	13,338.2	6,651.1	134.4	124.6	-95.92	-6,948.6	1,332.1	641.5	384.9	256.62	2.500		
13,200.0	6,587.8	13,438.2	6,650.2	136.3	126.5	-95.90	-7,048.6	1,332.1	641.5	381.0	260.42	2.463		
13,300.0	6,587.1	13,538.2	6,649.3	138.2	128.4	-95.88	-7,148.6	1,332.1	641.4	377.2	264.23	2.428		
13,400.0	6,586.4	13,638.2	6,648.4	140.1	130.3	-95.86	-7,248.5	1,332.1	641.4	373.4	268.03	2.393		
13,500.0	6,585.7	13,738.2	6,647.5	142.0	132.2	-95.84	-7,348.5	1,332.1	641.4	369.6	271.84	2.359		
13,600.0	6,585.0	13,838.2	6,646.6	143.9	134.1	-95.83	-7,448.5	1,332.1	641.4	365.7	275.65	2.327		
13,700.0	6,584.3	13,938.2	6,645.7	145.8	136.0	-95.81	-7,548.5	1,332.1	641.4	361.9	279.46	2.295		
13,800.0	6,583.6	14,038.2	6,644.8	147.7	137.9	-95.79	-7,648.5	1,332.1	641.3	358.1	283.27	2.264		
13,862.7	6,583.2	14,100.9	6,644.2	148.9	139.1	-95.78	-7,711.2	1,332.1	641.3	355.7	285.66	2.245		
13,886.8	6,583.0	14,124.0	6,644.0	149.3	139.6	-95.77	-7,734.3	1,332.1	641.3	354.8	286.56	2.238 ES, SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design		Chesnut 27K-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-403 - Wellbore #1 - Plan #1 (4-22-14)										Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
1,500.0	1,497.5	1,495.0	1,495.0	3.3	3.2	25.75	-681.2	777.4	994.2	987.8	6.38	155.878		
1,600.0	1,596.0	1,593.5	1,593.5	3.6	3.5	26.18	-681.2	777.4	978.9	972.1	6.83	143.335		
1,700.0	1,694.6	1,692.1	1,692.1	3.9	3.7	26.63	-681.2	777.4	963.7	956.4	7.29	132.196		
1,800.0	1,793.1	1,790.6	1,790.6	4.2	3.9	27.09	-681.2	777.4	948.5	940.7	7.76	122.267		
1,900.0	1,891.7	1,889.2	1,889.2	4.5	4.1	27.56	-681.2	777.4	933.4	925.1	8.23	113.380		
2,000.0	1,990.2	1,987.7	1,987.7	4.9	4.4	28.05	-681.2	777.4	918.3	909.6	8.71	105.396		
2,100.0	2,088.8	2,098.2	2,098.2	5.3	4.6	28.51	-679.7	778.1	902.7	893.5	9.22	97.859		
2,200.0	2,187.3	2,210.3	2,210.1	5.6	4.9	28.75	-674.1	780.3	885.7	876.0	9.74	90.919		
2,300.0	2,285.9	2,321.9	2,321.2	6.0	5.1	28.72	-664.5	784.3	867.2	857.0	10.26	84.522		
2,400.0	2,384.4	2,432.6	2,430.9	6.4	5.4	28.41	-651.1	789.8	847.2	836.5	10.78	78.564		
2,500.0	2,483.0	2,542.2	2,538.9	6.7	5.6	27.82	-633.9	796.8	825.9	814.6	11.32	72.981		
2,600.0	2,581.5	2,639.8	2,634.8	7.1	5.9	27.12	-616.7	803.8	803.8	792.0	11.83	67.936		
2,700.0	2,680.1	2,736.9	2,730.1	7.5	6.2	26.39	-599.7	810.8	781.9	769.5	12.36	63.263		
2,800.0	2,778.6	2,833.9	2,825.4	7.9	6.5	25.62	-582.6	817.7	760.1	747.2	12.89	58.944		
2,900.0	2,877.2	2,931.0	2,920.7	8.2	6.8	24.80	-565.5	824.7	738.4	725.0	13.44	54.944		
3,000.0	2,975.7	3,028.0	3,016.0	8.6	7.1	23.93	-548.5	831.7	716.9	702.9	13.99	51.240		
3,100.0	3,074.3	3,125.1	3,111.3	9.0	7.4	23.02	-531.4	838.7	695.6	681.0	14.55	47.808		
3,200.0	3,172.8	3,222.2	3,206.5	9.4	7.8	22.04	-514.4	845.7	674.4	659.3	15.11	44.627		
3,300.0	3,271.4	3,319.2	3,301.8	9.8	8.1	21.00	-497.3	852.6	653.5	637.8	15.68	41.676		
3,400.0	3,369.9	3,416.3	3,397.1	10.2	8.4	19.89	-480.2	859.6	632.7	616.5	16.25	38.936		
3,500.0	3,468.5	3,513.3	3,492.4	10.6	8.8	18.72	-463.2	866.6	612.2	595.4	16.82	36.390		
3,600.0	3,567.0	3,610.4	3,587.7	10.9	9.2	17.46	-446.1	873.6	592.0	574.6	17.40	34.023		
3,700.0	3,665.6	3,707.4	3,683.0	11.3	9.5	16.11	-429.0	880.5	572.1	554.1	17.98	31.820		
3,800.0	3,764.1	3,804.5	3,778.3	11.7	9.9	14.67	-412.0	887.5	552.5	534.0	18.56	29.769		
3,900.0	3,862.7	3,901.6	3,873.6	12.1	10.2	13.13	-394.9	894.5	533.3	514.2	19.14	27.859		
4,000.0	3,961.2	3,998.6	3,968.9	12.5	10.6	11.48	-377.9	901.5	514.5	494.8	19.73	26.080		
4,100.0	4,059.7	4,095.7	4,064.2	12.9	11.0	9.70	-360.8	908.4	496.1	475.8	20.32	24.422		
4,200.0	4,158.3	4,192.7	4,159.5	13.3	11.3	7.80	-343.7	915.4	478.3	457.4	20.91	22.877		
4,300.0	4,256.8	4,289.8	4,254.8	13.7	11.7	5.75	-326.7	922.4	461.0	439.5	21.50	21.439		
4,400.0	4,355.4	4,386.9	4,350.1	14.1	12.1	3.55	-309.6	929.4	444.3	422.2	22.11	20.101		
4,500.0	4,453.9	4,483.9	4,445.4	14.5	12.5	1.19	-292.5	936.3	428.4	405.7	22.72	18.859		
4,600.0	4,552.5	4,581.0	4,540.6	14.9	12.9	-1.34	-275.5	943.3	413.2	389.9	23.34	17.707		
4,700.0	4,651.0	4,678.0	4,635.9	15.3	13.2	-4.05	-258.4	950.3	399.0	375.0	23.97	16.641		
4,800.0	4,749.6	4,775.1	4,731.2	15.7	13.6	-6.94	-241.4	957.3	385.7	361.0	24.63	15.660		
4,900.0	4,848.1	4,872.2	4,826.5	16.0	14.0	-10.03	-224.3	964.2	373.4	348.1	25.30	14.760		
5,000.0	4,946.7	4,969.2	4,921.8	16.4	14.4	-13.30	-207.2	971.2	362.4	336.4	26.00	13.941		
5,100.0	5,045.2	5,066.3	5,017.1	16.8	14.8	-16.76	-190.2	978.2	352.7	326.0	26.71	13.202		
5,200.0	5,143.8	5,163.3	5,112.4	17.2	15.2	-20.39	-173.1	985.2	344.4	316.9	27.46	12.542		
5,300.0	5,242.4	5,260.4	5,207.7	17.6	15.5	-24.15	-156.0	992.1	337.7	309.5	28.23	11.963		
5,400.0	5,341.3	5,357.8	5,303.4	17.9	15.9	-27.84	-138.9	999.1	334.9	305.9	28.96	11.565		
5,410.8	5,352.0	5,368.4	5,313.7	17.9	16.0	-28.23	-137.1	999.9	334.9	305.8	29.03	11.534 CC		
5,500.0	5,440.8	5,459.0	5,402.8	18.1	16.3	-31.39	-121.5	1,006.3	336.4	306.8	29.63	11.353		
5,600.0	5,540.5	5,565.5	5,508.0	18.3	16.6	-34.34	-106.2	1,012.5	340.0	309.8	30.18	11.264		
5,700.0	5,640.4	5,673.3	5,615.0	18.5	16.9	-36.41	-94.4	1,017.3	344.6	314.0	30.62	11.254		
5,800.0	5,740.4	5,781.8	5,723.2	18.6	17.1	-39.26	-86.3	1,020.6	349.6	318.6	31.01	11.275		
5,900.0	5,840.4	5,890.9	5,832.1	18.7	17.3	-41.70	-82.0	1,022.4	352.5	321.1	31.37	11.237		
6,000.0	5,940.3	5,996.6	5,937.8	18.9	17.5	-44.84	-81.2	1,022.7	354.4	322.7	31.66	11.194		
6,100.0	6,038.9	6,100.2	6,041.5	19.1	17.6	-48.86	-81.7	1,022.7	360.6	328.6	31.97	11.279		
6,200.0	6,134.5	6,224.2	6,164.4	19.3	17.7	-52.48	-95.9	1,022.7	368.2	336.1	32.13	11.458		
6,300.0	6,225.6	6,352.2	6,287.3	19.7	17.5	-56.56	-131.3	1,022.7	374.9	342.8	32.11	11.678		
6,400.0	6,310.5	6,483.6	6,405.5	20.1	17.3	-60.05	-188.4	1,022.7	380.1	348.2	31.92	11.908		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut 27K-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-403 - Wellbore #1 - Plan #1 (4-22-14)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,500.0	6,387.8	6,617.5	6,514.0	20.6	16.9	-120.93	-266.5	1,022.7	383.3	351.6	31.69	12.096	
6,600.0	6,456.2	6,752.5	6,608.0	21.2	16.5	-121.17	-363.2	1,022.7	384.2	352.6	31.56	12.175	
6,700.0	6,514.5	6,887.4	6,683.5	21.9	16.2	-120.78	-474.8	1,022.7	382.7	351.0	31.71	12.068	
6,800.0	6,561.7	7,020.8	6,737.6	22.8	16.0	-119.75	-596.5	1,022.7	379.0	346.7	32.33	11.725	
6,900.0	6,597.0	7,151.4	6,769.4	23.9	16.3	-118.11	-723.1	1,022.7	373.4	339.9	33.50	11.147	
7,000.0	6,619.8	7,260.5	6,782.0	25.0	16.9	-116.70	-831.4	1,022.7	368.1	333.1	34.97	10.526	
7,100.0	6,629.7	7,375.8	6,789.0	26.2	17.8	-116.20	-946.4	1,022.7	366.4	329.8	36.59	10.013	
7,146.6	6,630.9	7,424.5	6,789.0	26.9	18.2	-116.04	-995.1	1,022.7	365.9	328.3	37.58	9.737	
7,200.0	6,629.7	7,478.0	6,788.8	27.6	18.7	-116.19	-1,048.6	1,022.7	366.3	327.7	38.61	9.486	
7,300.0	6,629.0	7,578.0	6,788.5	29.0	19.8	-116.24	-1,148.6	1,022.7	366.5	325.5	40.96	8.947	
7,400.0	6,628.3	7,678.0	6,788.2	30.4	21.0	-116.30	-1,248.6	1,022.7	366.7	323.2	43.47	8.436	
7,500.0	6,627.6	7,778.0	6,787.9	31.9	22.3	-116.36	-1,348.6	1,022.7	366.8	320.7	46.10	7.957	
7,600.0	6,626.9	7,878.0	6,787.7	33.5	23.7	-116.41	-1,448.6	1,022.7	367.0	318.2	48.85	7.514	
7,700.0	6,626.2	7,978.0	6,787.4	35.1	25.2	-116.47	-1,548.6	1,022.7	367.2	315.5	51.68	7.105	
7,800.0	6,625.5	8,078.0	6,787.1	36.7	26.7	-116.53	-1,648.6	1,022.7	367.4	312.8	54.59	6.730	
7,900.0	6,624.8	8,178.0	6,786.8	38.3	28.2	-116.58	-1,748.6	1,022.7	367.6	310.0	57.56	6.385	
8,000.0	6,624.1	8,278.0	6,786.5	40.0	29.8	-116.64	-1,848.6	1,022.7	367.7	307.1	60.59	6.069	
8,100.0	6,623.4	8,378.0	6,786.2	41.7	31.5	-116.69	-1,948.6	1,022.7	367.9	304.3	63.66	5.779	
8,200.0	6,622.7	8,478.0	6,785.9	43.4	33.1	-116.75	-2,048.6	1,022.7	368.1	301.3	66.77	5.513	
8,300.0	6,622.0	8,578.0	6,785.6	45.1	34.8	-116.80	-2,148.6	1,022.7	368.3	298.4	69.91	5.268	
8,400.0	6,621.3	8,678.0	6,785.3	46.9	36.5	-116.86	-2,248.6	1,022.7	368.5	295.4	73.08	5.042	
8,500.0	6,620.6	8,778.0	6,785.0	48.6	38.3	-116.92	-2,348.6	1,022.7	368.6	292.4	76.27	4.833	
8,600.0	6,619.9	8,878.0	6,784.7	50.4	40.0	-116.97	-2,448.6	1,022.7	368.8	289.3	79.48	4.640	
8,700.0	6,619.2	8,978.0	6,784.4	52.2	41.8	-117.03	-2,548.6	1,022.7	369.0	286.3	82.71	4.461	
8,800.0	6,618.5	9,078.0	6,784.1	54.0	43.6	-117.08	-2,648.6	1,022.7	369.2	283.2	85.96	4.295	
8,900.0	6,617.8	9,178.0	6,783.8	55.8	45.4	-117.14	-2,748.6	1,022.7	369.4	280.1	89.22	4.140	
9,000.0	6,617.1	9,278.0	6,783.5	57.6	47.2	-117.19	-2,848.6	1,022.7	369.5	277.1	92.49	3.996	
9,100.0	6,616.4	9,378.0	6,783.2	59.4	49.0	-117.25	-2,948.6	1,022.7	369.7	274.0	95.77	3.861	
9,200.0	6,615.7	9,478.0	6,782.9	61.2	50.8	-117.30	-3,048.6	1,022.7	369.9	270.9	99.05	3.734	
9,300.0	6,615.0	9,578.0	6,782.6	63.0	52.6	-117.36	-3,148.6	1,022.7	370.1	267.7	102.35	3.616	
9,400.0	6,614.3	9,678.0	6,782.3	64.9	54.4	-117.41	-3,248.6	1,022.7	370.3	264.6	105.65	3.505	
9,500.0	6,613.6	9,778.0	6,782.0	66.7	56.3	-117.47	-3,348.6	1,022.7	370.5	261.5	108.96	3.400	
9,600.0	6,612.9	9,878.0	6,781.7	68.5	58.1	-117.53	-3,448.6	1,022.7	370.7	258.4	112.27	3.301	
9,700.0	6,612.2	9,978.0	6,781.4	70.4	60.0	-117.58	-3,548.6	1,022.7	370.8	255.3	115.58	3.208	
9,800.0	6,611.5	10,078.0	6,781.1	72.2	61.8	-117.64	-3,648.6	1,022.7	371.0	252.1	118.90	3.120	
9,900.0	6,610.8	10,178.0	6,780.8	74.1	63.7	-117.69	-3,748.6	1,022.7	371.2	249.0	122.22	3.037	
10,000.0	6,610.1	10,278.0	6,780.5	75.9	65.5	-117.74	-3,848.6	1,022.7	371.4	245.8	125.55	2.958	
10,100.0	6,609.4	10,378.0	6,780.2	77.8	67.4	-117.80	-3,948.6	1,022.7	371.6	242.7	128.87	2.883	
10,200.0	6,608.7	10,478.0	6,779.9	79.7	69.3	-117.85	-4,048.6	1,022.7	371.8	239.6	132.20	2.812	
10,300.0	6,608.0	10,578.0	6,779.6	81.5	71.1	-117.91	-4,148.6	1,022.7	372.0	236.4	135.53	2.744	
10,400.0	6,607.3	10,678.0	6,779.3	83.4	73.0	-117.96	-4,248.6	1,022.7	372.1	233.3	138.86	2.680	
10,500.0	6,606.6	10,778.0	6,779.0	85.3	74.9	-118.02	-4,348.6	1,022.7	372.3	230.1	142.19	2.619	
10,600.0	6,605.9	10,878.0	6,778.7	87.1	76.7	-118.07	-4,448.6	1,022.7	372.5	227.0	145.52	2.560	
10,700.0	6,605.2	10,978.0	6,778.5	89.0	78.6	-118.13	-4,548.6	1,022.7	372.7	223.9	148.85	2.504	
10,800.0	6,604.5	11,078.0	6,778.2	90.9	80.5	-118.18	-4,648.6	1,022.7	372.9	220.7	152.18	2.450	
10,900.0	6,603.8	11,178.0	6,777.9	92.8	82.4	-118.24	-4,748.6	1,022.7	373.1	217.6	155.52	2.399	
11,000.0	6,603.2	11,277.9	6,777.6	94.6	84.3	-118.29	-4,848.6	1,022.7	373.3	214.4	158.85	2.350	
11,100.0	6,602.5	11,377.9	6,777.3	96.5	86.2	-118.34	-4,948.6	1,022.7	373.5	211.3	162.18	2.303	
11,200.0	6,601.8	11,477.9	6,777.0	98.4	88.0	-118.40	-5,048.6	1,022.7	373.7	208.2	165.50	2.258	
11,300.0	6,601.1	11,577.9	6,776.7	100.3	89.9	-118.45	-5,148.6	1,022.7	373.8	205.0	168.83	2.214	
11,400.0	6,600.4	11,677.9	6,776.4	102.2	91.8	-118.51	-5,248.6	1,022.7	374.0	201.9	172.16	2.173	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut 27K-HZ Pad Sec.27-T5N-R64W - Chesnut 27K-403 - Wellbore #1 - Plan #1 (4-22-14)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
11,500.0	6,599.7	11,777.9	6,776.1	104.1	93.7	-118.56	-5,348.5	1,022.7	374.2	198.7	175.49	2.133	
11,600.0	6,599.0	11,877.9	6,775.8	105.9	95.6	-118.62	-5,448.5	1,022.7	374.4	195.6	178.81	2.094	
11,700.0	6,598.3	11,977.9	6,775.5	107.8	97.5	-118.67	-5,548.5	1,022.7	374.6	192.5	182.14	2.057	
11,800.0	6,597.6	12,077.9	6,775.2	109.7	99.4	-118.72	-5,648.5	1,022.7	374.8	189.3	185.46	2.021	
11,900.0	6,596.9	12,177.9	6,774.9	111.6	101.3	-118.78	-5,748.5	1,022.7	375.0	186.2	188.78	1.986	
12,000.0	6,596.2	12,277.9	6,774.6	113.5	103.2	-118.83	-5,848.5	1,022.7	375.2	183.1	192.10	1.953	
12,100.0	6,595.5	12,377.9	6,774.3	115.4	105.1	-118.88	-5,948.5	1,022.7	375.4	180.0	195.42	1.921	
12,200.0	6,594.8	12,477.9	6,774.0	117.3	107.0	-118.94	-6,048.5	1,022.7	375.6	176.8	198.73	1.890	
12,300.0	6,594.1	12,577.9	6,773.7	119.2	108.9	-118.99	-6,148.5	1,022.7	375.8	173.7	202.05	1.860	
12,400.0	6,593.4	12,677.9	6,773.4	121.1	110.8	-119.05	-6,248.5	1,022.7	376.0	170.6	205.36	1.831	
12,500.0	6,592.7	12,777.9	6,773.1	123.0	112.7	-119.10	-6,348.5	1,022.7	376.2	167.5	208.67	1.803	
12,600.0	6,592.0	12,877.9	6,772.8	124.9	114.6	-119.15	-6,448.5	1,022.7	376.4	164.4	211.98	1.775	
12,700.0	6,591.3	12,977.9	6,772.5	126.8	116.5	-119.21	-6,548.5	1,022.7	376.6	161.3	215.28	1.749	
12,800.0	6,590.6	13,077.9	6,772.2	128.7	118.4	-119.26	-6,648.5	1,022.7	376.7	158.2	218.59	1.724	
12,900.0	6,589.9	13,177.9	6,771.9	130.6	120.3	-119.31	-6,748.5	1,022.7	376.9	155.1	221.89	1.699	
13,000.0	6,589.2	13,277.9	6,771.6	132.5	122.2	-119.37	-6,848.5	1,022.7	377.1	151.9	225.19	1.675	
13,100.0	6,588.5	13,377.9	6,771.3	134.4	124.1	-119.42	-6,948.5	1,022.7	377.3	148.8	228.49	1.651	
13,200.0	6,587.8	13,477.9	6,771.0	136.3	126.0	-119.47	-7,048.5	1,022.7	377.5	145.7	231.78	1.629	
13,300.0	6,587.1	13,577.9	6,770.7	138.2	127.9	-119.52	-7,148.5	1,022.7	377.7	142.7	235.08	1.607	
13,400.0	6,586.4	13,677.9	6,770.4	140.1	129.8	-119.58	-7,248.5	1,022.7	377.9	139.6	238.37	1.585	
13,500.0	6,585.7	13,777.9	6,770.1	142.0	131.7	-119.63	-7,348.5	1,022.7	378.1	136.5	241.66	1.565	
13,600.0	6,585.0	13,877.9	6,769.8	143.9	133.6	-119.68	-7,448.5	1,022.7	378.3	133.4	244.95	1.545	
13,700.0	6,584.3	13,977.9	6,769.6	145.8	135.5	-119.74	-7,548.5	1,022.7	378.5	130.3	248.23	1.525	
13,800.0	6,583.6	14,077.9	6,769.3	147.7	137.4	-119.79	-7,648.5	1,022.7	378.7	127.2	251.51	1.506	
13,886.8	6,583.0	14,163.7	6,769.0	149.3	139.1	-119.83	-7,734.3	1,022.7	378.9	124.6	254.34	1.490	Level 3, ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design		Chesnut 27K-HZ Pad Sec.27-T5N-R64W - Chesnut 27O-243 - Wellbore #1 - Plan #1 (4-22-14)											Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	128.44	-619.3	780.2	996.1						
100.0	100.0	95.5	95.5	0.1	0.1	128.44	-619.3	780.2	996.1	995.9	0.22	4,533.678			
200.0	200.0	195.5	195.5	0.3	0.3	128.44	-619.3	780.2	996.1	995.5	0.66	1,499.781			
300.0	300.0	295.5	295.5	0.6	0.6	128.44	-619.3	780.2	996.1	995.0	1.11	894.420			
400.0	400.0	395.5	395.5	0.8	0.8	128.44	-619.3	780.2	996.1	994.6	1.56	637.218			
500.0	500.0	485.4	485.4	1.0	1.0	128.37	-618.6	781.3	996.6	994.6	1.99	501.741			
600.0	600.0	574.7	574.6	1.2	1.2	128.15	-616.5	784.7	998.2	995.8	2.41	414.008			
1,900.0	1,891.7	1,796.7	1,772.4	4.5	6.0	10.82	-493.0	983.9	997.5	988.0	9.51	104.875			
2,000.0	1,990.2	1,895.3	1,868.5	4.9	6.4	9.90	-481.5	1,002.5	992.4	982.3	10.13	97.962			
2,100.0	2,088.8	1,993.8	1,964.6	5.3	6.9	8.98	-469.9	1,021.2	987.6	976.9	10.75	91.893			
2,200.0	2,187.3	2,092.4	2,060.7	5.6	7.4	8.05	-458.3	1,039.8	983.0	971.7	11.36	86.532			
2,300.0	2,285.9	2,191.0	2,156.8	6.0	7.8	7.11	-446.8	1,058.4	978.7	966.8	11.97	81.769			
2,400.0	2,384.4	2,289.5	2,252.9	6.4	8.3	6.17	-435.2	1,077.1	974.7	962.1	12.57	77.517			
2,500.0	2,483.0	2,388.1	2,349.0	6.7	8.8	5.21	-423.7	1,095.7	971.0	957.8	13.17	73.702			
2,600.0	2,581.5	2,486.7	2,445.1	7.1	9.2	4.25	-412.1	1,114.4	967.5	953.7	13.77	70.264			
2,700.0	2,680.1	2,585.3	2,541.2	7.5	9.7	3.28	-400.5	1,133.0	964.3	950.0	14.36	67.155			
2,800.0	2,778.6	2,683.8	2,637.3	7.9	10.2	2.31	-389.0	1,151.7	961.4	946.5	14.94	64.331			
2,900.0	2,877.2	2,782.4	2,733.4	8.2	10.6	1.33	-377.4	1,170.3	958.8	943.3	15.52	61.759			
3,000.0	2,975.7	2,881.0	2,829.5	8.6	11.1	0.35	-365.8	1,189.0	956.5	940.4	16.10	59.408			
3,100.0	3,074.3	2,979.6	2,925.6	9.0	11.6	-0.64	-354.3	1,207.6	954.4	937.8	16.67	57.253			
3,200.0	3,172.8	3,078.1	3,021.7	9.4	12.0	-1.63	-342.7	1,226.3	952.7	935.5	17.24	55.273			
3,300.0	3,271.4	3,176.7	3,117.8	9.8	12.5	-2.63	-331.2	1,244.9	951.2	933.4	17.80	53.448			
3,400.0	3,369.9	3,275.3	3,213.9	10.2	13.0	-3.63	-319.6	1,263.6	950.1	931.7	18.35	51.763			
3,500.0	3,468.5	3,373.9	3,310.0	10.6	13.4	-4.62	-308.0	1,282.2	949.2	930.3	18.91	50.204			
3,600.0	3,567.0	3,472.4	3,406.1	10.9	13.9	-5.63	-296.5	1,300.9	948.7	929.2	19.46	48.758			
3,700.0	3,665.6	3,571.0	3,502.2	11.3	14.4	-6.63	-284.9	1,319.5	948.4	928.4	20.00	47.413			
3,736.9	3,701.9	3,607.3	3,537.6	11.5	14.6	-7.00	-280.6	1,326.4	948.4	928.2	20.20	46.942 CC			
3,800.0	3,764.1	3,669.6	3,598.3	11.7	14.9	-7.63	-273.3	1,338.2	948.5	927.9	20.55	46.162			
3,900.0	3,862.7	3,768.1	3,694.4	12.1	15.3	-8.63	-261.8	1,356.8	948.8	927.7	21.09	44.995			
4,000.0	3,961.2	3,866.7	3,790.5	12.5	15.8	-9.63	-250.2	1,375.4	949.4	927.8	21.62	43.905			
4,100.0	4,059.7	3,965.3	3,886.6	12.9	16.3	-10.63	-238.6	1,394.1	950.4	928.2	22.16	42.885			
4,200.0	4,158.3	4,063.9	3,982.7	13.3	16.7	-11.63	-227.1	1,412.7	951.6	928.9	22.70	41.929			
4,300.0	4,256.8	4,162.4	4,078.8	13.7	17.2	-12.62	-215.5	1,431.4	953.1	929.9	23.23	41.031			
4,400.0	4,355.4	4,261.0	4,174.9	14.1	17.7	-13.62	-204.0	1,450.0	954.9	931.2	23.76	40.188			
4,500.0	4,453.9	4,359.6	4,271.0	14.5	18.2	-14.60	-192.4	1,468.7	957.1	932.8	24.29	39.395			
4,600.0	4,552.5	4,458.2	4,367.1	14.9	18.6	-15.58	-180.8	1,487.3	959.5	934.6	24.83	38.647			
4,700.0	4,651.0	4,556.7	4,463.2	15.3	19.1	-16.56	-169.3	1,506.0	962.2	936.8	25.36	37.942			
4,800.0	4,749.6	4,655.3	4,559.3	15.7	19.6	-17.53	-157.7	1,524.6	965.1	939.2	25.89	37.276			
4,900.0	4,848.1	4,753.9	4,655.4	16.0	20.0	-18.50	-146.1	1,543.3	968.4	942.0	26.43	36.645			
5,000.0	4,946.7	4,852.5	4,751.5	16.4	20.5	-19.46	-134.6	1,561.9	971.9	945.0	26.96	36.049			
5,100.0	5,045.2	4,951.0	4,847.6	16.8	21.0	-20.41	-123.0	1,580.6	975.8	948.3	27.50	35.483			
5,200.0	5,143.8	5,049.6	4,943.7	17.2	21.5	-21.36	-111.5	1,599.2	979.8	951.8	28.04	34.946			
5,300.0	5,242.4	5,148.2	5,039.8	17.6	21.9	-22.30	-99.9	1,617.9	984.3	955.8	28.58	34.441			
5,400.0	5,341.3	5,281.4	5,170.2	17.9	22.4	-23.46	-85.4	1,641.3	990.2	961.1	29.10	34.027			
5,500.0	5,440.8	5,426.6	5,313.5	18.1	22.9	-24.43	-73.1	1,661.0	995.0	965.4	29.56	33.659			
5,600.0	5,540.5	5,572.9	5,458.9	18.3	23.2	-25.09	-64.7	1,674.7	998.4	968.4	29.96	33.329			
6,200.0	6,134.5	6,314.7	6,189.6	19.3	23.6	-98.03	-132.0	1,683.3	999.2	967.6	31.62	31.604			
6,300.0	6,225.6	6,435.7	6,294.6	19.7	23.4	-97.47	-191.9	1,683.3	997.9	966.0	31.84	31.338			
6,400.0	6,310.5	6,554.4	6,387.1	20.1	23.1	-96.77	-266.0	1,683.3	996.4	964.2	32.17	30.974			
6,500.0	6,387.8	6,670.3	6,465.3	20.6	22.8	-95.94	-351.4	1,683.3	994.8	962.1	32.67	30.450			
6,600.0	6,456.2	6,783.2	6,528.3	21.2	22.5	-95.01	-445.1	1,683.3	993.2	959.8	33.41	29.727			

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design		Chesnut 27K-HZ Pad Sec.27-T5N-R64W - Chesnut 27O-243 - Wellbore #1 - Plan #1 (4-22-14)											Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor			
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
6,700.0	6,514.5	6,893.0	6,575.6	21.9	22.3	-94.00	-544.1	1,683.3	991.8	957.4	34.45	28.791			
6,800.0	6,561.7	6,999.8	6,607.6	22.8	22.2	-92.94	-645.9	1,683.3	990.7	954.9	35.81	27.664			
6,900.0	6,597.0	7,103.7	6,624.7	23.9	22.2	-91.84	-748.2	1,683.3	989.8	952.3	37.51	26.391			
7,000.0	6,619.8	7,204.4	6,628.3	25.0	22.4	-90.74	-848.8	1,683.3	989.4	949.9	39.51	25.043			
7,100.0	6,629.7	7,303.7	6,627.5	26.2	22.7	-90.13	-948.1	1,683.3	989.3	947.6	41.75	23.694			
7,159.9	6,631.0	7,363.6	6,627.0	27.0	23.1	-90.03	-1,008.0	1,683.3	989.3	946.1	43.22	22.891			
7,200.0	6,629.7	7,403.7	6,626.7	27.6	23.3	-90.09	-1,048.1	1,683.3	989.3	945.1	44.19	22.388			
7,300.0	6,629.0	7,503.7	6,625.8	29.0	24.1	-90.08	-1,148.1	1,683.3	989.3	942.5	46.82	21.132			
7,400.0	6,628.3	7,603.7	6,625.0	30.4	25.1	-90.07	-1,248.1	1,683.3	989.3	939.7	49.61	19.943			
7,500.0	6,627.6	7,703.7	6,624.2	31.9	26.2	-90.07	-1,348.1	1,683.3	989.3	936.8	52.53	18.832			
7,600.0	6,626.9	7,803.7	6,623.4	33.5	27.4	-90.06	-1,448.1	1,683.3	989.3	933.7	55.58	17.801			
7,700.0	6,626.2	7,903.7	6,622.6	35.1	28.7	-90.05	-1,548.1	1,683.3	989.3	930.6	58.72	16.848			
7,800.0	6,625.5	8,003.7	6,621.8	36.7	30.1	-90.05	-1,648.1	1,683.3	989.3	927.4	61.94	15.972			
7,900.0	6,624.8	8,103.7	6,621.0	38.3	31.5	-90.04	-1,748.1	1,683.3	989.3	924.1	65.23	15.166			
8,000.0	6,624.1	8,203.7	6,620.2	40.0	33.0	-90.04	-1,848.1	1,683.3	989.3	920.7	68.59	14.424			
8,100.0	6,623.4	8,303.7	6,619.4	41.7	34.5	-90.03	-1,948.1	1,683.3	989.3	917.3	71.99	13.743			
8,200.0	6,622.7	8,403.7	6,618.6	43.4	36.1	-90.02	-2,048.1	1,683.3	989.3	913.9	75.43	13.115			
8,300.0	6,622.0	8,503.7	6,617.8	45.1	37.7	-90.02	-2,148.1	1,683.3	989.3	910.4	78.92	12.536			
8,400.0	6,621.3	8,603.7	6,617.0	46.9	39.3	-90.01	-2,248.1	1,683.3	989.3	906.9	82.44	12.001			
8,500.0	6,620.6	8,703.7	6,616.2	48.6	40.9	-90.01	-2,348.1	1,683.3	989.3	903.3	85.98	11.506			
8,600.0	6,619.9	8,803.7	6,615.4	50.4	42.6	-90.00	-2,448.1	1,683.3	989.3	899.7	89.55	11.047			
8,700.0	6,619.2	8,903.7	6,614.6	52.2	44.3	-89.99	-2,548.1	1,683.3	989.3	896.2	93.15	10.621			
8,800.0	6,618.5	9,003.7	6,613.8	54.0	46.0	-89.99	-2,648.1	1,683.3	989.3	892.5	96.76	10.224			
8,900.0	6,617.8	9,103.7	6,613.0	55.8	47.8	-89.98	-2,748.1	1,683.3	989.3	888.9	100.39	9.855			
9,000.0	6,617.1	9,203.7	6,612.2	57.6	49.5	-89.98	-2,848.1	1,683.3	989.3	885.3	104.04	9.509			
9,100.0	6,616.4	9,303.7	6,611.4	59.4	51.2	-89.97	-2,948.1	1,683.3	989.3	881.6	107.69	9.186			
9,200.0	6,615.7	9,403.7	6,610.6	61.2	53.0	-89.96	-3,048.1	1,683.3	989.3	877.9	111.37	8.883			
9,300.0	6,615.0	9,503.7	6,609.8	63.0	54.8	-89.96	-3,148.1	1,683.3	989.3	874.2	115.05	8.599			
9,400.0	6,614.3	9,603.7	6,609.0	64.9	56.6	-89.95	-3,248.0	1,683.3	989.3	870.5	118.74	8.331			
9,500.0	6,613.6	9,703.7	6,608.2	66.7	58.4	-89.95	-3,348.0	1,683.3	989.3	866.8	122.45	8.079			
9,600.0	6,612.9	9,803.7	6,607.4	68.5	60.2	-89.94	-3,448.0	1,683.3	989.3	863.1	126.16	7.842			
9,700.0	6,612.2	9,903.7	6,606.6	70.4	62.0	-89.93	-3,548.0	1,683.3	989.3	859.4	129.88	7.617			
9,800.0	6,611.5	10,003.7	6,605.8	72.2	63.8	-89.93	-3,648.0	1,683.3	989.3	855.7	133.61	7.405			
9,900.0	6,610.8	10,103.7	6,605.0	74.1	65.6	-89.92	-3,748.0	1,683.3	989.3	852.0	137.34	7.203			
10,000.0	6,610.1	10,203.7	6,604.2	75.9	67.4	-89.92	-3,848.0	1,683.3	989.3	848.2	141.08	7.012			
10,100.0	6,609.4	10,303.7	6,603.4	77.8	69.3	-89.91	-3,948.0	1,683.3	989.3	844.5	144.82	6.831			
10,200.0	6,608.7	10,403.7	6,602.6	79.7	71.1	-89.90	-4,048.0	1,683.3	989.3	840.7	148.57	6.659			
10,300.0	6,608.0	10,503.7	6,601.8	81.5	72.9	-89.90	-4,148.0	1,683.3	989.3	837.0	152.32	6.495			
10,400.0	6,607.3	10,603.7	6,601.0	83.4	74.8	-89.89	-4,248.0	1,683.3	989.3	833.2	156.08	6.338			
10,500.0	6,606.6	10,703.7	6,600.2	85.3	76.6	-89.89	-4,348.0	1,683.3	989.3	829.4	159.84	6.189			
10,600.0	6,605.9	10,803.7	6,599.4	87.1	78.5	-89.88	-4,448.0	1,683.3	989.3	825.7	163.61	6.047			
10,700.0	6,605.2	10,903.7	6,598.6	89.0	80.3	-89.87	-4,548.0	1,683.3	989.3	821.9	167.38	5.910			
10,800.0	6,604.5	11,003.7	6,597.7	90.9	82.2	-89.87	-4,648.0	1,683.3	989.3	818.1	171.15	5.780			
10,900.0	6,603.8	11,103.7	6,596.9	92.8	84.0	-89.86	-4,748.0	1,683.3	989.3	814.4	174.93	5.655			
11,000.0	6,603.2	11,203.7	6,596.1	94.6	85.9	-89.85	-4,848.0	1,683.3	989.3	810.6	178.71	5.536			
11,100.0	6,602.5	11,303.7	6,595.3	96.5	87.8	-89.85	-4,948.0	1,683.3	989.3	806.8	182.49	5.421			
11,200.0	6,601.8	11,403.7	6,594.5	98.4	89.6	-89.84	-5,048.0	1,683.3	989.3	803.0	186.27	5.311			
11,300.0	6,601.1	11,503.7	6,593.7	100.3	91.5	-89.84	-5,148.0	1,683.3	989.3	799.2	190.06	5.205			
11,400.0	6,600.4	11,603.7	6,592.9	102.2	93.4	-89.83	-5,248.0	1,683.3	989.3	795.4	193.85	5.103			
11,500.0	6,599.7	11,703.7	6,592.1	104.1	95.2	-89.82	-5,348.0	1,683.3	989.3	791.6	197.64	5.006			
11,600.0	6,599.0	11,803.7	6,591.3	105.9	97.1	-89.82	-5,448.0	1,683.3	989.3	787.9	201.43	4.911			

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut 27K-HZ Pad Sec.27-T5N-R64W - Chesnut 27O-243 - Wellbore #1 - Plan #1 (4-22-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
11,700.0	6,598.3	11,903.7	6,590.5	107.8	99.0	-89.81	-5,548.0	1,683.3	989.3	784.1	205.22	4.821		
11,800.0	6,597.6	12,003.7	6,589.7	109.7	100.9	-89.81	-5,648.0	1,683.3	989.3	780.3	209.02	4.733		
11,900.0	6,596.9	12,103.7	6,588.9	111.6	102.7	-89.80	-5,748.0	1,683.3	989.3	776.5	212.82	4.649		
12,000.0	6,596.2	12,203.7	6,588.1	113.5	104.6	-89.79	-5,848.0	1,683.3	989.3	772.7	216.62	4.567		
12,100.0	6,595.5	12,303.7	6,587.3	115.4	106.5	-89.79	-5,948.0	1,683.3	989.3	768.9	220.42	4.488		
12,200.0	6,594.8	12,403.7	6,586.5	117.3	108.4	-89.78	-6,048.0	1,683.3	989.3	765.1	224.22	4.412		
12,300.0	6,594.1	12,503.7	6,585.7	119.2	110.3	-89.78	-6,148.0	1,683.3	989.3	761.3	228.02	4.339		
12,400.0	6,593.4	12,603.7	6,584.9	121.1	112.2	-89.77	-6,247.9	1,683.3	989.3	757.5	231.83	4.267		
12,500.0	6,592.7	12,703.7	6,584.1	123.0	114.0	-89.76	-6,347.9	1,683.3	989.3	753.6	235.63	4.198		
12,600.0	6,592.0	12,803.7	6,583.3	124.9	115.9	-89.76	-6,447.9	1,683.3	989.3	749.8	239.44	4.132		
12,700.0	6,591.3	12,903.7	6,582.5	126.8	117.8	-89.75	-6,547.9	1,683.3	989.3	746.0	243.25	4.067		
12,800.0	6,590.6	13,003.7	6,581.7	128.7	119.7	-89.75	-6,647.9	1,683.3	989.3	742.2	247.06	4.004		
12,900.0	6,589.9	13,103.7	6,580.9	130.6	121.6	-89.74	-6,747.9	1,683.3	989.3	738.4	250.87	3.943		
13,000.0	6,589.2	13,203.7	6,580.1	132.5	123.5	-89.73	-6,847.9	1,683.3	989.3	734.6	254.68	3.884		
13,100.0	6,588.5	13,303.7	6,579.3	134.4	125.4	-89.73	-6,947.9	1,683.3	989.3	730.8	258.49	3.827		
13,200.0	6,587.8	13,403.7	6,578.5	136.3	127.3	-89.72	-7,047.9	1,683.3	989.3	727.0	262.30	3.772		
13,300.0	6,587.1	13,503.7	6,577.7	138.2	129.2	-89.72	-7,147.9	1,683.3	989.3	723.2	266.12	3.717		
13,400.0	6,586.4	13,603.7	6,576.9	140.1	131.1	-89.71	-7,247.9	1,683.3	989.3	719.3	269.93	3.665		
13,500.0	6,585.7	13,703.7	6,576.1	142.0	133.0	-89.70	-7,347.9	1,683.3	989.3	715.5	273.74	3.614		
13,600.0	6,585.0	13,803.7	6,575.3	143.9	134.9	-89.70	-7,447.9	1,683.3	989.3	711.7	277.56	3.564		
13,700.0	6,584.3	13,903.7	6,574.5	145.8	136.8	-89.69	-7,547.9	1,683.3	989.3	707.9	281.38	3.516		
13,800.0	6,583.6	14,003.7	6,573.7	147.7	138.7	-89.69	-7,647.9	1,683.3	989.3	704.1	285.19	3.469		
13,861.5	6,583.2	14,065.2	6,573.2	148.9	139.8	-89.68	-7,709.4	1,683.3	989.3	701.7	287.54	3.440		
13,886.8	6,583.0	14,086.4	6,573.0	149.3	140.2	-89.68	-7,730.6	1,683.3	989.3	700.9	288.43	3.430 ES, SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut 27K-HZ Pad Sec.27-T5N-R64W - Chesnut 27O-303 - Wellbore #1 - Plan #1 (4-22-14)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	127.10	-590.2	780.2	978.3				
100.0	100.0	95.5	95.5	0.1	0.1	127.10	-590.2	780.2	978.3	978.1	0.22	4,452.419	
200.0	200.0	195.5	195.5	0.3	0.3	127.10	-590.2	780.2	978.3	977.6	0.66	1,472.899 CC, ES	
300.0	300.0	281.7	281.7	0.6	0.5	127.05	-589.7	781.3	978.9	977.9	1.08	907.402	
400.0	400.0	367.1	367.0	0.8	0.7	126.86	-588.2	784.7	981.1	979.6	1.50	655.072	
500.0	500.0	452.2	451.9	1.0	0.9	126.54	-585.8	790.4	984.8	982.8	1.93	511.258	
600.0	600.0	536.8	536.1	1.2	1.1	126.11	-582.3	798.4	990.0	987.6	2.37	417.767	
700.0	700.0	620.9	619.4	1.5	1.4	125.56	-578.0	808.6	996.8	994.0	2.83	352.580 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut Existing Pad Sec.27-T5N-R64W - Bailey 14-34 (Exist) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 6999-UNKNOWN												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
12,900.0	6,589.9	6,625.4	6,625.4	130.6	132.5	90.71	-7,570.4	228.6	945.0	682.5	262.52	3.600	
13,000.0	6,589.2	6,624.7	6,624.7	132.5	132.5	90.62	-7,570.4	228.6	859.4	594.9	264.42	3.250	
13,100.0	6,588.5	6,624.0	6,624.0	134.4	132.5	90.53	-7,570.4	228.6	777.2	510.9	266.31	2.918	
13,200.0	6,587.8	6,623.3	6,623.3	136.3	132.5	90.45	-7,570.4	228.6	699.7	431.5	268.21	2.609	
13,300.0	6,587.1	6,622.6	6,622.6	138.2	132.5	90.36	-7,570.4	228.6	628.6	358.5	270.10	2.327	
13,400.0	6,586.4	6,621.9	6,621.9	140.1	132.4	90.28	-7,570.4	228.6	566.2	294.2	271.99	2.082	
13,500.0	6,585.7	6,621.2	6,621.2	142.0	132.4	90.19	-7,570.4	228.6	515.9	242.0	273.89	1.884	
13,600.0	6,585.0	6,620.5	6,620.5	143.9	132.4	90.11	-7,570.4	228.6	481.3	205.5	275.78	1.745	
13,700.0	6,584.3	6,619.8	6,619.8	145.8	132.4	90.02	-7,570.4	228.6	466.0	188.3	277.67	1.678	
13,722.4	6,584.1	6,619.6	6,619.6	146.2	132.4	90.00	-7,570.4	228.6	465.5	187.4	278.10	1.674 CC, ES, SF	
13,800.0	6,583.6	6,619.1	6,619.1	147.7	132.4	89.93	-7,570.4	228.6	471.9	192.3	279.57	1.688	
13,886.8	6,583.0	6,618.5	6,618.5	149.3	132.4	89.86	-7,570.4	228.6	493.7	212.5	281.21	1.755	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut Existing Pad Sec.27-T5N-R64W - Bailey 34-1 (Exist) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 6940-UNKNOWN												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
11,600.0	6,599.0	6,622.5	6,622.5	105.9	132.4	90.69	-6,258.8	225.8	936.3	698.6	237.71	3.939	
11,700.0	6,598.3	6,621.8	6,621.8	107.8	132.4	90.61	-6,258.8	225.8	851.2	611.6	239.60	3.553	
11,800.0	6,597.6	6,621.1	6,621.1	109.7	132.4	90.52	-6,258.8	225.8	769.7	528.2	241.48	3.187	
11,900.0	6,596.9	6,620.4	6,620.4	111.6	132.4	90.44	-6,258.8	225.8	693.0	449.6	243.37	2.847	
12,000.0	6,596.2	6,619.7	6,619.7	113.5	132.4	90.35	-6,258.8	225.8	623.0	377.7	245.26	2.540	
12,100.0	6,595.5	6,619.0	6,619.0	115.4	132.4	90.27	-6,258.8	225.8	562.1	314.9	247.15	2.274	
12,200.0	6,594.8	6,618.3	6,618.3	117.3	132.4	90.18	-6,258.8	225.8	513.5	264.5	249.04	2.062	
12,300.0	6,594.1	6,617.6	6,617.6	119.2	132.4	90.09	-6,258.8	225.8	481.2	230.3	250.92	1.918	
12,400.0	6,593.4	6,616.9	6,616.9	121.1	132.3	90.01	-6,258.8	225.8	468.4	215.6	252.81	1.853	
12,410.9	6,593.3	6,616.8	6,616.8	121.3	132.3	90.00	-6,258.8	225.8	468.3	215.3	253.02	1.851 CC, ES, SF	
12,500.0	6,592.7	6,616.2	6,616.2	123.0	132.3	89.92	-6,258.8	225.8	476.7	222.0	254.70	1.872	
12,600.0	6,592.0	6,615.5	6,615.5	124.9	132.3	89.84	-6,258.8	225.8	505.0	248.4	256.59	1.968	
12,700.0	6,591.3	6,614.8	6,614.8	126.8	132.3	89.75	-6,258.8	225.8	550.3	291.9	258.48	2.129	
12,800.0	6,590.6	6,614.1	6,614.1	128.7	132.3	89.67	-6,258.8	225.8	608.9	348.5	260.37	2.338	
12,900.0	6,589.9	6,613.4	6,613.4	130.6	132.3	89.58	-6,258.8	225.8	677.2	414.9	262.25	2.582	
13,000.0	6,589.2	6,612.7	6,612.7	132.5	132.3	89.50	-6,258.8	225.8	752.6	488.4	264.14	2.849	
13,100.0	6,588.5	6,612.0	6,612.0	134.4	132.2	89.41	-6,258.8	225.8	833.2	567.1	266.03	3.132	
13,200.0	6,587.8	6,611.3	6,611.3	136.3	132.2	89.33	-6,258.8	225.8	917.6	649.7	267.91	3.425	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	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		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
12,200.0	6,594.8	6,617.3	6,617.3	117.3	132.3	-91.80	-7,002.0	905.8	977.3	728.4	248.83	3.927		
12,300.0	6,594.1	6,616.6	6,616.6	119.2	132.3	-91.61	-7,002.0	905.8	879.9	629.2	250.75	3.509		
12,400.0	6,593.4	6,615.9	6,615.9	121.1	132.3	-91.42	-7,002.0	905.8	783.2	530.6	252.67	3.100		
12,500.0	6,592.7	6,615.2	6,615.2	123.0	132.3	-91.23	-7,002.0	905.8	687.5	432.9	254.58	2.700		
12,600.0	6,592.0	6,614.5	6,614.5	124.9	132.3	-91.05	-7,002.0	905.8	593.2	336.7	256.50	2.313		
12,700.0	6,591.3	6,613.8	6,613.8	126.8	132.3	-90.86	-7,002.0	905.8	501.0	242.6	258.41	1.939		
12,800.0	6,590.6	6,613.1	6,613.1	128.7	132.3	-90.67	-7,002.0	905.8	412.6	152.3	260.32	1.585		
12,900.0	6,589.9	6,612.4	6,612.4	130.6	132.2	-90.48	-7,002.0	905.8	330.8	68.5	262.23	1.261 Level 3		
13,000.0	6,589.2	6,611.7	6,611.7	132.5	132.2	-90.29	-7,002.0	905.8	261.9	-2.2	264.13	0.992 Level 1		
13,100.0	6,588.5	6,611.0	6,611.0	134.4	132.2	-90.10	-7,002.0	905.8	218.6	-47.4	266.04	0.822 Level 1		
13,154.1	6,588.1	6,610.6	6,610.6	135.4	132.2	-90.00	-7,002.0	905.8	211.8	-55.3	267.07	0.793 Level 1, CC, ES, SF		
13,200.0	6,587.8	6,610.3	6,610.3	136.3	132.2	-89.91	-7,002.0	905.8	216.7	-51.2	267.94	0.809 Level 1		
13,300.0	6,587.1	6,609.6	6,609.6	138.2	132.2	-89.72	-7,002.0	905.8	257.2	-12.6	269.84	0.953 Level 1		
13,400.0	6,586.4	6,608.9	6,608.9	140.1	132.2	-89.54	-7,002.0	905.8	324.6	52.8	271.74	1.194 Level 2		
13,500.0	6,585.7	6,608.2	6,608.2	142.0	132.2	-89.35	-7,002.0	905.8	405.6	132.0	273.63	1.482 Level 3		
13,600.0	6,585.0	6,607.5	6,607.5	143.9	132.1	-89.16	-7,002.0	905.8	493.7	218.2	275.52	1.792		
13,700.0	6,584.3	6,606.8	6,606.8	145.8	132.1	-88.97	-7,002.0	905.8	585.6	308.2	277.41	2.111		
13,800.0	6,583.6	6,606.1	6,606.1	147.7	132.1	-88.78	-7,002.0	905.8	679.8	400.5	279.30	2.434		
13,886.8	6,583.0	6,605.5	6,605.5	149.3	132.1	-88.62	-7,002.0	905.8	762.7	481.8	280.93	2.715		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut Existing Pad Sec.27-T5N-R64W - White 1-1 (Exist) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 6966-UNKNOWN												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,400.0	6,614.3	6,621.8	6,621.8	64.9	132.4	-94.01	-4,171.3	785.9	927.8	732.3	195.56	4.745	
9,500.0	6,613.6	6,621.1	6,621.1	66.7	132.4	-93.58	-4,171.3	785.9	828.4	630.9	197.52	4.194	
9,600.0	6,612.9	6,620.4	6,620.4	68.5	132.4	-93.15	-4,171.3	785.9	729.1	529.6	199.47	3.655	
9,700.0	6,612.2	6,619.7	6,619.7	70.4	132.4	-92.71	-4,171.3	785.9	630.0	428.6	201.42	3.128	
9,800.0	6,611.5	6,619.0	6,619.0	72.2	132.4	-92.28	-4,171.3	785.9	531.3	327.9	203.36	2.613	
9,900.0	6,610.8	6,618.3	6,618.3	74.1	132.4	-91.84	-4,171.3	785.9	433.2	227.9	205.29	2.110	
10,000.0	6,610.1	6,617.6	6,617.6	75.9	132.4	-91.41	-4,171.3	785.9	336.1	128.9	207.21	1.622	
10,100.0	6,609.4	6,616.9	6,616.9	77.8	132.3	-90.97	-4,171.3	785.9	241.5	32.3	209.13	1.155 Level 2	
10,200.0	6,608.7	6,616.2	6,616.2	79.7	132.3	-90.54	-4,171.3	785.9	153.8	-57.3	211.03	0.729 Level 1	
10,300.0	6,608.0	6,615.5	6,615.5	81.5	132.3	-90.10	-4,171.3	785.9	94.8	-118.1	212.93	0.445 Level 1	
10,323.3	6,607.9	6,615.4	6,615.4	82.0	132.3	-90.00	-4,171.3	785.9	91.9	-121.5	213.37	0.431 Level 1, CC, ES, SF	
10,400.0	6,607.3	6,614.8	6,614.8	83.4	132.3	-89.67	-4,171.3	785.9	119.7	-95.1	214.82	0.557 Level 1	
10,500.0	6,606.6	6,614.1	6,614.1	85.3	132.3	-89.23	-4,171.3	785.9	199.2	-17.5	216.69	0.919 Level 1	
10,600.0	6,605.9	6,613.4	6,613.4	87.1	132.3	-88.80	-4,171.3	785.9	291.5	73.0	218.56	1.334 Level 3	
10,700.0	6,605.2	6,612.7	6,612.7	89.0	132.3	-88.36	-4,171.3	785.9	387.7	167.3	220.41	1.759	
10,800.0	6,604.5	6,612.0	6,612.0	90.9	132.2	-87.93	-4,171.3	785.9	485.5	263.2	222.25	2.184	
10,900.0	6,603.8	6,611.3	6,611.3	92.8	132.2	-87.49	-4,171.3	785.9	584.0	359.9	224.08	2.606	
11,000.0	6,603.2	6,610.7	6,610.7	94.6	132.2	-87.06	-4,171.3	785.9	682.9	457.0	225.90	3.023	
11,100.0	6,602.5	6,610.0	6,610.0	96.5	132.2	-86.62	-4,171.3	785.9	782.1	554.4	227.71	3.435	
11,200.0	6,601.8	6,609.3	6,609.3	98.4	132.2	-86.19	-4,171.3	785.9	881.5	652.0	229.50	3.841	
11,300.0	6,601.1	6,608.6	6,608.6	100.3	132.2	-85.76	-4,171.3	785.9	981.0	749.7	231.28	4.241	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut Existing Pad Sec.27-T5N-R64W - White 12-34 (Exist) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 6970-UNKNOWN												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,200.0	6,608.7	6,626.2	6,626.2	79.7	132.5	90.75	-4,863.5	262.0	922.9	711.6	211.27	4.368	
10,300.0	6,608.0	6,625.5	6,625.5	81.5	132.5	90.66	-4,863.5	262.0	835.8	622.7	213.15	3.921	
10,400.0	6,607.3	6,624.8	6,624.8	83.4	132.5	90.57	-4,863.5	262.0	752.0	537.0	215.02	3.497	
10,500.0	6,606.6	6,624.1	6,624.1	85.3	132.5	90.48	-4,863.5	262.0	672.6	455.7	216.89	3.101	
10,600.0	6,605.9	6,623.4	6,623.4	87.1	132.5	90.38	-4,863.5	262.0	599.4	380.7	218.77	2.740	
10,700.0	6,605.2	6,622.7	6,622.7	89.0	132.5	90.29	-4,863.5	262.0	535.0	314.3	220.64	2.425	
10,800.0	6,604.5	6,622.0	6,622.0	90.9	132.4	90.20	-4,863.5	262.0	482.8	260.3	222.52	2.170	
10,900.0	6,603.8	6,621.3	6,621.3	92.8	132.4	90.11	-4,863.5	262.0	447.2	222.8	224.40	1.993	
11,000.0	6,603.2	6,620.7	6,620.7	94.6	132.4	90.01	-4,863.5	262.0	432.3	206.0	226.28	1.911	
11,015.5	6,603.0	6,620.5	6,620.5	94.9	132.4	90.00	-4,863.5	262.0	432.0	205.5	226.57	1.907	CC, ES, SF
11,100.0	6,602.5	6,620.0	6,620.0	96.5	132.4	89.92	-4,863.5	262.0	440.2	212.1	228.15	1.930	
11,200.0	6,601.8	6,619.3	6,619.3	98.4	132.4	89.83	-4,863.5	262.0	469.8	239.8	230.03	2.042	
11,300.0	6,601.1	6,618.6	6,618.6	100.3	132.4	89.74	-4,863.5	262.0	517.3	285.4	231.91	2.231	
11,400.0	6,600.4	6,617.9	6,617.9	102.2	132.4	89.64	-4,863.5	262.0	578.3	344.6	233.79	2.474	
11,500.0	6,599.7	6,617.2	6,617.2	104.1	132.3	89.55	-4,863.5	262.0	649.1	413.5	235.67	2.754	
11,600.0	6,599.0	6,616.5	6,616.5	105.9	132.3	89.46	-4,863.5	262.0	726.8	489.3	237.55	3.060	
11,700.0	6,598.3	6,615.8	6,615.8	107.8	132.3	89.37	-4,863.5	262.0	809.4	570.0	239.43	3.381	
11,800.0	6,597.6	6,615.1	6,615.1	109.7	132.3	89.27	-4,863.5	262.0	895.6	654.3	241.31	3.711	
11,900.0	6,596.9	6,614.4	6,614.4	111.6	132.3	89.18	-4,863.5	262.0	984.3	741.2	243.19	4.048	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut Existing Pad Sec.27-T5N-R64W - White 27-1 (P&A) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7345-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor			
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
6,400.0	6,310.5	6,315.0	6,315.0	20.1	126.3	11.04	-1,337.0	537.8	996.8	876.4	120.45	8.276		
6,500.0	6,387.8	6,392.3	6,392.3	20.6	127.8	13.07	-1,337.0	537.8	934.4	823.0	111.33	8.392		
6,600.0	6,456.2	6,460.7	6,460.7	21.2	129.2	16.16	-1,337.0	537.8	862.6	761.0	101.65	8.486		
6,700.0	6,514.5	6,519.0	6,519.0	21.9	130.4	21.05	-1,337.0	537.8	782.9	689.0	93.97	8.332		
6,800.0	6,561.7	6,566.2	6,566.2	22.8	131.3	29.07	-1,337.0	537.8	696.8	602.8	94.00	7.414		
6,900.0	6,597.0	6,601.5	6,601.5	23.9	132.0	42.47	-1,337.0	537.8	606.1	496.4	109.69	5.526		
7,000.0	6,619.8	6,624.3	6,624.3	25.0	132.5	62.86	-1,337.0	537.8	512.7	374.7	138.05	3.714		
7,100.0	6,629.7	6,634.2	6,634.2	26.2	132.7	85.19	-1,337.0	537.8	419.1	263.8	155.34	2.698		
7,200.0	6,629.7	6,634.2	6,634.2	27.6	132.7	90.74	-1,337.0	537.8	328.4	170.9	157.52	2.085		
7,300.0	6,629.0	6,633.5	6,633.5	29.0	132.7	90.48	-1,337.0	537.8	245.1	86.1	159.05	1.541		
7,400.0	6,628.3	6,632.8	6,632.8	30.4	132.7	90.23	-1,337.0	537.8	179.7	19.1	160.62	1.119	Level 2	
7,488.9	6,627.7	6,632.2	6,632.2	31.8	132.6	90.00	-1,337.0	537.8	156.2	-5.9	162.05	0.964	Level 1, CC, ES, SF	
7,500.0	6,627.6	6,632.1	6,632.1	31.9	132.6	89.97	-1,337.0	537.8	156.6	-5.6	162.23	0.965	Level 1	
7,600.0	6,626.9	6,631.4	6,631.4	33.5	132.6	89.72	-1,337.0	537.8	191.7	27.8	163.87	1.170	Level 2	
7,700.0	6,626.2	6,630.7	6,630.7	35.1	132.6	89.46	-1,337.0	537.8	262.6	97.1	165.53	1.586		
7,800.0	6,625.5	6,630.0	6,630.0	36.7	132.6	89.20	-1,337.0	537.8	348.1	180.9	167.22	2.082		
7,900.0	6,624.8	6,629.3	6,629.3	38.3	132.6	88.95	-1,337.0	537.8	439.8	270.8	168.92	2.603		
8,000.0	6,624.1	6,628.6	6,628.6	40.0	132.6	88.69	-1,337.0	537.8	534.4	363.8	170.64	3.132		
8,100.0	6,623.4	6,627.9	6,627.9	41.7	132.6	88.44	-1,337.0	537.8	630.7	458.4	172.36	3.659		
8,200.0	6,622.7	6,627.2	6,627.2	43.4	132.5	88.18	-1,337.0	537.8	728.0	553.9	174.10	4.182		
8,300.0	6,622.0	6,626.5	6,626.5	45.1	132.5	87.92	-1,337.0	537.8	826.0	650.1	175.84	4.697		
8,400.0	6,621.3	6,625.8	6,625.8	46.9	132.5	87.67	-1,337.0	537.8	924.4	746.8	177.60	5.205		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design		Chesnut Existing Pad Sec.27-T5N-R64W - White 27-6 (Exist) - Wellbore #1 - Wellbore #1											Offset Site Error:		0.0 ft
Survey Program: 6900-UNKNOWN													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	29.29	382.5	214.6	439.2						
100.0	100.0	77.5	77.5	0.1	1.6	29.29	382.5	214.6	438.6	436.9	1.66	263.799			
200.0	200.0	177.5	177.5	0.3	3.6	29.29	382.5	214.6	438.6	434.7	3.89	112.824			
300.0	300.0	277.5	277.5	0.6	5.6	29.29	382.5	214.6	438.6	432.5	6.11	71.757			
400.0	400.0	377.5	377.5	0.8	7.6	29.29	382.5	214.6	438.6	430.3	8.34	52.608			
500.0	500.0	477.5	477.5	1.0	9.6	29.29	382.5	214.6	438.6	428.0	10.56	41.526			
600.0	600.0	577.5	577.5	1.2	11.6	29.29	382.5	214.6	438.6	425.8	12.79	34.301			
700.0	700.0	677.5	677.5	1.5	13.6	29.29	382.5	214.6	438.6	423.6	15.01	29.217			
800.0	800.0	777.5	777.5	1.7	15.6	29.29	382.5	214.6	438.6	421.4	17.24	25.446			
900.0	900.0	877.5	877.5	1.9	17.6	29.29	382.5	214.6	438.6	419.1	19.46	22.537			
1,000.0	1,000.0	977.5	977.5	2.1	19.6	29.29	382.5	214.6	438.6	416.9	21.69	20.225			
1,100.0	1,100.0	1,077.5	1,077.5	2.3	21.5	-77.78	382.5	214.6	438.2	414.3	23.89	18.341			
1,200.0	1,199.8	1,177.3	1,177.3	2.5	23.5	-78.47	382.5	214.6	437.1	411.0	26.09	16.758			
1,300.0	1,299.5	1,277.0	1,277.0	2.8	25.5	-79.62	382.5	214.6	435.5	407.2	28.29	15.394			
1,400.0	1,398.7	1,376.2	1,376.2	3.0	27.5	-81.23	382.5	214.6	433.4	402.9	30.51	14.207			
1,500.0	1,497.5	1,475.0	1,475.0	3.3	29.5	-83.30	382.5	214.6	431.3	398.5	32.75	13.168			
1,600.0	1,596.0	1,573.5	1,573.5	3.6	31.5	-85.51	382.5	214.6	429.6	394.6	35.03	12.266			
1,700.0	1,694.6	1,672.1	1,672.1	3.9	33.4	-87.74	382.5	214.6	428.6	391.3	37.32	11.486			
1,800.0	1,793.1	1,770.6	1,770.6	4.2	35.4	-89.98	382.5	214.6	428.3	388.7	39.62	10.810			
1,800.9	1,794.0	1,771.5	1,771.5	4.2	35.4	-90.00	382.5	214.6	428.3	388.6	39.64	10.804 CC			
1,900.0	1,891.7	1,869.2	1,869.2	4.5	37.4	-92.22	382.5	214.6	428.6	386.7	41.93	10.222			
2,000.0	1,990.2	1,967.7	1,967.7	4.9	39.4	-94.45	382.5	214.6	429.6	385.4	44.24	9.710			
2,100.0	2,088.8	2,066.3	2,066.3	5.3	41.3	-96.66	382.5	214.6	431.3	384.7	46.56	9.263 ES			
2,200.0	2,187.3	2,164.8	2,164.8	5.6	43.3	-98.86	382.5	214.6	433.6	384.7	48.87	8.872			
2,300.0	2,285.9	2,263.4	2,263.4	6.0	45.3	-101.03	382.5	214.6	436.6	385.4	51.18	8.530			
2,400.0	2,384.4	2,361.9	2,361.9	6.4	47.2	-103.17	382.5	214.6	440.2	386.7	53.49	8.229			
2,500.0	2,483.0	2,460.5	2,460.5	6.7	49.2	-105.27	382.5	214.6	444.4	388.6	55.79	7.966			
2,600.0	2,581.5	2,559.0	2,559.0	7.1	51.2	-107.33	382.5	214.6	449.2	391.2	58.08	7.734			
2,700.0	2,680.1	2,657.6	2,657.6	7.5	53.2	-109.35	382.5	214.6	454.6	394.3	60.37	7.531			
2,800.0	2,778.6	2,756.1	2,756.1	7.9	55.1	-111.32	382.5	214.6	460.6	398.0	62.65	7.353			
2,900.0	2,877.2	2,854.7	2,854.7	8.2	57.1	-113.23	382.5	214.6	467.1	402.2	64.92	7.196			
3,000.0	2,975.7	2,953.2	2,953.2	8.6	59.1	-115.09	382.5	214.6	474.2	407.0	67.18	7.058			
3,100.0	3,074.3	3,051.8	3,051.8	9.0	61.0	-116.90	382.5	214.6	481.7	412.3	69.43	6.937			
3,200.0	3,172.8	3,150.3	3,150.3	9.4	63.0	-118.65	382.5	214.6	489.7	418.0	71.68	6.832			
3,300.0	3,271.4	3,248.9	3,248.9	9.8	65.0	-120.35	382.5	214.6	498.1	424.2	73.92	6.739			
3,400.0	3,369.9	3,347.4	3,347.4	10.2	66.9	-121.99	382.5	214.6	507.0	430.9	76.15	6.658			
3,500.0	3,468.5	3,446.0	3,446.0	10.6	68.9	-123.57	382.5	214.6	516.3	437.9	78.38	6.588			
3,600.0	3,567.0	3,544.5	3,544.5	10.9	70.9	-125.09	382.5	214.6	526.0	445.4	80.59	6.526			
3,700.0	3,665.6	3,643.1	3,643.1	11.3	72.9	-126.56	382.5	214.6	536.0	453.2	82.81	6.473			
3,800.0	3,764.1	3,741.6	3,741.6	11.7	74.8	-127.98	382.5	214.6	546.4	461.4	85.01	6.427			
3,900.0	3,862.7	3,840.2	3,840.2	12.1	76.8	-129.34	382.5	214.6	557.1	469.9	87.21	6.387			
4,000.0	3,961.2	3,938.7	3,938.7	12.5	78.8	-130.66	382.5	214.6	568.1	478.7	89.41	6.354			
4,100.0	4,059.7	4,037.2	4,037.2	12.9	80.7	-131.92	382.5	214.6	579.4	487.8	91.60	6.325			
4,200.0	4,158.3	4,135.8	4,135.8	13.3	82.7	-133.14	382.5	214.6	590.9	497.1	93.79	6.300			
4,300.0	4,256.8	4,234.3	4,234.3	13.7	84.7	-134.30	382.5	214.6	602.8	506.8	95.98	6.280			
4,400.0	4,355.4	4,332.9	4,332.9	14.1	86.7	-135.43	382.5	214.6	614.8	516.7	98.16	6.263			
4,500.0	4,453.9	4,431.4	4,431.4	14.5	88.6	-136.51	382.5	214.6	627.1	526.8	100.34	6.250			
4,600.0	4,552.5	4,530.0	4,530.0	14.9	90.6	-137.55	382.5	214.6	639.6	537.1	102.52	6.239			
4,700.0	4,651.0	4,628.5	4,628.5	15.3	92.6	-138.55	382.5	214.6	652.3	547.6	104.70	6.231			
4,800.0	4,749.6	4,727.1	4,727.1	15.7	94.5	-139.51	382.5	214.6	665.2	558.3	106.87	6.224			
4,900.0	4,848.1	4,825.6	4,825.6	16.0	96.5	-140.44	382.5	214.6	678.3	569.2	109.04	6.220			

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut Existing Pad Sec.27-T5N-R64W - White 27-6 (Exist) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 6900-UNKNOWN												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
5,000.0	4,946.7	4,924.2	4,924.2	16.4	98.5	-141.33	382.5	214.6	691.5	580.3	111.21	6.218	
5,100.0	5,045.2	5,022.7	5,022.7	16.8	100.5	-142.18	382.5	214.6	704.9	591.5	113.38	6.217	
5,200.0	5,143.8	5,121.3	5,121.3	17.2	102.4	-143.01	382.5	214.6	718.5	602.9	115.55	6.218	
5,300.0	5,242.4	5,219.9	5,219.9	17.6	104.4	-143.84	382.5	214.6	732.1	614.2	117.82	6.213	
5,400.0	5,341.3	5,318.8	5,318.8	17.9	106.4	-144.62	382.5	214.6	743.7	623.4	120.29	6.182	
5,500.0	5,440.8	5,418.3	5,418.3	18.1	108.4	-145.20	382.5	214.6	752.5	629.8	122.69	6.133	
5,600.0	5,540.5	5,518.0	5,518.0	18.3	110.4	-145.58	382.5	214.6	758.5	633.5	125.01	6.068	
5,700.0	5,640.4	5,617.9	5,617.9	18.5	112.4	-145.78	382.5	214.6	761.7	634.4	127.24	5.986	
5,800.0	5,740.4	5,717.9	5,717.9	18.6	114.4	-38.98	382.5	214.6	762.2	632.8	129.41	5.890	
5,900.0	5,840.4	5,817.9	5,817.9	18.7	116.4	-38.98	382.5	214.6	762.2	630.6	131.57	5.793	
6,000.0	5,940.3	5,917.8	5,917.8	18.9	118.4	141.06	382.5	214.6	765.0	631.6	133.42	5.734 SF	
6,100.0	6,038.9	6,016.4	6,016.4	19.1	120.3	141.21	382.5	214.6	777.7	643.8	133.86	5.810	
6,200.0	6,134.5	6,112.0	6,112.0	19.3	122.2	141.39	382.5	214.6	800.6	667.9	132.77	6.030	
6,300.0	6,225.6	6,203.1	6,203.1	19.7	124.1	141.47	382.5	214.6	833.9	703.7	130.23	6.404	
6,400.0	6,310.5	6,288.0	6,288.0	20.1	125.8	141.28	382.5	214.6	877.6	751.1	126.50	6.937	
6,500.0	6,387.8	6,365.3	6,365.3	20.6	127.3	140.58	382.5	214.6	931.2	809.1	122.18	7.622	
6,600.0	6,456.2	6,433.7	6,433.7	21.2	128.7	139.10	382.5	214.6	994.4	876.1	118.31	8.405	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut Existing Pad Sec.27-T5N-R64W - White 27-8 (Exist) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 6939-UNKNOWN												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,600.0	6,626.9	6,626.4	6,626.4	33.5	132.5	90.68	-2,295.1	197.9	981.7	817.9	163.80	5.993	
7,700.0	6,626.2	6,625.7	6,625.7	35.1	132.5	90.60	-2,295.1	197.9	896.8	731.3	165.47	5.420	
7,800.0	6,625.5	6,625.0	6,625.0	36.7	132.5	90.52	-2,295.1	197.9	815.4	648.2	167.18	4.877	
7,900.0	6,624.8	6,624.3	6,624.3	38.3	132.5	90.44	-2,295.1	197.9	738.5	569.6	168.90	4.373	
8,000.0	6,624.1	6,623.6	6,623.6	40.0	132.5	90.36	-2,295.1	197.9	667.9	497.2	170.64	3.914	
8,100.0	6,623.4	6,622.9	6,622.9	41.7	132.5	90.28	-2,295.1	197.9	605.5	433.1	172.39	3.512	
8,200.0	6,622.7	6,622.2	6,622.2	43.4	132.4	90.20	-2,295.1	197.9	554.3	380.1	174.16	3.183	
8,300.0	6,622.0	6,621.5	6,621.5	45.1	132.4	90.12	-2,295.1	197.9	517.5	341.6	175.94	2.941	
8,400.0	6,621.3	6,620.8	6,620.8	46.9	132.4	90.04	-2,295.1	197.9	498.4	320.7	177.73	2.804	
8,447.1	6,621.0	6,620.5	6,620.5	47.7	132.4	90.00	-2,295.1	197.9	496.2	317.6	178.57	2.778	CC, ES, SF
8,500.0	6,620.6	6,620.1	6,620.1	48.6	132.4	89.96	-2,295.1	197.9	499.0	319.4	179.52	2.779	
8,600.0	6,619.9	6,619.4	6,619.4	50.4	132.4	89.88	-2,295.1	197.9	519.2	337.9	181.33	2.863	
8,700.0	6,619.2	6,618.7	6,618.7	52.2	132.4	89.80	-2,295.1	197.9	556.9	373.8	183.14	3.041	
8,800.0	6,618.5	6,618.0	6,618.0	54.0	132.4	89.72	-2,295.1	197.9	608.9	423.9	184.96	3.292	
8,900.0	6,617.8	6,617.3	6,617.3	55.8	132.3	89.63	-2,295.1	197.9	671.8	485.0	186.78	3.597	
9,000.0	6,617.1	6,616.6	6,616.6	57.6	132.3	89.55	-2,295.1	197.9	742.9	554.3	188.61	3.939	
9,100.0	6,616.4	6,615.9	6,615.9	59.4	132.3	89.47	-2,295.1	197.9	820.0	629.6	190.44	4.306	
9,200.0	6,615.7	6,615.2	6,615.2	61.2	132.3	89.39	-2,295.1	197.9	901.7	709.4	192.28	4.689	
9,300.0	6,615.0	6,614.5	6,614.5	63.0	132.3	89.31	-2,295.1	197.9	986.7	792.6	194.12	5.083	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

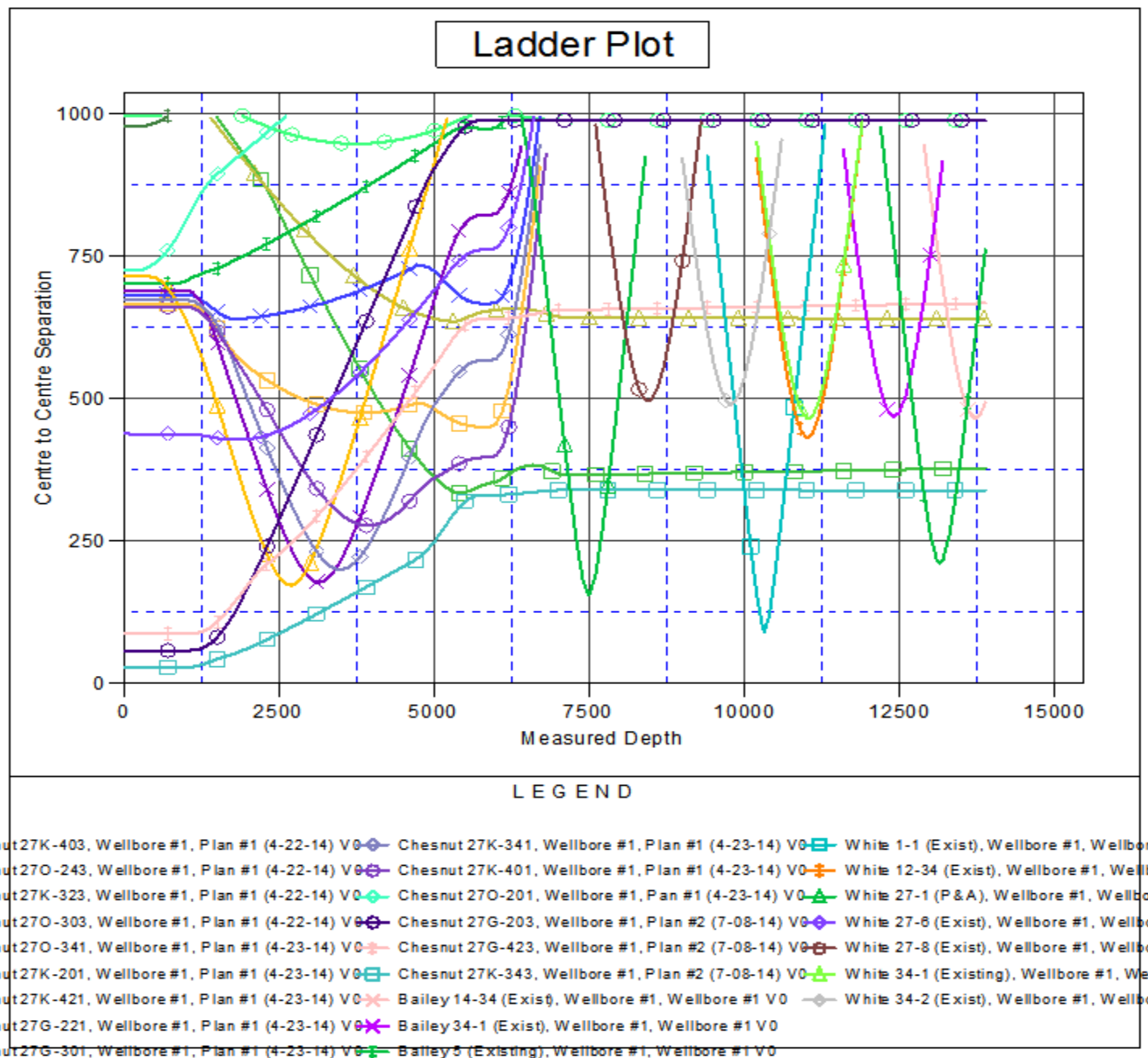
Offset Design Chesnut Existing Pad Sec.27-T5N-R64W - White 34-1 (Existing) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 7400-UNKNOWN												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,200.0	6,608.7	6,619.2	6,619.2	79.7	132.4	-90.71	-4,878.1	1,159.4	951.6	740.5	211.08	4.508	
10,300.0	6,608.0	6,618.5	6,618.5	81.5	132.4	-90.63	-4,878.1	1,159.4	865.8	652.8	212.96	4.065	
10,400.0	6,607.3	6,617.8	6,617.8	83.4	132.4	-90.54	-4,878.1	1,159.4	783.3	568.4	214.84	3.646	
10,500.0	6,606.6	6,617.1	6,617.1	85.3	132.3	-90.46	-4,878.1	1,159.4	705.3	488.6	216.72	3.255	
10,600.0	6,605.9	6,616.4	6,616.4	87.1	132.3	-90.37	-4,878.1	1,159.4	633.6	415.0	218.60	2.899	
10,700.0	6,605.2	6,615.7	6,615.7	89.0	132.3	-90.28	-4,878.1	1,159.4	570.5	350.0	220.48	2.588	
10,800.0	6,604.5	6,615.0	6,615.0	90.9	132.3	-90.20	-4,878.1	1,159.4	519.1	296.8	222.37	2.335	
10,900.0	6,603.8	6,614.3	6,614.3	92.8	132.3	-90.11	-4,878.1	1,159.4	483.2	258.9	224.25	2.155	
11,000.0	6,603.2	6,613.7	6,613.7	94.6	132.3	-90.03	-4,878.1	1,159.4	466.3	240.2	226.13	2.062	
11,030.1	6,602.9	6,613.4	6,613.4	95.2	132.3	-90.00	-4,878.1	1,159.4	465.4	238.7	226.70	2.053	CC, ES, SF
11,100.0	6,602.5	6,613.0	6,613.0	96.5	132.3	-89.94	-4,878.1	1,159.4	470.6	242.6	228.02	2.064	
11,200.0	6,601.8	6,612.3	6,612.3	98.4	132.2	-89.85	-4,878.1	1,159.4	495.4	265.5	229.90	2.155	
11,300.0	6,601.1	6,611.6	6,611.6	100.3	132.2	-89.77	-4,878.1	1,159.4	538.0	306.2	231.79	2.321	
11,400.0	6,600.4	6,610.9	6,610.9	102.2	132.2	-89.68	-4,878.1	1,159.4	594.5	360.8	233.68	2.544	
11,500.0	6,599.7	6,610.2	6,610.2	104.1	132.2	-89.60	-4,878.1	1,159.4	661.3	425.8	235.56	2.808	
11,600.0	6,599.0	6,609.5	6,609.5	105.9	132.2	-89.51	-4,878.1	1,159.4	735.8	498.3	237.45	3.099	
11,700.0	6,598.3	6,608.8	6,608.8	107.8	132.2	-89.42	-4,878.1	1,159.4	815.7	576.3	239.34	3.408	
11,800.0	6,597.6	6,608.1	6,608.1	109.7	132.2	-89.34	-4,878.1	1,159.4	899.6	658.4	241.22	3.729	
11,900.0	6,596.9	6,607.4	6,607.4	111.6	132.1	-89.25	-4,878.1	1,159.4	986.6	743.4	243.11	4.058	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut Existing Pad Sec.27-T5N-R64W - White 34-2 (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 6940-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
9,000.0	6,617.1	6,622.6	6,622.6	57.6	132.5	90.64	-3,628.5	203.4	921.8	733.1	188.76	4.884		
9,100.0	6,616.4	6,621.9	6,621.9	59.4	132.4	90.55	-3,628.5	203.4	838.9	648.3	190.60	4.401		
9,200.0	6,615.7	6,621.2	6,621.2	61.2	132.4	90.47	-3,628.5	203.4	760.0	567.6	192.44	3.949		
9,300.0	6,615.0	6,620.5	6,620.5	63.0	132.4	90.39	-3,628.5	203.4	686.7	492.4	194.29	3.534		
9,400.0	6,614.3	6,619.8	6,619.8	64.9	132.4	90.31	-3,628.5	203.4	620.8	424.7	196.14	3.165		
9,500.0	6,613.6	6,619.1	6,619.1	66.7	132.4	90.23	-3,628.5	203.4	565.1	367.1	197.99	2.854		
9,600.0	6,612.9	6,618.4	6,618.4	68.5	132.4	90.15	-3,628.5	203.4	522.7	322.9	199.84	2.616		
9,700.0	6,612.2	6,617.7	6,617.7	70.4	132.4	90.07	-3,628.5	203.4	497.1	295.4	201.70	2.465		
9,780.5	6,611.7	6,617.2	6,617.2	71.9	132.3	90.00	-3,628.5	203.4	490.6	287.4	203.19	2.414 CC, ES		
9,800.0	6,611.5	6,617.0	6,617.0	72.2	132.3	89.98	-3,628.5	203.4	491.0	287.4	203.56	2.412 SF		
9,900.0	6,610.8	6,616.3	6,616.3	74.1	132.3	89.90	-3,628.5	203.4	504.9	299.5	205.42	2.458		
10,000.0	6,610.1	6,615.6	6,615.6	75.9	132.3	89.82	-3,628.5	203.4	537.5	330.2	207.28	2.593		
10,100.0	6,609.4	6,614.9	6,614.9	77.8	132.3	89.74	-3,628.5	203.4	585.5	376.3	209.14	2.799		
10,200.0	6,608.7	6,614.2	6,614.2	79.7	132.3	89.66	-3,628.5	203.4	645.5	434.5	211.01	3.059		
10,300.0	6,608.0	6,613.5	6,613.5	81.5	132.3	89.58	-3,628.5	203.4	714.5	501.7	212.87	3.357		
10,400.0	6,607.3	6,612.8	6,612.8	83.4	132.3	89.49	-3,628.5	203.4	790.2	575.5	214.74	3.680		
10,500.0	6,606.6	6,612.1	6,612.1	85.3	132.2	89.41	-3,628.5	203.4	870.8	654.2	216.61	4.020		
10,600.0	6,605.9	6,611.4	6,611.4	87.1	132.2	89.33	-3,628.5	203.4	955.1	736.6	218.48	4.372		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4632.5ft (Ensign 121 RKB - Coordinates are relative to: Chesnut 27K-203
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 0.62°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27K-203
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Reference Site:	Chesnut 27G-HZ Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4632.5ft (Ensign 121 RKB - 13.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 27K-203	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 (7-08-14)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4632.5ft (Ensign 121 RKB - Coordinates are relative to: Chesnut 27K-203
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°

